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DMS-100 Family

North American DMS-100

TOPS Translations Guide Volume 5 of 5
Groups OSEA, OSI, TPC, and UNBN

TOPS15 and up Standard 01.01 May 2001

DMS-100 Family

North American DMS-100

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1 Datafilling Operator Services Equal Access (continued)

This chapter contains the operator services equal access functionalities.

TOPS Incoming FGD Signaling

Ordering codes

Functional group ordering code: OSEA0101

Functionality ordering code: not applicable

Release applicability

NA006 and up

TOPS Incoming FGD Signaling was introduced in BCS26.

Prerequisites

To operate, TOPS Incoming FGD Signaling has the following prerequisites:

- BAS Generic, BAS00003
- Operator Services Basic, OSB00101, and table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- Operator Services Equal Access, OSEA0101

Description

This functionality is provided by the following features:

Feature number	Feature name
AF1102	TOPS Incoming FGD Signaling
AF1781	Alternate Carrier Selection
BY28832	Operator Hold Support for COMFGD Trunks (TOPS06)
50093498	TOPS COMFGD Restricted Billing (TOPS11)

TOPS Incoming Feature Group D Signaling provides the following capabilities:

- incoming FGD signaling
This capability allows the TOPS AT to collect two-stage domestic and three-stage international signaling on 1+, non-operator-assisted carrier calls incoming from an Equal Access End Office (EAEO) on TOPS trunks.
- alternate carrier selection
- terminating points screening
These two capabilities enable a DMS-200 TOPS office to determine if an Interexchange Carrier (IEC) can complete a given domestic, international

TOPS Incoming FGD Signaling (continued)

or zero-minus call, and then select an alternate IEC when a primary IEC cannot complete the call. This is done without the operator entering an alternate Carrier Access Code (CAC).

- collection of combined FGD signaling - This allows the TOPS office to receive and handle carrier calls outpulsed with FGD from Equal Access End Offices (EAEO), other Access Tandems (AT) or from IEC offices. The calls may originate from any Numbering Plan Area (NPA) in North America.
- conditional routing for transferred calls - This allows routing based on if the call has been transferred to a carrier by a TOPS operator.
- operator hold on COMFGD TOPS trunks.

User Perspective

The functionality of this feature is optimized when used in a TOPS AT with TOPS Inter-LATA Carrier Service (TICS) capability. In addition, the AF1102 feature is best used when all subscribers are known to the Inter-LATA Carrier (IC) datafilled as the primary carrier in the Directory Number Primary Inter-LATA Carrier (DNPIC) Table. This results in routing within the carrier's network. Calls from subscribers not known to the IC have a carrier chosen for them from the TOPS Equal Access Trunk Group (TOPEATRK) Table.

By changing from the standard BELL signaling to the EAFGD signaling between the EAEO and the TOPS AT, the carrier can collect access charges and there is no visible change to the subscriber.

Operation

AF1102 - TOPS Incoming FGD Signaling

AF1102 allows a TOPS AT to collect two-stage and three-stage FGD signaling on domestic and international calls, respectively, incoming on TOPS trunks from an EAEO. This capability is increased when the TOPS AT is equipped with TOPS Inter-LATA Carrier Service (TICS), OSEA0101, software, which allows the TOPS AT to complete calls for an IC/INC.

TOPS Incoming FGD Signaling (continued)

The following information is provided to better understand the capability provided by AF1102:

- A brief description of standard Feature Group D (FGD) Signaling. This description is included here to better understand the functionality provided by AF1102.

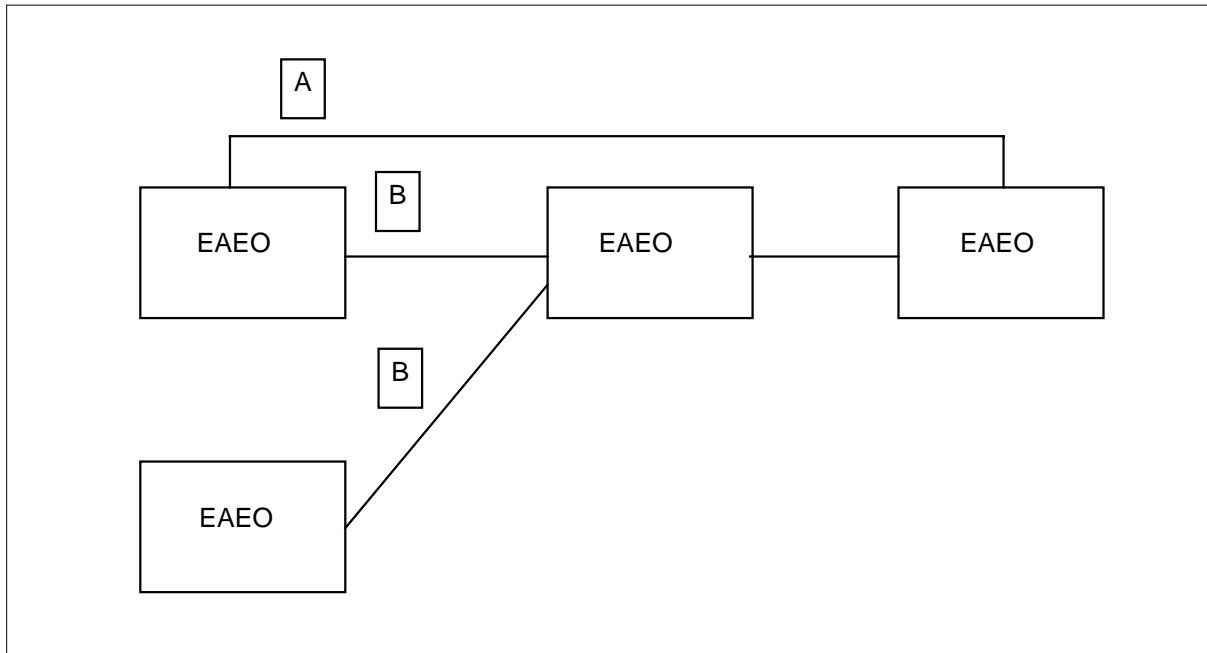
Note: This description does not take into consideration all possible office types and office configurations.

- A brief description of the extensions of FGD Signaling. The capability provided by AF1102 is considered an extension of FGD. Currently, there are only two: EAOSS and EAFGD (AF1102). A short description of EAOSS is in "Extensions of FGD Signaling" located within this document. EAOSS is similar to EAFGD and could easily be confused with EAFGD.
- A description of the considerations and requirements for EAFGD. This document looks at on EAFGD.

Standard Feature Group D Signaling

FGD signaling communicates digit information to an IC/INC. There are two signaling paths to the IC/INC: a direct path and an indirect path. The way that digit information is signaled to the IC/INC varies slightly depending on the type of path used.

Possible Office Configurations



TOPS Incoming FGD Signaling (continued)

In the preceding figure, if a call originates at the EAEO, the first attempt to route to the IC/INC will be over the direct path (A). If the direct path is not available, the call will be routed indirectly through the Access Tandem (B).

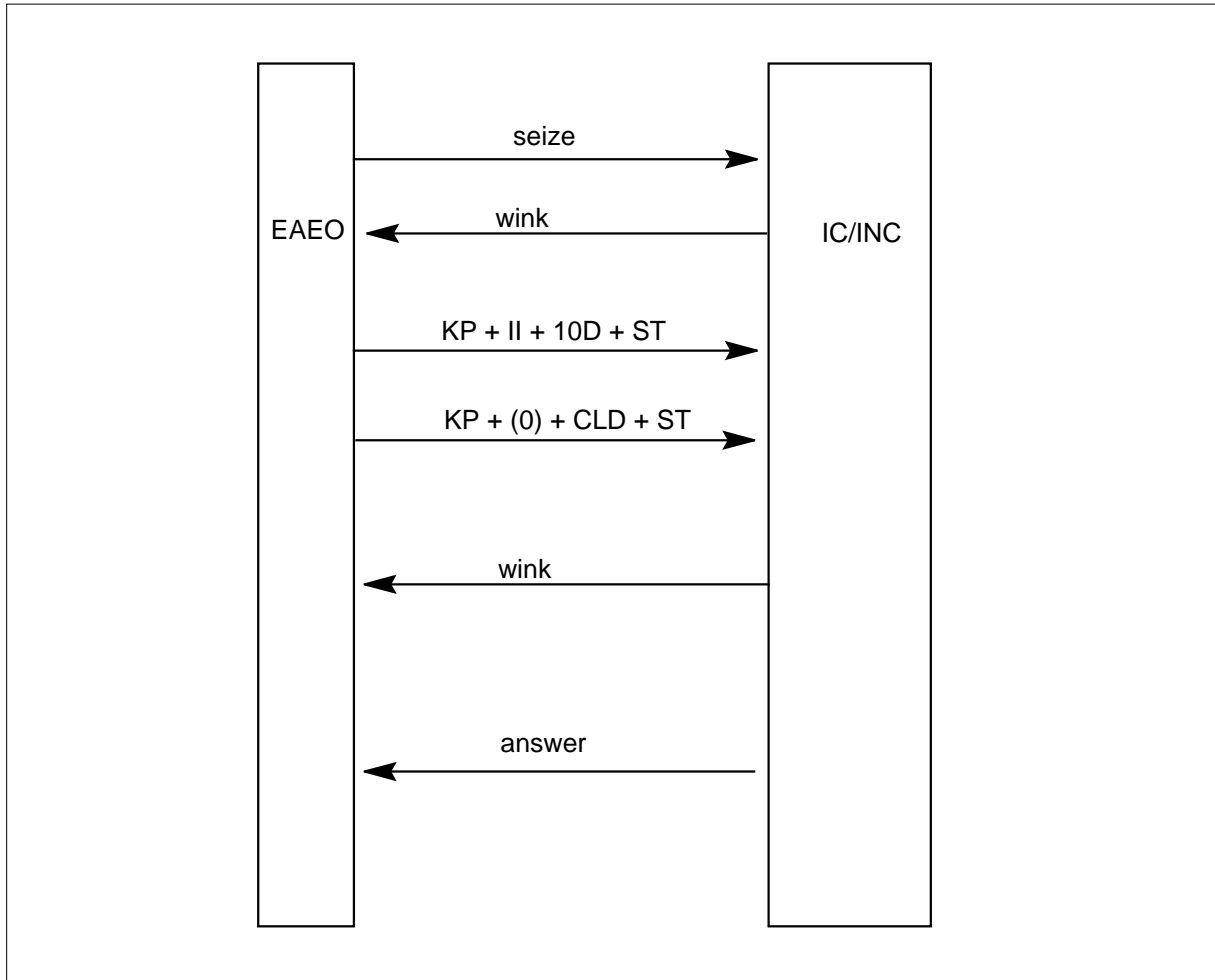
Routing calls through the Access Tandem (AT) is referred to as tandeming of FGD calls. Calls over indirect paths are tandemed through an AT.

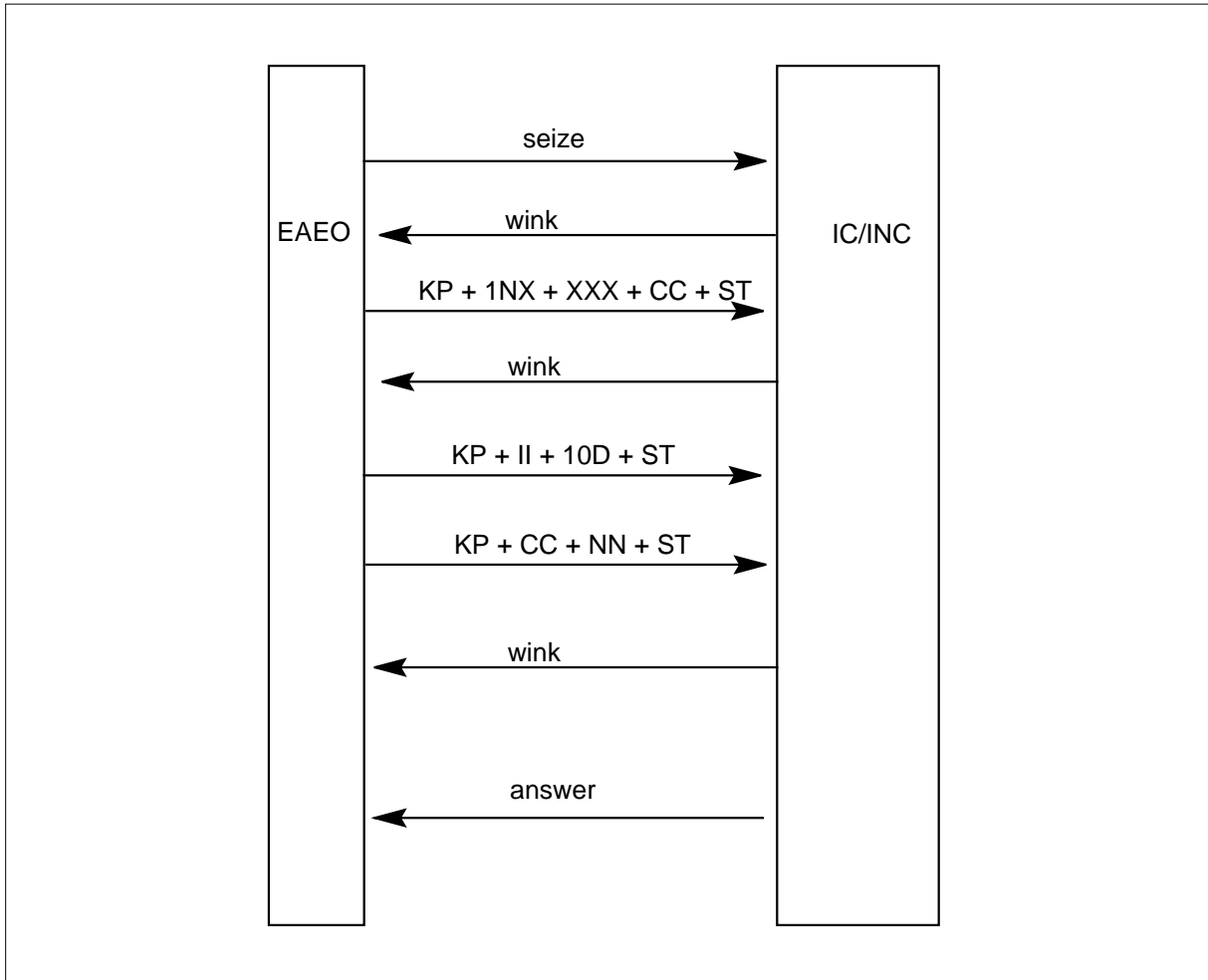
When a FGD call is sent directly from the EAEO to the IC/INC over a direct path, the EAEO sends the IC/INC two-stage outpulsing on domestic calls and three-stage outpulsing on international calls. Refer to the following two figures for figures of the outpulsing sequence over a direct path for domestic and international calls using standard FGD.

Note: Explanations of the different components of the signaling sequences are given in table, "Legend."

TOPS Incoming FGD Signaling (continued)

Direct Path, Domestic Call Using Standard FGD



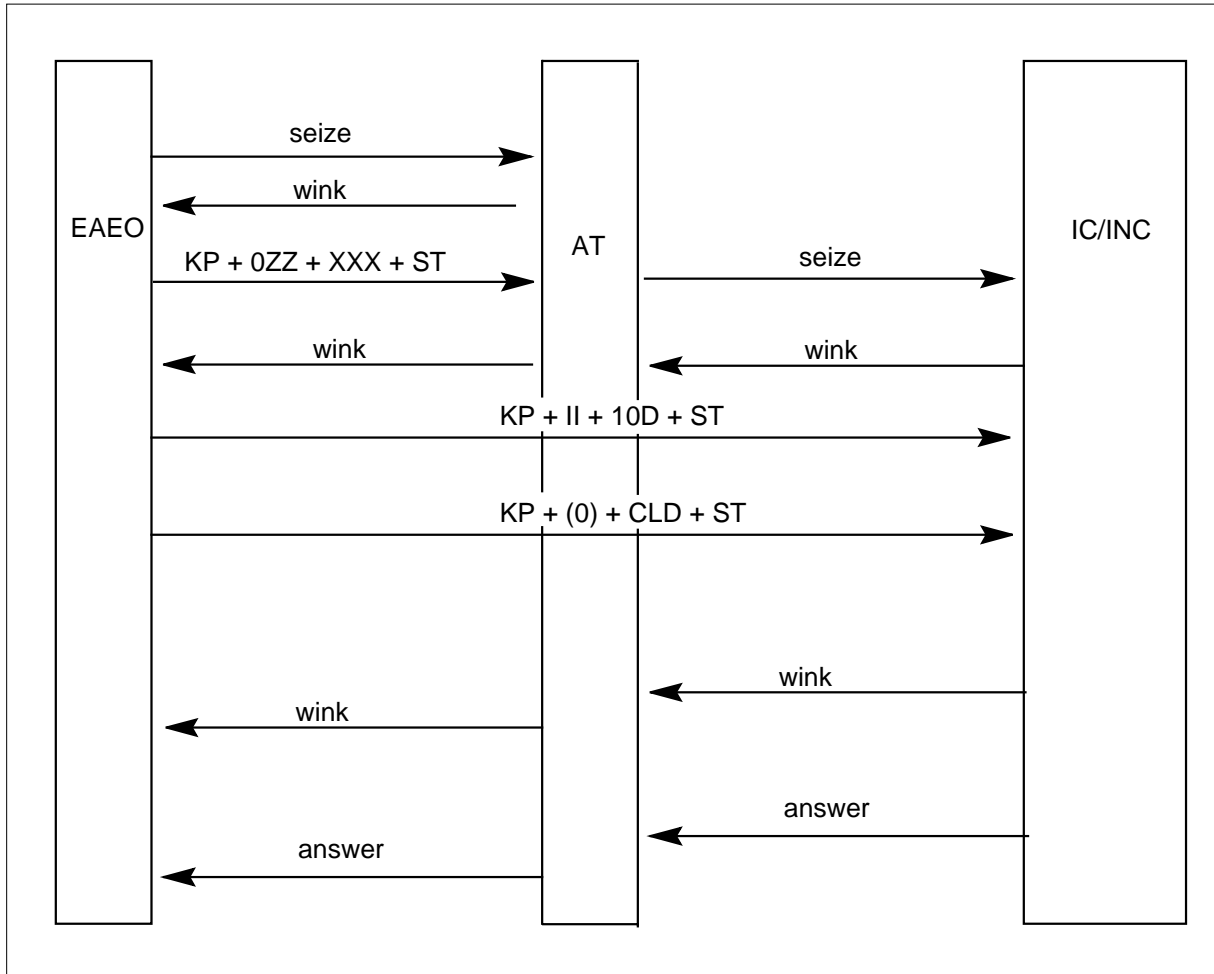
TOPS Incoming FGD Signaling (continued)**Direct Path, International Call Using Standard FGD**

When a FGD call is tandemed (routed indirectly) through an AT, there is a three-stage outpulsing sequence on both domestic and international calls.

The AT collects the first stage of outpulsing on a three-stage outpulsing sequence on both domestic and international EA carrier calls for the purpose of routing to a carrier. Automatic Number Identification (ANI) and called digits, which are sent in the second and third stage of outpulsing, are not collected at the AT but are passed directly to the carrier and are transparent to the AT. The following two figures show the outpulsing sequence for domestic and international calls tandemed through an AT.

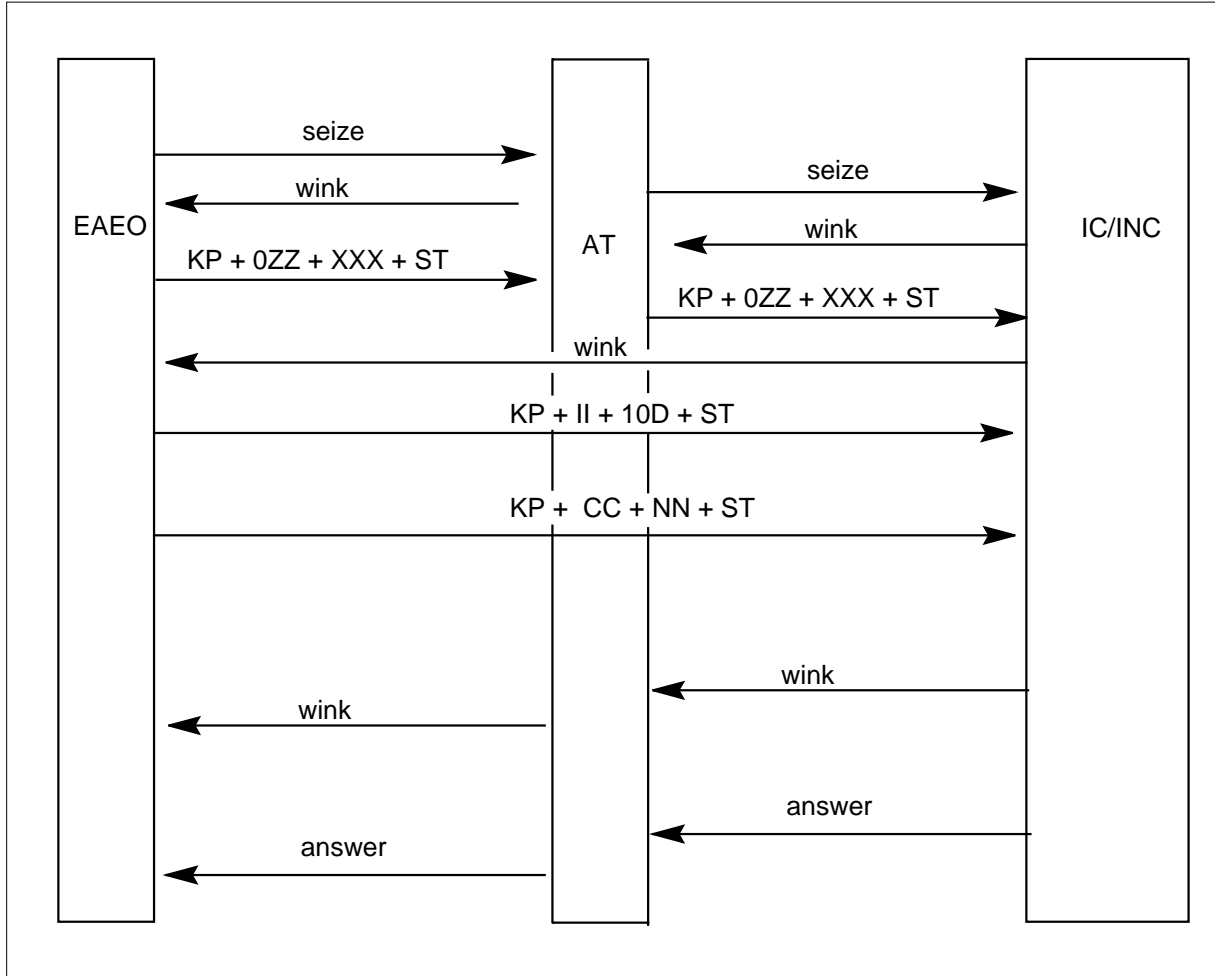
TOPS Incoming FGD Signaling (continued)

Indirect Path, Domestic Call Using Standard FGD



TOPS Incoming FGD Signaling (continued)

Indirect Path, International Call Using Standard FGD



Legend

Code	Meaning
0ZZ	Routing digits in the first stage of a three-stage outpulsing sequence on domestic FGD calls.
10D	Ten-digits stream made up of a Directory Number (DN) in the national dialing plan format.
II	Two Automatic Number Identification (ANI) information digits on a FGD call that accompany the calling number outpulsed to the carrier in the second stage of outpulsing.
CLD	Called number.
KP	Key Pulse (KP) is the first signal in a multifrequency (MF) digit stream.

TOPS Incoming FGD Signaling (continued)

Legend

Code	Meaning
ST	Start Translation (ST) is the last signal in a MF digit stream.
XXX	Three digit Carrier Access Code (CAC).
(0)	Optional inclusion of the digit 0 in the digit stream to indicate a 0+ dialed call.
1NX	Routing digits in the first stage of a three-stage outpulsing sequence on international FGD calls.
CC	Country Code (CC).
CCC	Pseudo Country Code (CCC) is normally the CC padded to three digits.
NN	National Number (NN) follows the CC in an international DN.

Extensions of FGD Signaling

Currently, there are two capabilities that are considered extensions of FGD signaling: EAOSS and EAFGD. In discussing these two capabilities, the following assumptions are made:

- The AT is a TOPS AT (equipped with the Baae TOPS Equal Access, OSEA0101, feature package).
- The TOPS AT is capable of operator service (equipped with the TOPS Call Processing Features feature package).
- The TOPS AT is capable of handling and completing calls for the carrier (equipped with the TOPS Inter-LATA Carrier Service, OSEA0101, feature package). This service is provided to the carrier on a contractual basis.

When discussing EAOSS and/or EAFGD, the AT will be referred to as a TOPS AT.

EAOSS: Equal Access Operator Service Signaling (EAOSS) is available optionally between an EAEO and a TOPS AT. EAOSS allows the Operating Company to combine traffic requiring operator service with other types of traffic on the same trunk group.

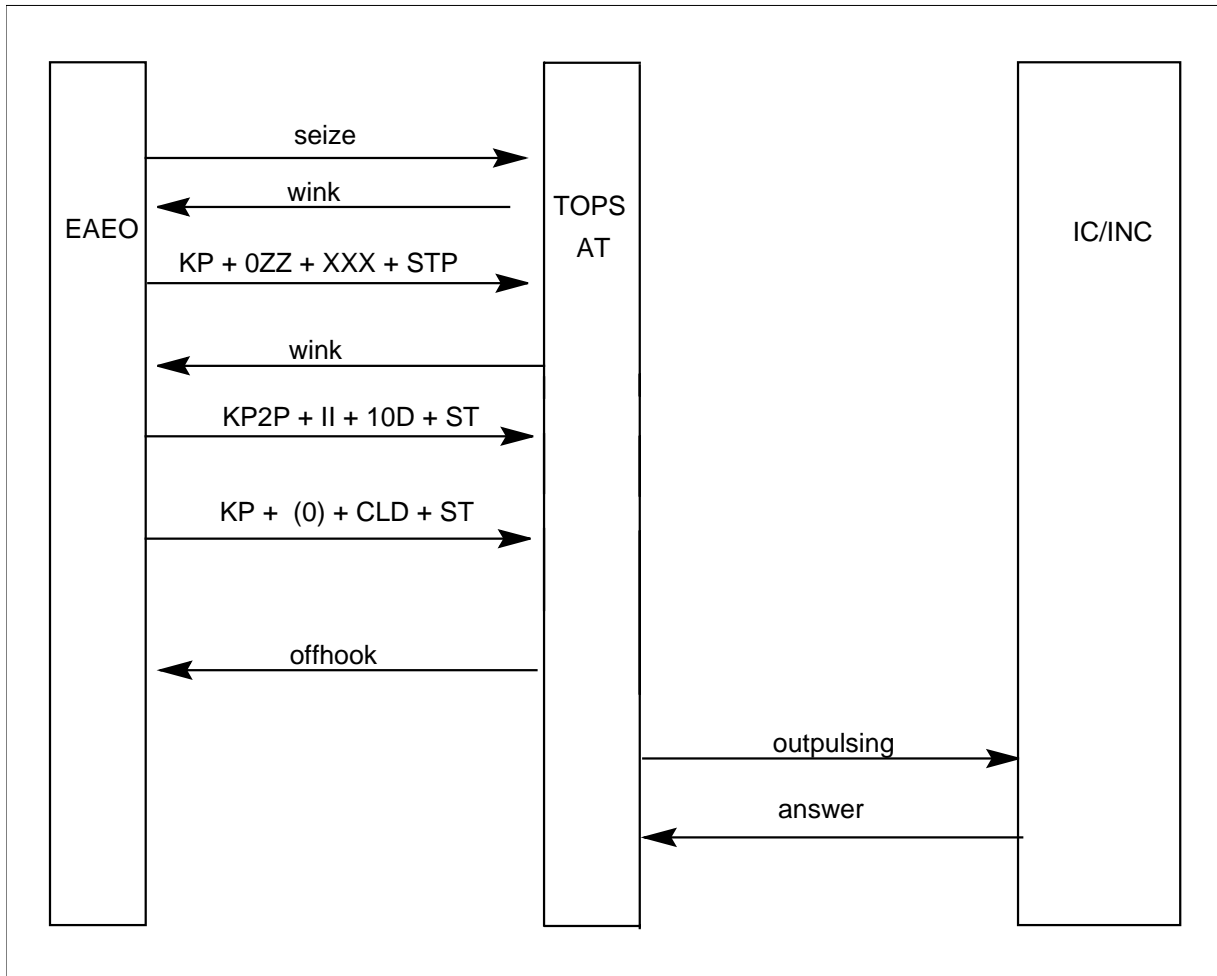
Based on information incoming from the first stage of signaling, carrier calls on TOPS trunk groups using EAOSS can be tandemed to the carrier without collection of the second and third stage of signaling, or all stages can be collected and the Operating Company's operator handles the call, if necessary. EAOSS uses coded Key Pulse (KP) and Start Translation (ST) digits to communicate information. The following two figures illustrate the outpulsing sequence for domestic and international calls using EAOSS.

TOPS Incoming FGD Signaling (continued)

The EAOSS capability is provided in the EAOSS, OSEA0101, feature package.

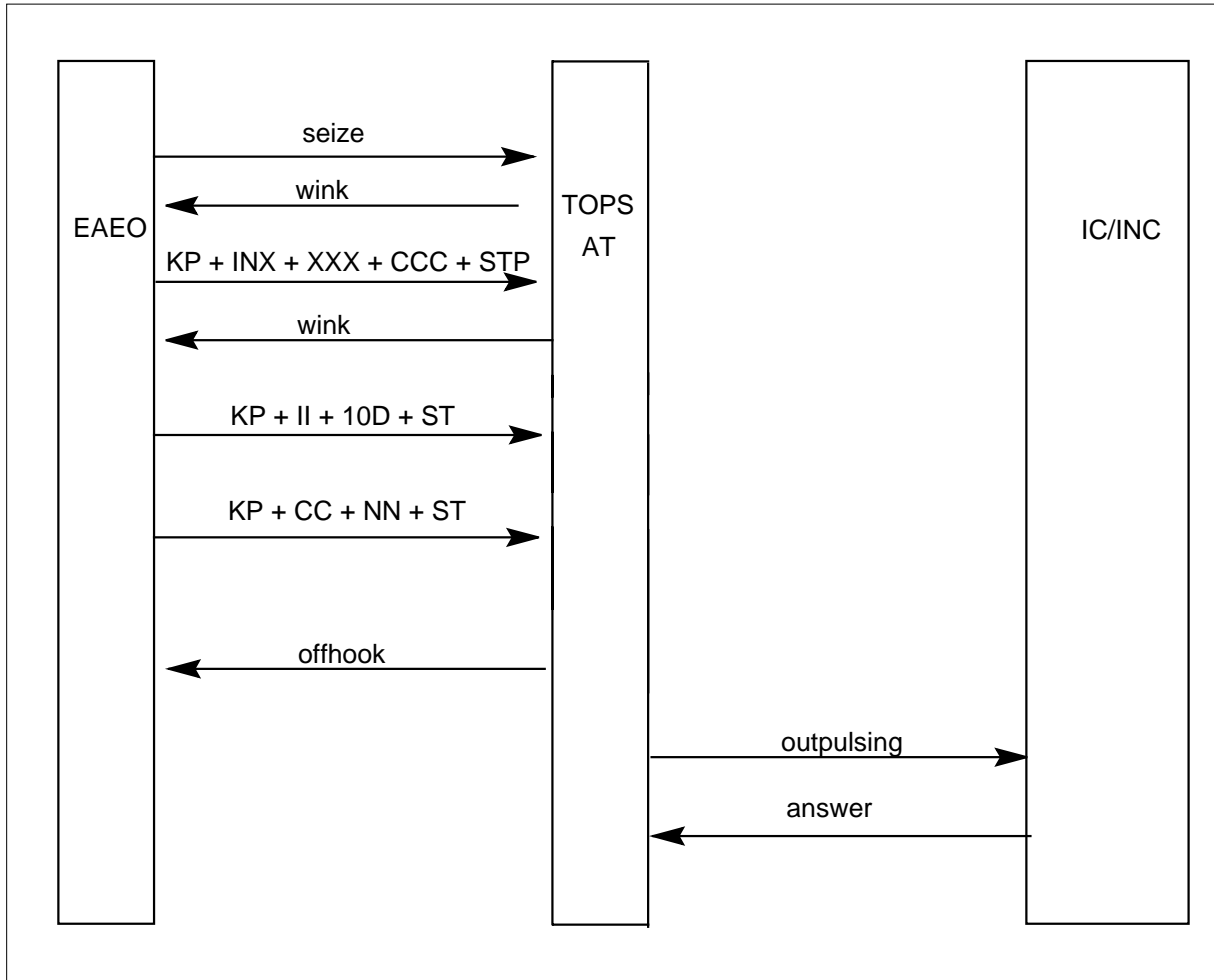
Note: If the TOPS AT has EAOSS, OSEA0101, the EAEO must have EAEO EAOSS since modified ST and KP signals are required.

Outpulsing Sequence on Domestic Call Using EAOSS



TOPS Incoming FGD Signaling (continued)

Outpulsing Sequence on International Call Using EAOSS



EAFGD: Equal Access Feature Group D (EAFGD) is available between the EAO and the TOPS AT. The EAFGD capability allows the TOPS AT to collect two-stage outpulsing on domestic and three-stage outpulsing on international 1+ dialed, non-operator-assisted carrier calls.

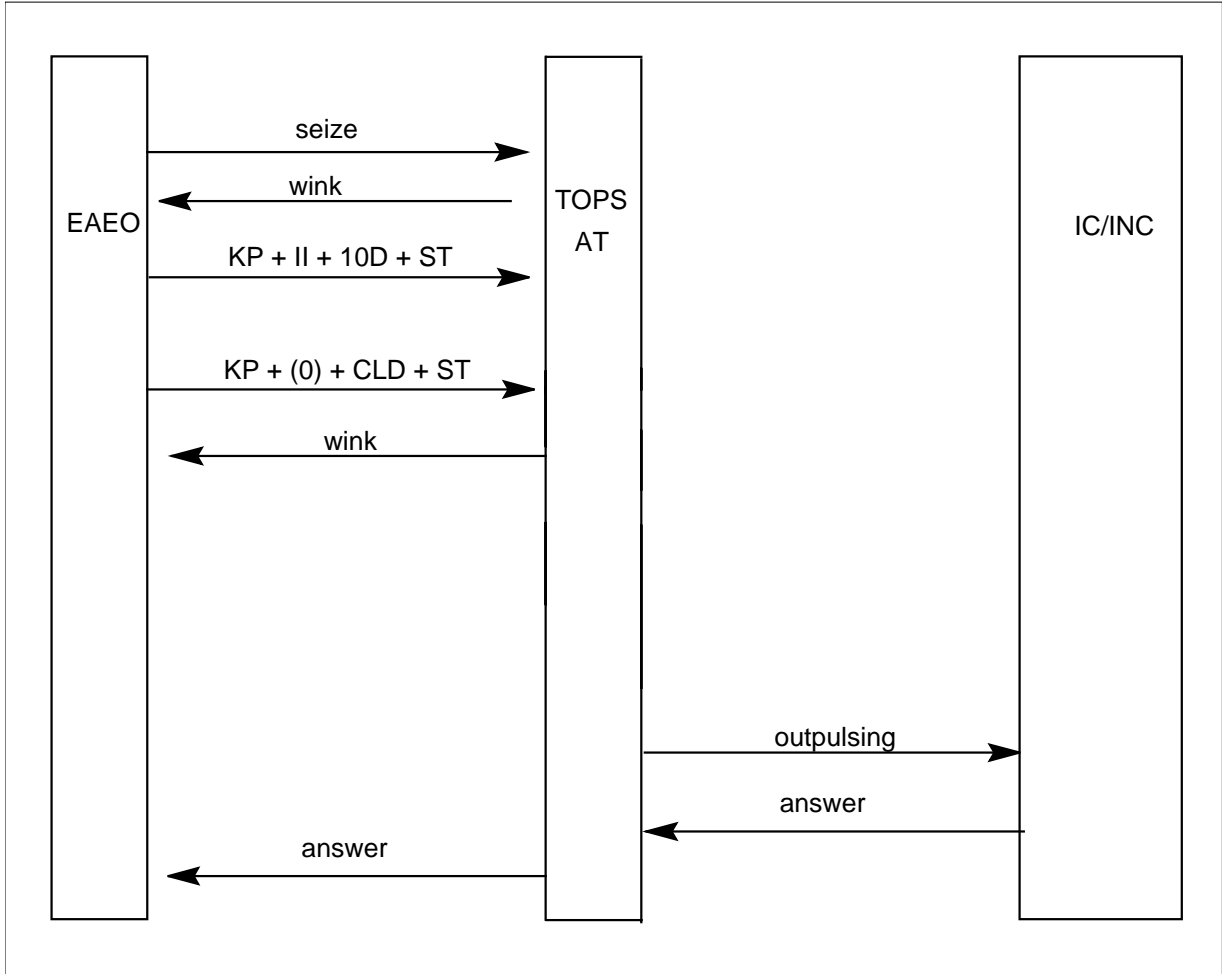
On domestic calls, the first stage of outpulsing (KP+ 0ZZ+XXX+ST) is not required. The following two figures illustrate the outpulsing sequence for domestic and international calls using EAFGD signaling.

EAFGD is available in TOPS Incoming FGD Signaling, OSEA0101. The remainder of this document defines the requirements for EAFGD.

Both EAOSS and EAFGD can exist together in an AT, but neither depends on the other.

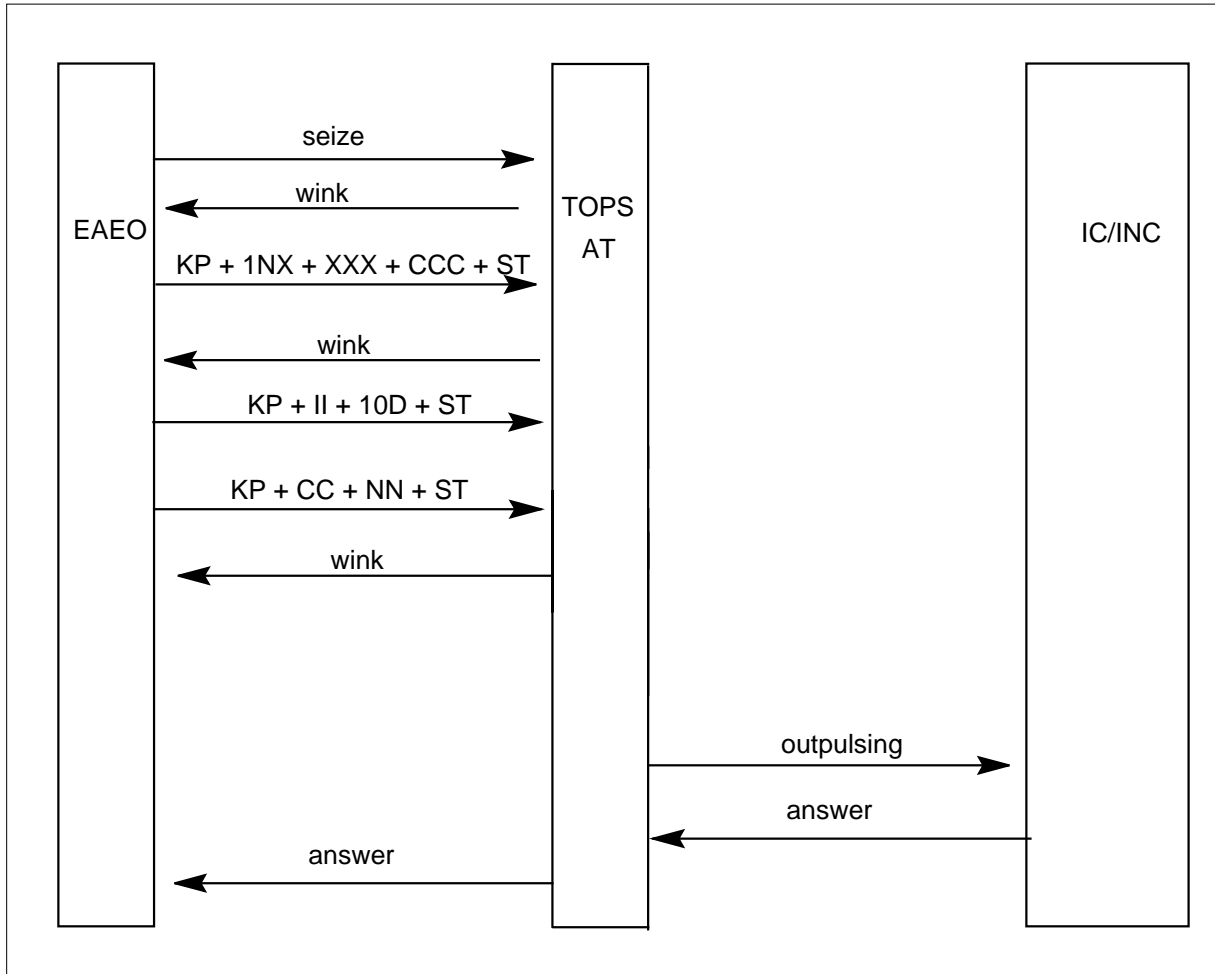
TOPS Incoming FGD Signaling (continued)

Outpulsing Sequence on Domestic Calls Using EAFGD Signaling



TOPS Incoming FGD Signaling (continued)

Outpulsing Sequence on International Calls Using EAFGD Signaling



EAFGD Requirements

The requirements for TOPS Incoming Feature Group D Signaling (EAFGD) are datafill related. TOPS Incoming Feature Group D Signaling does not require modified KP or ST signals or any additional hardware, that is, there are no EAEO modifications required.

EAFGD is assigned as a signaling type for incoming TOPS trunks in the Trunk Group (TRKGRP) Table. The EAFGD option is available on incoming TOPS trunk groups only.

When a TOPS trunk group has been assigned as an EAFGD trunk group, the only traffic possible over that group is EAFGD-signaled traffic. For domestic calls, this means receiving the ANI information followed by the called number.

TOPS Incoming FGD Signaling (continued)

Separate TOPS trunk groups must be used for EAFGD-signaled traffic, that is, different traffic types and signaling types cannot be combined on a trunk group designated to carry EAFGD-signaled traffic.

The following requirements apply to TOPS trunks carrying EAFGD-signaled traffic.

- The STATCLASS field of the TRKGRP Table must be set to CAMA. This ensures that calls requiring operator assistance are not routed over TOPS trunks designated to carry EAFGD-signaled traffic. Calls requiring operator assistance should be routed over TOPS trunks that use BELL, OSS, or EAOSS signaling.
- The IPULSTYP field of the Trunk Subgroup (TRKSGRP) Table must be set to MF.
- The OPULSTYP field of the TRKSGRP Table must be set to MF for two-way trunks.

All calls arriving on TOPS trunks marked to carry EAFGD-signaled traffic are considered carrier calls regardless of the LATA status. The calls route through TOPS EA class of service screening. If routing from the Home Numbering Plan Translation (HNPACONT) Table or the Country Code (CCTR) Table is needed, routes from these tables will be used if no entries are made in the Class of Service Screening (CLSVSCRC) Table for the carrier digits of the IC.

Internal System Controls

Internal system controls have class of service, screening and routing.

Class of service: Selection of a route for a carrier call incoming on a TOPS trunks is accomplished through the CLSVSCRC Table. Refer to "Datafilling table CLSVSCRC" for further details.

Screening: All EAFGD-signaled calls are considered carrier calls regardless of the LATA status in the LATA XLA Table. The handling and billing of these calls is the same whether the LATA XLA Table indicates Inter- or Intra-LATA. Refer to "Datafilling table LATA XLA" for further details.

Routing: The Carrier Access Code (CAC) used for a call determines the routing for that call. The CAC of EAFGD-signaled traffic incoming on TOPS trunks assigned to carry such traffic is chosen from the DNPIC Table or from the TOPEATRK Table.

Note: For EAFGD, the selection of CAC is done for routing purposes only because the carrier determination is done before the call being signaled to the carrier. Therefore, the CAC is datafilled to allow routing to outgoing

TOPS Incoming FGD Signaling (continued)

trunk groups or to treatment if necessary. Treatments can be tones or recorded announcements.

The recommended way to use CACs for routing is to have all the subscribers known to the carrier datafilled in the DNPIC Table with the CAC of the carrier assigned as each subscriber's Primary Inter-LATA Carrier (PIC). Calls from these subscribers route from TOPS EA class of service screening (CLSVSCRC Table) to their intended destinations. If routes are not provided in the class of service screening tables, the routes from the HNPACONT Table or the CCTR Table are used.

For calls from subscribers whose DN is not datafilled in the DNPIC Table, a CAC from the TOPEATRK Table is assigned to them by TOPS EA. By using the CAC from the TOPEATRK Table, such calls can be routed to an appropriate treatment during class of service screening or may be allowed to complete normally.

Because the subscriber's DN is required to determine routing for the call, calls that arrive as Operator Number Identification (ONI) or ANI Fail need to have the calling number identified. Since only CAMA traffic arrives on EAFGD TOPS trunks groups, ONI and ANI Fail calls always route to a CAMA position.

The EAFGD capability places no restrictions on the type of signaling that can be used on outgoing trunk groups used by EAFGD calls incoming on TOPS trunk groups designated to carry EAFGD-signaled traffic.

If outgoing Intertoll (IT) trunk groups are used, then CCIS6 signaling is supported.

Call Progression

The general call progression for EAFGD-signaled calls is as follows:

1. The incoming signaling is collected.
2. The ANI is analyzed (CAMA identification is collected if ONI or ANI Fail call).
3. Translation is performed resulting in a route.
4. TOPS EA screening and routing is performed.
5. Outgoing signaling is outputted.

TOPS Incoming FGD Signaling (continued)

AF1781 - Alternate Carrier Selection**Alternate carrier selection**

Background: With the TOPS EA package (without TICS), zero-plus (0+) and one-plus (1+) carrier calls that arrive at the DMS on a TOPS trunk group are immediately outpulsed to a carrier. Carrier calls dialed 0+ do not route to a TOPS position for assistance unless a CAC needs to be entered by an operator. If a subscriber dials zero-minus (0-) and requires assistance for a carrier call, then the TOPS operator may transfer the call to a carrier's operator services system either before or after collecting the called number. The Operating Company may only provide complete operator services for non-carrier calls (Operating Company calls).

If a TOPS EA office has the TICS package, then the Operating Company may contract with individual carriers to provide full operator services for those carriers' calls. Calls for carriers not serviced by the Operating Company are still handled by TOPS EA as described above. However, when a 0+ inter-LATA call arrives on a TOPS trunk group and is designated for a carrier receiving TOPS office handling, then the call will route to a TOPS operator. 0-calls, which always route to a TOPS operator, may also be designated as carrier calls for which the TOPS office provides TICS service. When the required operator assistance has been provided, the call is released from the TOPS position. The call does not require further services from a carrier operator service center.

With or without this optional feature, TOPS EA performs routing using the Class of Service Screening function (in table CLSVSCRC). Routing is based on the Carrier Access Code, as well as the NPA (and NXX) or Country Code if necessary. The result from routing must be either an outgoing trunk or a treatment (tone or announcement). If the chosen carrier cannot complete a call (e.g., to a particular NPA or country), then there is no way of selecting an alternate carrier for the call, routing to that new carrier, and providing correct AMA. The call may be routed to treatment, in which case the call must be placed using another carrier. Alternately, datafill in CLSVSCRC may route the call to another IEC's trunk group without AMA being updated to reflect the use of the alternate carrier.

Therefore, a selected carrier may not be able to handle a call for the following reasons:

- The carrier is unable to provide some or all required services. For example, a carrier can handle 0+ calls for handling by an automated service, but cannot accept 0- calls since they are not automated.
- Call completion is restricted according to the called NPA, NXX, or Country Code. This screening is performed in table CLSVSCRC by the

TOPS Incoming FGD Signaling (continued)

TOPS Equal Access package and Terminating Points Screening, discussed in the following section.

- The carrier does not accept transferred 0- calls and/or subscriber dialed 00, 10XXX0 and 10XXX00 calls.

TOPS EA Requirement for Alternate Carrier Selection: Selection of an alternate carrier can only be performed on calls that are handled by TOPS EA. If the first stage of three stage Feature Group D (FGD) signaling is collected by the TOPS office and the call is cut through to a carrier (FGD Cut-through), then the TOPS office does not collect the called and Automatic Number Identification (ANI digit stages, so TOPS EA processing is not done, and alternate carrier selection does not apply.

Note: When FGD cut-through signaling is used, the EAEO should have already provided selection of an alternate carrier, if it was required.

Routing with a T-selector typically by-passes TOPS EA processing, so alternate carrier selection does not apply for these calls. If the optional AF1100 feature TOPS FGB Call Code 134 is providing equal access handling for calls that use a T-selector, then alternate carrier selection will apply for T-selector calls.

If the originating LATA of the TOPS trunk group is NILLATA in TOPEATRK, then TOPS EA handling is not performed. With NILLATA, all domestic and international calls are completed by the Operating Company. No carrier is chosen for the call, so alternate carrier selection does not apply.

Selection of an Alternate Carrier: The following fields in table TOPEACAR determine an alternate carrier:

- **ALTCARR** (Alternate Carrier Code) - This indicates the IEC alternate carrier when the initial carrier cannot complete the call. This alternate must be able to complete all calls that the initial carrier cannot complete. The Operating Company or the carrier may choose this alternate, based on contracts with alternate carriers. If an alternate is not needed or desired, the initial carrier should be datafilled.

Carriers that have operator services provided by the Operating Company (field OPSERV=SERV) as well as non-served carriers (field OPSERV=NOSERV) require field ALTCARR to be datafilled. Any carrier that is datafilled as an alternate must already be datafilled in table TOPEACAR. The carrier datafilled in table OFCVAR as the TOPS_OTC_CARRIER_NUMBER (which is used in some offices as the

TOPS Incoming FGD Signaling (continued)

presubscribed carrier for coin phones) may not be used as an alternate carrier.

If Terminating Point Screening results in the need for an alternate carrier, this field determines that carrier.

If a 0+ call is serviced by MCCS or AABS, then sequence dialing is allowed. The first call is associated with a carrier. Then, this same carrier must be used for the sequence call. If the first call carrier cannot complete the sequence call, then no alternate carrier may be chosen since billing is already in effect using the initial carrier. So, the sequence call is connected to the TOPS Carrier Call Completion Failure treatment.

- BLK0MXFR (Block 0- Transfer Calls) - This field indicates if a carrier will accept 0- calls transferred from a TOPS operator. A 0- call is transferred from an operator to a carrier if the subscriber gives an inter-LATA called number or requests a carrier for transfer of the call.

This field only applies to carriers not receiving operator services from the Operating Company. So, the field only appears when field OPSERV=NOSERV.

Note: Any carrier receiving TICS service (OPSERV set to SERV) has operator calls handled by a TOPS operator, so 0- calls may remain at the TOPS position for handling.

If field BLK0MXFR=N and field OPSERV=NOSERV, then a route to the carrier is determined. TOPS EA will have selected the carrier. The position display notifies the operator that the call requires transfer. Upon release from the TOPS position, the call is outpulsed.

If BLK0MXFR is set to Y, then the carrier's alternate is chosen to receive the call. If the alternate is a carrier that has operator services provided by the Operating Company (field OPSERV=SERV), then the call remains at the TOPS position and the new carrier information is displayed. If the alternate is a NOSERV carrier with BLK0MXFR=N, then that carrier is chosen to receive the call. If neither the original nor the alternate carrier can complete the call, then the carrier code for the first carrier flashes to indicate to the operator that a new carrier access code must be entered.

- ZEROALT (0 Calls Alternate Carrier) - 00-, 10XXX0 or 10XXX00 dialed calls normally route directly to an IEC operator service from the originating EAEO or use FGD cut-through in the tandem office. However, some carriers may not want an alternate carrier chosen for these calls. For example, if a carrier wants to receive calls dialed 00-, and then play an announcement that includes dialing instructions for another carrier, then the TOPS office would not send these calls to an alternate. Since it is

TOPS Incoming FGD Signaling (continued)

possible to signal these calls to the TOPS office for TOPS EA handling, they can be screened with field ZEROALT.

This field does not apply for 0- calls transferred by a TOPS operator. Since carriers serviced by TICS can always handle these types of calls, this field only appears if a carrier is datafilled as NOSERV.

When a subscriber dials a call 00, 10XXX0 or 10XXX00 and the carrier for the call is not served by TICS, the ZEROALT field is checked. If set to N, then the call outpulses to the carrier regardless of the setting of the BLKOMXFR field. However, if ZEROALT is set to Y, then alternate carrier selection applies so the carrier's alternate is chosen to complete the call. If the alternate is served by TICS, then the call routes to a TOPS position for handling. If the alternate is not served by TICS, then the alternate's BLKOMXFR field determines whether or not the call may be outpulsed to that carrier, since BLKOMXFR provides the more accurate indication of whether or not a carrier is capable of call completion for 0-calls.

- **ALTDISP** - When an alternate carrier is selected, this field is displayed as the alternate carrier's name. The alternate carrier's number is also displayed and the operator may inform the subscriber, if desired. However, if the Operating Company does not want this capability, this field should be datafilled with the name of the initial carrier, field CARNAME.

If the initial carrier is first displayed, then this name changes to the alternate on the display. Also, if one carrier code is entered, using the 'KP IC' key, a different name and code is displayed if the initial carrier cannot complete the call.

XFR IC may also be displayed when an alternate carrier is chosen to complete a call. If the initial carrier has operator services provided by the Operating Company with TICS and the alternate does not, then XFR IC may be displayed when the alternate is chosen. If XFR IC is already displayed and the operator enters a CAC that results in the call being handled by a carrier served by TICS, then the XFR IC display is erased.

Informing Subscribers of Alternate Carrier Selection: For calls that do not go to an operator and calls that outpulse to a carrier after leaving an Operator Position, the TOPEAALT conditional route selector in table OFRT allows routing to a brief explanatory announcement if an alternate carrier has been selected. This announcement should mention the name of the carrier receiving the call. Although informing the subscriber will cause a delay before outpulsing, it may prevent or reduce billing questions from subscribers who receive a bill with long distance charges for a carrier other than their presubscribed carrier.

TOPS Incoming FGD Signaling (continued)

To use the TOPEAALT condition during routing, the routes for all carriers that serve as alternates must be updated. At the beginning of the route list, the TOPEAALT condition should cause routing to an announcement that tells the subscriber which carrier the subscriber is being routed to. This means that the Operating Company needs to set up an announcement for each carrier that serves as an alternate. When a call routes to one of the affected route lists, the TOPEAALT condition is evaluated. If a call has not been routed to an alternate, then the TOPEAALT condition is false, so routing datafill should cause immediate outpulsing of the call. If the call is at a position (e.g., it is being outpulsed prior to being released from the position) then the condition is false. So again, the call immediately outpulses to the carrier. If the call is routing to this carrier because an initial carrier could not handle the call, and the call is not currently at a TOPS position, then the condition is true. And the route list should be set up for this call to route first to the explanatory announcement, then to outpulse on the trunk to the carrier.

For calls outpulsed while at a TOPS position, Operating Company's have the option of training operators to mention which carrier is receiving the call. As previously mentioned, the ALTDISP field may be datafilled in such a way that operators will always know that an alternate has been chosen. Playing an announcement (as described above for calls not at an operator) is inappropriate due to operator work time and MMI considerations, so the operator should inform the subscriber verbally.

The only carrier calls that are outpulsed while at a position are calls for carriers served by TICS. If TOPS operators always mention the name of the served carrier during the processing of the call, then the subscriber will always know which carrier is being used.

Note: In some cases operators may notice a change in carrier display indicating that an alternate has been chosen. In other cases, the first carrier displayed will be an alternate, so the operator does not know that the subscriber's chosen carrier is not being used.

Alternates Without Call Completion Capability: As previously mentioned, carriers used as alternates for other carriers should be able to complete all domestic, international and 0- transfer calls that the initial carrier cannot complete. If an alternate cannot handle a call type (or if a carrier is datafilled as its own alternate to prevent alternate carrier selection), then cases may arise where neither the initial nor the alternate carrier can handle the call. If this occurs for calls at an Operator Position, then the initial carrier's name and number will be displayed in a flashing mode to indicate to the operator that a different carrier must be entered. If the subscriber requests a different called number, then the operator must reenter the carrier number along with the new called digits.

TOPS Incoming FGD Signaling (continued)

If neither the initial nor the alternate carrier can handle a call on a TOPS trunk group that is not at a position, then the call will receive the new TOPS Carrier Call Completion Failure (CCCF) treatment. This treatment may be set up to provide either a tone or an explanatory announcement.

Example call type handling: Following is how example call types are handled.

MAP display example for table TOPEACAR

CARDIG	CARNAME	ALTDISP	OPLSCLD	CAMABILL	ALTCARR	NATERM
	INTERM			OPSERV		
101	CAR1	ALTCAR1	Y	Y	102	UNREST
	DENY	SERV		QUERY N	QUERY N	QUERY N
102	CAR2	ALTCAR2	N	N	102	UNREST
	UNREST			NOSERV	N	N
103	CAR3	ALTCAR3	Y	Y	102	RESTRICT NA3
	RESTRICT	IN3		NOSERV	N	Y
104	CAR4	ALTCAR4	Y	Y	104	UNREST
	DENY			NOSERV	N	Y
105	CAR5	ALTCAR5	Y	Y	104	UNREST
	DENY			NOSERV	N	Y

Note: CAR1 is served by TICS while the others are not. CAR2 can receive 0- carrier, CAR3 and CAR4 cannot. CAR3 allows alternate carrier selection for 00, 10XXX0 and 10XXX00 calls while CAR4 does not. The field ordering is ZEROALT followed by BLKOMXFR with NOSERV.

MAP display example for table OFRT

RTE	RTELIST
50	(NOT TOPEAALT SK 1) (S D ALTCAR2) (S D OGEACAR2)

The following examples describe how some call types are handled.

- 0- Transfer, Alternate Carrier Datafilled

A 0- call is received on a TOPS trunk group (using any type of signaling) and routes to a TOPS operator for handling. The subscriber mentions an intended destination for the call, and the operator recognizes the

TOPS Incoming FGD Signaling (continued)

destination is out of the Operating Company's serving area. The operator keys XFR IC to transfer the call. Since the DNLOOK field in TOPEATRK for the incoming TOPS trunk group is set to Y, table DNPIC is checked for the calling party's presubscribed IEC. For this calling party, the IEC is datafilled as CAR3.

The subscriber chose CAR3 as the carrier during the presubscription process. The BLK0MXFR field in TOPEACAR is set to Y for carrier CAR3, so the 0- call cannot be transferred to that carrier. CAR3's alternate, given in the ALTCARR field of TOPEACAR, is CAR2. CAR2 can handle 0- calls so CAR2 becomes the designated carrier for this call. CAR2 is not serviced by the TICS package, so the call must be released and outpulsed to CAR2's operator services office. The operator's display is updated to show the carrier information (the name CAR2 as well as the number 102), and the XFR IC display indicates to the operator that the call cannot be handled by the Operating Company. The operator keys POS RLS to release the call from the position.

When the call is released, TOPS EA routing in table CLSVSCRC determines a route to the carrier, which happens to be OFRT 50. The first route element in OFRT 50 is the TOPEAALT condition that is evaluated with a result of "true" since an alternate has been chosen for the call and the call is no longer at an Operator Position. Since TOPEAALT is true, NOT TOPEAALT is false, so the SK1 (skip one route element) command is not executed. The next route element causes the call to route to the Operating Company defined announcement corresponding to the ALTCAR2 CLLI. This brief announcement informs the subscriber that the call will be handled by carrier CAR2. At the end of the announcement, routing continues with the next element in the route list, which is the outgoing trunk group to the CAR2 carrier. The call is outpulsed on that group, causing the subscriber to be connected to a CAR2 carrier operator.

- 0- Transfer, No Alternate Available

Just as in the previous example, a 0- call routes to a TOPS position and the operator realizes that an IEC must handle the call. The operator keys XFR IC, table DNPIC is checked, and the calling party's presubscribed carrier is CAR4. The BLK0MXFR field in TOPEACAR for the CAR4 carrier indicates that 0- calls are not supported, but CAR4 has no alternate datafilled (e.g., CAR4 is datafilled as its own alternate). Since there is no valid carrier available for this call, the operator's display is updated with the carrier number (104) and name flashing.

Note: This scenario may be avoided by datafilling each carrier with an alternate that can complete all call types.

TOPS Incoming FGD Signaling (continued)

The operator knows from the display that a different carrier access code must be entered. KP IC 102 START (on TOPS IV) or IC 102 START (on TOPS MP) is keyed. Carrier 102 can complete the call since BLK0MXFR=N for that carrier. The display is updated again to show CAR2 as the carrier for the call, and XFR IC is displayed since the Operating Company does not provide operator services for CAR2. The operator keys POS RLS, which causes TOPS EA routing to choose OFRT 50 as the route for the call. Just as for the call described above, the TOPEAALT selector causes the call to route briefly to the ALTCAR2 announcement prior to outpulsing.

- Carrier Accepts 00, but not 0- Transfer

Note: Carrier 105 (CAR5), as datafilled earlier in table TOPEACAR, accepts calls dialed 00, 10XXX0 and 10XXX00, even though 0-transferred calls are not accepted.

A subscriber dials 00 and TOPS EA determines that CAR5 is the presubscribed carrier. The TOPEACAR field ZEROALT is set to N, so the call outpulses to the carrier. This carrier does not have operators for handling this type of call, so the carrier switch connects the call to an announcement that tells the subscriber to hang up and dial 10102-0.

In another example, the same subscriber dials 0-, and the call routes to a TOPS operator. Upon realizing that a carrier operator is required, the operator keys XFR IC, causing TOPS EA to check for the presubscribed carrier. The PIC is 105, but BLK0MXFR is set to Y for CAR5, so CAR5's alternate is chosen to complete the call. The operator releases the call, and the TOPEAALT condition releases a brief announcement informing the subscriber of the carrier change prior to outpulsing to the new carrier.

Terminating Points Screening

This screening determines if a carrier may complete a call to an NPA, NPA-NXX, or Country Code. The call must already be identified as a carrier call. If a carrier can complete a call to the terminating destination, then the call may be forwarded to that carrier. Screening is determined by the following fields and tables:

- Field NATERM (table TOPEACAR) - This field indicates if a carrier can complete national calls, NPA or NPA-NXX. Its values are as follows:

— UNREST - Unrestricted. Carrier will accept all national calls.

Screening based on the terminating NPA or NPA-NXX is not required.

If a carrier wants to receive all national calls, even calls that cannot be completed, then NATERM should be set to UNREST. This may occur if a carrier wants to receive calls and connect them to an announcement

TOPS Incoming FGD Signaling (continued)

that informs the subscriber how to dial instead of having the Operating Company automatically choose an alternate for the call.

— DENY - Carrier will not accept any national calls.

Terminating points screening is not performed.

— RESTRICT - Some calls are accepted.

Terminating Points Screening is performed. Subfield NASCRN provides an index, along with the called number, into table TOPEATRM for further screening.

- Field INTERM (table TOPEACAR) - This field indicates if a carrier can complete international calls according to the country code.

This field has the same values as field NATERM, except subfield INSCRN instead of NASCRN indexes table TOPEATRM.

- Table OCCINFO - This table provides screening for whether or not a carrier may complete international calls (Y/N), inter-LATA calls and intra-LATA calls. In a correctly datafilled office, these Y/N fields in OCCINFO will be consistent with the per-carrier screening information in TOPEACAR. However, if datafill in the two tables is not coordinated and table OCCINFO indicates that a call may not be completed, then the call will go to vacant code treatment (if not at a position) or the carrier number and name will flash (if the call is at a position). OCCINFO screening is done after the screening provided by this feature, and if OCCINFO prevents a call from completing, no alternate carrier is chosen. As mentioned before, this will not happen when the datafill in tables OCCINFO and TOPEACAR is coordinated.

- Table TOPEATRM - This table is indexed using a screening class name (from either NASCRN or INSCRN in TOPEACAR) and the called digits. As mentioned above, TOPEATRM is only accessed when a carrier can complete some, but not all, national or international terminating points. When TOPEATRM is indexed and the screening name-called number combination is present in the table, then the carrier is considered capable of completing calls to that destination. So, to datafill TOPEATRM for a given carrier's national calls, the carrier's screening name together with the NPAs and/or the carrier supported NPA-NXXs be included in the table.

Different screening names must be used for screening national and international calls, since there is overlap in the digit patterns for the two dialing plans. If two or more carriers have the same restrictions for call completion, then they may share the same screening name. Sharing data this way reduces the amount of datafill required in table TOPEATRM. However, if the areas supported by the carriers are expected to change, then

TOPS Incoming FGD Signaling (continued)

updating the table may be easier when different screening names are used for the carriers.

Note: Prior to being datafilled in table TOPEACAR and TOPEATRM, all screening names must be defined in table SCRNNAME.

Terminating Points Screening Datafill Examples: Following is example datafill for the tables mentioned above.

MAP display example for table SCRNNAME

INDEX	SYMBOL
0	IN1
1	IN3
2	NA3

MAP display example for table TOPEACAR

CARDIG	CARNAME	ALTCAR	OPLSCLD	CAMABILL	ALTCARR	NATERM
	INTERM		OPSERV			
101	CAR1	ALTCAR1	Y	Y	102	UNREST
		RESTRICT IN1		SERV QUERY N	QUERY N	QUERY N
102	CAR2	ALTCAR2	N	N	102	UNREST
		UNREST		NOSERV N	N	
103	CAR3	ALTCAR3	Y	Y	102	RESTRICT NA3
		RESTRICT IN3		NOSERV N	Y	
104	CAR4	ALTCAR4	Y	Y	104	UNREST
		DENY		NOSERV N	Y	

Note: CAR1 can complete all national calls, but only certain international calls. CAR2 can complete all national and international calls. CAR3 can complete only certain national calls and only certain international calls. CAR 4 can complete all national calls but no international calls.

MAP display example for table OFRT

RTE	RTELIST
50	(NOT TOPEAALT SK1) (S D ALTCAR2) (S D OGEACAR2)

TOPS Incoming FGD Signaling (continued)**MAP display example for table TOPEATRM**

SCRNNNAME	CLDCODE
IN1	33
IN1	44
IN3	33
NA3	212
NA3	617441
NA3	617442
NA3	617446
NA3	718

Note: CAR1 (using SCRNNNAME IN1) has international call completion limited to country codes 33 and 44. For international calls, CAR3 is limited to country code 33. CAR3 (using SCRNNNAME NA3) may only complete national calls to are codes 212 and 718, plus three specific NXXs in the 617 area code.

The following examples describes terminating screening scenarios:

- Terminating Screening: Alternate Required

A DD non-coin international call is received on a TOPS trunk group. TOPS Equal Access processing determines that the call must be handled by a carrier. A lookup in table DNPIC using the calling number tests CAR1 as the subscriber's chosen carrier. The CAR1 entry in table TOPEACAR indicates that carrier CAR1 can handle only certain international calls (INTERM is set to RESTRICT), so Terminating Points Screening is performed. The screening name IN1 (from the INSCRN field in TOPEACAR) and the called number (which begins with country code 41) indexes table TOPEATRM. No tuple is found in TOPEATRM for this combination, so the screening result shows that the carrier CAR1 cannot handle this call.

Since an alternate carrier must be selected for this call, the ALTCARR field in TOPEACAR for CAR1 is checked. CAR1 does have an alternate (CAR2), so call completion characteristics must be checked. According to the INTERM field in TOPEACAR, CAR2 may complete all international calls, so CAR2 becomes the designated carrier for the call.

TOPS EA routing for this call results in OFRT 50, which includes the TOPEAALT conditional route selector. That condition is "true" since an alternate was chosen for this call but the call is not at an Operator Position. The call is briefly connected to the announcement informing the subscriber

TOPS Incoming FGD Signaling (continued)

which carrier is being used, and then the call outpulses on the trunk group to the carrier (OGEACAR2).

- Terminating Screening: Alternate Not Required

If the DNPIC lookup in the above example listed CAR2 as the calling party's presubscribed carrier, then handling for this international non-operator call would have been different. When CAR2 is chosen as the initial IEC for the call, the INTERM field in TOPEACAR indicates that CAR2 is unrestricted in its ability to complete international calls. Terminating Points Screening in the TOPEATRM table is not required. TOPS EA determines that OFRT 50 should route this call. The TOPEAALT condition in the first element of the OFRT 50 route list is evaluated with a result of "false," causing the SK1 command to be executed. Skipping one element means that the call outpulses on the OGEACAR2 trunk group without first connecting to the ALTCAR2 announcement.

Collection of Combined FGD Signaling

This new signaling type is not related to the new screening capabilities previously described. Either part of this feature (screening and signaling) may be used without the other.

TOPS Trunk Signaling and NXX Verification: With standard Bell signaling on TOPS trunks, Automatic Number Identification (ANI) contains seven calling digits. Although verification of the calling NXX (in table TOPSBC) allows calling numbers on one trunk group to be from more than one NPA, this capability is limited by table TOPSBC. In that table, indexing with the name of the originating TOPS trunk group and the calling NXX results in the use of the NPA-NXX for the calling number. So, for any given NXX on the trunk group, only one NPA may be used.

With Exchange Access Operator Services Signaling (EAOSS), ANI contains ten calling digits, so the calling area is not limited as it is with Bell. However, EAOSS requires software modifications in sending offices beyond standard equal access capabilities.

To allow carrier calls to be effectively signaled from multiple NPAs on one TOPS trunk group, this feature implements combined FGD signaling consisting of two-stage digit signaling for domestic calls and three-stage for international calls. Operator assisted and direct dialed traffic may be combined on the same TOPS group.

FGD and Related Signaling Types: FGD signaling conveys digit signaling information to Interexchange Carriers (IEC). The signaling type that this document refers to as Standard FGD, which may be collected by a TOPS office

TOPS Incoming FGD Signaling (continued)

with this feature, involves the sending of two stages of digits for domestic calls (ANI followed by the called number) and three stages for calls using the international dialing plan (routing digits, followed by ANI and the called number). Operator Assisted (OA) and Direct Dialed (DD) non-operator calls may be combined with this signaling type. No software modifications are required for the end offices or tandem offices that are sending FGD calls to the TOPS office.

With the TOPS EA package, a TOPS office may not collect standard FGD signaling. Tandeming capabilities are supported with TOPS EA by collecting the first of three stages outpulsed by an end office and choosing an outgoing trunk to the appropriate carrier using routing information in that first stage (this is referred to as cut-through FGD). When tandeming FGD traffic, the TOPS office does not collect the ANI and called digit stages.

With the Exchange Access Operator Services Signaling (EAOSS), OSEA0101, package, a TOPS office has the capability of collecting a version of FGD that allows the combination of many types of traffic, but connecting offices that outpulse using EAOSS signaling require software capabilities beyond those provided with basic equal access functions.

With the TOPS Incoming Feature Group D Signaling, OSEA0101, package in a TOPS EA office, FGD signaling may be collected without the need for modification of the offices outpulsing the calls, but only DD calls may be signaled this way. Calls requiring operator assistance must use another signaling type on a separate incoming TOPS trunk group.

Description of COMFGD: COMFGD signaling on TOPS trunk groups is the type of FGD signaling that is performed directly between an EAEO and an IEC switch. One expected use for COMFGD signaling is in a DMS-200 TOPS switch that is acting as a carrier switch by using the TICS package to provide operator services for that carrier.

For domestic calls signaled with COMFGD, the ANI stage is sent, followed immediately by the called number stage. For international calls, there are three stages. The first stage signaled contains routing digits, followed by the ANI and called number stages. Important factors of standard FGD (TOPS COMFGD) signaling are:

- Start Translation (ST) digits are not primed (e.g., STP, ST2P, and ST3P are not used), and coin calls are identified with ANI ID digits (e.g., 27) instead.
- Key Pulse (KP) digits are not primed.
- ANI consists of two information digits (II) followed by 10 calling digits for ANI success calls, resulting in the pattern KP-II-NPA-NXX-XXXX-ST.

TOPS Incoming FGD Signaling (continued)

- For domestic (2-stage) calls, the digit 0 is included in the called number as a prefix to indicate that a call is operator assisted.
- For international calls, the routing digits in the first stage indicate whether or not a call requires operator assistance. In the DMS, pretranslations based on these digits mark the call as either OA or DD.
- There is no wink response between the ANI and called digit stages with FGD signaling. However, for international calls, which are signaled with three stages, there is a wink after the first stage.
- FGD digit signaling ends with a wink. For calls that are answered and calls that go to an operator, an off-hook is received by the sending office after the wink.

Note: If a TOPS COMFGD call (that does not go to an operator) is outpulsed on a trunk group to the next switch, and that trunk group uses an off-hook as an ANI request, then that off-hook is propagated to the sending office. This will occur when BELLI/II signaling with ANI is used on an ATC trunk group to a carrier switch. Because an off-hook has occurred during outpulsing, neither the TOPS office nor the sending office will receive the true answer signal.

Assigning COMFGD Signalling: Operating company personnel can assign COMFGD signalling in table TRKGRP. The following restrictions apply to trunks with datafill of COMFGD signalling in table TRKRP:

- STATCLAS must be set to COMBINED in table TRKGRP. TOPS11 feature 50093498, which is described later in this section, adds another STATCLAS value of RESTBIL.
- IPULSTYP in table TRKSGRP must be set to MF (for both subgroups if both are assigned)
- OPULSTYP in table TRKSGRP must be set to MF (for both subgroups if both are assigned) if the group is 2-way. (Note that as always, calls outgoing on a TOPS trunk group are signaled as intertoll.)

When COMFGD is given in the CLGID field in table TRKGRP for a TOPS group, then seven subfields must be datafilled. The first four are standard subfields that appear for other TOPS signaling types. Those subfields are:

- NOBILLCD
- ANISEIZ
- ANIPDIAL
- TRTMTSUP

TOPS Incoming FGD Signaling (continued)

In addition to these four, the following three new subfields are required:

- **ONLNRATE** - Support of On-Line Rating

On-line rating capabilities in TOPS are currently limited to 16 originating NPAs that can be defined for tariffs, 64 tariffs [based on calling NPA, NPA-NXX, or CAC-NPA(NXX)], and 64 schedules (determined by tariff and called NPA-NXX) that contain rates. If a COMFGD TOPS group is serving a wide area, then it can be impossible for the rating tables to provide on-line rating from all originating points. If this is the case, then the ONLNRATE subfield of table TRKGRP should be set to N.

If ONLNRATE is set to N, then several billing related options typically available for operator calls are not allowed. Time and Charges information may not be provided for calls on the COMFGD trunk group with ONLNRATE=N. Coin billing may not be done without on-line rating, so calls cannot use the Automatic Coin Toll System (ACTS) or be paid for at an Operator Position using coins. The third service that is unavailable is sent paid (station paid and person paid) billing of calls from hotel originations, since rating information must be available on-line for that capability. When ONLNRATE is set to Y for a COMFGD group, then these services are available.

- **COINPD** - Support of Coin Signaling

Coin signaling on a TOPS trunk group requires that the sending office supports operator hold for the call. With COMFGD signaling, the call may have already passed through several offices, so each of these must support operator hold in order to perform coin signaling. If coin signaling is performed and a previous office is not supporting the operator hold, then an on-hook coin signal could be interpreted as an on-hook (clear back) and the call is taken down.

The COINPD subfield of TOPS trunk groups marked for COMFGD signaling indicates whether or not coin signaling may be done for calls on the group. For sent paid coin calls, both COINPD and ONLNRATE must be set to Y. COINPD may be set to Y when on-line rating is not available to handle the cases of coin returns and keypad enabling/disabling for 0- and 0+ calls. COINPD should only be set to Y if information about the network configuration indicates that all calls received on that TOPS group have operator hold supported by all previous offices. If this requirement is not met, then COINPD should be set to N, and calls received on the trunk group will not be supported by coin signaling. If COINPD is Y but

TOPS Incoming FGD Signaling (continued)

ONLNRATE is N, then ACTS may not be used and calls from coin stations may not be billed person paid or station paid.

- NXXVER - Option for NXX verification

Depending on the mix of traffic expected on the TOPS-FGD facility, the Operating Company may use a new option provided with this feature to either perform NXX verification (in table TOPSBC) as is currently done with Bell, EAOSS, and other TOPS signaling types, or by-pass NXX verification, allowing support for a wide variety of calling NPAs and NXXs.

The NXXVER subfield in TRKGRP indicates whether or not verification is required. If NXXVER is set to Y, then verification of calling NXXs is performed in table TOPSBC. A setting of N prevents this screening. If traffic from multiple NPAs is received on the TOPS COMFGD trunk group, then by-passing TOPSBC verification with NXXVER=N allows acceptance of calls from any NXX within any originating NPA.

Note: If NXX verification is not performed by the TOPS office and it has not been performed in a previous office, then ONI and ANI Fail calls may be subject to fraud. These calls have the calling number entered by the TOPS operator, and without NXX verification, invalid NXXs will not be detected. When COMFGD signaling is used without NXX verification, then TOPS operators must enter a ten-digit calling number instead of just seven digits, so that an NPA will be included. To facilitate this, all ONI and ANI Fail calls on COMFGD groups with NXXVER=N will route to a non-CAMA (e.g., full function) TOPS operator instead of a CAMA operator. The KP BACK key function may then be used to enter the ten digit calling number. To inform operators that 10 digits must be entered, a display may be given on a trunk group basis using the TOPSDISP table and the DISPLAY field in TOPS trunk group data.

Because of the risks involved with not performing NXX verification, offices may want to consider handling only ANI Success traffic in this manner.

Note: If COMFGD serves a wide area, then it may not be possible to datafill table Special DN Identification (SPLDNID) with all of the calling DNs. SPLDNID allows marking DNs as restricted for billing purposes or allows identification of special line types (coin, hotel) when signaling does not identify them.

Operator Hold on COMFGD Calls: For calls received on TOPS-COMFGD trunk groups that require operator handling, an off-hook is returned to the sending office as mentioned above. This happens on calls that go to a TOPS

TOPS Incoming FGD Signaling (continued)

operator as well as 0+ calls that use the Mechanized Calling Card Service (MCCS) or Automated Alternate Billing Service (AABS) and 1+ coin calls that are handled with the Automated Coin Toll Service (ACTS) feature. In all of these cases, the TOPS office is billing for the call. The sending office does not receive indication of answer occurring from a forward party.

If any office preceding the TOPS office does not support operator hold for FGD-signaled calls, and if the call goes to a TOPS operator, that operator will have less control over the call. In particular, if the calling party goes on-hook and operator hold is not supported by an office preceding the TOPS office, then the call is taken down. TOPS operators must be trained to handle this, since with other TOPS signaling types the calling party remains attached to the call even after going on-hook.

Digit Translation for COMFGD Calls: As mentioned above, COMFGD allows the TOPS office to receive calls from many NPAs. However, since only one NPA is associated with the incoming trunk for the purpose of translating the called digits, all calls have initial translations (e.g., POTS) performed in the same subtable of HNPACONT. Although TOPS EA routes these calls from the CLSVSCRC table, all called numbers must first go through POTS translations.

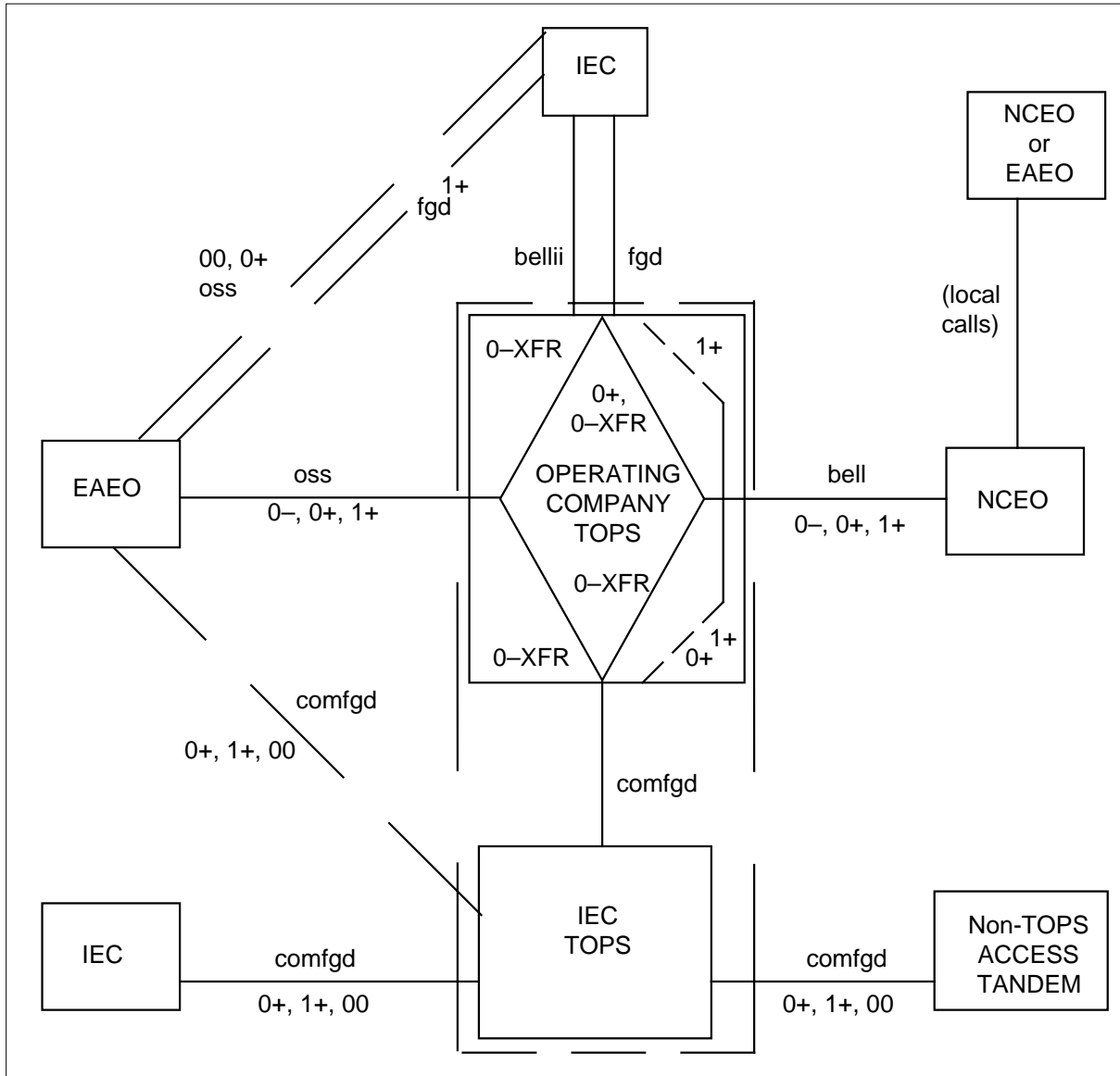
Note: If desired, the routing function may be accomplished using the POTS tables [STDPRTCT and HNPACONT (or CCTR)] instead of the CLSVSCRC table by simply not datafilling CLSVSCRC.

COMFGD in the Telephone Network: The following diagram attempts to show a network that includes an Operating Company TOPS switch, a carrier DMS-200 TOPS switch (using COMFGD) and another carrier, in addition to end offices.

Note: A single DMS-200 TOPS switch may be used as an Operating Company switch to provide operator services for carriers at the same time (the dotted line illustrates this). In the diagram, 0-XFR refers to 0- calls transferred to a carrier by an Operating Company TOPS operator, and 00 includes 00, 10XXX0- and 10XXX00 dialed calls.

TOPS Incoming FGD Signaling (continued)

Telephone Network

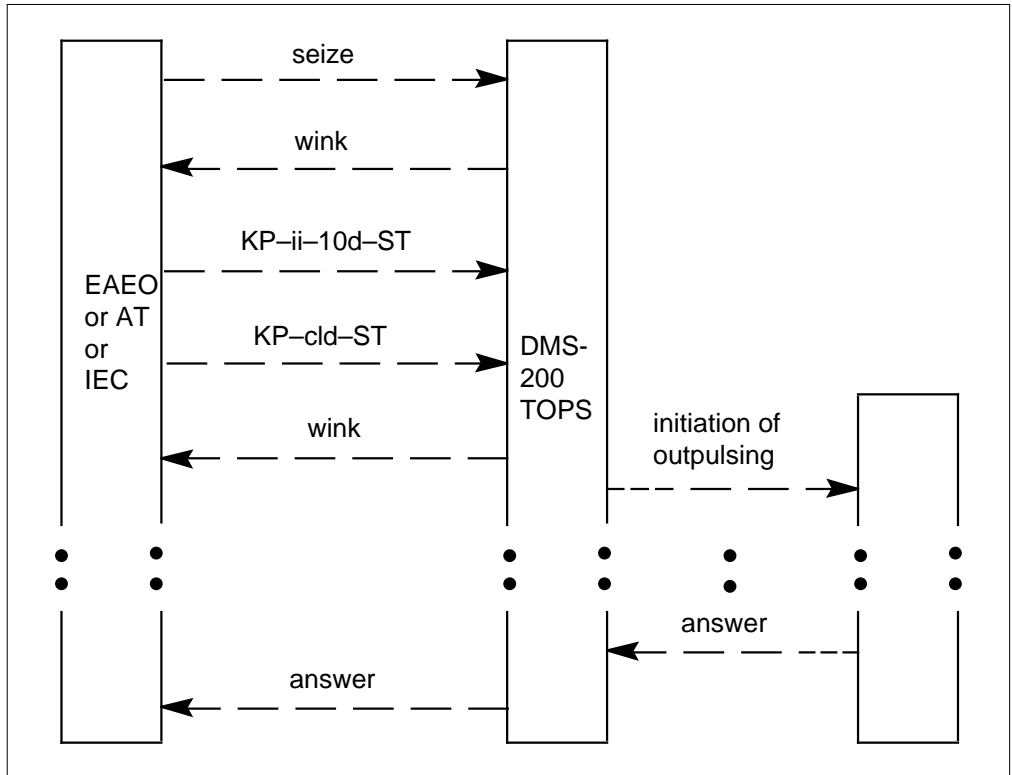


Diagrams of COMFGD Signaling: The following diagrams represent how standard FGD signaling is performed on representative call types. In these diagrams, it is assumed that the carrier being used is serviced by TICS.

In these examples, TOPS is the billing office, so the outgoing signaling does not involve an off-hook ANI request that would prevent the reporting of true answer in the TOPS switch.

TOPS Incoming FGD Signaling (continued)

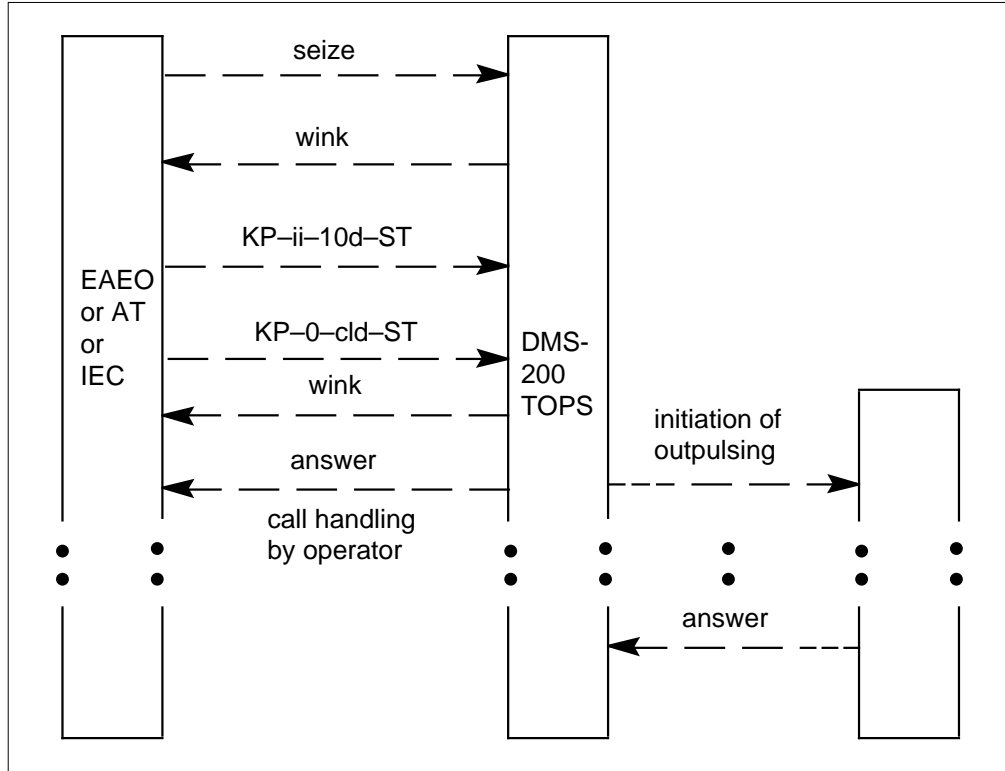
Collecting COMFGD for Domestic Non-operator Calls



For this call, no operator assistance is required, so after incoming signaling is complete, outpulsing to the next office is initiated. True answer is propagated to the sending office.

TOPS Incoming FGD Signaling (continued)

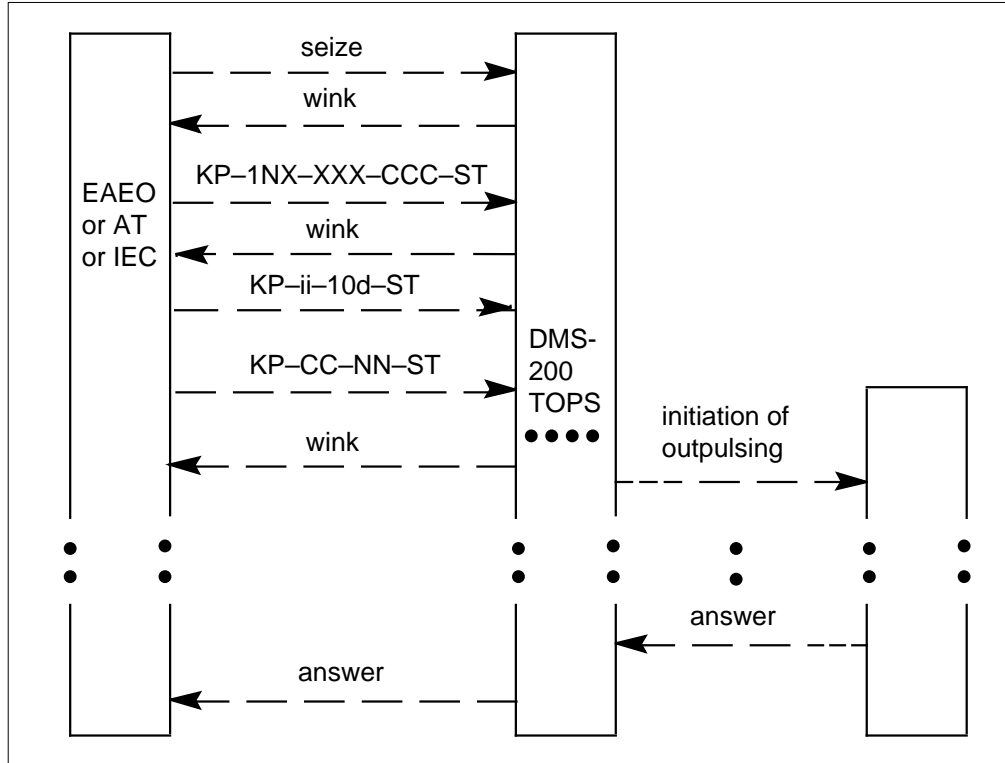
Collecting COMGD for Domestic Operator Calls



A 0 at the beginning of the called digit stream identifies this domestic call as OA. This call requires handling by a TOPS operator, so after the final wink is sent to the sending office, an off-hook is sent and the call is presented to a TOPS position. Outpulsing is initiated at some point by the operator, and true answer cannot be returned to the sending office since the TOPS office is already off-hook in that direction.

TOPS Incoming FGD Signaling (continued)

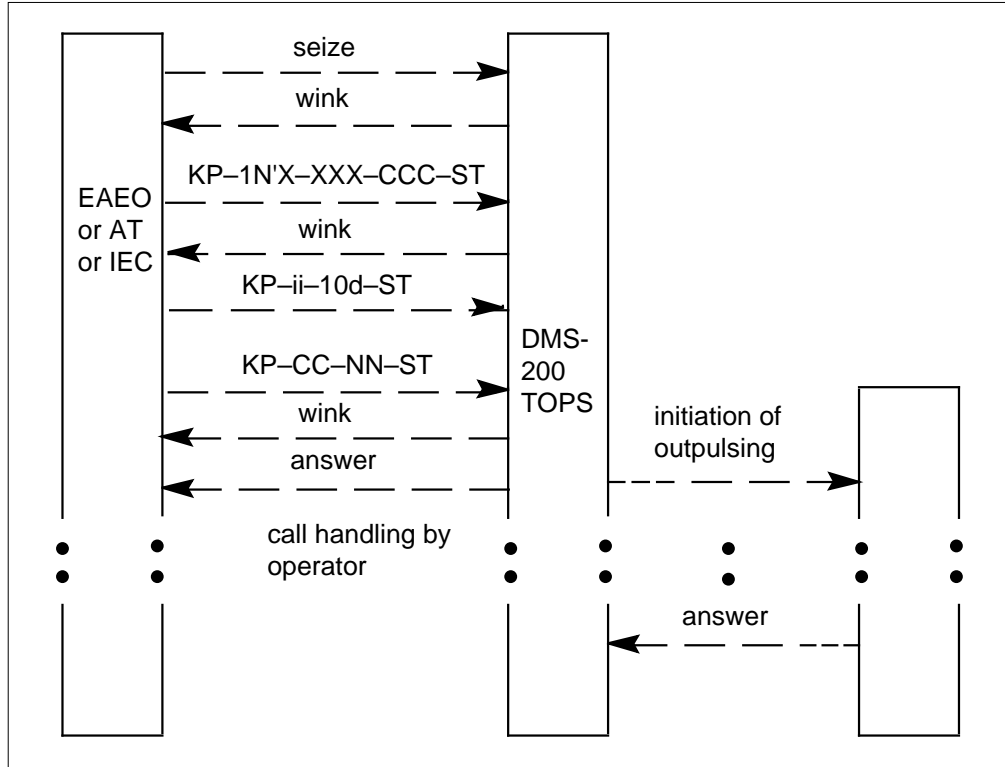
Collecting COMFGD for International Non-operator Calls



This call can be identified as international by the first digit of the first stage; only international calls can have a first digit of 1 in the first stage. Pretranslations of the 1NX code identifies this as a non-operator call, so the call does not need to go to a TOPS position. After collection of the ANI and called number stages, the call is outpulsed. Since the TOPS office has remained on-hook to the sending office, true answer may be propagated.

TOPS Incoming FGD Signaling (continued)

Collecting COMFGD for International Operator Calls



After being identified as an international call by the first digit in the first stage, pretranslations of the 1N'X code causes this call to be marked as OA. The call must be handled by a TOPS operator, so an off-hook (answer) is sent to the sending office when FGD signaling is complete. Just as with any other call that receives handling (other than simple CAMA identification) by a TOPS operator, answer by the forward party cannot be propagated to the sending office.

Screening and Routing of COMFGD Calls: Calls signaled COMFGD have LATA screening performed as part of TOPS equal access processing, but regardless of the resulting LATA status, all COMFGD calls are handled as carrier calls since the TOPS switch that receives FGD is acting as a carrier switch. LATA screening also results in calls being designated as either interstate or intrastate, and this designation selects a screening class name from TOPEATRK for TOPS EA routing in CLSVSCRC.

A carrier for each COMFGD call is chosen either from table TOPEATRK or from table DNPIC (if the DNLOOK field of TOPEATRK is set to Y). If it is desirable to only complete calls from known subscribers, then DNPIC may include all known subscribers with a carrier code that allows normal routing,

TOPS Incoming FGD Signaling (continued)

while calls from other subscribers will route to the carrier indicated in TOPEATRK. The carrier code given in TOPEATRK may be datafilled to cause the call to route to a tone or announcement.

Collection of Combined FGD Signaling Datafill Examples: Following is example datafill.

MAP display example for table TRKGRP

GRPKEY	GRPINFO
TOPSCOMFGD1	TOPS 0 NPDGP NCRT IC MIDL 919 PFGD L919 NSCR N NIL COMBINED N N 0 COMFGD 10 5 5 N Y Y Y
TOPSCOMFGD2	TOPS 0 NPDGP NCRT IC MIDL 704 PFGD L704 NSCR N NIL COMBINED N N 0 COMFGD 10 5 5 N N N N

Note: Calls on the first group have NXX verification performed in table TOPSBC using the calling number, whereas calls on TOPSCOMFGD2 by-pass this verification function. Rating and coin signaling are supported only on the first of these two groups.

MAP display example for table TOPEATRK

TRUNKGRP	ENDOFFC	CARRIER	LATANM	INTRASSC	INTERSSC	OVSSCL
SCRNIDX	DNLOOK	DFLTPIC	BYPASS			
TOPSCOMFGD1	CONFORM	105	LATA1	TEAD	TEAD	TEAI
919	Y	Y		\$		
TOPSCOMFGD2	CONFORM	101	LATA1	TEAD	TEAD	TEAI
919	N	Y		\$		

The following examples describe the use of COMFGD:

- **COMFGD for a Large Serving Area**
Calls that arrive at the TOPS office on trunk group TOPSCOMFGD2 come from a wide variety of originating NPAs. These calls may be outpulsed from a tandem office or an IEC switch. The TOPS office is acting as an IEC operator switch, and the carrier code for this IEC is 101. Since these calls come from such a wide variety of calling NPA-NXXs, NXX verification in table TOPSBC is not being performed (TRKGRP field

TOPS Incoming FGD Signaling (continued)

NXXVER under COMFGD is set to N). In table TOPEATRK, the default carrier for this trunk group is 101. Since a lookup in table DNPIC is not performed (TOPEATRK field DNLOOK is set to N), all calls are handled by the 101 carrier. Calls that require operator assistance are handled by MCCS, AABS, ACTS, or a TOPS operator since the 101 carrier is datafilled as SERV in TOPEACAR.

- **Selective Call Completion with COMFGD**

This example describes calls arriving at the TOPS office on the TOPSCOMFGD1 trunk group. In this use of COMFGD, calls are probably being outpulsed either directly from an end office or from a tandem that serves a particular originating LATA. The TOPS office is acting as an IEC operator switch since COMFGD signaling is being used. For billing reasons, this office is set up to only complete COMFGD calls from known subscribers. The area being served is small enough that calling NXX verification in table TOPSBC is desirable, so the NXXVER field in table TRKGRP is set to Y.

To allow selective completion of calls based on whether or not the originating subscriber is known (or has an account with this carrier), all known subscribers are datafilled in the DNPIC table with 101 as their presubscribed carrier. The DNLOOK field in TOPEATRK causes a lookup in table DNPIC to be performed for all calls on this trunk group. When the calling number is found in DNPIC for a particular call, the call is routed either to an operator or automated system (if required) or to an outgoing trunk group.

If the calling number is not found in DNPIC, then the default carrier from table TOPEATRK must be used. The default for the TOPSCOMFGD1 group is 105, and TOPS EA routing is set up to cause all calls to carrier 105 to route immediately to a datafilled treatment. So, even though calls from unknown subscribers reach the TOPS switch, they route to a tone or announcement instead of being completed normally.

Conditional Routing for Transferred Calls

Conditional route selector TOPEAXFR in table OFRT allows routing in the route list based on whether or not a call has been transferred by a TOPS operator. This route selector may be used in conjunction with other capabilities offered with this feature or may be used in isolation. The selector is evaluated as true for TOPS calls that have been marked as transfer and subsequently released from the TOPS position, while XFR IC was displayed.

Since TOPS EA routing is in CLSVSCRC, it is expected that the TOPEAXFR condition will appear in route lists in OFRT that are pointed to by data in CLSVSCRC. However, like other conditions that follow the CND selector,

TOPS Incoming FGD Signaling (continued)

TOPEAXFR may be datafilled in other routing tables, including the RTEREF subtables of HNPACONT and FNPACONT.

One possible use for this conditional selector is to route calls to an announcement prior to outpulsing. This announcement could inform the subscriber that their call will be handled by an Interexchange Carrier. Alternately, several announcements could be set up so that the carrier's name could be included.

Note: The TOPEAALT condition, described in an earlier section of this document, has a similar purpose but does not interact with this condition. Different conditional selectors may be used in the same route list if desired, so these two could be used together if necessary to provide specific announcement capabilities.

Conditional Routing for Transferred Calls Datafill Example: An example of the TOPEAXFR condition is given below. For calls that route to OFRT index 120 (if they have been transferred), the announcement associated with the ALTCAR2 CLLI is played prior to outpulsing on the OGEACAR2 trunk group.

MAP display example for table OFRT

RTE	RTELIST
120	(NOT TOPEAALT SK1) (S D ALTCAR2) (S D OGEACAR2)

BY28832 - Operator Hold Support for COMFGD Trunks

This capability allows operator hold on combined Feature Group D (COMFGD) TOPS trunks.

Background

Combined Feature Group D (COMFGD) signalling on TOPS trunk groups is the type of FGD signalling that is performed directly between an equal access end office and an interLATA carrier. One expected use for COMFGD signalling is in a DMS-200 TOPS switch that is acting as a carrier switch by using the TOPS InterLATA Carrier Service (TICS) package to provide operator services for that carrier.

For domestic calls signalled with COMFGD, the automatic number identification (ANI) stage is sent, followed immediately by the called number stage. For international calls, there are three stages: the first stage signalled

TOPS Incoming FGD Signaling (continued)

contains routing digits, followed by the calling and the called number stages. Important factors of COMFGD (and standard FGD) signalling are:

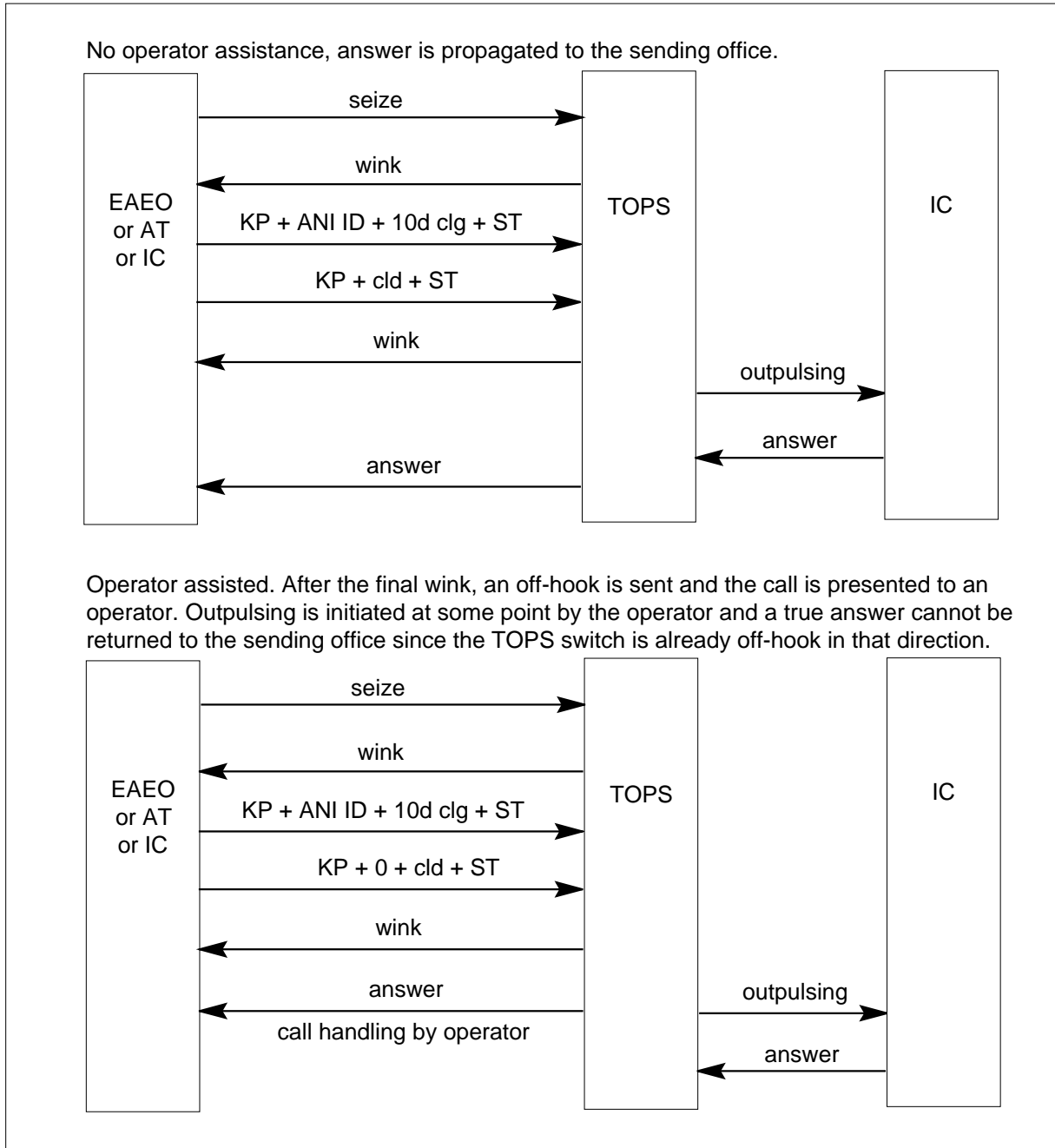
- Start Translations (ST) signals are not coded (that is, STP, ST2P, and ST3P are not used; coin calls are identified with the ANI ID digits instead).
- Key Pulse (KP) signals are not coded.
- ANI ID consists of two digits followed by a 10 digit calling number for ANI success calls resulting in the pattern KP+II+NPA-NXX-XXXX+ST.
- For domestic (two-stage signalling) calls, the digit 0 is included in the called number as a prefix to indicate that a call is operator assisted.
- For international calls, the routing digits in the first stage indicate whether or not a call requires operator assistance. In the DMS switch, pretranslations based on these digits marks the call as either operator assisted (OA) or direct dialed (DD).
- There is no wink response between the calling and called digits. However, for international calls, which are signalled with three stages, there is a wink after the first stage.
- Prior to this activity, COMFGD signalling ends with a wink. For calls that are answered and calls that go to an operator, an off-hook is received by the sending office after the wink.

COMFGD signalling is only supported on MF trunks with a STATCLAS of COMBINED in table TRKGRP. TOPS Feature 50093498 allows a STATCLAS of RESTBIL in the table.

In the following diagrams illustrating COMFGD signalling, it is assumed that the TOPS office provides service for the carrier. Also, in these examples, TOPS is the billing office, so the outgoing signalling does not involve an off-hook ANI request that would prevent the reporting of true answer in the TOPS switch.

TOPS Incoming FGD Signaling (continued)

Domestic FGD Signalling on a TOPS COMFGD trunk - no operator hold



TOPS Incoming FGD Signaling (continued)

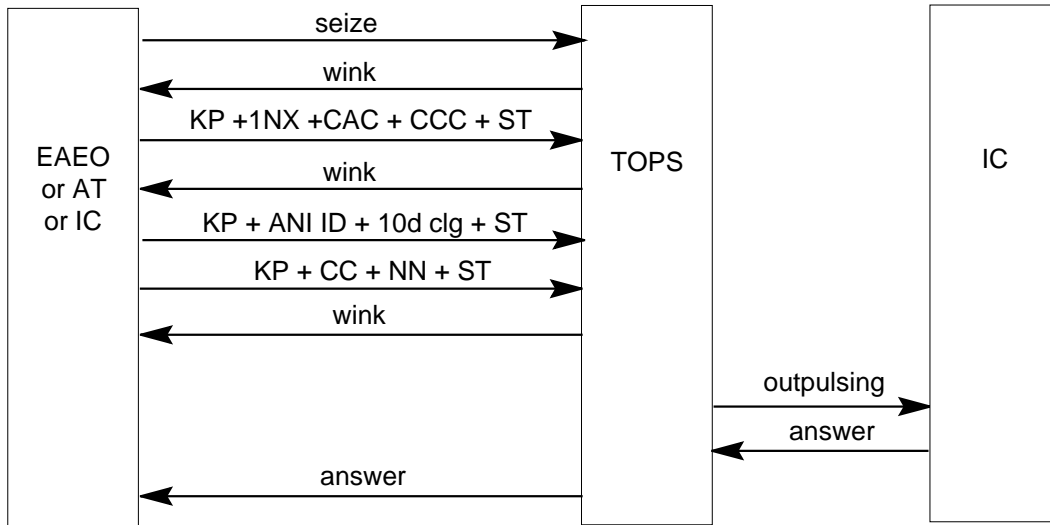
In the above figure, the format is:

- calling or ANI spill: KP + ANI ID + 10d clg + ST
- called spill: KP + (0) + cld + ST, where:
 - (0) - optional, indicates 0+ dialed call

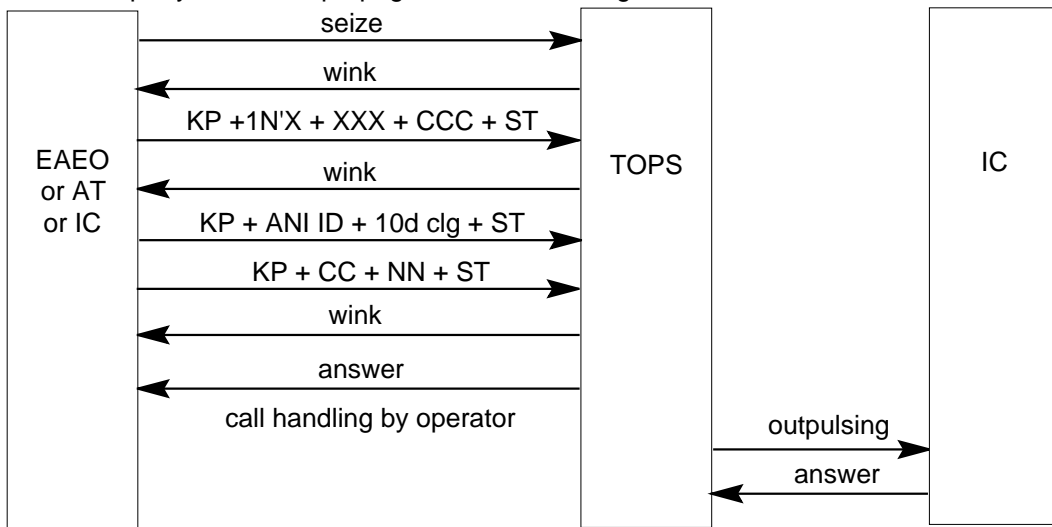
TOPS Incoming FGD Signaling (continued)

International FGD Signalling on a TOPS COMFGD trunk - no operator hold

No operator assistance. This call can be identified as international by the first digit of the first stage; only international calls can have a first digit of 1 in the first stage. Pretranslations of the 1NX code identifies this as a non-operator call. After collection of the ANI spill (calling number) and the called number stages, the call is outpulsed and since the TOPS switch is on-hook to the sending office, true answer is propagated.



Operator assisted. After being identified as an international call by the first digit in the first stage, pretranslation of the 1N'X code causes this call to be marked as operator assisted. The call must be handled by an operator, so answer (off-hook) is sent to the sending office after the third stage of signalling. Just as with any other call that receives operator handling, answer by the forward party cannot be propagated to the sending office.



TOPS Incoming FGD Signaling (continued)

In the above figure, the format is:

- carrier information: KP + IN'X + CAC + CCC + ST, where:
 - 1 - overseas
 - NX- routing digits
 - CAC - carrier access code
 - CCC - country code, padded to 3 digits
- calling or ANI spill: KP + ANI ID + 10d clg + ST
- called spill: KP + CC + NN + ST, where:
 - CC - country code
 - NN - national number

All calls on COMFGD trunks are treated as Equal Access calls. Call completion services use Equal Access translations. Additionally, the AMA records for these calls contain modules which are used for carrier calls.

New functionality

With this activity, the signalling on a COMFGD trunk can be changed to end with an offhook instead of a wink, to support operator hold. This signalling is optional.

A new field, OPRHOLD, is added to the COMFGD TOPS trunk refinement in table TRKGRP. This new field indicates whether operator hold is supported on this incoming trunk. If OPRHOLD = N, signalling remains as described above (in the background section), ending with a wink. If OPRHOLD = Y, the new signalling implemented by this activity is in effect. This signalling is described in detail later.

Below is an example of the TRKGRP datafill for a COMFGD trunk. The new OPRHOLD field is in bold.

MAP display example for table TRKGRP

GRPKEY	GRPINFO
TGENIC1	TOPS 0 NPDGP NCRT IC MIDL 619 NPRT NLCA NSCR Y SP COMBINED N Y 0 0000 NONE COMFGD 16 10 10 Y N Y Y Y N N

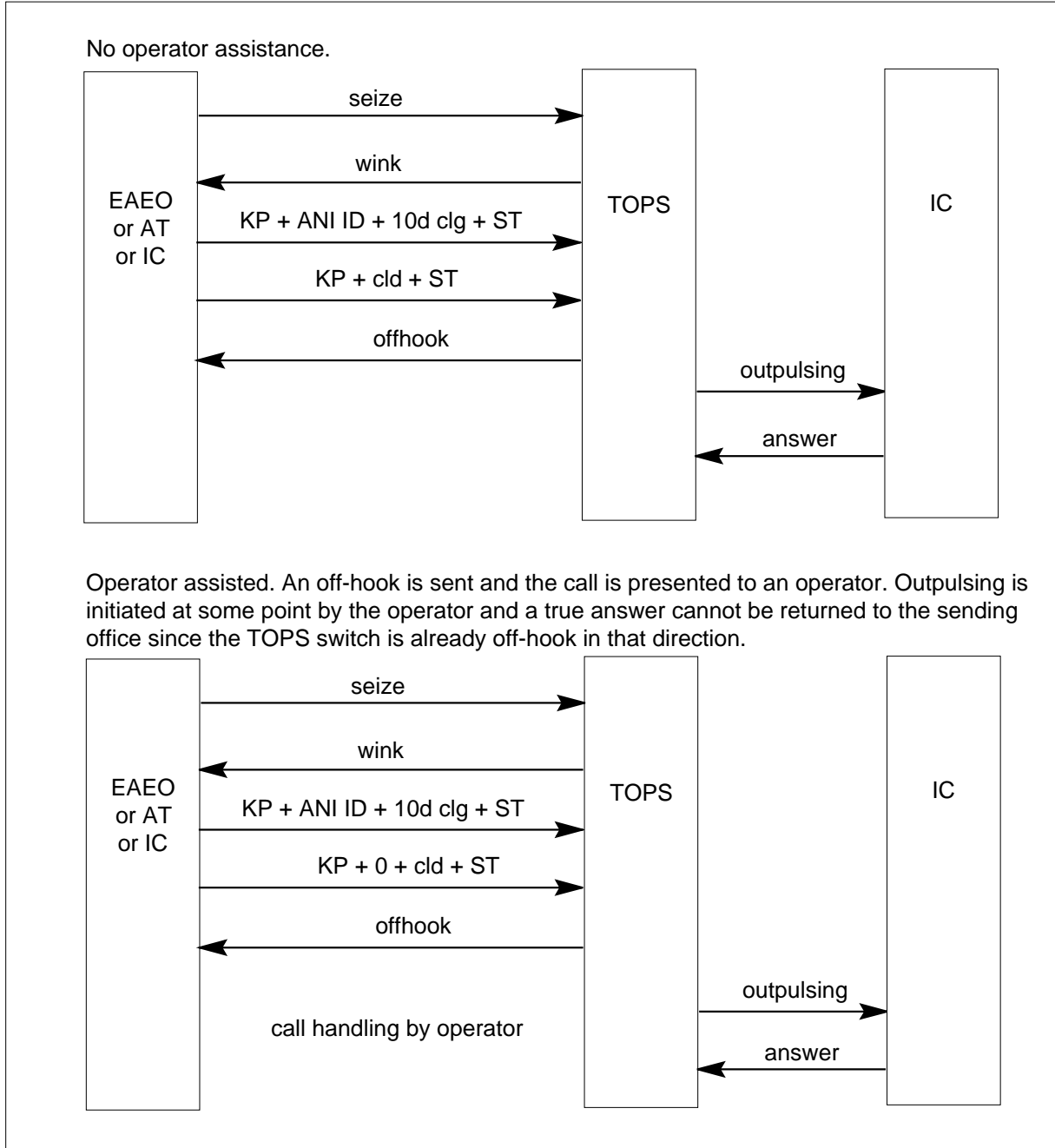
TOPS Incoming FGD Signaling (continued)

When OPRHOLD is set to Y, COMFGD signalling ends with an offhook instead of a wink. The following diagrams illustrate the new signalling.

Note that when this activity is used (OPRHOLD = Y), true answer is no longer propagated to the originating office. Because the TOPS trunk is already offhook, an additional offhook can not sent to indicate true answer.

TOPS Incoming FGD Signaling (continued)

Domestic FGD Signalling on a TOPS COMFGD trunk - operator hold



TOPS Incoming FGD Signaling (continued)

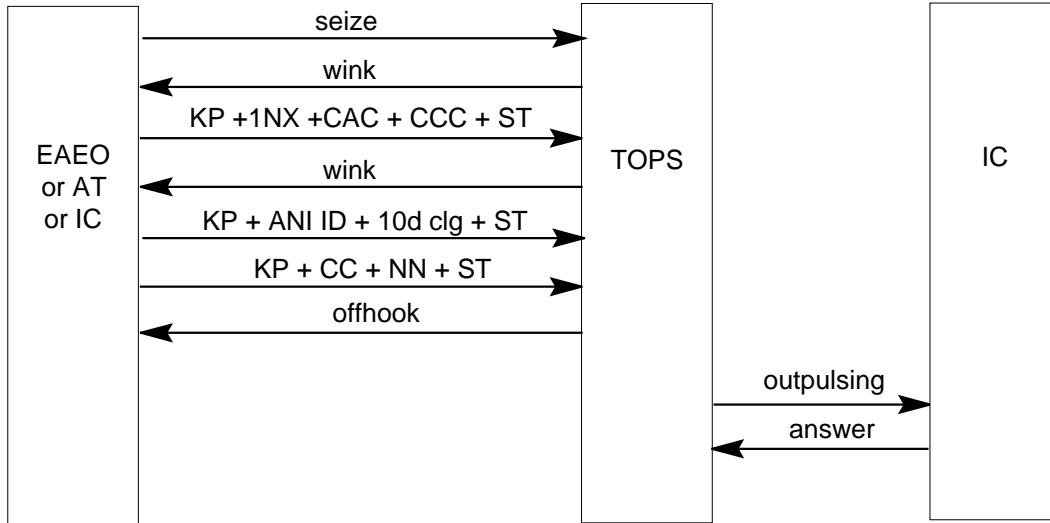
In the above figure, the format is:

- calling or ANI spill: KP + ANI ID + 10d clg + ST
- called spill: KP + (0) + cld + ST, where:
 - (0) - optional, indicates 0+ dialed call

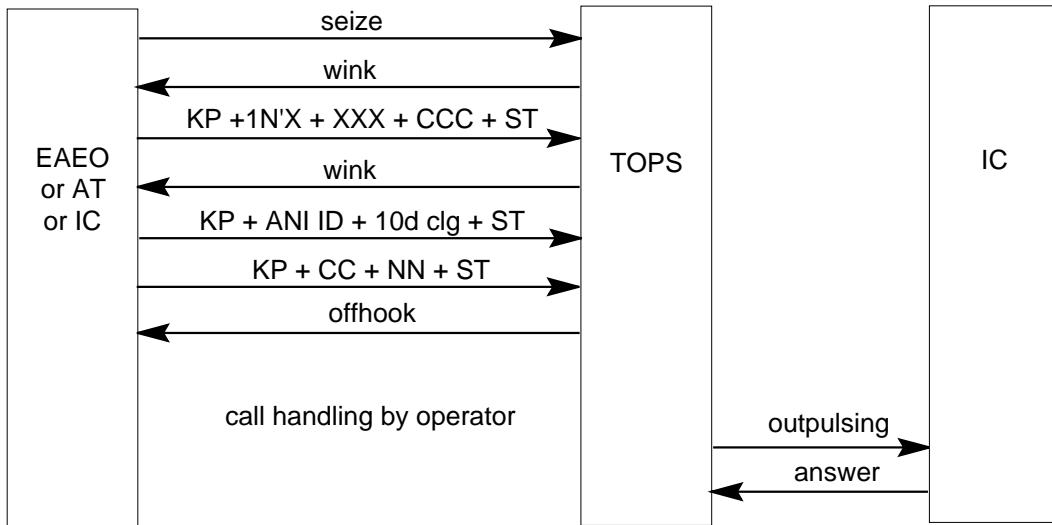
TOPS Incoming FGD Signaling (continued)

International FGD Signalling on a TOPS COMFGD trunk - operator hold

No operator assistance. This call can be identified as international by the first digit of the first stage; only international calls can have a first digit of 1 in the first stage. Pretranslations of the 1NX code identifies this as a non-operator call.



Operator assisted. After being identified as an international call by the first digit in the first stage, pretranslation of the 1N'X code causes this call to be marked as operator assisted. Off-hook is sent to the sending office after the third stage of signalling. Just as with any other call that receives operator handling, answer by the forward party cannot be propagated to the sending office.



TOPS Incoming FGD Signaling (continued)

In the above figure, the format is:

- carrier information: KP + IN'X + CAC + CCC + ST, where:
 - 1 - overseas
 - NX- routing digits
 - CAC - carrier access code
 - CCC - country code, padded to 3 digits
- calling or ANI spill: KP + ANI ID + 10d clg + ST
- called spill: KP + CC + NN + ST, where:
 - CC - country code
 - NN - national number

50093498 — TOPS COMFGD Restricted Billing

This TOPS11 functionality provides the additional value of RESTBIL for the STATCLAS subfield, which is on the TOPS COMFGD trunk.

Background

Before this feature, COMBINED was the only datafill for the STATCLAS subfield for COMFGD trunks. This datafill only allowed traffic that contained an ANI digit marked as SPECIAL to prompt billing restriction checks. Restricted billing checks are based on the the ANI ID digit and the STATCLAS of the trunk group.

The limited STATCLAS datafill caused problems for operating companies. Some end offices encountered a problem during attempts to trigger restricted billing checks. They encountered this problem when a call was signaled as STATION on a COMFGD trunk group with a STATCLAS value of COMBINED. Thus, the end offices handled many restricted billing calls incorrectly.

New functionality

The functionality for feature 50093498 addresses this issue by allowing a STATCLAS value of RESTBIL on the COMFGD trunk. This additional STATCLAS value allows the operating company to perform restricted billing checks on all traffic. RESTBIL causes calls signaled as STATION or SPECIAL to generate restricted billing.

One of the following requirements is necessary for restricted billing to occur:

- When a call travels over a trunk group with datafill of COMBINED, the ANI ID digit of the call must include a number identified as SPECIAL. The

TOPS Incoming FGD Signaling (continued)

operating company personnel must datafill the number in the CLGSERV field of the OSSCAT table to the SPLDNID index table as SPECIAL.

- When a call travels over a TOPS trunk group with a STATCLAS value of RESTBIL, the ANI ID digits must be identified or datafilled as STATION or SPECIAL in the CLGSERV field of the OSSCAT table.

Note: A number datafilled as SPECIAL usually has an ANI ID digit of 7. A number datafilled as STATION usually has ANI ID digit of 0.

Interactions

Refer to the interactions section.

Translations table flow

Translations table flow is not provided for TOPS Incoming FGD Signaling.

Limitations and restrictions

The following limitations and restrictions apply to TOPS Incoming FGD Signaling:

AF1102 - TOPS Incoming FGD Signaling

- Only CAMA traffic can be handled on TOPS trunk groups designated to carry EAFGD-signaled traffic.
- The TOPS trunk groups must have MF assigned as the incoming pulse type (IPULSTYP) and MF as the outgoing pulse type (OPULSTYP) on two-way trunk groups.
- The TOPS trunk group cannot carry any other traffic other than EAFGD-signaled traffic.

AF1781 - Alternate Carrier Selection

- For MCCS and AABS calling card sequence calls, a carrier is associated with the first call. If this carrier cannot complete the sequence call, no alternate is chosen. Instead, the call routes to CCCF treatment and the subscriber must initiate another call.
- When COMFGD is assigned as the signaling type for a TOPS trunk group, the STATCLAS must be set to COMBINED, and the IPULSTYP field (and OPULSTYP for two-way groups) must be set to MF.
- All calls signaled COMFGD are handled as carrier calls, even if LATA screening indicates that the call is intra-LATA.
- The AMA record produced for a carrier call includes an indication of which IEC received the call, even if an alternate carrier is chosen to handle

TOPS Incoming FGD Signaling (continued)

the call. However, there is no indication in AMA of whether or not a substitution of an alternate carrier was required to complete the call. If an alternate carrier is chosen for a call, then the AMA field for carrier service time will only include the service time for the carrier that actually received the call.

- Rating tables restrict the ability to provide on-line rating. If COMFGD serves a wide area, then on-line rating may not be possible. Table SPLDNID may not have room for all of the DNs in the serving area, especially if multiple NPAs are served using COMFGD.
- The TOPS_OTC_CARRIER_NUMBER carrier (from OFCVAR) may not be datafilled as an alternate in table TOPEACAR.

50093498 — TOPS COMFGD Restricted Billing

- Although three STATCLAS values exist that allow restricted billing, this feature implements only RESTBIL and COMBINED for COMFGD trunks.

Interactions

The following paragraphs describe the interactions between TOPS Incoming FGD Signaling and other functionalities.

AF1781 - Alternate Carrier Selection

This feature interacts with TOPS EA handling by selecting an alternate carrier when an initial carrier cannot complete a given call.

- Interaction with TOPS operators is affected by this feature due to the selection of alternate carriers. When an alternate is chosen for a call at a TOPS position, the new carrier is displayed in place of the initial one (if there was one displayed already). The name that is displayed is from the TOPEACAR field ALTDISP instead of CARNAME, so depending on datafill, operators will see a different carrier name for the carrier digits (e.g., ALTCAR2 instead of CAR2 for 102).
- This feature interacts with the Automatic Directory Assistance Call Completion (ADACC) feature. When the initial carrier does not accept a call to the terminating destination, this feature selects an alternate carrier to handle DA calls that can be completed.
- COMFGD signaling allows operator assisted calls to be combined with direct dialed calls. For the OA calls, 0+ dialed calls may be handled by MCCS or AABS, while 1+ dialed coin calls may be handled by ACTS.
- This feature may be used in an Operator Centralization (OC) configuration in either the host or remote or both.

TOPS Incoming FGD Signaling (continued)

If some, but not all, offices have this optional feature, then operators must be trained to understand that alternate carrier selection and its associated position displays will apply to calls from some originations, but not from others.

- One of the optional branding features available with TOPS, AL0417 TOPS Alternate MCCS Announcement, may be used to play a customized Thank You announcement upon release from the ACTS or MCCS automated systems for carrier calls that are serviced by TICS. If this branding feature is in use, and the TOPEAALT conditional route selector simultaneously informs subscribers that an alternate carrier has been chosen, then the subscriber could hear both carrier specific announcements prior to the call outpulsing from the TOPS office.
- Depending on the features in use, it is possible that the TOPS office could choose an alternate carrier for a call that an EAEO already selected a carrier for. Two examples of this would be a call on an incoming TOPS trunk group dedicated to a particular carrier, and a call signaled with a carrier identifier using EAOSS signaling from an EAEO. Since an EAEO would provide alternate carrier selection if necessary, these scenarios would likely only occur for calls that have call data altered by key actions at a TOPS position.
- This feature also interacts with LEAS (LATA Equal Access System) in two instances.
 - If a LEAS call is routed to treatment (due to DNPIC restrictions or OCCINFO checks), the DMS will not attempt to select an alternate carrier. This is because LEAS checks determined that this call could not be handled by a carrier. Since the call cannot be handled by a carrier, no alternate carrier selection will be attempted. In this case the LEAS checks override the possibility of alternate carrier availability.
 - LEAS interactions with this feature also occur when an alternate carrier is selected to handle a call. No LEAS checks will be performed on the alternate carrier. This is because the original carrier wants another carrier to handle all calls the original carrier cannot complete. The carrier's decision overrides the subscriber information in table DNPIC, and the call is completed to the alternate without any LEAS checks on the alternate carrier. The carrier's decision also overrides any Carrier Toll Denial information in table TRKLATA.

BY28832 - Operator Hold Support for COMFGD Trunks

When this activity is in use (OPRHOLD = Y in table TRKGRP), operator hold is in effect for the incoming COMFGD TOPS trunk. Additionally, true answer is no longer propagated to the originating end office for calls on the incoming COMFGD TOPS trunk.

TOPS Incoming FGD Signaling (continued)

In most cases, the “other end” of the COMFGD trunk is an ATC trunk using EAPLAN signalling. For full use of this activity, at the originating office, the outgoing EAPLAN trunk should be datafilled with OPRHOLD = Y. This datafill is only supported in a TOPS tandem office.

If this activity is not in use, (OPRHOLD = N), coin traffic should not be routed over a COMFGD trunk to the TOPS office. Coin traffic needs operator hold.

50093498 — TOPS COMFGD Restricted Billing

The signaled ANI ID digit and the station class of the trunk group are the triggers for restricted billing checks. Fields, sub-fields, or index tables do not affect the triggers for restricted billing comparisons.

Activation/deactivation by the end user

TOPS Incoming FGD Signaling requires no activation or deactivation by the end user.

Billing

Calls incoming on TOPS trunks designated to carry EAFGD signaled traffic will generate AMA billing record with structure codes in the 4700 series.

Station Message Detail Recording

TOPS Incoming FGD Signaling does not affect Station Message Detail Recording.

TOPS Incoming FGD Signaling (continued)

Datafilling office parameters

The following table shows the office parameters used by TOPS Incoming FGD Signaling. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by TOPS Incoming FGD Signaling

Table name	Parameter name	Explanation and action
OFCENG	TOPS_EA_INTERLATA_NONOPR_AMA	<p>The TOPS_EA_INTERLATA_NONOPR_AMA parameter specifies whether or not AMA records are produced for Inter-LATA calls that are not processed by a TOPS operator.</p> <p>If AMA records of call code 251, structure code 734, are needed for 1+ CAMA Inter-LATA calls, leave the parameter at the default value of Y (Yes) and define a LATA for each TOPS trunk in the TOPEATRK Table that carries this type of traffic. The CAMABILL field in the TOPEACAR Table must be set to N (No).</p> <p>When the value of this parameter is left at the default value and the CAMABILL field is set to Y (Yes), the 1+ CAMA Inter-LATA calls will produce call code 006 AMA records with a 047XX structure code appendage. If the TICS, OSEA0101, software is present in the office, structure code 047XX is produced when the OPSERV field in the TOPEACAR Table is set to SERV.</p> <p>If the value of this parameter is set to N (No) and the CAMABILL field is also set to N, billing records will not be produced for 1+ CAMA Inter-LATA calls.</p>

TOPS Incoming FGD Signaling (continued)**Datafill sequence**

The following table lists the tables that require datafill to implement TOPS Incoming FGD Signaling. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for TOPS Incoming FGD Signaling

Table	Purpose of table
TRKGRP	Trunk Group Table. This table is changed to allow TOPS trunk groups to be datafilled with the new CLGINFO signaling type (EAFGD) and new field OPRHOLD is added.
DNPIC	Directory Number Primary Inter-LATA Carrier. This table maps a directory number (DN) to a Primary Inter-LATA Carrier (PIC) datafilled in the PICNAME Table.
TOPEATRK	Equal Access Carrier Information for Trunk Group Type TOPS. This table contains the information required for the successful routing of Inter-LATA calls when the AT is a TOPS AT.
LATAOLA	Equal Access Local Access and Transport Area Translation. This table defines the attributes of domestic calls as Inter-LATA or Intra-LATA and as Interstate or Intrastate
OFRT	Office Route. This table routes all DMS, except DMS-300.
TMTCNTL.TREAT	Treatment Control. The TMTCNTL.TREAT subtables are used by the Operating Company to define the tone(s), announcements(s), state(s) (e.g., IDLE or LOCKOUT), or combinations of these returned to the originator of a call when a specified treatment code is encountered during call translation.
SCRNNAME	Screening Name. This table is new and allows the definition of screening class names that may later be used in tables TOPEACAR and TOPEATRM. Each tuple consists of an index and a symbol field that contains the screening name.
TOPEACAR	TOPS Equal Access Carrier. This table indicates whether or not operator service is provided for the carrier and defines the billing procedures for call to that carrier.
TOPEATRM	TOPS Equal Access Terminating Screening. This is a new table, created for terminating points screening of TOPS calls that are designated as requiring completion by an Interexchange Carrier.
CLSVSCRC	Class of Service Screening Control. This table selects a route for carrier calls incoming on TOPS trunk groups.

TOPS Incoming FGD Signaling (continued)

Datafilling table TRKGRP

The Trunk Group (TRKGRP) Table identifies the TOPS trunk groups in a toll or combined local/toll office with TOPS capability. Calls that require operator intervention, recording on CAMA must be routed to the TOPS office over trunk groups identified in this table.

The AF1102 feature adds the EAFGD signaling option to the CLGINFO field of this table. The CLGINFO field identifies the type of signaling used on incoming TOPS trunk groups (GRPTYP=TOPS).

EAFGD signaling applies to CAMA traffic only. Therefore, the STATCLAS field must be set to CAMA. This is enforced by table control. Table control also enforces that multifrequency (MF) signaling be used for such trunk group by checking the corresponding entries for the trunk group in the Trunk Subgroup (TRKSGRP) Table.

The BY28832 feature adds field OPRHOLD. The 50093498 feature adds the STATCLAS value of RESTBIL. COMFGD signaling is only supported on MF trunks with a STATCLAS value of RESTBIL or COMBINED.

The following table shows the datafill specific to TOPS Incoming FGD Signaling for table TRKGRP. Only those fields that apply directly to TOPS Incoming FGD Signaling are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TRKGRP

Field	Subfield or refinement	Entry	Explanation and action
CLGINFO		EAFGD	Equal Access Feature Group D. Indicates the type of signaling used for calls incoming on the trunk group.
	NOBILLCD	0 to 63	Number of Billing Codes. Identifies the number of billing codes plus spares that are to be reserved in the TOPS Billing Code (TOPSBC) Table.
	ANISEIZ	2 to 30	ANI Seizure Timing. Identifies the time in seconds that the trunk has to wait for reception of the first digit of the ANI spill.
	ANIPDIAL	2 to 30	ANI Partial Dial Timing. Identifies the time in seconds that the trunk has to wait for reception of each ANI digit except the first one.

TOPS Incoming FGD Signaling (continued)

Datafilling table TRKGRP

Field	Subfield or refinement	Entry	Explanation and action
	TRTMTSUP	N or Y	Treatment Supervision. Indicates whether or not an off-hook is to be returned for treatment cases when the signaling is EAFGD.
	ONLNRATE	N or Y	On line rating.
	COINPD	Y or N	Coin paid
	NXXVER	Y or N	NXX verification
	OPRHOLD	Y or N	<p>Operator hold. This field indicates whether operator hold is used on combined FGD (COMFGD) TOPS trunks. COMFGD signalling is only supported on MF trunks with STATCLAS of COMBINED or RESTBIL.</p> <p>Set OPRHOLD = Y to enable operator hold. Then, signalling ends with an offhook rather than a wink (when OPRHOLD = N). When OPRHOLD = Y, true answer is no longer propagated to the originating office since the TOPS trunk is already offhook. An additional offhook cannot be sent to indicate true answer.</p> <p>In most cases, the "other end" of the COMFGD trunk is an ATC trunk using EAPLAN signalling. For full use of this activity, at the originating office, the outgoing EAPLAN trunk should be datafilled with OPRHOLD = Y. This datafill is only supported in a TOPS tandem office.</p> <p>If OPRHOLD = N, coin traffic should not be routed over a COMFGD trunk to the TOPS office. Coin traffic needs operator hold.</p>

Datafill example for table TRKGRP

The following figure provides a datafill example for the TRKGRP Table. The datafill shows that the trunk group (ICTOPSEAFGD1) is a TOPS type trunk group. It is one-way incoming into the TOPS AT. The serving NPA for this trunk group is 919. The standard pretranslator subtable that calls over this trunk group will route to is PFGD. The only type of traffic allowed over ICTOPSEAFGD1 is CAMA traffic; that is, 1+ , direct-dialed, non-operator-assisted traffic from coin, and non-coin stations. EAFGD specifies the type of signaling expected over ICTOPSEAFGD1.

TOPS Incoming FGD Signaling (continued)

The following example shows sample datafill for table TRKGRP.

MAP display example for table TRKGRP

```

GRPKEY
-----
ICTOPSEAFGD1
  TOPS 0 NPDGP NCRT IC MIDL 919 PFGD NLCA NSCR Y SP CAMA Y Y 0
  EAFGD  10 2 2 N
TGENIC1
  TOPS 0 NPDGP NCRT IC MIDL 619 NPRT NLCA NSCR Y SP COMBINED
  N Y 0 0000 NONE COMFGD 16 10 10 Y N Y Y Y N N
  
```

In the above example, the first tuple is applicable to EAFGD signalling in feature AF1102. The second tuple is applicable to COMFGD signalling in feature BY28832.

Datafilling table DNPIC

The Directory Number Primary Inter-LATA Carrier (DNPIC) Table maps a directory number (DN) to a Primary Inter-LATA Carrier (PIC) datafilled in the PICNAME Table. If a subscriber's DN is not found in this table, the carrier for the call is chosen from the TOPEATRK Table. For the EAFGD application, fields CHOICE and CTD are not used for EAFGD calls

The following table shows the datafill specific to TOPS Incoming FGD Signaling for table DNPIC. Only those fields that apply directly to TOPS Incoming FGD Signaling are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table DNPIC

Field	Subfield or refinement	Entry	Explanation and action
DNPIC		alphanumeric	To optimize the EAFGD feature, it is recommended that all subscribers known to the IC be datafilled in the DNPIC Table and that the IC be the primary carrier for the DN.

Datafill example for table DNPIC

The following figure provides a datafill example of the DNPIC Table. The datafill shows that carrier 123 serves all the DNs in the 919 NPA having an NXX of 942 and 967 with line 3312 and 9889. The figure, "MAP display

TOPS Incoming FGD Signaling (continued)

example for table TRKGRP" showed that the ICTOPSEAFGD1 trunk group handled traffic originating in the 919 NPA area.

MAP display example for table DNPIC

DNKEY	DNPIC	CHOICE	CTD
919 942 33 12	123	N	N
919 967 98 89	123	N	N

Datafilling table TOPEATRK

The TOPS Equal Access Trunk Group Extension (TOPEATRK) Table contains the information required for the successful routing of Inter-LATA calls when the AT is a TOPS AT. For each TOPS trunk group datafilled in the TRKGRP (TOPS) Table, there is a corresponding tuple in the TOPEATRK Table that provides EA information for that trunk group.

The EAFGD application does not make any changes to this table, however, certain fields require specific datafill for the proper handling of calls on TOPS trunks designated to carry EAFGD signaled traffic.

The following table shows the datafill specific to TOPS Incoming FGD Signaling for table TOPEATRK. Only those fields that apply directly to TOPS

TOPS Incoming FGD Signaling (continued)

Incoming FGD Signaling are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TOPEATRK

Field	Subfield or refinement	Entry	Explanation and action
CARRIER		alphanumeric	<p>The CARRIER field specifies the default carrier to be used for carrier traffic. If the DNPIC Table is searched for a subscriber's DN and cannot be found, then the entry in the CARRIER field determines the default carrier to be used for the screening and routing of the call.</p> <p>If calls from DNs not datafilled in the DNPIC Table are to be routed to treatment, the CARRIER field may be datafilled with a value that causes screening in CLSVSCRC to result in an appropriate treatment. If the calls are to route normally, the carrier's identifier should be datafilled in the CARRIER field so that the call complete normally.</p>
LATANM		alphanumeric	<p>The LATANM field gives the name of the originating LATA for the trunk group. This name is used for LATA screening in the LATAXLA Table. EAFGD-signaled calls incoming to the TOPS AT can have a LATA status of Inter-LATA or Intra-LATA. However, all EAFGD-signaled calls will be treated as carrier calls.</p>
<p>Note: Table control does not allow tuples to be manually added or deleted from this table. Tuples are automatically added or deleted when a TOPS trunk group is entered or deleted from the TRKGRP (TOPS) Table. Once a tuple is added by the system, the Operating Company may change the values accordingly so that the appropriate call screening and routing will result.</p>			

TOPS Incoming FGD Signaling (continued)**Datafilling table TOPEATRK**

Field	Subfield or refinement	Entry	Explanation and action
INTRASSC, INTERSSC, and OVSSCL		alphanumeric	<p>There are three screening class names available for each trunk group in the TOPEATRK Table. These are as follows:</p> <ul style="list-style-type: none"> • INTRASSC - determines the route for domestic intrastate carrier calls • INTERSSC - determines the route for domestic interstate carrier calls • OVSSCL - determines the route for international carrier calls. <p>The appropriate class name for a given call identifies the class of service screening (CLSVSCRC.CLSVSCR) subtable that contains the routing information for the call. If carrier calls are to be routed from CLSVSCRC, each of these screening class names must be non-nil.</p>
DNLOOK		Y	<p>The DNLOOK field requires an entry of Y or N. For EAFGD-signaled calls, the lookup in the DNPIC Table is always performed regardless of the value of the DNLOOK field. However, the DNLOOK field should be set to Y to accurately reflect the actions of call processing.</p>
<p>Note: Table control does not allow tuples to be manually added or deleted from this table. Tuples are automatically added or deleted when a TOPS trunk group is entered or deleted from the TRKGRP (TOPS) Table. Once a tuple is added by the system, the Operating Company may change the values accordingly so that the appropriate call screening and routing will result.</p>			

Datafill example for table TOPEATRK

The following figure provides example datafill for the TOPEATRK Table. The datafill shows the additional information provided for the ICTOPSEAFGD1 trunk group datafilled in the TRKGRP (TOPS) Table. The datafill indicates that the traffic incoming over this trunk group is being sent from a CONFORMing end office (that is, an Equal Access End Office). The default carrier identifier is 999. LATA1 identifies the originating LATA for the ICTOPSEAFGD1 trunk group. DOM11 is the name of the class of service screening subtable to which domestic calls over ICTOPSEAFGD1 will route and OVS1 is the name of the class of service screening subtable to which international calls will route. The first Y specifies that the DNPIC Table should be searched for the subscriber's DN.

TOPS Incoming FGD Signaling (continued)

Datafill example for table TOPEATRK

The following example shows sample datafill for table TOPEATRK.

MAP display example for table TOPEATRK

TRUNKGRP	ENDOFFCE	CARRIER	LATANM	INTRAASC	INTERSSC	OVSSCL
SCRNIDX	DNLOOK	DFLTPIC	BYPASS			
ICTOPSEAFGD1	CONFORM	999	LATA1	DOM11	DOM11	OVS1
919	Y	Y	\$			

Datafilling table LATAXLA

The Local Access and Transport Area Translation (LATAXLA) Table defines the attributes of domestic calls as Inter-LATA or Intra-LATA and as Interstate or Intrastate.

The LATAXLA Table has a two-part key consisting of a LATA name (the originating LATA of the call) and a subset of the called digits. It also contains the results that mark a call as inter-LATA or intra-LATA and interstate or intrastate. LATA screening is performed only on calls that use the National Dialing plan. The interstate/intrastate marking determines which domestic screening class name is chosen from the TOPEATRK Table.

The following table shows the datafill specific to TOPS Incoming FGD Signaling for table LATAXLA. Only those fields that apply directly to TOPS Incoming FGD Signaling are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table LATAXLA

Field	Subfield or refinement	Entry	Explanation and action
EATYPE		STD	For EAFGD-signaled calls, the EATYPE field must be set to STD to ensure that the call is handled as a carrier call. The handling of the call will be the same regardless of the LATA status, that is, all calls will be handled as Inter-LATA calls.
STATE		INTER or INTRA	The STATE field can be set either to INTER or INTRA. The interstate or intrastate indication determines a CLSVSCR subtable from the TOPEATRK Table.

TOPS Incoming FGD Signaling (continued)

Datafill example for table LATAXLA

The following figure provides example datafill for the LATAXLA Table. The datafill defines the attributes of a call originating in LATA1 on ICTOPSEAFGD1 based on the digits dialed by the originator of the call.

MAP display example for table LATAXLA

LATACODE	LATA STATE	EATYPE
LATA1 2	INTER INTER	STD
LATA1 3	INTER INTER	STD
LATA1 4	INTER INTER	STD
LATA1 5	INTER INTER	STD
LATA1 6	INTER INTER	STD
LATA1 7	INTER INTER	STD
LATA1 8	INTER INTER	STD
LATA1 9	INTER INTER	STD

Datafilling table OFRT

The following table shows the datafill specific to Alternate Carrier Selection for table OFRT. Only those fields that apply directly to Alternate Carrier Selection are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table OFRT

Field	Subfield or refinement	Entry	Explanation and action
RTSEL		TOPEAALT, TOPEAXFR	<p>Two new conditional route selectors are added: TOPEAALT and TOPEAXFR. The TOPEAALT selector allows different routing to be used when a TOPS EA call has been routed to an alternate carrier and the call is not at a TOPS position. The TOPEAXFR selector provides routing conditional on whether or not a call has been marked as a carrier transfer call by a TOPS operator.</p> <p>Note: The conditional selectors, including these new ones, may be datafilled in other routing tables, including the RTEREF subtables of HNPACONT and FNPACONT.</p>

Datafill example for table OFRT

The following example shows sample datafill for table OFRT.

TOPS Incoming FGD Signaling (continued)

MAP display example for table OFRT

RTE	RTELIST
50	(NOT TOPEAALT SK 1) (S D ALTCAR2) (S D OGEACAR2)

Datafilling table TMTCNTL (EXTTMTNM=OFFTREAT).TREAT

The following table shows the datafill specific to Alternate Carrier Selection for table TMTCNTL (EXTTMTNM=OFFTREAT).TREAT. Only those fields that apply directly to Alternate Carrier Selection are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TMTCNTL (EXTTMTNM=OFFTREAT).TREAT

Field	Subfield or refinement	Entry	Explanation and action
TREATMT		CCCF	<p>Although the TMTCNTL (Treatment Control) table is not changed by this feature, the new Carrier Call Completion Failure (CCCF) treatment defined by this feature must be datafilled in this table. The OFFTREAT subtable of TMTCNTL sometimes includes all treatments defined for an office, so CCCF may be datafilled in that subtable. The CCCF treatment is only assigned to calls that arrive on TOPS trunk groups, so the TOPSTKGP subtable is the only other TMTCNTL subtable that needs to be datafilled with this treatment. The Operating Company may choose to route CCCF to a tone, an existing announcement, or a new announcement specific to this treatment.</p> <p>After CCCF is added to table TMTCNTL, it may be datafilled in any of the routing tables in the DMS switch. Currently, these tables include tables OFCCODE, OFCHEAD, PXCODE, PXHEAD, and WRDNCODE. Each of these tables has a field whose range is EXTENDED_TREATMENT, and this feature adds treatment CCCF to this range.</p>

Datafilling table SCRNNAME

The following table shows the datafill specific to Alternate Carrier Selection for table SCRNNAME. Only those fields that apply directly to Alternate

TOPS Incoming FGD Signaling (continued)

Carrier Selection are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table SCRNNAME

Field	Subfield or refinement	Entry	Explanation and action
INDEX		0-255	Key to table.
SYMBOL		1-32 characters	Screening name used in tables TOPEACAR and TOPEATRM.

Datafill example for table SCRNNAME

The following example shows sample datafill for table SCRNNAME.

MAP display example for table SCRNNAME

INDEX	SYMBOL
0	IN1
1	IN3
2	NA3

Datafilling table TOPEACAR

The TOPS Equal Access Carrier (TOPEACAR) Table indicates whether or not operator service is provided for the carrier and defines the billing procedures for call to that carrier. No operator service is required for EAFGD signaled calls. Calls requiring operator service other than CAMA identification should be routed over trunks handling BELL, OSSS, or EAOSS signaled traffic.

The TOPS AT office uses the TOPEACAR Table to store information about each carrier that is provided access. It contains billing and outpulsing information about each carrier as well as an indication of whether or not operator service is provided for that carrier.

The following table shows the datafill specific to TOPS Incoming FGD Signaling for table TOPEACAR. Only those fields that apply directly to TOPS

TOPS Incoming FGD Signaling (continued)

Incoming FGD Signaling are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TOPEACAR

Field	Subfield or refinement	Entry	Explanation and action
ALTDISP		up to 16 characters	Alternate carrier displayed.
ALTCARR		000-999	Alternate carrier digits.
NATERM	TERMSEL	DENY, RESTRICT, or UNREST	National terminating point screening select.
INTERM	TERMSEL	DENY, RESTRICT, or UNREST	International terminating point screening select.
OPSERV		NOSERV or SERV	Operator service. The OPSERV field determines if billing is relevant for EAFGD signaled calls. When the AF1102 feature is present, it is recommended that the OPSERV field be set to SERV to indicate that operator service is provided for the carrier. This is required to get AMA records in the 4700 series. Note: If the OPSERV field is set to NOSERV and the CAMABILL field is set to Y, AMA records in the 700 series will be generated.

Datafill example for table TOPEACAR

The following figure provides example datafill for the TOPEACAR Table. The datafill shows that for carrier 123, AMA billing records with structure code 4700 series will be generated for CAMA calls as defined in the TRKGRP (TOPS) Table. It also shows that operator service is provided for the carrier by the Operating Company.

MAP display example for table TOPEACAR

CARDIG	CARNAME	OPLSCLD	CAMABILL	OPSERV
123	123	Y	Y	
SERV	QUERY	Y QUERY	Y NOQUERY	N Y Y

TOPS Incoming FGD Signaling (continued)

MAP display example for table TOPEACAR

CARDIG	CARNAME	ALTDISP	OPLSCLD	CAMABILL	ALTCARR	NATERM
	INTERM		OPSERV			
101	CAR1	ALTCAR1	Y	Y	102	UNREST
	DENY	SERV		QUERY N	QUERY N	QUERY N
102	CAR2	ALTCAR2	N	N	102	UNREST
	UNREST			NOSERV N	N	
103	CAR3	ALTCAR3	Y	Y	102	RESTRICT NA3
	RESTRICT	IN3		NOSERV N	Y	
104	CAR4	ALTCAR4	Y	Y	104	UNREST
	DENY			NOSERV N	Y	
105	CAR5	ALTCAR5	Y	Y	104	UNREST
	DENY			NOSERV N	Y	

Note: CAR1 is served by TICS while the others are not. CAR2 can receive 0- carrier, CAR3 and CAR4 cannot. CAR3 allows alternate carrier selection for 00, 10XXX0 and 10XXX00 calls while CAR4 does not. The field ordering is ZEROALT followed by BLKOMXFR with NOSERV.

MAP display example for table TOPEACAR

CARDIG	CARNAME	ALTCAR	OPLSCLD	CAMABILL	ALTCARR	NATERM
	INTERM		OPSERV			
101	CAR1	ALTCAR1	Y	Y	102	UNREST
	RESTRICT	IN1	SERV	QUERY N	QUERY N	QUERY N
102	CAR2	ALTCAR2	N	N	102	UNREST
	UNREST			NOSERV N	N	
103	CAR3	ALTCAR3	Y	Y	102	RESTRICT NA3
	RESTRICT	IN3		NOSERV N	Y	
104	CAR4	ALTCAR4	Y	Y	104	UNREST
	DENY			NOSERV N	Y	

Note: CAR1 can complete all national calls, but only certain international calls. CAR2 can complete all national and international calls. CAR3 can complete only certain national calls and only certain international calls. CAR 4 can complete all national calls but no international calls.

Datafilling table TOPEATRM

This is a new table, created for terminating points screening of TOPS calls that are designated as requiring completion by an Interexchange Carrier. If a carrier requires screening to determine call completion ability based on the destination of the call, then this table is indexed using a screening name (given

TOPS Incoming FGD Signaling (continued)

for the carrier in TOPEACAR) and the called number. If a tuple corresponding to this combination is found in the table, then the carrier can complete the call.

The following table shows the datafill specific to TOPS Incoming FGD Signaling for table TOPEATRM. Only those fields that apply directly to TOPS Incoming FGD Signaling are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TOPEATRM

Field	Subfield or refinement	Entry	Explanation and action
SCRNNAME		1-32 characters	Screen name defined in table SCRNNAME.
CLDCODE		numeric	Calling number with NPA, NPA-NXX, or country code.

Datafill example for table TOPEATRM

The following example shows sample datafill for table TOPEATRM.

MAP display example for table TOPEATRM

SCRNNAME	CLDCODE
-----	-----
IN1	33
IN1	44
IN3	33
NA3	212
NA3	617441
NA3	617442
NA3	617446
NA3	718

Note: CAR1 (using SCRNNAME IN1) has international call completion limited to country codes 33 and 44. For international calls, CAR3 is limited to country code 33. CAR3 (using SCRNNAME NA3) may only complete national calls to area codes 212 and 718, plus three specific NXXs in the 617 area code.

TOPS Incoming FGD Signaling (continued)

Datafilling table CLSVSCRC

The Class of Service Screening Control (CLSVSCRC) Table lists the following information for each of the screening classes:

- the serving NPA of the screening class
- the screening class name
- the type of call for which screening is applied
- the total number of routes or treatments to be provided for in the subtable
- the type of position to which a call will be routed if the destination of the call is independent of the digits dialed.

For carrier calls incoming on TOPS trunk groups, selection of a route is accomplished through the Class of Service Screening (CLSVSCRC) Table. The CLSVSCRC Table has a three-part key consisting of the originating NPA (pulled from the TOPEATRК Table), a screening class name (selected from the three provided in TOPEATRК Table), and the type of call (only DD type calls are valid for EAFGD-signaled traffic). The class of service screening subtables contain the actual routing information.

Datafill example for table CLSVSCRC

The following figure provides datafill example for the CLSVSCRC Table. The datafill provides further information on the class of screening subtables (DOM11 and OVS1) datafilled in the TOPEATRК Table. CAMA call incoming on ICTOPSEAFGD1 will route to these subtables.

MAP display example for table CLSVSCRC

	NPASCTYP	NORSLTS	TMTOFRT	CLSVSCR
919	DOM11 DD	2	N NONE	(1)
919	OVS1 DD	2	N NONE	(1)

Datafilling subtable CLSVSCRC.CLSVSCR

The Class of Service Screening (CLSVSCR) Subtable is required whenever the call destination depends upon the digits dialed.

The subtable determines for the digits dialed whether or not the call should maintain the route specified in a previous table or to complete according to the route or treatment specified in the CLSVSCRC.CLSVSCR Subtable.

For each entry in the CLSVSCRC Table, there is an entry in the subtables. Datafill may vary between the different subtables to provide different routes

TOPS Incoming FGD Signaling (end)

based on the domestic/international and operator-assisted/direct-dialed attributes.

Datafill example for subtable CLSVSCRC.CLSVSCR

The following figure provides datafill example for subtable CLSVSCRC.CLSVSCR. In this datafill example, routing is based only on carrier digits. The example illustrates calls using the carrier from the DNPIC Table route to outgoing trunks while calls using the default carrier datafilled in the TOPEATRK Table route to treatment.

MAP display example for subtable CLSVSCRC.CLSVSCR

FROMDIGS	TODIGS	TMTOFRT
123	123	T 741
999	999	D VACT

Note: If routing is to be done through the HNPACONT Table for domestic calls and through the CCTR Table for international calls, then there should be no entries made into the CLSVSCR Subtables for the valid carrier calls. Invalid carrier codes still may result in treatment in the CLSVSCR Subtables.

Translation verification tools

TOPS Incoming FGD Signaling does not use translation verification tools.

SERVORD

TOPS Incoming FGD Signaling does not use SERVORD.

TOPS Inter-LATA Carrier

Ordering codes

Functional group ordering code: OSEA0101

Functionality ordering code: not applicable

Release applicability

BCS36 and up

Prerequisites

To operate, TOPS Inter-LATA Carrier has the following prerequisites:

- BAS Generic, BAS00003
- Operator Services Basic, OSB00101, and table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- Operator Services Equal Access, OSEA0101
- EQA Toll, EQA00002

Description

This functionality is provided by the following features:

Feature number	Feature name
AF0072	TOPS Inter-LATA Carrier Services
BR30517	Optional Equal Access Translations for Zenith Calls
BQ11959	AIN 0.1 Routing to TOPS Extension
BK08865	Calling Card Screening Enhancements (BCS36)

Note that although the Access Tandem Switch software package is required because of its interdependency with the TICS package, each package supports different features. For this reason, this document describes only the features supported by the TICS package.

AF0072 - TOPS Inter-LATA Carrier Services

The TOPS Inter-LATA Carrier Service (TICS) feature allows an Operating Company to provide operator services on a contractual basis to Inter-LATA Carriers (IC).

The benefit of the TICS feature is twofold. First, it eliminates the need for a carrier to establish its own operator services to handle inter-LATA traffic.

TOPS Inter-LATA Carrier (continued)

Second, it allows an Operating Company to handle the inter-LATA traffic for a carrier and to designate itself as a Primary Inter-LATA Carrier (PIC).

BR30517 - Optional Equal Access Translations for Zenith Calls

This feature adds parameter ZENITH_EA_ROUTING to table TOPSPARM to allow optional TOPS EA translations of Zenith routing numbers.

BQ11959 - AIN 0.1 Routing to TOPS Extension

The capability routes Advanced Intelligent Network (AIN) 0.1 operator requested calls to TOPS.

BK08865 - Calling Card Screening Enhancements (BCS36)

This PRSDOC prevents call completion when a subscriber attempts to complete a call on one Interexchange carrier (IEC) using a calling card restricted to another IEC. This PRSDOC is also in EABS Canada, ABS00101, and EABS (MCCS), ABS00101.

Operation

AF0072 - TOPS Inter-LATA Carrier Services

AF0072 provides operator services for a carrier and allows an Operating Company to handle inter-LATA calls originating from Equal Access or non-Equal Access End Offices.

AF0072 involves a 2-phase procedure of identifying the carrier for an inter-LATA call, and of determining whether that carrier is eligible for operator services.

Identifying the Carrier

Depending on the datafill in table TOPEATRK, one of the following methods matches a carrier with a 0- or a plus-dialed (0+, 1+) call:

- automatically searching the DNPIC table
- automatically using the TOPEATRK table data
- manually entering an access code.

The DNLOOK field in the TOPEATRK table specifies which procedure determines the carrier associated with a plus-dialed call.

- If the DNLOOK field is set to Y, the AT searches the DNPIC table for the appropriate carrier.
- If the DNLOOK field is set to N, the AT automatically associates the call with the default carrier specified in the CARRIER field of the TOPEATRK table.

TOPS Inter-LATA Carrier (continued)

The DFLTPIC field in the TOPEATRK table specifies whether a default carrier is associated with a 0- call.

If the DFLTPIC field is set to Y, the AT determines the carrier by using one of the following methods:

- takes carrier from DNPIC table (DNLOOK=Y)
- takes carrier (default) from TOPEATRK table (DNLOOK=N).

If the DFLTPIC field is set to N, the AT does not associate the call with any carrier. Instead, the operator does this by manually entering the access code for the carrier requested by the subscriber.

In cases where a call is already at the position and has a carrier associated with it but the operator needs to change the called number, the operator must perform the following keying sequences:

1. Erase the carrier associated with the current called number by keying the following:
 - TOPS - KP IC + START
 - TOPS MP - XFR IC
2. Enter the new called number.

The TOPS software translates the new called number and determines if the call is to be completed by a carrier or by the Operating Company. If the call is to be completed by the carrier, the operator must reenter the carrier digits. If the call is to be completed by the Operating Company, the operator should handle the call as any other intra-LATA call.

If the operator had entered the new called number without disassociating the carrier, the new call would have been considered a carrier call even if the new call was an intra-LATA call. Therefore, to change a call from an inter-LATA call handled by a carrier to an intra-LATA call handled by the Operating Company, the operator must erase the carrier before entering the new called number.

Determining the Eligibility of the Carrier

Once a carrier is associated with an inter-LATA call, the next step is determining whether operator services are provided for that carrier by examining the OPSERV field in table TOPEACAR.

TOPS Inter-LATA Carrier (continued)

The OPSERV field can be set to SERV or to NOSERV. Based on the entry in this field and the type of call (0-, 0+, or 1+) being processed by the AT, the following methods exist for completing the call:

- Operator services are provided for the carrier (OPSERV=SERV). The operator must handle all calls except CAMA calls.
- Operator services are not provided for the carrier (OPSERV=NOSERV). The call (plus-dialed) is automatically forwarded to the carrier for completion.
- Operator services are not provided for the carrier (OPSERV=NOSERV). The operator must transfer the calls (0-) to the carrier for completion.

Refer to "Interactions" for a description of how a call is forwarded to, transferred to, or handled for a carrier.

Field AUTZPLUS in Table TOPEACAR (BCS27)

Table TOPEACAR data for TICS carriers (OPSERV=SERV) was not used if a calling card required Line Information DataBase (LIDB) validation. Addition of field AUTZPLUS in table TOPEACAR provides a means of allowing LIDB as well as BVC queries on IC calls.

A new field AUTZPLUS is added to table TOPEACAR for TICS. The field only appears if field OPSERV=SERV for a carrier.

Field AUTZPLUS indicates whether or not 0+ calls to an Interexchange Carrier (IC) are to be routed to MCCS or EABS for entry of the calling card number, provided that all other criteria required for automated handling are met (i.e., ANI successfully received, etc.). AUTZPLUS is the last field in table TOPEACAR (following PRIVRATE).

If AUTZPLUS=Y the call is eligible for automated handling. If table CCVPARMS indicates LIDB, the database query is made. If table CCVPARMS specifies BVC, the fields CCVQUERY and CCVVAL determine whether a database query or manual validation is done.

If AUTZPLUS=N, a LIDB or BVC query will not be initiated. 0+ inter-LATA calls will be routed directly to an operator.

Exchange Alternate Billing Services (EABS)

If AUTZPLUS=Y and table CCVPARMS indicates that a LIDB query is to be performed, the DMS initiates a database query over the SS7 links, provided that a query is allowed based on the restrictions set by office parameters TOPS_ACCS_ACG and ACCS_MAX_QUERIES.

TOPS Inter-LATA Carrier (continued)

The DMS uses the results of the query, along with the value of office parameter TOPS_ACCS_CCV_QUERY_BLK to determine whether billing should be accepted or denied.

Mechanized Calling Card Service (MCCS)

If table CCVPARMS indicates a BVC query is to be performed via CCIS6 links, the setting of fields CCVQUERY, CCVVAL, and AUTZPLUS impact the outcome of the call. Field CCVVAL can only be set to Y if CCVQUERY=NOQUERY. Each possible situation is described below:

Note: TOPS_MCCS_CCV must be set to Y to activate the CCV feature.

Table TOPEACAR assumed field values

- Case 1

AUTZPLUS=YCCVQUERY=NOQUERYCCVVAL=Y

In this case, no database query will be performed. The DMS will first check the format of the calling card number. No format checks are made on calling cards used for international calls. For domestic calls, the calling card is checked for validity in table RAO if the 4th digit is 0 or 1.

Otherwise the DMS screens the number through tables HOTLIST, REGNUM, and DOMBILL. The DMS also blocks a line number calling card if the first three digits are not in valid NPA format (700 and 800 are not allowed) or if the NXX is 555.

If the format is found to be invalid through these internal DMS checks, the call is routed to an announcement. If the format is valid, the call is presented to a TOPS operator for manual validation of the calling card number. The screen display includes MAN, the carrier name and number, and the calling card number.

- Case 2

AUTZPLUS=YCCVQUERY=NOQUERYCCVVAL=N

In this case, the DMS accepts the calling card number without any type of validation or database query and completes the call.

- Case 3

AUTZPLUS=YCCVQUERY=BLKCCVVAL=N

AUTZPLUS should never be set to Y if CCVQUERY=BLK. Setting the fields to this combination of values will cause all credit card billing attempts to be blocked and sent to an announcement. The table should NOT be datafilled in this manner for any carrier.

TOPS Inter-LATA Carrier (continued)

- Case 4

AUTZPLUS=YCCVQUERY=QUERYCCVVAL=N

In this case, a BVC database query is made and the result determines whether billing should be accepted or denied.

- Case 5

AUTZPLUS=YCCVQUERY=QUERYCCVVAL=N

If AUTZPLUS=N, there will be no attempt to route the call to MCCS for validation of the calling card number.

- Case 6

AUTZPLUS=NCCVQUERY=NOQUERYCCVVAL=Y

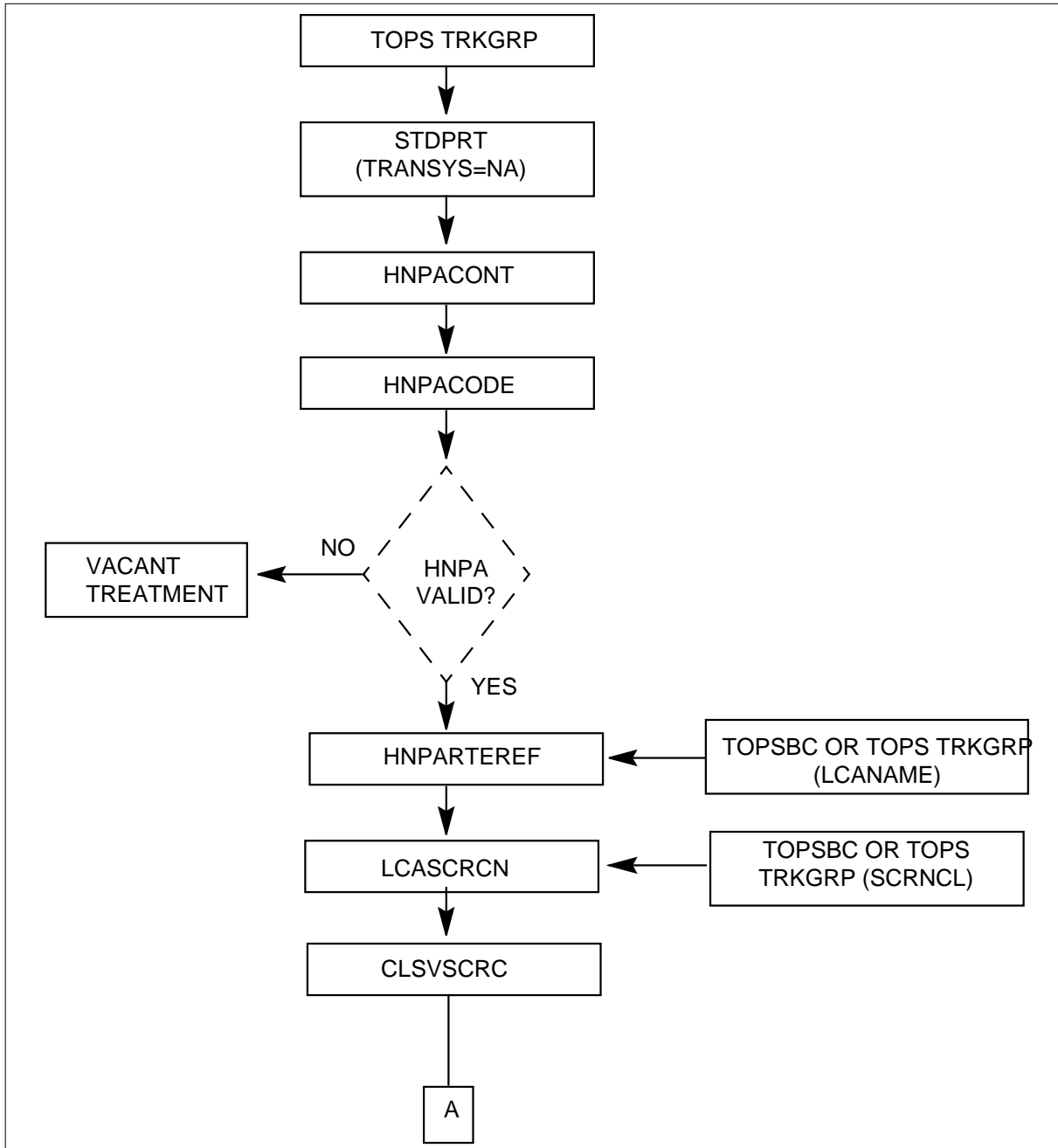
A 0+ call will be routed to the operator for manual validation of the calling card number. No validity checking will be done by the DMS.

Call Flow

The flowcharts in this section show the order in which certain data tables are accessed during TOPS translations. Refer to the following figures for the call flow for inter-LATA and international calls.

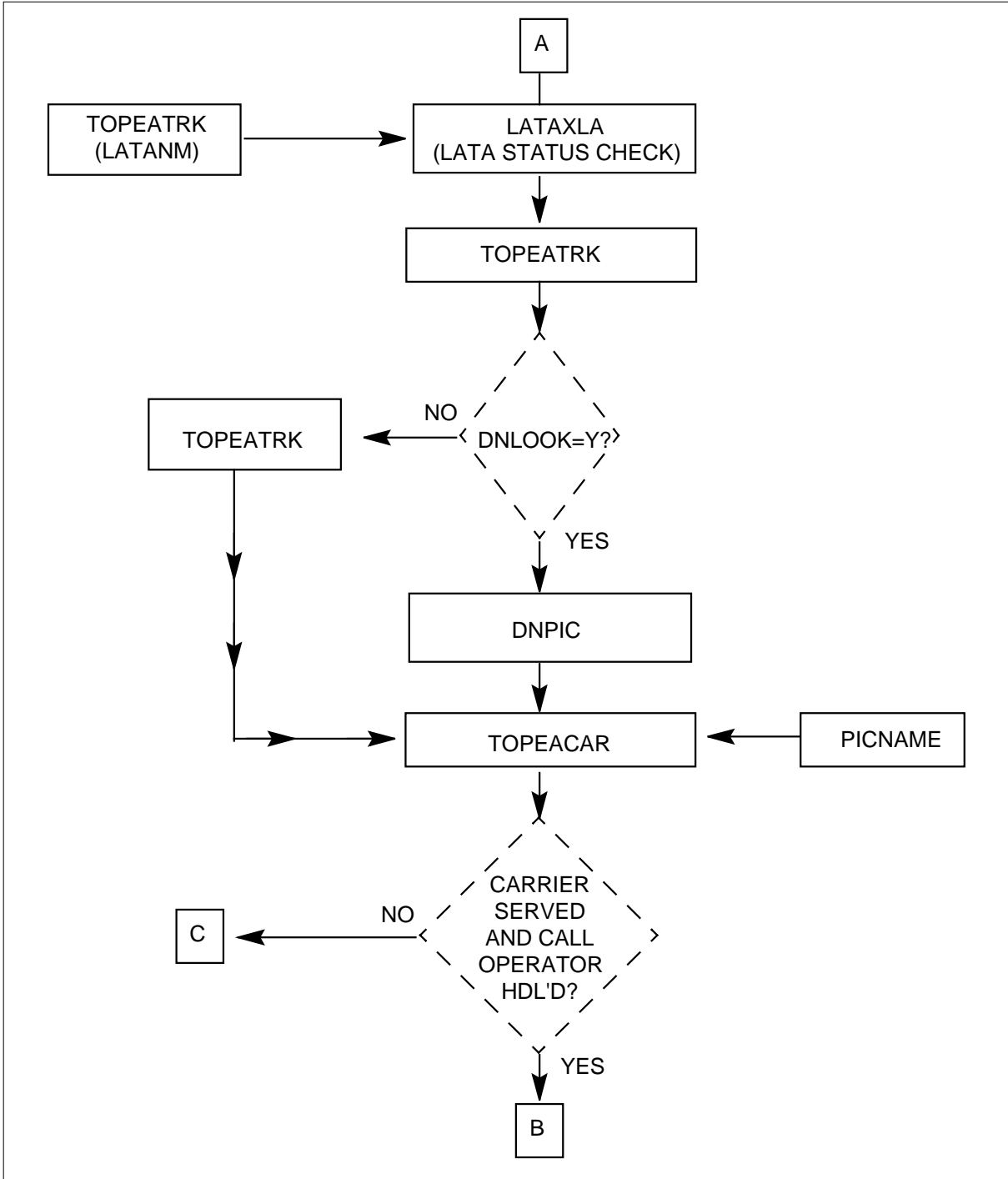
TOPS Inter-LATA Carrier (continued)

Inter-LATA Call Routing (Traditional ALL) (Part 1 of 5)



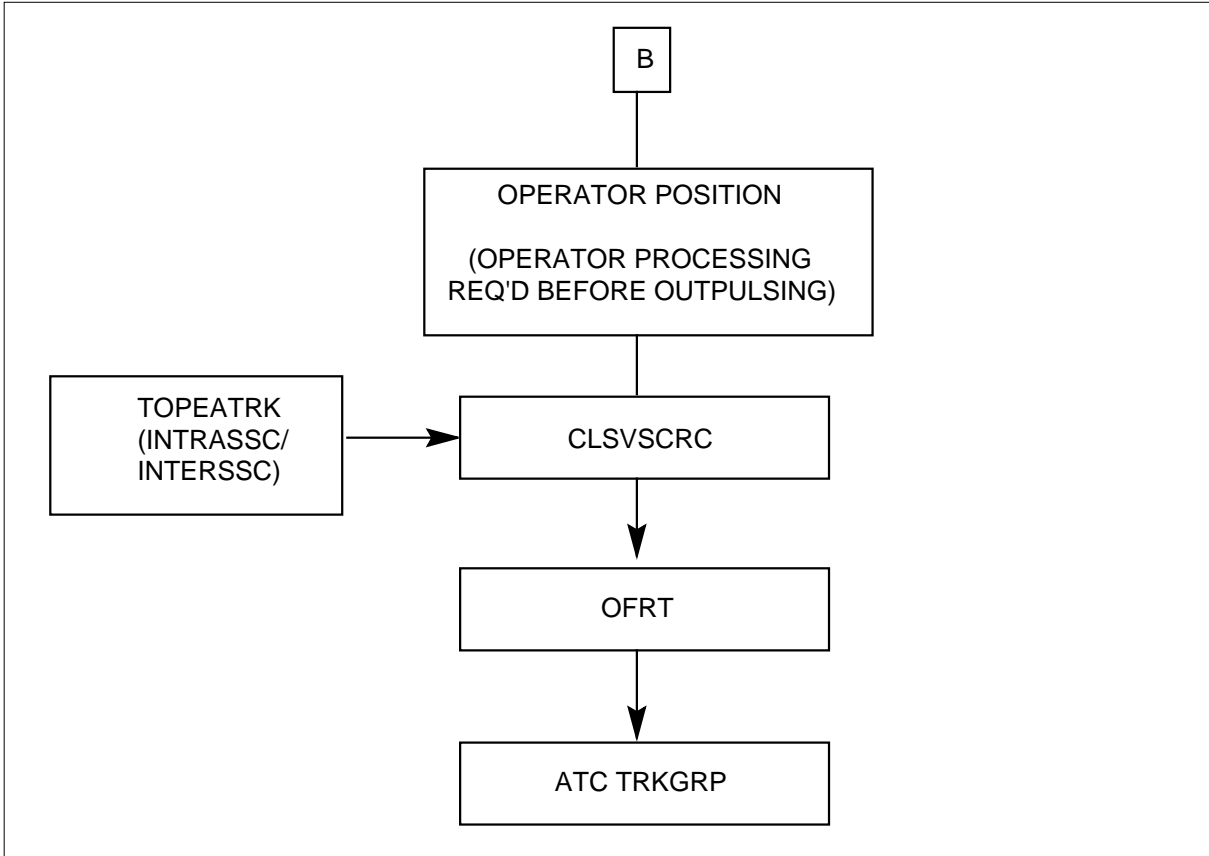
TOPS Inter-LATA Carrier (continued)

Inter-LATA Call Routing (Traditional ALL) (Part 2 of 5)



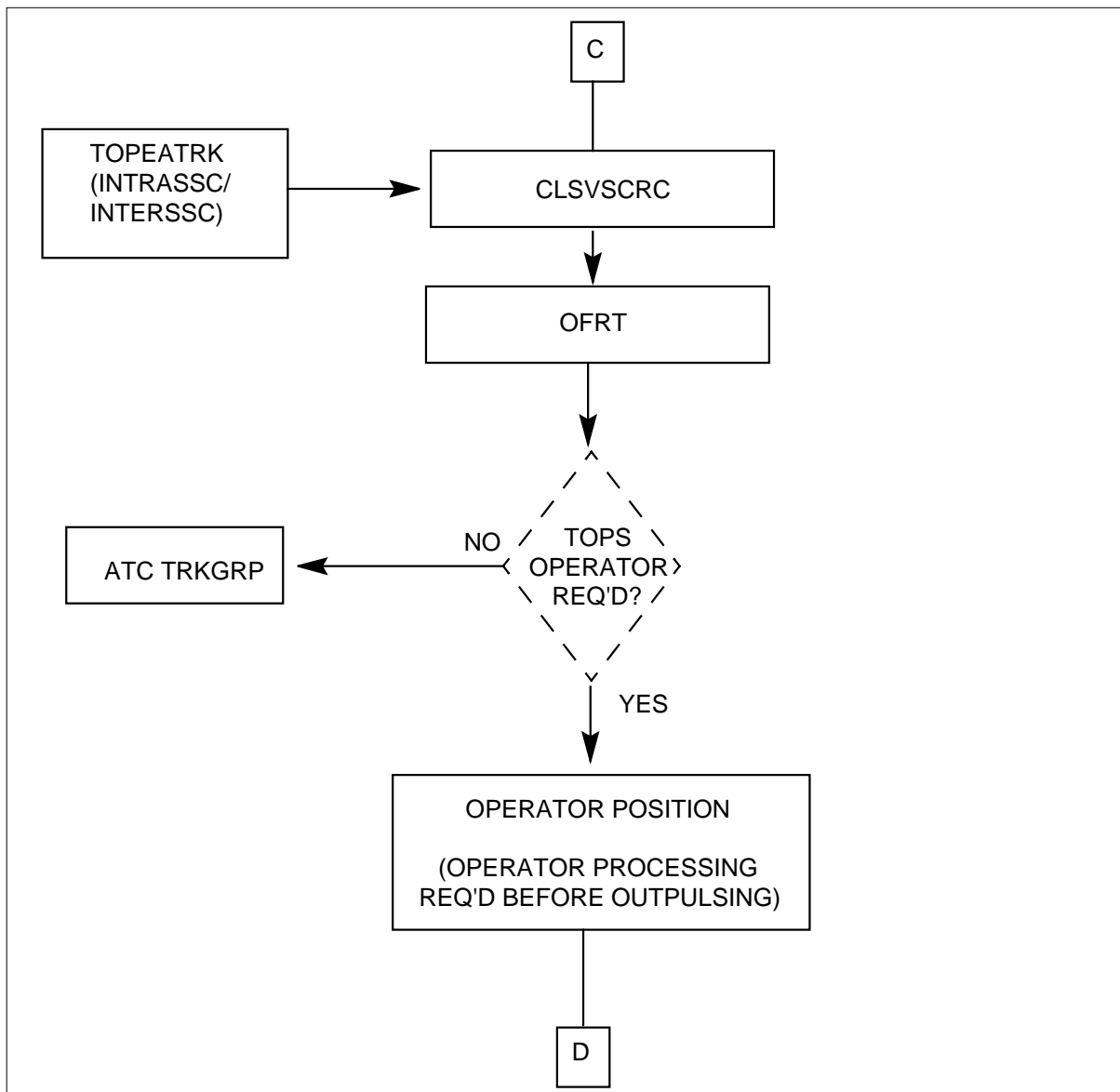
TOPS Inter-LATA Carrier (continued)

Inter-LATA Call Routing (Traditional ALL) (Part 3 of 5)



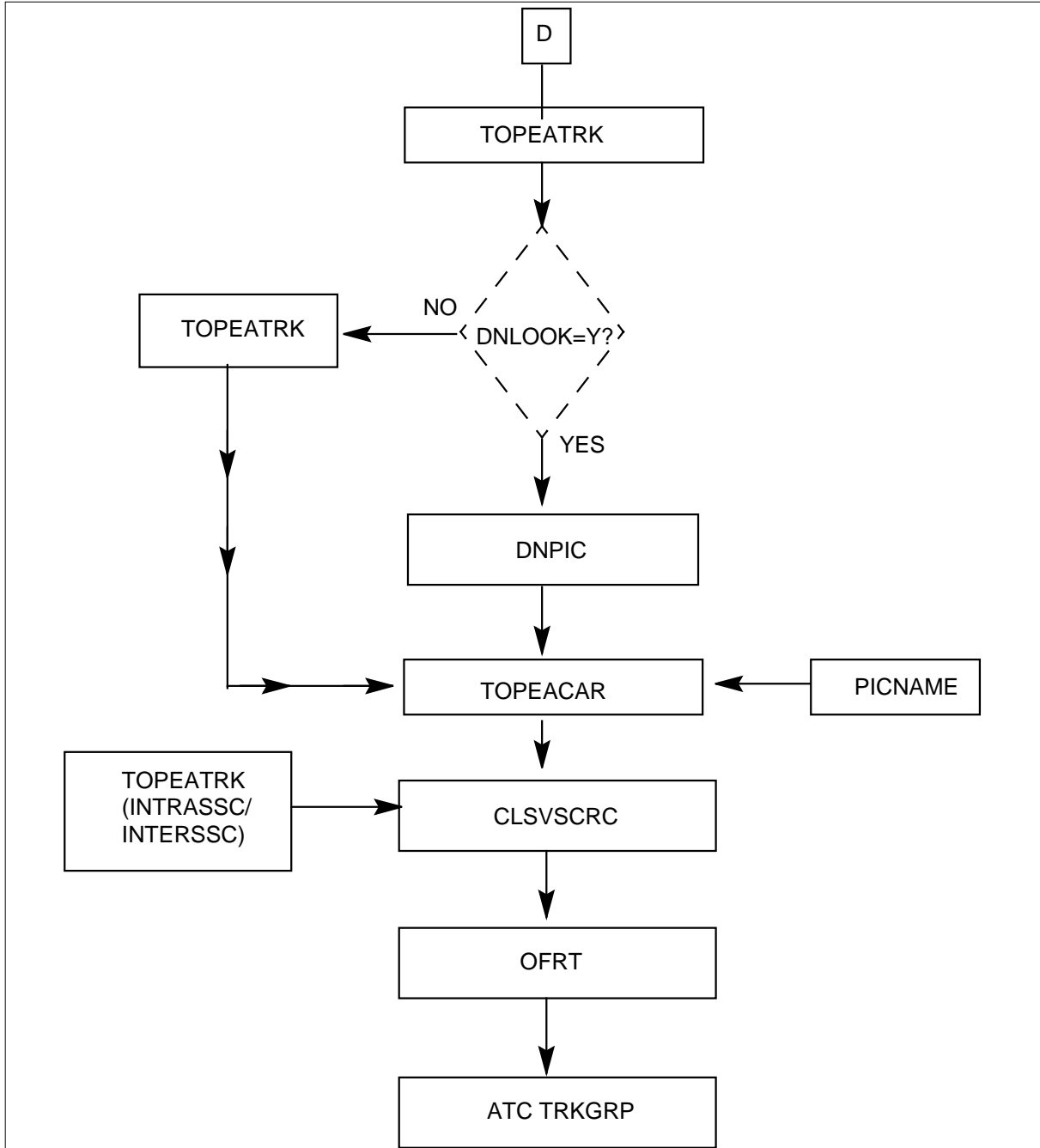
TOPS Inter-LATA Carrier (continued)

Inter-LATA Call Routing (Traditional ALL) (Part 4 of 5)



TOPS Inter-LATA Carrier (continued)

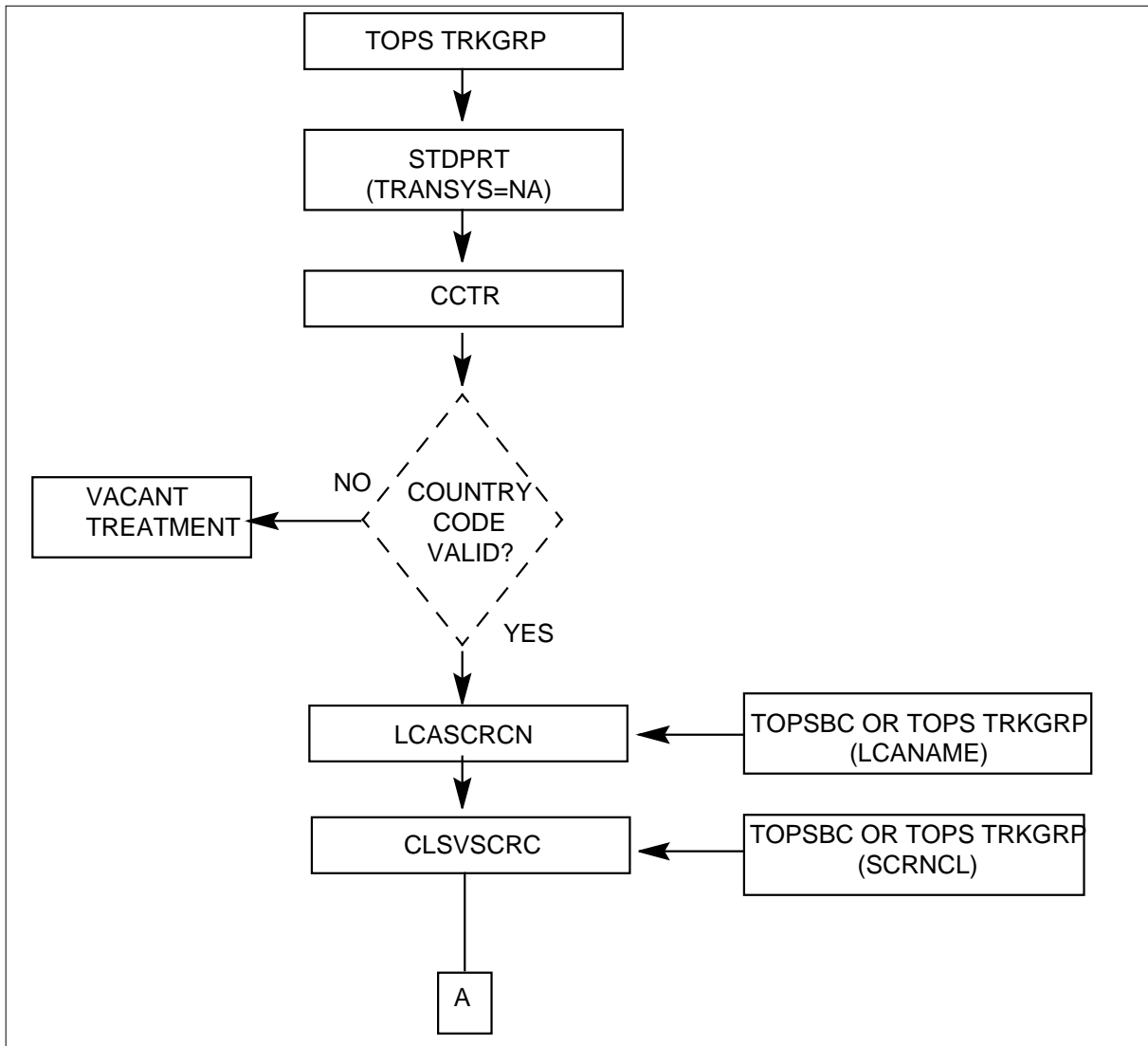
Inter-LATA Call Routing (Traditional ALL) (Part 5 of 5)



TOPS Inter-LATA Carrier (continued)

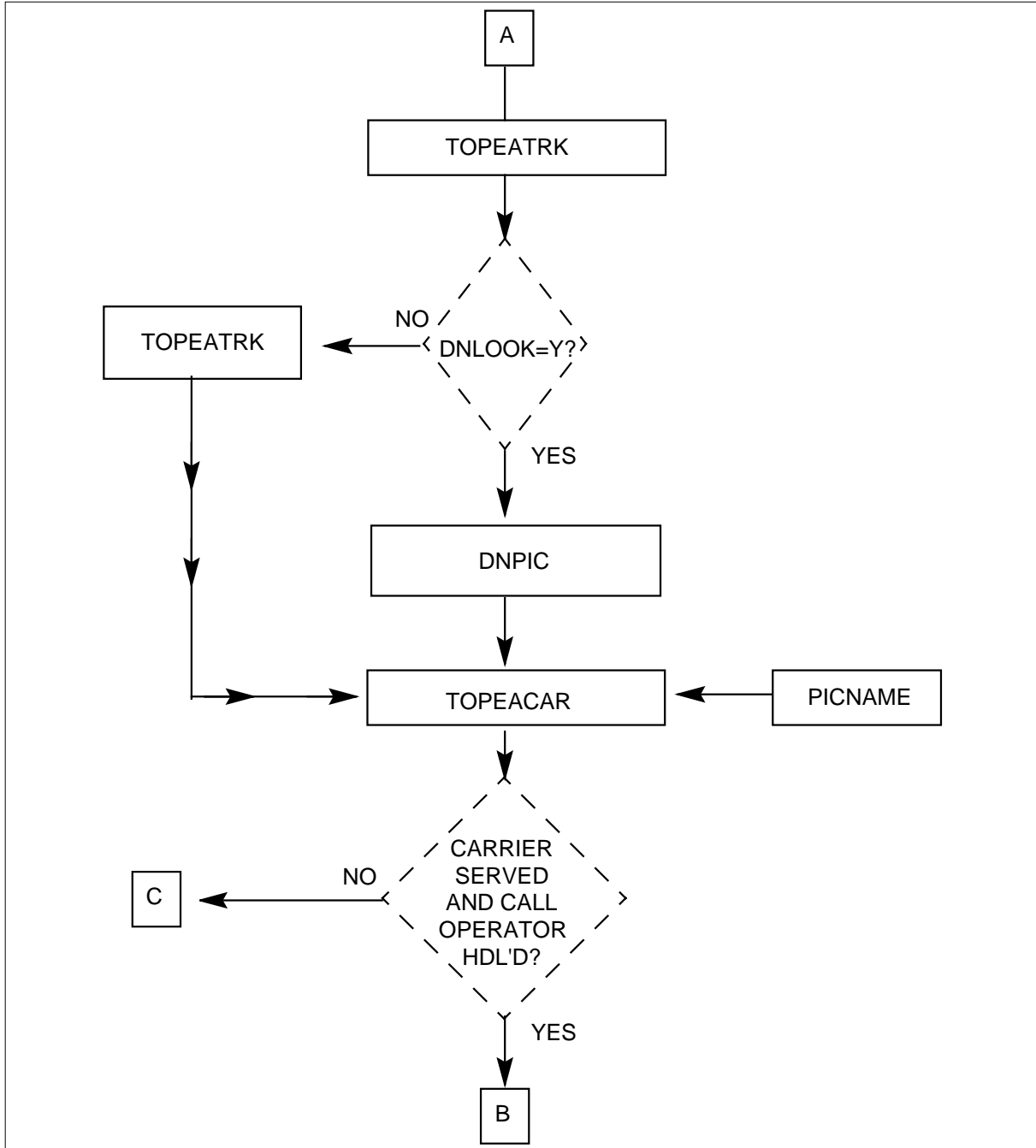
Note: If Interim OSS is used instead of Traditional OSS, inter-LATA call routing is the same except no LATA status check is performed. Instead, the DMS examines the start signal on the calling number to determine the designation of the call.

International Call Routing (Traditional OSS) (Part 1 of 5)



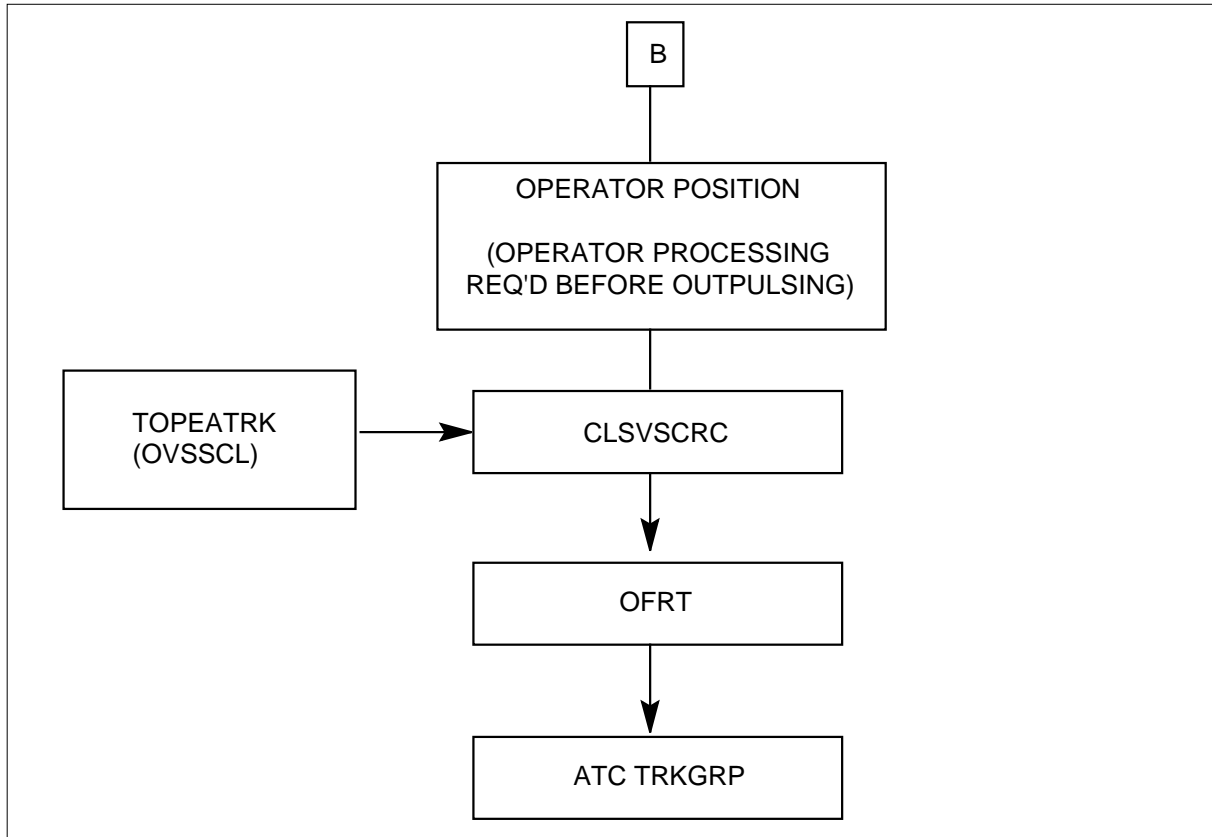
TOPS Inter-LATA Carrier (continued)

International Call Routing (Traditional OSS) (Part 2 of 5)



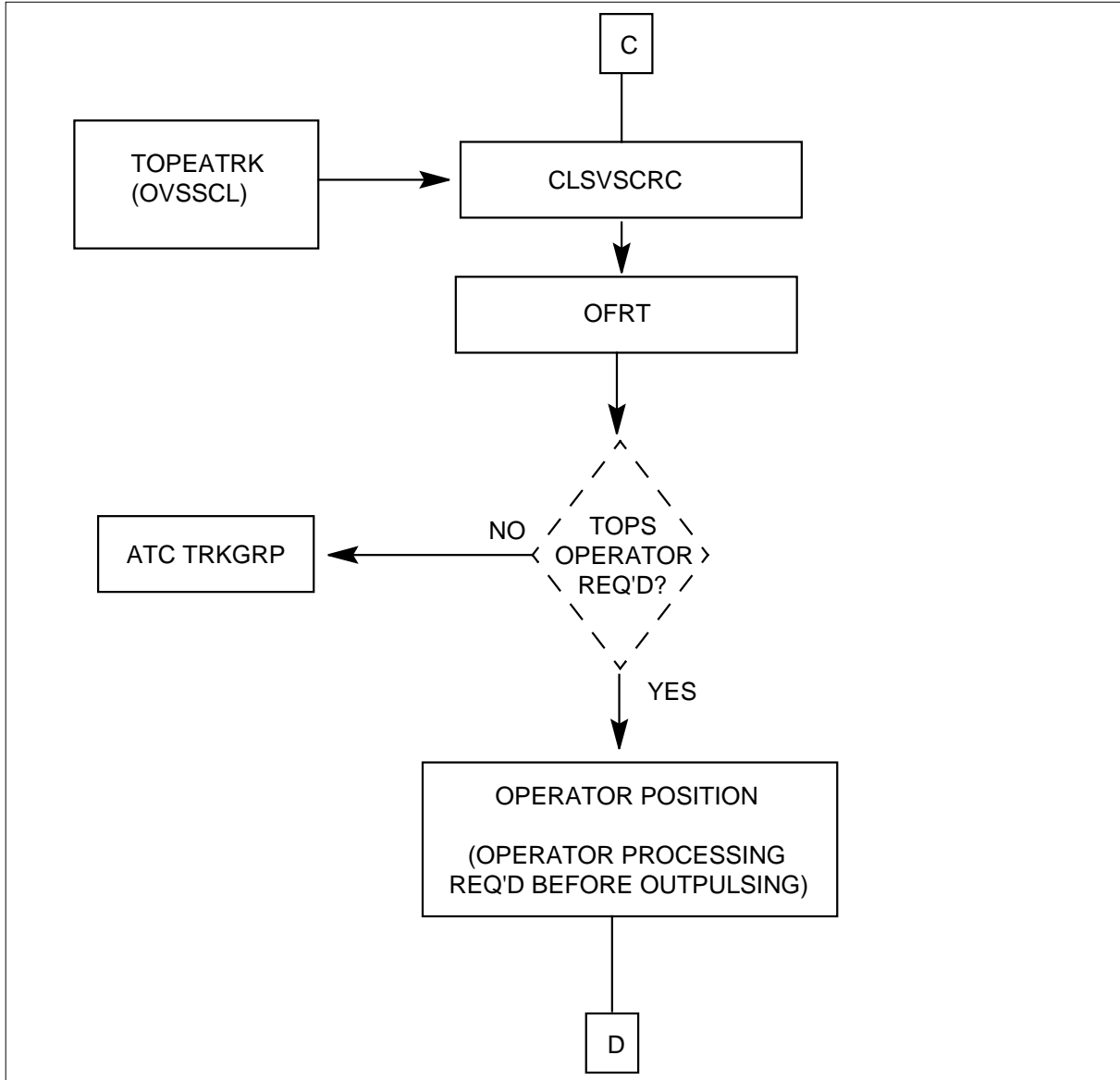
TOPS Inter-LATA Carrier (continued)

International Call Routing (Traditional OSS) (Part 3 of 5)



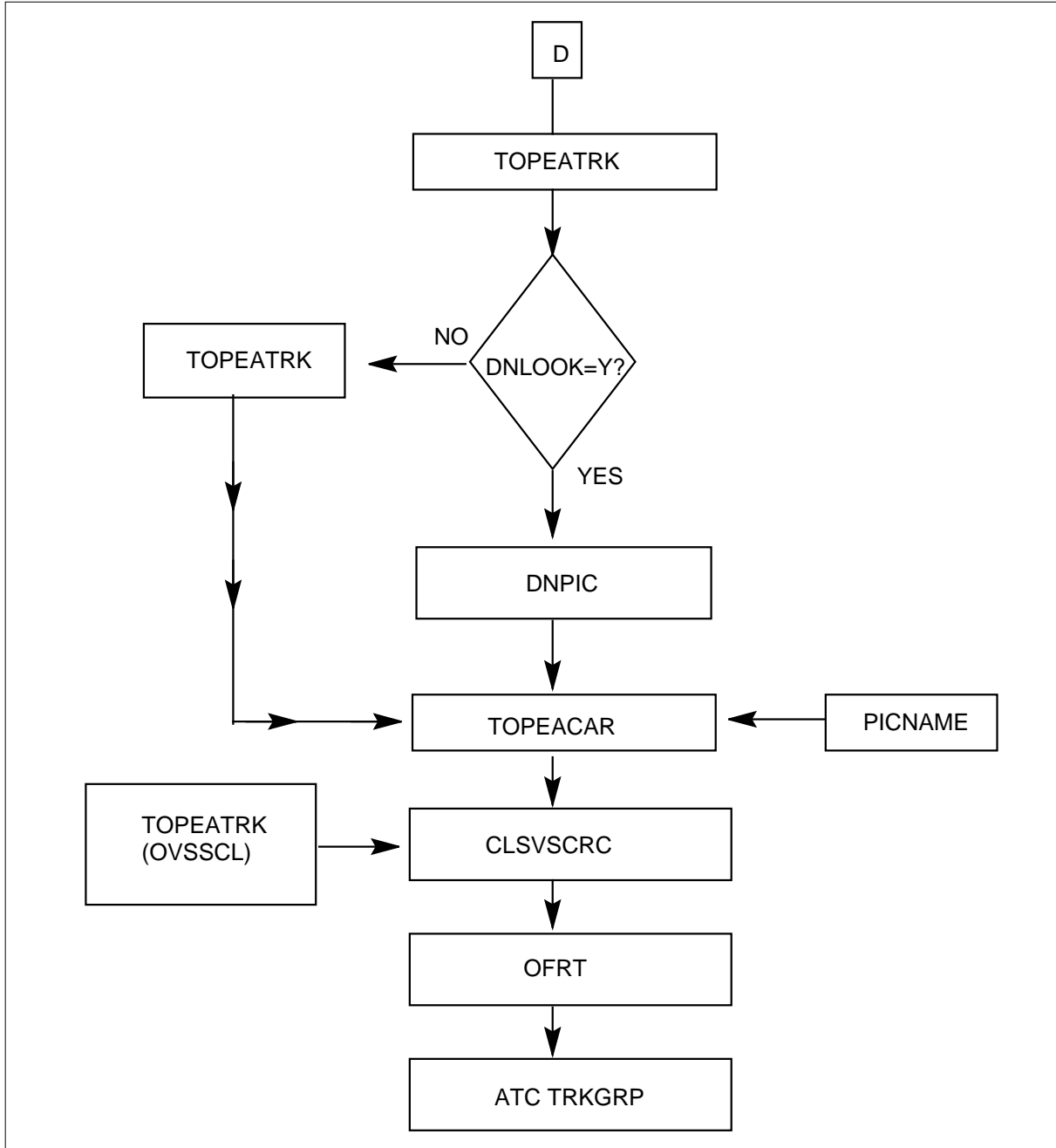
TOPS Inter-LATA Carrier (continued)

International Call Routing (Traditional OSS) (Part 4 of 5)



TOPS Inter-LATA Carrier (continued)

International Call Routing (Traditional OSS) (Part 5 of 5)



Signaling and Supervision

When it includes the TOPS Equal Access software, an AT accepts the FGC Signaling types and analyzes all information received from the EO during the first and the second stages of outpulsing. The AT also accepts the FGD

TOPS Inter-LATA Carrier (continued)

Signaling type; however, it only analyzes the information received during the first stage of outpulsing.

All incoming trunk groups to a DMS-200 with the Base TOPS Equal Access, OSEA0101, software are TOPS. All outgoing trunks from a DMS-200 with the Base TOPS Equal Access software are Intertoll, for intra-LATA traffic, or are Access Tandem to Carrier (ATC), for inter-LATA or international traffic.

The CLGID and STATCLAS fields in the TOPS Trunk Group (TRKGRP) table specify the signaling for the incoming trunk groups. The SIGTYPE field in the TRKGRP (ATC) table specifies the signaling for the outgoing trunk groups, and the STNCLS field, which is also in the TRKGRP (ATC) table, specifies the type of signaling accepted by the carrier switch.

The two entries for the STNCLS field are COMB and NONCOMB. If this field is set to COMB, the carrier accepts four types of start pulses for a call: ST (1+, coin), STP (0+/0-, coin), ST2P (1+, non-coin), and ST3P (0+/0-, non-coin). If this field is set to NONCOMB, the carrier accepts two start pulses for a call: ST (1+, coin and non-coin) and STP (0+/0-, coin and non-coin).

Incoming trunks can use Equal Access Signaling or Interim Operator Services Signaling (OSS) with MF pulsing, or Traditional OSS with Dial or MF pulsing. Outgoing trunks can also use these types of signaling; however, the pulsing on outgoing trunks is always MF, even if the pulsing on the connecting incoming trunk is Dial pulsing.

The signaling on the incoming and on the outgoing trunks can be the same or different. Through the use of the TRKGRP (ATC) and the EAANIID tables, the AT can convert the signaling for a call from one FGC Signaling type to another or from a FGC Signaling type to the FGD Signaling type.

An incoming trunk can use either one signaling type or the following combinations of signaling types:

- Equal Access and Traditional OSS
- Equal Access and Interim OSS.

Note: If Traditional OSS and Equal Access Signaling, or Interim OSS and Equal Access Signaling are used on the same trunk group, the trunk group should be defined in the EAEO as an Operator (OP) trunk group and in the AT as a TOPS trunk group.

The group types for the incoming trunks are either DEDICATED or COMBINED. DEDICATED trunks carry traffic with one station class, e.g.,

TOPS Inter-LATA Carrier (continued)

1+, 0+, and 0- COIN calls. COMBINED trunks carry traffic with different station classes, e.g., 1+ COIN and NONCOIN calls. The same type of signaling can be used on both DEDICATED and COMBINED trunks; the difference is the manner in which the AT interprets the signaling information.

Note: Refer to "Limitations and Restrictions" for a description of how incoming and outgoing trunk groups should be set up.

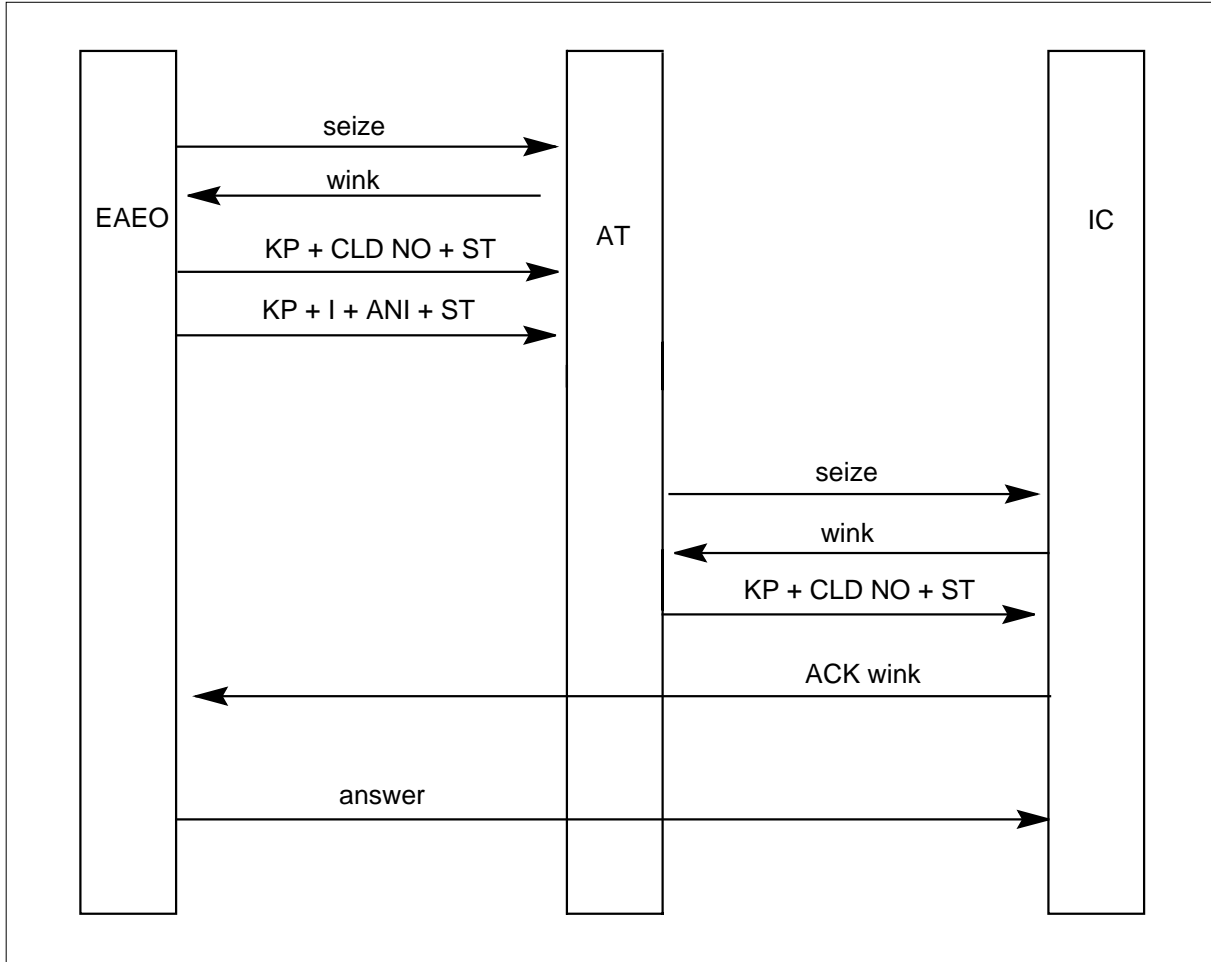
Traditional OSS

Traditional Operator Services Signaling (OSS) can be sent from an Equal Access End Office (EAEO) or from a non-Equal Access End Office (non-EAEO). This signaling format uses 2-stage outpulsing. During the first stage, the called number is outpulsed. During the second stage, the ANI spill is outpulsed. For Traditional OSS, the ANI spill includes a single ANI ID digit, the calling number, and a start translation (ST) signal.

The following figure shows the format of the signaling information outpulsed from an EAEO, to an AT, then to a IC when operator services are provided.

TOPS Inter-LATA Carrier (continued)

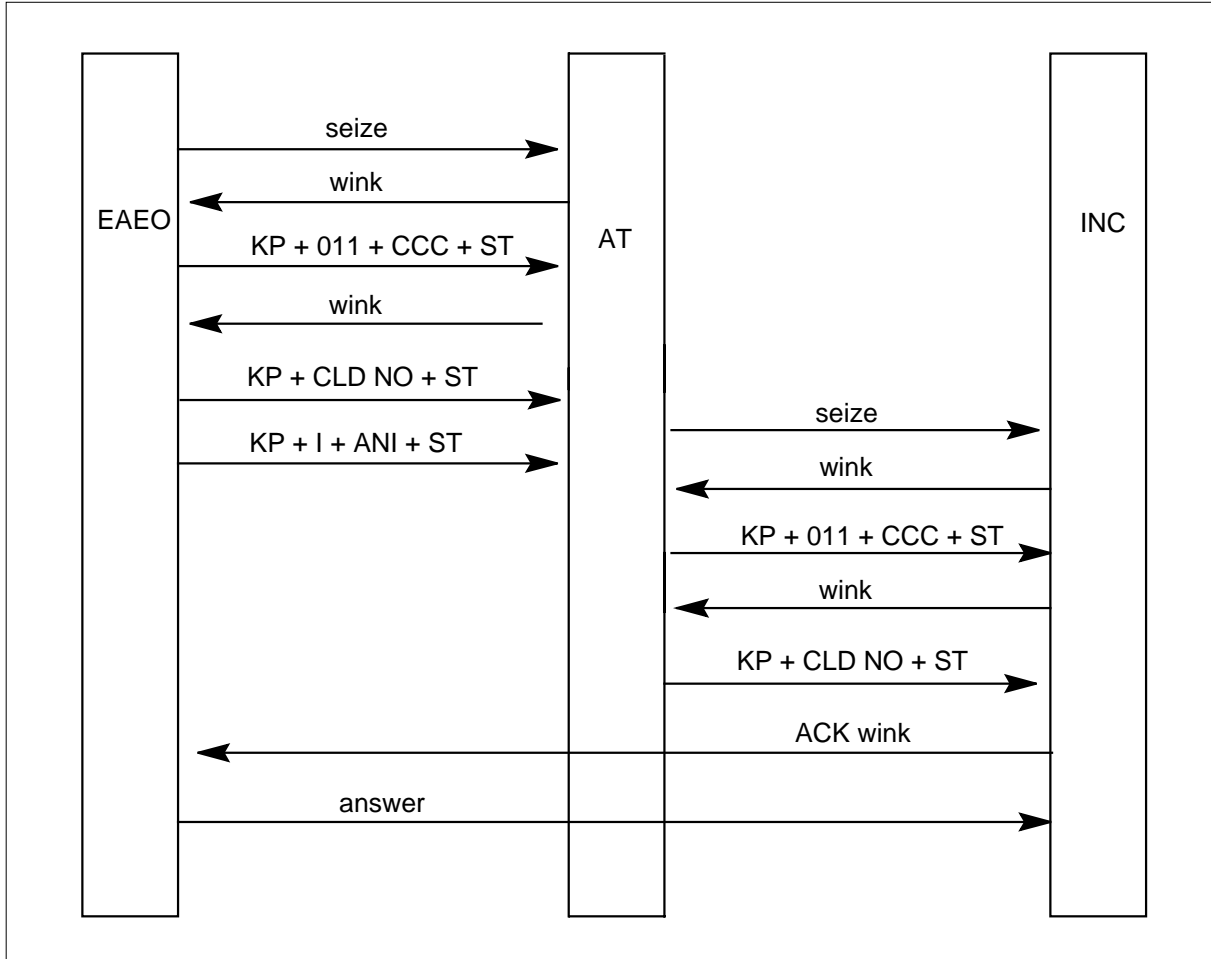
FGC Outpulsing from EAEO to AT to IC using Traditional OSS



The following figure shows the format of the signaling information outpulsed from an EAEO, to an AT, then to an INC when operator services are provided.

TOPS Inter-LATA Carrier (continued)

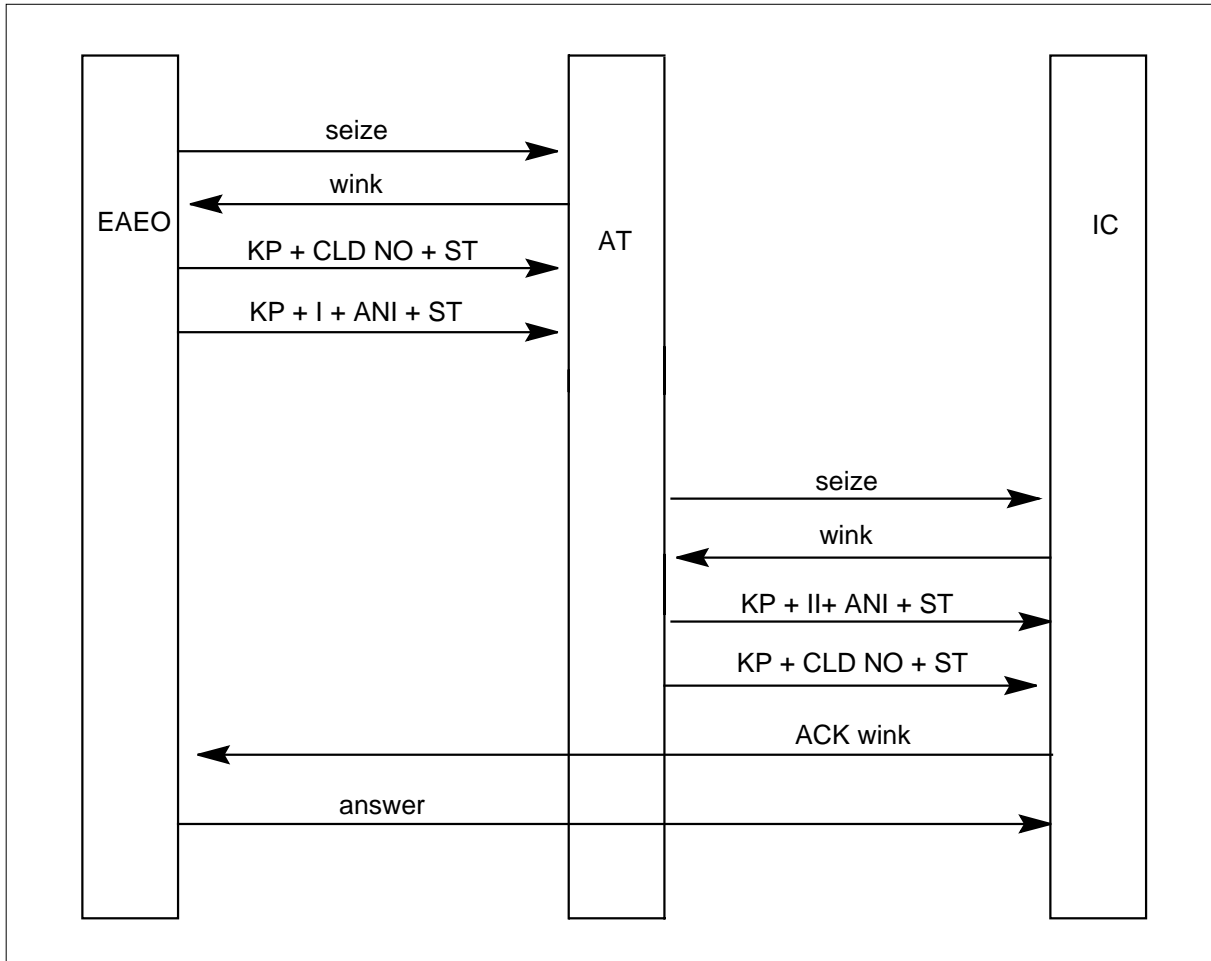
FGC Outpulsing from EAEO to AT to INC using Traditional OSS



The following figure shows the format of the signaling information outpulsed from an EAEO, to an AT, then to an IC. In this example, the signaling on the incoming trunk group to the AT is Traditional OSS, and the signaling on the outgoing trunk group from the AT is Equal Access Signaling.

TOPS Inter-LATA Carrier (continued)

Incoming Traditional OSS - Outgoing EA Signaling



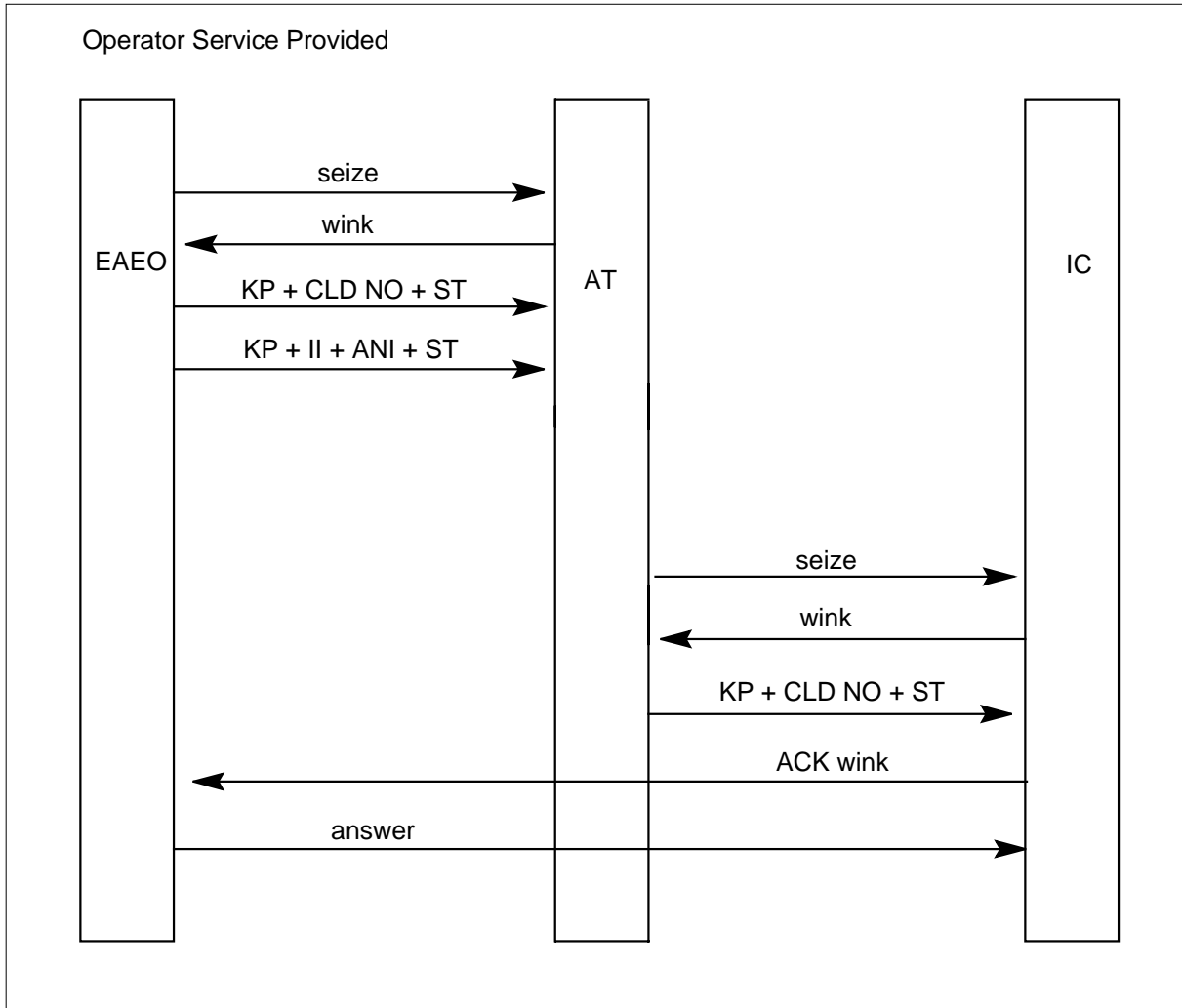
Interim OSS

Interim Operator Services Signaling (OSS) is typically sent from an EAEO. This signaling format has a 2-stage outpulsing scheme. During the first stage, the called number is outpulsed. During the second stage, the ANI spill is outpulsed. For Interim OSS, the ANI spill includes a double ANI ID digit, the calling number, and a coded ST signal.

The following figure shows the format of the signaling information outpulsed from an EAEO, to an AT, then to an IC when operator services are and are not provided.

TOPS Inter-LATA Carrier (continued)

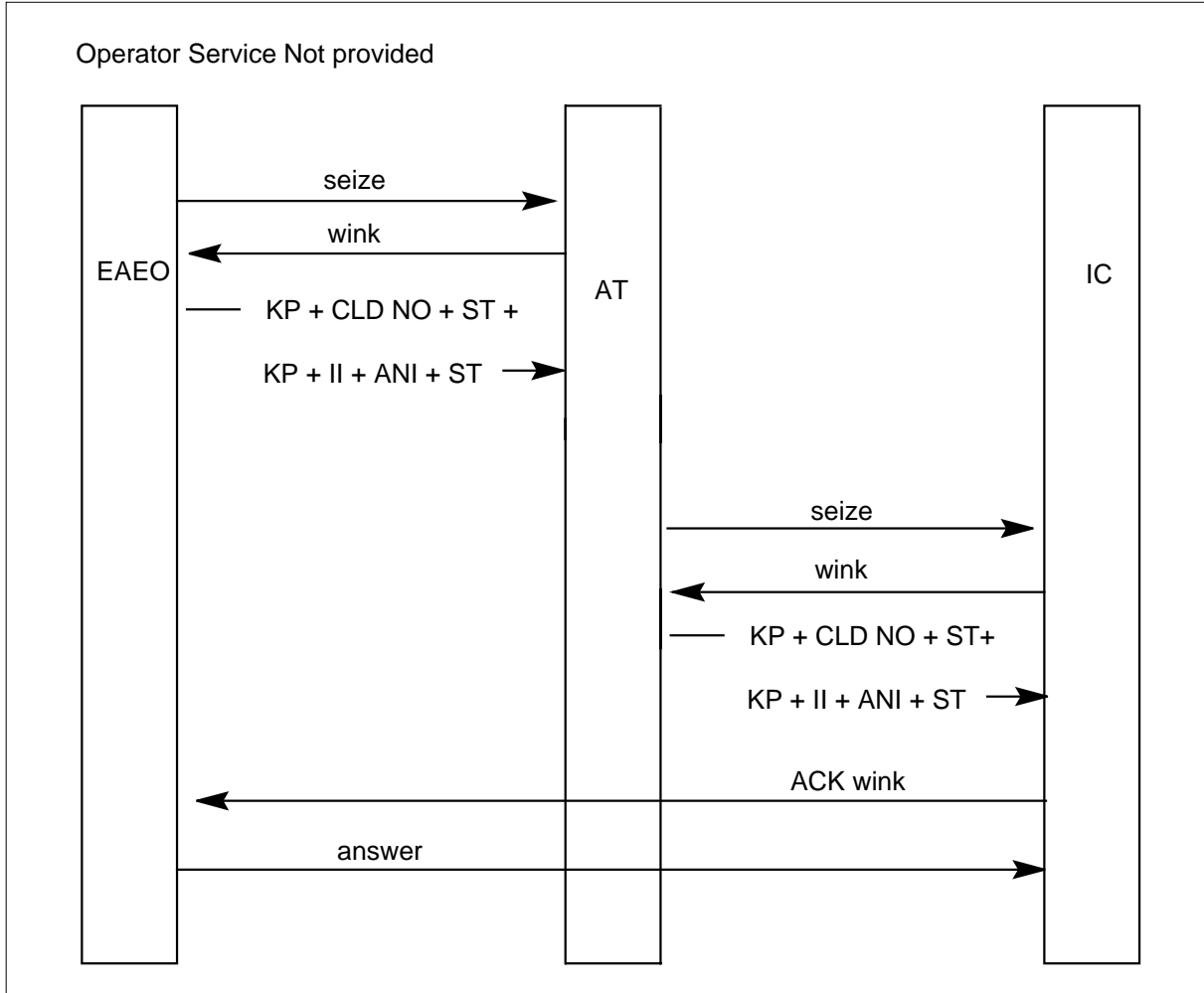
FGC Outpulsing from EAEO to AT to IC using Interim OSS (Part 1 of 2)



The following figure shows the format of the signaling information outpulsed from an EAEO, to an AT, then to an INC when operator services are provided.

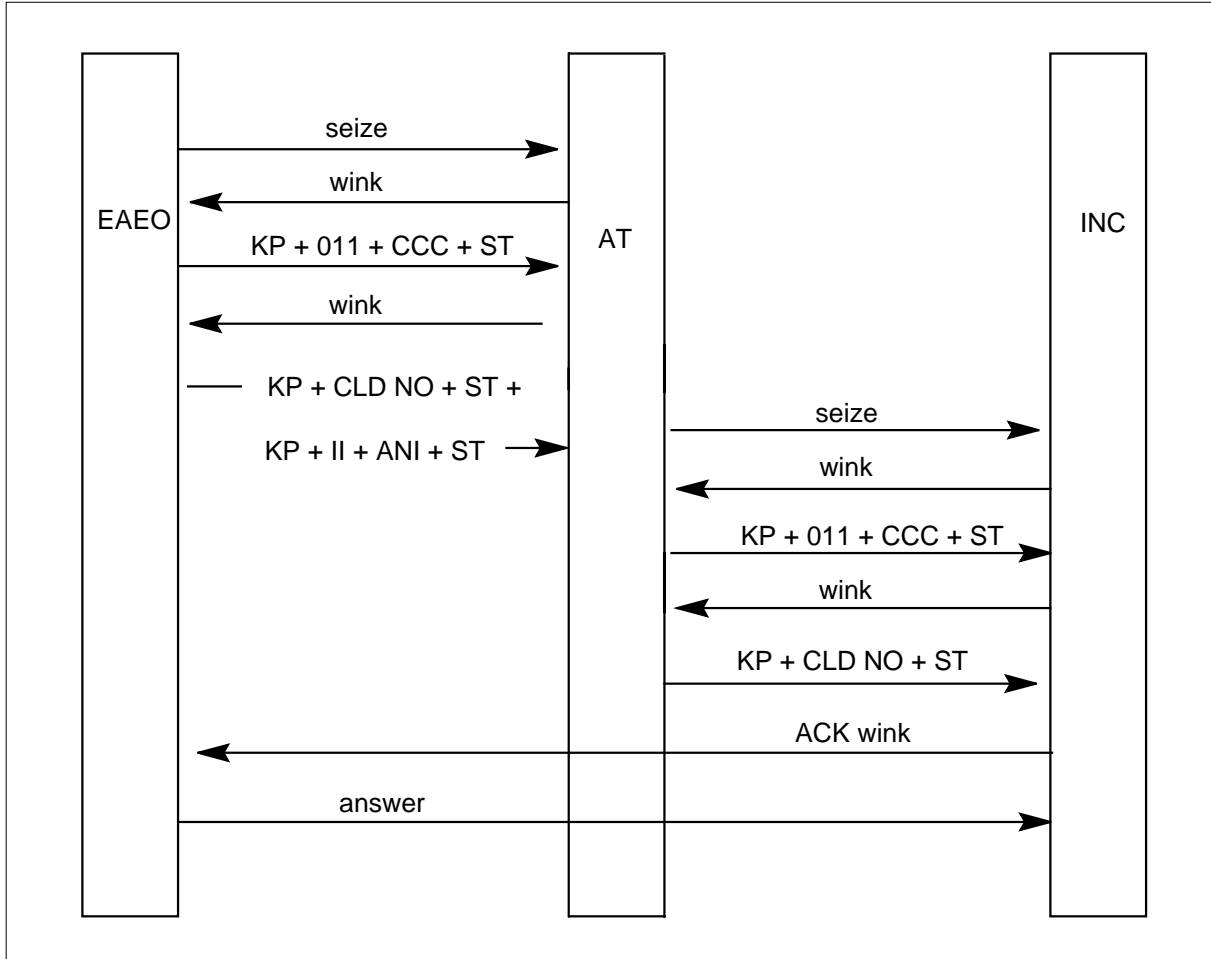
TOPS Inter-LATA Carrier (continued)

FGC Outpulsing from EAEO to AT to IC using Interim OSS (Part 2 of 2)



TOPS Inter-LATA Carrier (continued)

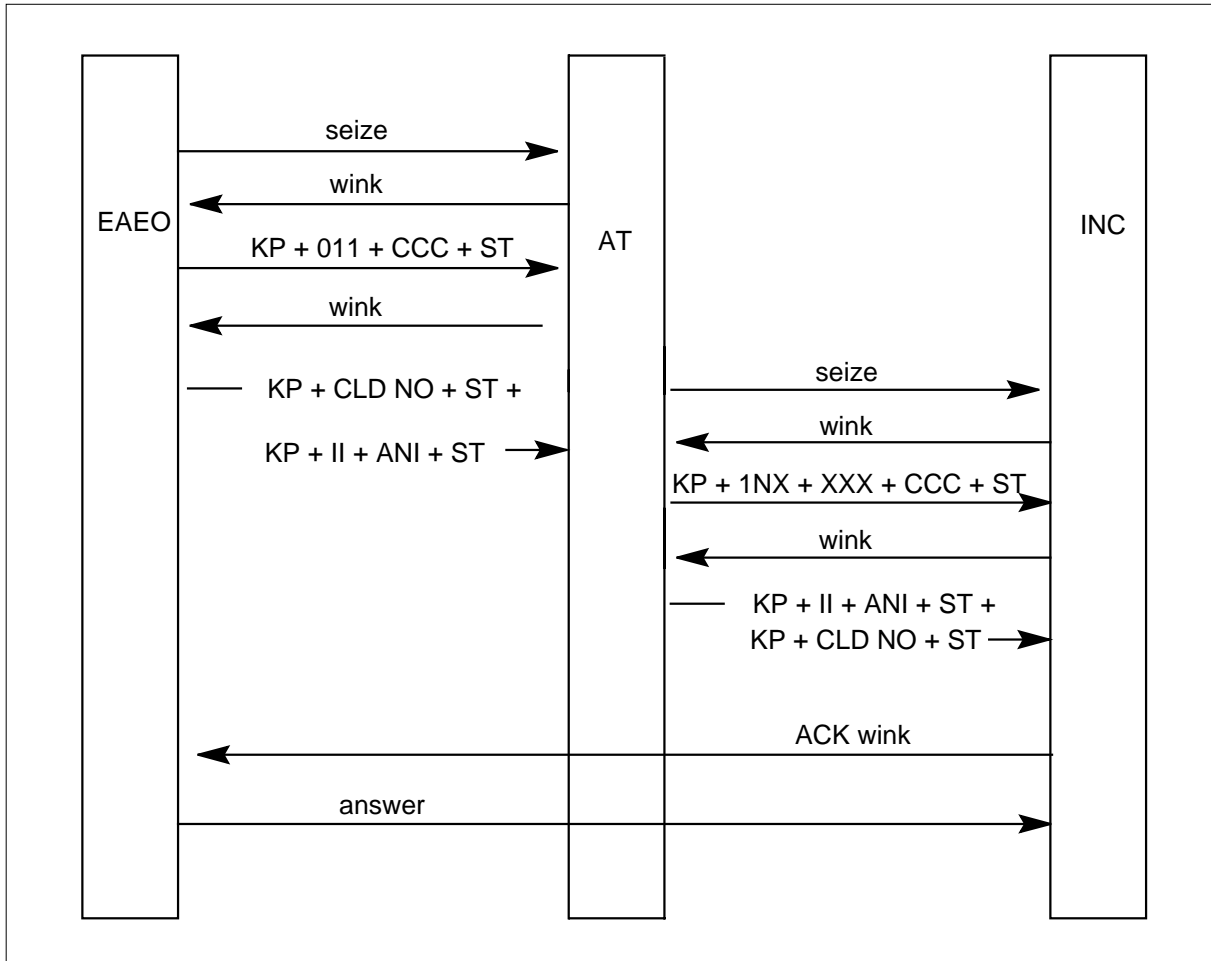
FGC Outpulsing from EAEO to AT to INC using Interim OSS



The following figure shows the format of the signaling information outpulsed from an EAEO, to an AT, then to an INC. In this example, the signaling on the incoming trunk group to the AT is Interim OSS, and the signaling on the outgoing trunk group from the AT is Equal Access Signaling.

TOPS Inter-LATA Carrier (continued)

Incoming Interim OSS - Outgoing EA Signaling



EA Signaling

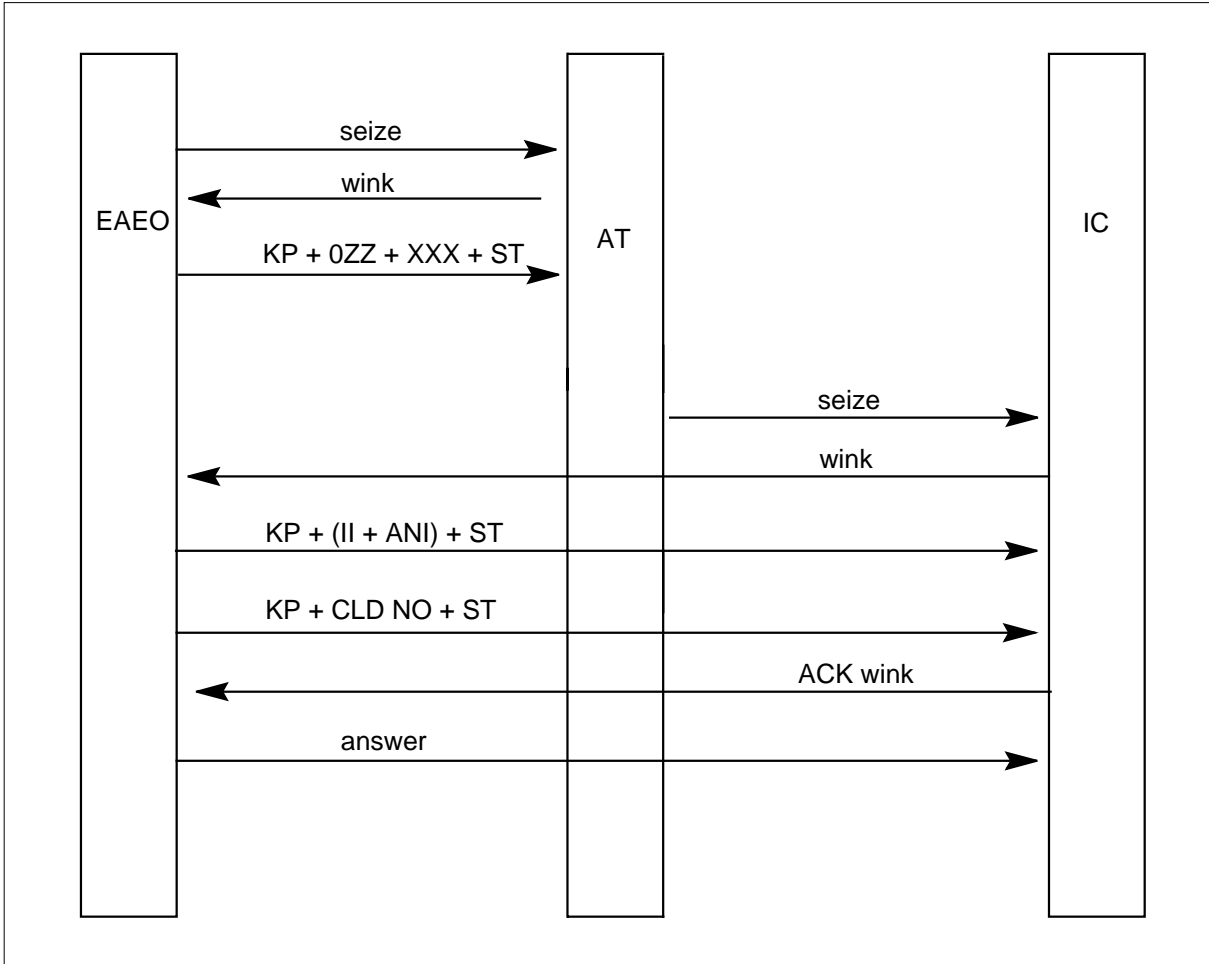
Equal Access (EA) Signaling is sent only from an EAEO. This signaling format has a 3-stage outpulsing scheme. During the first stage, the call type identification digits and the Carrier Access Code (CAC) are outpulsed. The AT uses this information as an index into the Standard Pretranslator (STDPRTCT.STDPRT) Subtable to select an outgoing trunk for the call.

During the second and third stages, the ANI spill and the called number are outpulsed. For EA Signaling, the 10-digit ANI spill includes a double ANI ID digit, the calling number, and a coded ST signal. The AT does not analyze the signaling received during the second and third stages. It passes this information directly to the carrier.

TOPS Inter-LATA Carrier (continued)

The following figure shows the format of the signaling information outputted from an EAEO to an IC by way of an AT.

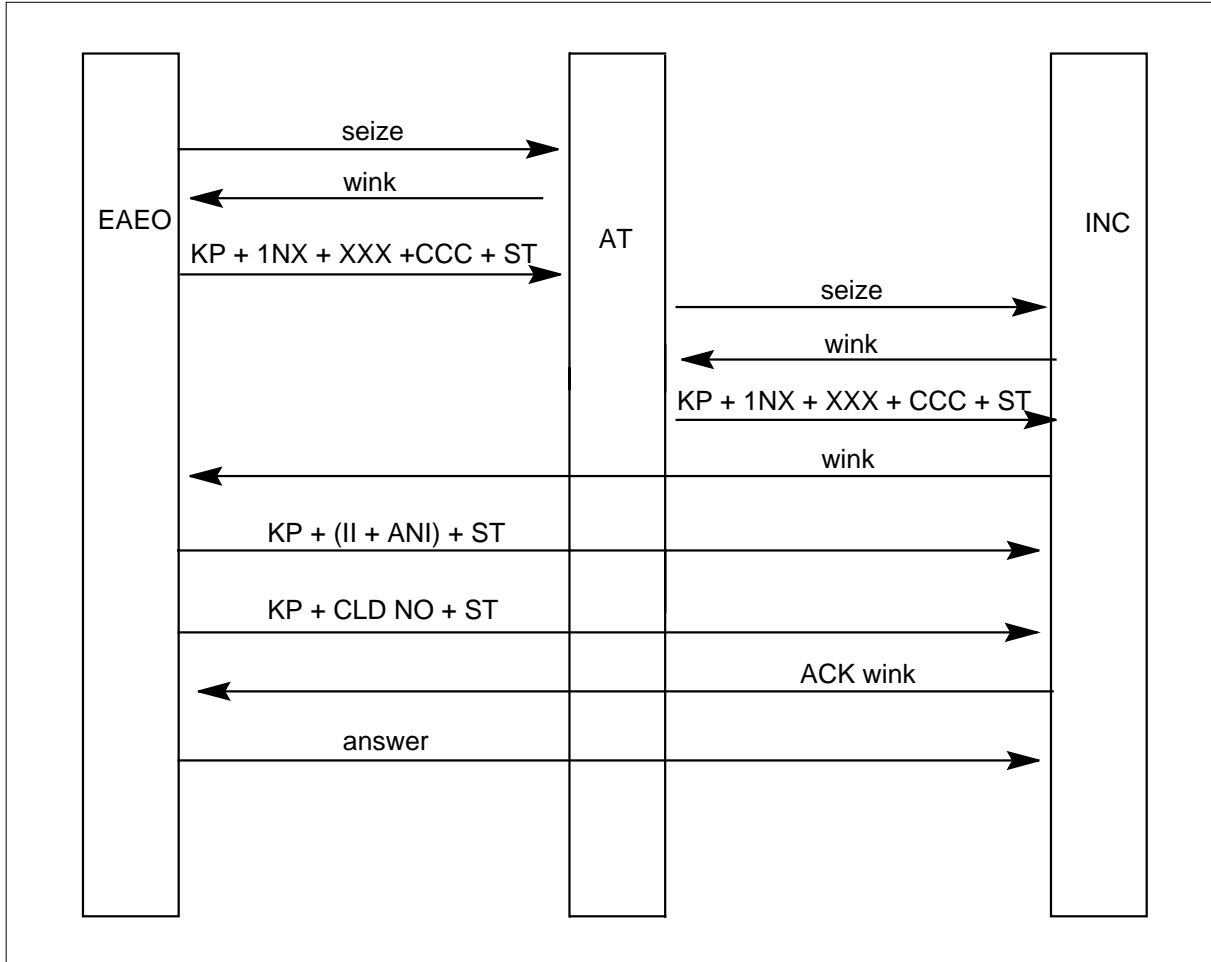
FGD Cut-through to an IC



The following figure shows the format of the signaling information outputted from an EAEO to an INC by way of an AT.

TOPS Inter-LATA Carrier (continued)

FGD Cut-through to an INC



Note: The TS route selector must be used in the OFRT table to use FGD Signaling on an outgoing trunk group from an AT to an INC. Refer to the data schema section of this document for more information.

TOPS Inter-LATA Carrier (continued)

Dump and Restore

Table TOPEACAR is checked in offices going to BCS27 and higher. Datatools add values for AUTZPLUS in the following manner during the Dump and Restore process:

- If field OPSERV=SERV and CCVQUERY=BLK, then AUTZPLUS=N.
- If field OPSERV=SERV and CCVQUERY=QUERY or NOQUERY, then AUTZPLUS=Y.
- If field OPSERV=NOSERV, field AUTZPLUS is not present.

BR30517 - Optional Equal Access Translations for Zenith Calls

This feature adds parameter ZENITH_EA_ROUTING to table TOPSPARM to allow optional TOPS EA translations of Zenith routing numbers. This optionality is on an office basis. Normally, inter-LATA Zenith calls are outpulsed to a carrier as 0- minus calls where the dialed digits are not sent. However, for TICS calls, the routing number is outpulsed to the carrier so that the call can be completed since no further operator involvement is necessary. Refer to Base TOPS Equal Access, OSEA0101, for further details.

BQ11959 - AIN 0.1 Routing to TOPS Extension

The capability routes Advanced Intelligent Network (AIN) 0.1 operator requested calls to TOPS.

An AIN 0.1 call that has sent a query to an off-board processor (e.g., Service Control Point (SCP) / Adjunct) may receive a response indicating the call is to be routed to an operator. Then, the following applicable operator requested numbers are sent:

- No Address Present, Operator Requested
- National Number, Operator Requested
- International Number, Operator Requested

Routing of these operator requested AIN calls is only supported to a DMS TOPS position.

TOPS Inter-LATA Carrier (continued)

The following screening on the number of ANI spill digits on the outgoing OP trunk is performed.

Signaling protocol

Number of ANI spill digits on outgoing OP trunk	BELL (see note 1)	OSS	EAOSS
0	SSP-based	SSP-based	SSP-based
3		II + OD ANI spill	II + 3D ANI spill
6 (see note 2)		II + OD ANI spill	II + 3D ANI spill
10		II + 7D ANI spill	II + 10D ANI spill

Note 1: BELL signaling only allows an ANI I digit, which AIN does not support.

Note 2: In BCS36 of AIN 0.1, a 6-digit charge number is not supported. Until it is, the SSP based ANI spill will override the SCP ANI information. The table shows the signaling when a 6-digit charge is not supported.

TOPS Inter-LATA Carrier Services (TICS)

A call that requests a carrier operator may be routed to a TOPS position and handled by that operator if the TICS (TOPS Inter-LATA Carrier Services software package is present at the TOPS switch and the carrier has contracted out the operator services to the operating company.

Customized ANI II Display at TOPS

It is possible to customize the ANI display at the TOPS position for certain restricted billing types, by mapping an eight character alphanumeric display to the ANI II digits for certain Calling Numbers. This is shown in the example datafill below.

TOPS Inter-LATA Carrier (continued)

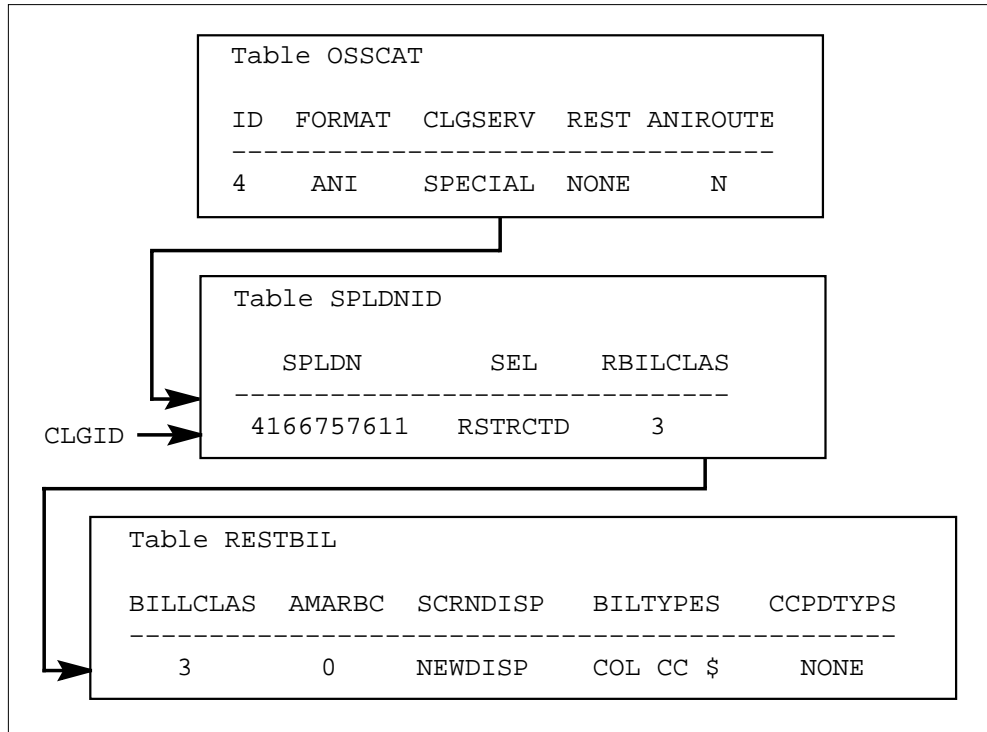


Table OSSCAT is used for any of the OSS, Operator Services Signaling formats that use ANI II digits.

Customizing the ANI II display at the TOPS position can only be done for the following restricted call types:

- PD - Station Paid or Person Paid
- COL - Collect
- CC - Credit Card
- 3RD - Third Party Billing
- SPLCLG - Special Billing Number by Calling Party
- SPLCLD - Special Billing Number by Called Party

The following call type may also be handled by the TOPS position, but customizing the ANI display is not possible.

- Call back

Limitations and restrictions

See "Limitations and restrictions" section.

TOPS Inter-LATA Carrier (continued)

BK08865 - Calling Card Screening Enhancements (BCS36)

This PRSDOC provides the capability to prevent call completion when a subscriber attempts to complete a call on one Interexchange carrier (IEC) using a calling card restricted to another IEC.

Background

Prior to this PRSDOC, the Operating Company did not have the capability to perform carrier related calling card screening. This type of screening is needed to block call completion of certain IEC calls billed to a calling card that is restricted from one or more carriers.

Today, many Independent Operating Companies (IOC) complete both intra-LATA and inter-LATA operator calls. More precisely, they complete Local Exchange Carrier (LEC) calls and IEC calls on behalf of IEC companies. Many of these calls are calling card calls. In order to complete calling card calls, the calling card number is collected from the calling subscriber, and then the calling card number is validated by launching a query into the nationwide Line Information Data Base (LIDB) system using Signaling System 7 (SS7).

The introduction of Card Issuer Identifier cards (CIID) is causing the IOCs extreme difficulty. When these cards are used to bill an IEC call that is completed on behalf of an IEC other than the issuing card company, the issuing card company may refuse to accept billing for these calls. Similar problems exist for certain issued CCITT calling cards and LEC calling cards.

To prevent this loss of revenue, the IOCs have turned off automatic validation of all CIID cards for both LEC and IEC calls. Calls made with these cards are connected to an operator.

If the call is an IEC call and the carrier is not an allowed carrier, then the call cannot be completed using that calling card/carrier combination. If the call is an LEC call, the operator manually validates the card.

Overview

Currently, manual validation is being used to satisfy the current limitation of blocking calls on one IEC using a calling card restricted to another IEC. When manual validation is used, AWT increases; therefore, expenses for the Operating Company increase. This PRSDOC addresses this problem by performing automatic calling card/carrier screening prior to call completion. Calling card/carrier screening is done prior to validating the calling card when the calling and called numbers are already known. Otherwise, calling card/carrier screening is done whenever the calling and called numbers become known. For example, an operator validates a calling card before calling and called number are known. Once calling and called number become

TOPS Inter-LATA Carrier (continued)

known, calling card/carrier screening is performed and in this case, the calling card is not to be re-validated before the call is floated. In order to provide this new functionality, table CCVINFO has been modified and new table CARRSCRN has been created.

Datafill tables

Datafill order is OCCINFO, CARRSCRN, and CCVINFO.

- Table OCCINFO (no change). Datafill this table with unique carriers that are used in new table CARRSCRN, field CARRLIST.
- Table CCVINFO (modified). New field CARRIDX has been added as an index into new table CARRSCRN. Table CCVINFO is used for CCV queries and is indexed with any of the following calling card formats: RAO, CIID, CCITT or directory number format. Field PARMSIDX is an index into table CCVPARMS.

Following is example datafill.

MAP display example for table CCVINFO

CCVDIGS	PARMSIDX	CARRIDX
212220	254	0
677001	55	2
677101	253	2
834001	6	0
836001	254	62
891999	3	0
891288	4	2
891333	1	3
9194	254	0
919781	250	1

If a given calling card number has no match in this table, then calling card/carrier screening is not performed and the call is allowed to complete.

- Table CARRSCRN (new). New table CARRSCRN provides calling card/carrier screening. This table indicates which carriers are permitted to complete an IEC call billed to a particular calling card. In this table,

TOPS Inter-LATA Carrier (continued)

permitted carriers are datafilled against indices of calling cards. Following are the fields.

- **IDX** - A key into this table defined in table CCVINFO, field CARRIDX. The range is 0-62.
- **PERMIT** - Indicates if ALL, NONE, or SOME carriers are permitted to complete an IEC call.
- **CARRLIST** - A listing of up to 16 carriers permitted to complete a call if field PERMIT=SOME. Otherwise, this field is not used. Carriers must be predefined in table OCCINFO.

Following is example datafill.

MAP display example for table CARRSCRN

IDX	PERMIT	CARRLIST
0	ALL	
1	NONE	
2	SOME	0288
3	SOME	0333
62	SOME	0333,0555

The first two tuples are defaults and cannot be altered or removed.

Automated calling card validation enhancement

Once a 14-digit calling card (RAO or DN) or CCITT calling card has been collected, the following steps (a combination of new and existing steps) are taken to validate it. For further information, refer to Expanded Calling Card Format SS7, ABS00101.

(existing: 1-3)

1. The calling card number entered is checked for format.
If it does not conform to one of the formats (RAO, CIID, CCITT, or Directory Number Format), the card is rejected immediately.
2. If the format checks pass, the calling card is then checked against table HOTLIST for a match.
Table HOTLIST records special numbers that are considered HOT (i.e., used in cases of fraud or classified as invalid). This table is used as a local cache. If a match exists, the subscriber is prompted to reenter the calling card, and validation begins again. If no match exists, validation continues.
3. The calling card is checked against table CCVINFO.

TOPS Inter-LATA Carrier (continued)

This table is used for CCV queries. It contains an index into table CCVPARMS and an index into new table CARRSCRN. If no match exists in modified table CCVINFO, then no calling card/carrier restrictions apply and table CCVPARMS is checked next in step 4.

(new: a-c)

- a. If a match exists in table CCVINFO and the call is an IEC call, table CARRSCRN is checked for calling card/carrier restrictions.
- b. If a carrier restriction has been noted, the carrier of the card is compared to the serving carrier on the call.

If a match exists, validation continues in step 4. If no match exists, the call is transferred to an operator for processing.

- c. Upon call arrival at the operator position, RESIC is displayed on the operator's screen indicating that the call was presented as a result of incompatibility between the permitted carriers, as specified in table CARRSCRN, and the serving carrier on the call.

Since billing is not accepted, the operator performs one of the following practices:

- Change Billing Type
- Change Calling Card
- Change Carriers
- Transfer to specific carriers operator
- Cancel Call
- Reenter calling card (Not very common)

The validation process cannot continue until an appropriate calling card/carrier match is found or billing is changed to collect or third.

(existing: 4-7)

4. The calling card is checked against table CCVPARMS for a match. Table CCVPARMS specifies which database to send a calling card validation or billed number screening query.

If a match exists, the query type is determined (LIDB, BVC, SDB, MANUAL, or BLK). If no match exists, the query type is assumed to be LIDB.

Table CCVPARMS also provides query launching information as well as an index into table ACCSERR. Table ACCSERR allows datafill of the desired reaction when something other than a "normal/successful" response message is received from a LIDB.

TOPS Inter-LATA Carrier (continued)

5. A validation query is launched to the appropriate database.
6. If the database response indicates a valid calling card, the call is completed.

Otherwise, the subscriber is prompted to reenter the calling card, and validation begins again. The call cannot be completed until either an acceptable calling card number or an alternate billing class is entered.

Operator assisted calling card validation enhancement

Once a 14-digit calling card (RAO or DN) or CCITT calling card has been collected, the following steps (a combination of new and existing steps) are taken to validate it. For further information, refer to Expanded Calling Card Format SS7, ABS00101..

(existing: 1-3)

1. The calling card number entered is checked for format.

If it does not conform to one of the formats mentioned in the appendix, the card is rejected immediately.

2. If the format checks pass, the calling card is then checked against table HOTLIST for a match.

Table HOTLIST records special numbers that are considered HOT (i.e., used in cases of fraud or classified as invalid). This table is used as a local cache. If a match exists, the subscriber is prompted to reenter the calling card, and validation begins again. If no match exists, validation continues.

3. The calling card is checked against table CCVINFO.

This table is used for CCV queries. It contains an index into table CCVPARMS and an index into table CARRSCRN. If no match exists in table CCVINFO then no calling card/carrier restrictions apply and table CCVPARMS is checked next in step 4.

(new: a-c)

- a. If a match exists in table CCVINFO and the call is not an IEC call or carrier number is not present, then calling card/carrier checks are not performed; go to step 4.

If a match exists in table CCVINFO and the call is an IEC call, table CARRSCRN is checked for calling card/carrier restrictions.

- b. If a carrier restriction has been noted, the carrier of the card is compared to the serving carrier on the call.

TOPS Inter-LATA Carrier (continued)

If a match exists, validation continues in step 4.

- c. If no match exists, the operator's screen displays RESIC, which indicates that the call is presented as a result of incompatibility between the permitted carriers, as specified in table CARRSCRN, and the serving carrier on the call.

Since billing is not accepted, the operator performs one of the following practices:

- Change Billing Type (Collect, 3rd, etc.)
- Change Calling Card
- Change Carriers
- Transfer to specific carriers operator
- Cancel Call
- Re-enter calling card (Not very common)

The call cannot be completed until an appropriate calling card/carrier match is found or billing is changed to collect or third.

(existing: 4-7)

4. Then the calling card is checked against table CCVPARMS (through table CCVINFO) for a match.

Table CCVPARMS specifies which database a calling card validation or billed number to send the screening query.

If a match exists, the query type is determined (LIDB, BVC, SDB, MANUAL, or BLK). If no match exists, the query type is assumed to be LIDB.

5. Table CCVPARMS is checked.

It provides query launching information as well as an index into table ACCSERR. Table ACCSERR allows datafilling the desired reaction when something other than a "normal/successful" message is received from a LIDB response.

6. A validation query is launched to the appropriate database.
7. If the database response indicates a valid calling card and carrier screening was performed (if it was an IEC call) the call is completed.

If carrier screening was not performed and it should have been, it is performed prior to call completion. Otherwise, the operator responds according to specific operator practices. An IEC call cannot be completed until either an acceptable calling card number or an alternate billing class is verified by the operator and calling card/carrier screening passes.

TOPS Inter-LATA Carrier (continued)

Re-validation due to operator intervention

Following are calling card re-validations examples (calling card/carrier screening) due to operator intervention.

- Changing calling card number:

If the operator enters a different calling card number than the previously entered one, the carrier restrictions may change. Thus, the new carrier may or may not be allowed to complete the call. Therefore, the new card must be re-validated.

- Changing the called number:

If the operator enters a new called number, the call may become a carrier or a non-carrier call. If it becomes a non-carrier call then no calling card/carrier restrictions apply. Therefore, validation continues. If it becomes a carrier call then the calling card/carrier restrictions may apply. In this case validation begins again.

- Changing the carrier:

If the operator changes the carrier a call should be completed with, the new carrier should be compared against the carrier restrictions of the calling card. In this case the validation process begins again. In addition, a call can toggle between served and no-served. For example, when the operator changes carriers for an IEC call, the call may become no-served or served. The calling card/carrier checks only apply if the IEC call is served. If the IEC call is no-served, then the operator transfers the call to the carrier's operator for completion.

- Changing billing type:

If the subscriber changes billing type to a calling card, the calling card must be re-validated.

Changes seen by subscriber

Calling card/carrier restrictions are checked before launching a CCV query to the LIBD for all served IEC calls. The subscriber will see changes in the ACCS/MCCS and AABS automated systems as shown in the following process steps.

- ACCS/MCCS
 - (existing) The subscriber enters their calling card number in response to a bong tone or a recorded announcement.
 - (new) Calling card screening is performed on IEC calls. If the card fails to validate due to carrier restrictions, the call is transferred to an operator without warning. If the card validates by passing carrier

TOPS Inter-LATA Carrier (continued)

restrictions, calling card validation continues by launching a CCV query.

- (existing) A CCV query is launched to the LIDB for validation.

If the card fails to validate, the subscriber is told, "The card number you entered is invalid; try your card again or dial 0 for another form of billing." They are re-prompted a number of times. On the last prompt, the subscriber is told, "The card number you entered is not valid; hang up; dial 0 plus the number you are calling for operator assistance." If the card validates, the call is connected automatically and billed to the calling card.

Initially, if the subscriber does not enter their calling card number, they are transferred to an operator without warning.

If the subscriber elects to dial 0 from ACCS/MCCS before entering their calling card number, the subscriber is transferred to an operator without warning.

- AABS

- (existing). The subscriber enters their calling card number in response to a bong tone and a recorded announcement.

- (new). Calling Card Screening is performed on IEC calls. If the card fails to validate due to carrier restrictions, the call is transferred to an operator with a warning. If the card validates by passing carrier restrictions, calling card validation continues by launching a CCV query.

- (existing) A CCV query is launched to the LIDB for validation.

If the card fails to validate, the subscriber is told, "The card number you entered is invalid; try your card again or dial 0 for another form of billing." They are re-prompted a number of times. On the last prompt, the subscriber is told, "The card number you entered is not valid; hang up; dial 0 plus the number you are calling for operator assistance." If the card validates, the call is connected automatically and billed to the calling card.

Initially, if the subscriber does not enter their calling card number, they are transferred to an operator with a warning message.

If the subscriber elects to dial 0 from AABS before entering their calling card number they will be transferred to an operator with a warning message.

Examples for an automated system with the calling and called numbers present prior to calling card validation

This section presents examples that demonstrate use of the calling card screening tables. These examples refer to previous sample datafill for tables CCVINFO and CARRSCRN.

TOPS Inter-LATA Carrier (continued)

Example 1 - No restrictions: This situation applies when a particular calling card has no restrictions upon which carrier completes the call. A 0 is datafilled in the CARRIDX field in table CCVINFO.

1. Caller enters card # 891999-9999999999-3333 when prompted for his/her calling card number by AABS or MCCS/ACCS.
2. After preliminary processing, the DMS searches table CCVINFO and finds a match with 891999.
CARRIDX has a value of 0.
3. If the call is an IEC call, table CARRSCRN will be accessed.
Since 0 is datafilled in the CARRIDX field of table CCVINFO, tuple 0 is accessed. If the call is not an IEC call, calling card/carrier screening is not performed.
4. Tuple 0 indicates the selected card is valid for billing all IEC calls.
Since no restrictions apply, calling card validation continues by accessing table CCVPARMS.
5. Once the calling card is validated, the call is completed.

Example 2 - All carriers restricted: This situation applies when a call is billed to a card not allowed to accept billing for an IEC call. In other words, carrier calls cannot be billed to these cards. All IEC calls, using this type of calling card for billing, are not permitted. A 1 will be datafilled in the CARRIDX field of table CCVINFO.

1. Caller enters card # 919-781-8252-6666 when prompted for the calling card number by AABS or MCCS/ACCS.
2. After preliminary processing, the DMS searches table CCVINFO and finds a match with 919781.
CARRIDX has a value of 1.
3. If the call is an IEC call, table CARRSCRN will be accessed.
Since 1 is datafilled in the CARRIDX field of table CCVINFO, tuple 1 is accessed. If the call is not an IEC call, calling card/carrier screening is not performed.
4. Tuple 1 indicates the selected card is not valid for billing any IEC calls.
5. Since this type of card is restricted for billing, the call is transferred to an operator for processing.
Upon presentation, RESIC is displayed on the operator's screen indicating that the call was presented as a result of incompatibility between the

TOPS Inter-LATA Carrier (continued)

permitted carriers, as specified in table CARRSCRN, and the serving carrier on the call.

6. Once at an operator position, the following operator practices are supported:
 - Change billing type:

The operator can change the billing type. In this case, the new billing type is validated. In general, a check for calling card/carrier restrictions is performed when type of billing indicates that billing is to a calling card and the call is an IEC call.
 - Change calling card:

The operator can change the type of calling card used for billing, provided the subscriber has another calling card. In this case the new calling card is validated.
 - Cancel the call:

If the operator cannot validate any alternate form of billing, the operator terminates the call.
 - Change carriers:

The operator can change the carrier of the call. In this case the new carrier is screened.
 - Transferring the call to the carrier:

If the operator cannot validate billing, the operator may choose to transfer the call to the carrier for completion.
 - Retry calling card number:

The operator reenters the calling card if the subscriber entered the card incorrectly. In this case, the card is re-validated. This case is supported; however, it is very uncommon.

Example 3 - One or more restrictions: This situation applies when a call is billed to a card that is allowed to accept billing for certain IEC calls. In other words, certain carrier calls can be billed to these cards. A value ranging from 2 to 62 will be datafilled in the CARRIDX field in table CCVINFO.

1. Caller enters card # 891288-9999999999-3333 when prompted for the calling card number by AABS or MCCS/ACCS.
2. After preliminary processing, the DMS searches table CCVINFO and finds a match with 891288.

CARRIDX has a value of 2.
3. If the call is an IEC call, table CARRSCRN is accessed.

TOPS Inter-LATA Carrier (continued)

Since 2 is datafilled in the CARRIDX field of table CCVINFO, tuple 2 is accessed. If the call is not an IEC call, calling card/carrier screening is not performed.

4. The PERMIT field of tuple 2 indicates that some carriers are permitted to complete the IEC call.
5. Since the PERMIT field of tuple 2 is datafilled with SOME, additional field CARRLIST is datafilled with the allowed carrier/carriers.
6. Since field CARRLIST is datafilled with 0288, 0288 is the only carrier allowed to complete this IEC call.
7. The carrier is compared to the serving carrier on the IEC call.
 - a. If the carriers match, table CCVPARMS is accessed to complete Calling Card Validation before completing the call.
 - b. If the carriers do not match, the call is transferred to an operator for processing.

Upon presentation, RESIC (for the TOPS IV), ResIC (for the TOPS MP), or Restricted IC (default for the TOPS MPX) is displayed on the operator's screen indicating that the call was presented as a result of incompatibility between the permitted carriers, as specified in table CARRSCRN, and the serving carrier on the call.

8. Once at an operator position, the following operator practices are supported:
 - Change billing type
 - Change calling card
 - Change carriers
 - Cancel the call
 - Transferring the call to the carrier
 - Retry calling card number (Supported, however very uncommon)

Examples for an operator position with the calling and called numbers not present prior to calling card validation

This section presents examples that demonstrate use of the calling card screening tables. These examples refer to previous sample datafill for tables CCVINFO and CARRSCRN.

TOPS Inter-LATA Carrier (continued)

Example 1 - No restrictions: This situation applies when a calling card has no restrictions upon which carrier completes the call. A 0 is datafilled in the CARRIDX field in table CCVINFO.

1. Operator enters card # 891999-9999999999-3333 when the call arrives at the position.

The subscriber has requested billing to their calling card. At this point the calling and called number are not known.

2. After preliminary processing, the DMS searches table CCVINFO and finds a match with 891999.

CARRIDX has a value of 0.

3. If the call is an IEC call, the carrier number is known, the database query type is LIDB, and the call is served, table CARRSCRN will be accessed.

This is because the calling and called numbers are not present. It is not known whether this is a carrier call and the carrier number is not present. Therefore, carrier screening is not performed at this point.

4. The calling card is validated.
5. Operator enters calling and called numbers.
6. The DMS searches table CCVINFO and finds a match with 891999. Field CARRIDX has a value of 0.
7. If the call is an IEC call, the carrier number is known, the database query type is LIDB, and the call is served, table CARRSCRN will be accessed.
Since calling and called number are present, carrier screening is performed. Since 0 is datafilled in the CARRIDX field of table CCVINFO, tuple 0 is accessed.
8. Tuple 0 indicates that the selected card is valid for billing all IEC calls. Since no restrictions apply, the call is completed.

Example 2 - All carriers restricted: This situation applies when a call is being billed to a card not allowed to accept billing for an IEC call. Carrier calls cannot be billed to these cards. All IEC calls, using this type of calling card for billing, are not permitted. A 1 will be datafilled in the CARRIDX field in table CCVINFO.

1. Operator enters card # 919-781-8252-6666 when the call arrives at the position.

The subscriber has requested billing to their calling card. At this point the calling and called number are not known.

2. After preliminary processing, the DMS searches table CCVINFO and finds a match with 919781. Field CARRIDX has a value of 1.

TOPS Inter-LATA Carrier (continued)

3. If the call is an IEC call, the carrier number is known, the database query type is LIDB, and the call is served, table CARRSCRN will be accessed.
This is because the calling and called numbers are not present. It is not known whether this is a carrier call and the carrier number is not present. Therefore, carrier screening is not performed at this point.
4. The calling card is validated.
5. The operator enters calling and called numbers.
6. The DMS searches table CCVINFO and finds a match with 919781. Field CARRIDX has a value of 1.
7. If the call is an IEC call, the carrier number is known, the database query type is LIDB, and the call is served, table CARRSCRN will be accessed.
Since calling and called number are present, carrier screening is performed. Since 1 is datafilled in the CARRIDX field of table CCVINFO, tuple 1 is accessed.
8. Tuple 1 indicates that the selected card is not valid for billing any IEC calls.
9. Since this type of card is restricted for billing, RESIC (for the TOPS IV), ResIC (for the TOPS MP), or Restricted IC (for the TOPS MPX) is displayed on the operator's screen indicating that the call is presented as a result of incompatibility between the permitted carriers, as specified in table CARRSCRN, and the serving carrier on the call.
10. At this point, the following operator practices are supported:
 - Change billing type:
The operator can change the billing type. In this case, the new billing type is validated. In general, a check for calling card/carrier

TOPS Inter-LATA Carrier (continued)

restrictions is performed when the type of billing indicates that billing is to a calling card and the call is an IEC call.

- Change calling card:

The operator can change the type of calling card used for billing, provided the subscriber has another calling card. In this case the new calling card is validated.

- Cancel the call:

If the operator cannot validate any alternate form of billing, the operator terminates the call.

- Change carriers:

The operator can change the carrier of the call. In this case, the new carrier is screened.

- Transferring the call to the carrier:

If the operator cannot validate billing, the operator may choose to transfer the call to the carrier for completion.

- Retry calling card number:

The operator reenters the calling card if the subscriber entered the card incorrectly. In this case, the card is re-validated. This case is supported; however, it is very uncommon.

Example 3 - One or more restrictions: This situation applies when a call is billed to a card allowed to accept billing for certain IEC calls. In other words, certain carrier calls can be billed to these cards. A value ranging from 2 to 62 will be datafilled in the CARRIDX field in table CCVINFO.

1. Operator enters card # 891288-9999999999-3333 when the call arrives at the position.

The subscriber has requested billing to their calling card. At this point the calling and called number are not known.

2. After preliminary processing, the DMS searches table CCVINFO and finds a match with 891288.

Field CARRIDX has a value of 2.

3. If the call is an IEC call, the carrier number is known, the database query type is LIDB, and the call is served, table CARRSCRN will be accessed.

This is because the calling and called numbers are not present. It is not known whether this is a carrier call and the carrier number is not present. Therefore, carrier screening is not performed at this point.

4. The calling card is validated.

TOPS Inter-LATA Carrier (continued)

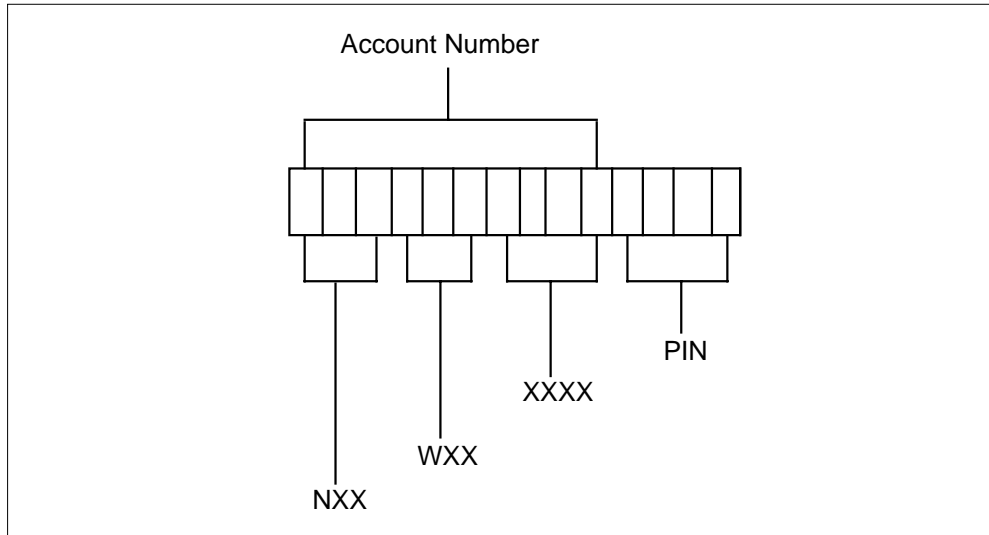
5. Operator enters calling and called numbers.
6. The DMS searches table CCVINFO and finds a match with 891288.
Field CARRIDX has a value of 2.
7. If the call is an IEC call, the carrier number is known, the database query type is LIDB, and the call is served, table CARRSCRN will be accessed.
Since calling and called number are present, carrier screening is performed. Since 2 is datafilled in the CARRIDX field of table CCVINFO, tuple 2 is accessed.
8. The PERMIT field of tuple 2 indicates that some carriers are permitted to complete the IEC call.
9. Since the PERMIT field of tuple 2 is datafilled with SOME, an additional field CARRLIST is datafilled with the allowed carrier/carriers.
10. Since field CARRLIST is datafilled with 0288, 0288 is the only carrier allowed to complete this IEC call.
11. The carrier is compared to the serving carrier on the IEC call.
 - a. If the carriers match, the call is completed.
 - b. If the carriers do not match, RESIC (for the TOPS IV), ResIC (for the TOPS MP), or Restricted IC (for the TOPS MPX) is displayed on the operator's screen indicating that the call is presented as a result of incompatibility between the permitted carriers, as specified in table CARRSCRN, and the serving carrier on the call.
12. At this point, the following operator practices are supported:
 - Change billing type
 - Change calling card
 - Change carriers
 - Cancel the call
 - Transferring the call to the carrier
 - Retry calling card number (Supported, however very uncommon)

Calling card formats

The RAO, Directory number format, and CCITT formats are shown in package Expanded Calling Card Format SS7, ABS00101. Following is the CIID format.

TOPS Inter-LATA Carrier (continued)

CIID calling card format



The CIID number format is a fixed length format 14 digits in length. It has two major parts: the Account Number and the PIN.

The Account Number is 10 digits in length and consists of the following fields:

- **NXXWXX** - This is a six-digit code assigned to requesting interexchange carriers for their use in 14-digit telecommunication cards. This is also known as the Card Issuer Identifier (assigned by Bellcore, code assignments were first made in the 8XXWXX and 9XXWXX series). The first digit ranges from 2 to 9, X ranges in value from 0 to 9, W is either 0 or 1.
- **XXXX** - Customer Account Number (assigned by the card issuer), 4 digits in length, X ranges in value from 0 to 9.

The Personal Identification Number (PIN) is a single field, 4 digits in length, with a value range from 2000 to 9999.

Dump and restore

During dump and restore, the old BCS34 or BCS35 logical tuple is copied to the new BCS36 logical tuple. The new field CARRIDX value that appears in the new logical tuple is initialized to 0. This is the default meaning ALL carriers are permitted to complete IEC calls and that no calling card/carrier restrictions apply.

Table CCVININFO did not exist prior to BCS34.

TOPS Inter-LATA Carrier (continued)

Translations table flow

Table flow is not provided.

Limitations and restrictions**AF0072 - TOPS Inter-LATA Carrier Services****Incoming Trunk Groups to the AT**

An EAEO should have two types of TOPS trunk groups to the AT, as follows:

- multi-carrier traffic trunk groups
- single-carrier traffic trunk groups for 10XXX calls.

PIC conditional routing separates the traffic on these trunks accordingly. Refer to paragraph OFRT table for a description of this form of conditional routing that is used only in an EAEO being served by an AT with the TICS software.

Outgoing Trunk Groups from the AT

Only Access Tandem to Carrier (ATC) outgoing trunk groups should be used for inter-LATA traffic from an Access Tandem (AT) to an IC/INC.

Appointment Calls

Inter-LATA appointment calls are supported by TICS only if the trunk connecting the calling party is a TOPS trunk. In this case, the operator completes the call by connecting the calling party, entering the access code for the requested carrier, and then connecting the called party.

Table PICNAME

The datafill in the PICNAME table should not be modified. Such tampering could corrupt the datafill in the DNPIC and the TOPEACAR tables and cause incorrect carrier names to be displayed on the Operator Position CRT.

Table CARRTRF

The Rating Test Program cannot verify the data in the CARRTRF table. However, this program can be used with the CLGTRF table, which functions in the same way as the CARRTRF table.

To test a carrier tariff (e.g., CARR1), add an unused NPA-NXX combination to the CLGTRF table. Then use the Rating Test Program to calculate charges using the CARR1 tariff.

Table TOPEACAR

Abbreviated dialing of the calling card number cannot be used by both the operator and the subscriber if the CCVQUERY field of table TOPEACAR is set to NOQUERY or BLK. For example, it is not sufficient to merely enter the

TOPS Inter-LATA Carrier (continued)

four-digit PIN when the called number is the same as the calling card number. In this case, all 14 digits (calling card number and PIN) must be entered.

BQ11959 - AIN 0.1 Routing to TOPS Extension

Refer to the following for routing to TOPS position.

- Routing to the TOPS position must be over trunks, whether from a separate switch or a DMS-100/200 (using a looparound configuration). Outgoing OP (operator) and incoming TOPS trunk group types with OSS (Operator Services Signaling) and EAOSS (Exchange Access Operator Services Signaling) support the routing of the AIN call to the TOPS position.

The OSS signaling supports the propagation of ANI II digits as well as 0- or 7-digit ANI spill.

The EAOSS signaling supports the propagation of ANI II digits as well as 0-, 3- or 10-digit ANI spill.

- Following are references for OSS and EAOSS signaling:
 - TOPS Call Processing Features (Calls connected to a TOPS position) for traditional OSS signaling.
 - EAEO EAOSS
 - EAOSS, OSEA0101
 - Base TOPS Equal Access, OSEA0101, for OSS signaling
 - EAEO for OSS signaling in NTP 297-2101-352 (EA Translations Guide)
- Customizing the ANI II display at the TOPS position can only be done for the following restricted call types:
 - PD - Station Paid or Person Paid
 - COL - Collect
 - CC - Credit Card
 - 3RD - Third Party Billing
 - SPLCLG - Special Billing Number by Calling Party
 - SPLCLD - Special Billing Number by Called Party
- The following call type may also be handled by the TOPS position, but customizing the ANI display is not possible.
 - Call back
- ANI AMA record generation is overridden for responses with both an Operator requested CalledPartyID and an AMAslpID. Any AMA record

TOPS Inter-LATA Carrier (continued)

generation for Operator Assisted (OA) types of calls is the responsibility of the TOPS position.

BK08865 - Calling Card Screening Enhancements (BCS36)

This PRSDOC applies when the billing type is a calling card and the call is transported by an LEC completing an IEC call for a served carrier.

- No-served versus served carrier: The calling card/carrier checks only apply if the IEC call is a served call. If the call is no-served, then the operator transfers the IEC call to the carrier's operator, so alternate billing is not performed.
- Called party billing to a calling card: When a call is billed collect, the calling party picks the carrier even though the called party is paying for the call. The carrier is selected before a connection is made to the called party. If the called party chooses to bill the IEC call to their calling card, calling card/carrier checks apply. However, once the connection to the called party is made, carriers cannot be changed. This is seen as a limitation to current operator practices. If calling card/carrier screening shows that the calling card is not a valid card for billing, the only way to float the call with appropriate billing is to change billing from the restricted calling card or terminate the call and re-connect using a different carrier. The same issues apply for 3rd party billing.
- Sequence calls: When performing sequence calls, set field SEQRY=Y in table CCVPARMS. This ensures that calling card/carrier screening is performed for all sequence IEC calls.
- ONI/ANIF calls: Once a called and calling number are present for IEC calls, the connection between two parties is allowed even though billing has not been satisfied. If the party decides to bill this call to a calling card that is carrier restricted, the only way to float the call with appropriate billing is to change billing from the restricted calling card or terminate the call and re-connect using a different carrier.
- Duplicate carriers allowed in table CARRSCRN: Table CARRSCRN can contain a maximum of 16 carriers. These carriers do not have to be unique. It is up to the operating company to datafill these uniquely.
- Applicable calling card types:
 - Applicable: RAO/CIID, CCITT and DN format calling cards.
 - Nonapplicable: Overseas and Manual calling cards.
- CIID versus RAO: This PRSDOC treats CIID calling cards the same as RAO calling cards. The operating company is responsible for determining

TOPS Inter-LATA Carrier (continued)

restrictions for these calling cards and then to datafill tables CCVINFO and CARRSCRN accordingly.

- **HOT cards versus RESIC cards:** In the past, calling cards marked as HOT had priority over any other invalid or restricted calling card status. This PRSDOC continues to give priority to calling cards marked as HOT. Therefore, if a calling card number is datafilled in both tables HOTLIST and CCVINFO, the card is marked as HOT. The operator screen displays HOT and the operator reserves the right to float the call. A calling card may be HOT and RESIC at the same time, but is treated as HOT.

Interactions

The following paragraphs describe the interactions between TOPS Inter-LATA Carrier and other functionalities.

AF0072 - TOPS Inter-LATA Carrier Services

The TOPS Inter-LATA Carrier Service (TICS) feature can be viewed as an enhancement to the TOPS Equal Access (TOPS EA) feature. Both packages affect the processing of inter-LATA calls and use the same Operational Measurements (OM) group (TOPSEA) to document how these calls are treated by the TOPS operator.

If the DMS-200 or the DMS-100/200 software includes just the TOPS EA feature, an operator can only transfer inter-LATA calls to a carrier for completion. If the DMS-200 software includes both the TICS and the TOPS EA features, the operator can complete inter-LATA calls as well as transfer them to the appropriate carrier for completion.

Subscriber/System Interactions

The TOPS operator handles two types of calls: 0-, and plus dialed (0+, 1+). The following table describes some of the messages associated with these calls, specifies how these messages are displayed (steady or flashing) and what the messages indicate.

Operator Position CRT Messages

Steady	Flashing	Not Displayed	Description
	carrier digits	XFR IC, carrier name	Invalid carrier digits

TOPS Inter-LATA Carrier (continued)

Operator Position CRT Messages

Steady	Flashing	Not Displayed	Description
XFRIC, carrier digits and name			Valid carrier but operator services are not provided
carrier digits and name		XFR IC	Valid carrier but operator services are not provided

0- Calls and Plus-Dialed (0+, 1+) Calls are discussed below:

- 0- Calls: When a 0- call arrives at the Operator Position, the operator does not know whether the call is intra-LATA or inter-LATA until the called digits are entered or until the calling party makes it known.

When the called digits are entered and the call is determined to be inter-LATA, the message, IC, is displayed on the Operator Position CRT. If a default carrier or a Primary Inter-LATA Carrier (PIC) is associated with the call, the name and access code of that carrier is also displayed. If no carrier is associated with the call, nothing is displayed on the Operator Position CRT after the operator enters the called digits. In this case, the operator must manually associate a carrier with the call.

Note: Refer to "Operation" for a description of the DFLTPIC field that specifies whether a default carrier is associated with a 0- call.

If operator services are provided for the carrier associated with the call, the operator has the option of either completing the call or changing the carrier for the call, if the calling party requests this and the called party is not connected.

If operator services are not provided for the carrier associated with the call, the message, XFR IC, is displayed on the Operator Position CRT after the called digits are entered. In this case, the operator has the option of either changing the carrier, if requested by the calling party, or transferring the call to the carrier operator service.

Plus-Dialed (0+, 1+) Calls: When a plus-dialed call arrives at the position, the name and access code of the PIC or default carrier associated with that call automatically displays on the Operator Position CRT. A carrier is always associated with a plus-dialed call.

Note: Refer to "Operation" for a description of the DNLOOK field that specifies whether a carrier is associated with a 0- or a plus-dialed call.

TOPS Inter-LATA Carrier (continued)

If operator services are provided for the carrier associated with the call, the operator has the option of either completing the call or changing the carrier for the call, if the calling party requests this and the called party is not connected.

If operator services are not provided for the carrier associated with the call, the message, XFR IC, is automatically displayed on the Operator Positions CRT when the call arrives at the Operator Position. In this case, the operator has the option of either changing the carrier for the call, if requested by the calling party, or transferring the call to the carrier operator service.

On 0+ calls, Equal Access translations for TICS calls is not invoked until the operator initiates outpulsing; therefore, 0+ calls that are designated to receive delayed outpulsing receive such handling based on the terminating route selected by non-Equal Access translations when the call is first presented to the operator.

Transferring Inter-LATA Calls

The operator transfers an inter-LATA call to a carrier only if operator services are not provided for the carrier associated with that call.

A call that is transferred to a carrier usually arrives at the Operator Position as a 0- call. After the call is determined to be inter-LATA, the call is either manually associated with a carrier by the operator or automatically associated with a carrier by the data in either the DNPIC or the TOPEATRK table.

Note: A transfer call can also be a plus-dialed (0+, 1+) call that is already at the position. In this case, the calling party requested that the call be completed to a non-PIC carrier for which operator services are not provided.

If the message, XFR IC, appears on the Operator Position CRT, operator services are not provided for the carrier. In this case, the operator transfers the call to the carrier operator service by pressing the POS RLS key. If operator services are provided for the carrier, the operator completes the call as described in "Handling Inter-LATA Calls."

TOPS Inter-LATA Carrier (continued)

Forwarding Inter-LATA Calls

Calls that are forwarded to a carrier do not arrive at the Operator Position.

Following are the types of calls that fall within this category:

- 0+
 - non-operator served
 - non-operator handled
- 1+
 - operator served
 - non-operator served
 - non-operator handled
 - non-operator handled CAMA

Note: The Operating Company can generate either access records (structure code 007XX) or billing records (structure code 047XX) for 1+ operator served and 1+ non-operator served CAMA calls.

Handling Inter-LATA Calls

The inter-LATA calls handled by the operator are 0- or plus-dialed (0+, 1+) calls that are associated with carriers for which operator services are provided.

These calls go to either ACTS or MCCS or to the Operator Position. The XFR IC message does not appear on the Operator Position CRT when these calls arrive at the position. The operator completes the calls then bills the carrier accordingly.

When an Operating Company handles the inter-LATA traffic of a carrier, the billing types used for these calls are third number billing, calling card billing, collect number billing, and automatic rating system billing.

The TOPS - Equal Access Operator Services Signaling (EAOSS, OSEA0101) feature, F2959, allows a DMS-100/200 or a DMS-200 switch to provide an indication to the IC of operator involvement.

When TICS is installed and the IC is to receive acknowledgment that TOPS operator services were involved, the EAOSS feature provides an indicator to the IC. The IC will receive a specific ANI Information Digit (e.g., 34) to indicate that operator services were provided.

The ANI ID indicator is optionally available on a trunk basis. If this option is not requested, the IC will receive the ANI ID (e.g., 01 for ANI success) as outpulsed by the EO.

TOPS Inter-LATA Carrier (continued)

BK08865 - Calling Card Screening Enhancements (BCS36)

This PRSDOC is packaged in the new base EABS (MCCS), OSEA0101, package and in the Custom Charge Calling package, EABS Canada, OSEA0101. In addition, the TOPS Inter-LATA Carrier Service (TICS) package is needed so that it can determine if the call is served by a carrier and if so which carrier. Modified table CCVINFO is packaged with EABS, but new table CARRSCRN is packaged with the TICS package.

Restrictions are added to the table control of table CCVINFO disallowing the datafill of any index into table CARRSCRN unless the TICS package is present. The one index that would be allowed in table CCVINFO would be the value of 0. If the value 0 is detected in the CARRIDX field, table CARRSCRN is not accessed. Instead it is assumed that no calling card/carrier restrictions apply and that all carriers are permitted to complete IEC calls. If TICS is present, but EABS is not, then table CARRSCRN has no meaning.

Impact to AWT: Prior to this activity, operators manually validated calling cards used to bill IEC and LEC calls. This method increases AWT tremendously; thus increasing expenses for the operating companies. This PRSDOC automates processing of these calls; therefore reducing AWT.

Activation/deactivation by the end user

TOPS Inter-LATA Carrier requires no activation or deactivation by the end user.

Billing

AF0072 provides manual billing by the operator and automatic billing by AMA Accounting.

Manual billing of interLATA calls

When an Operating Company provides operator services for a carrier, only the following types of billing are used for the interLATA calls associated with that carrier. The type(s) of billing that the carrier requires is specified in the TOPEACAR table:

- automatic rating system billing (public and private rating)
- calling card, third number, and collect number billing.

If the subscriber requests that a non-PIC carrier be used for a call, the operator must reenter the billing information and change the carrier for the call.

Automatic rating system billing

The carrier has the option of using the TOPS automatic rating system for private telephones, public telephones (COIN, NONCOIN, HOTEL), or both.

TOPS Inter-LATA Carrier (continued)

The entries in the PUBRATE and the PRIVRATE fields of the TOPEACAR Table determine whether public or private rating is allowed (Y) or disallowed (N).

Refer to the following datafill procedure section for a description of tables TOPEACAR and CARRTRF which are used for carrier rating.

Public Rating: If public rating is allowed, the Automatic Coin Toll Service (ACTS) is used for 1+ coin calls. When these calls arrive at the Operator Position, STA<PD> and NORATE appear on the CRT. The PD message is flashing; the NORATE message is steady. All sent-paid interLATA calls from a public station are also allowed.

If public rating is disallowed, a 1+ coin call does not go to ACTS. Rather, it goes to the operator where all sent-paid billing classes (station paid, person paid, and time and charges) are blocked. The following table describes the billing interactions for this type of rating.

Public rating of interLATA calls

PUBRATE	Billing status	ACTS
Y	STA_PD allowed allowed	PER_PD Y T&C allowed
N	STA_PD disallowed PER_PD disallowed T&C disallowed	N

Private rating: If private rating is allowed, time and charges can be quoted for calls from private stations.

If private rating is disallowed, time and charges cannot be quoted for calls from private stations. The following table describes the billing interactions for this type of rating.

Private rating of interLATA calls

PRIVRATE	Billing status
Y	T&C allowed
N	T&C disallowed

Calling card billing

If calling card billing of interLATA calls is allowed for a carrier, certain fields in the TOPEACAR Table must be set accordingly.

TOPS Inter-LATA Carrier (continued)

If the carrier has access to the Common Channel Interoffice Signaling (CCIS) calling card data base, the data base can be queried if the CCVQUERY field in TOPEACAR is set to QUERY. This allows the Mechanized Calling Card Service (MCCS) feature to handle 0+ calling card calls.

If the carrier allows calling card billing but does not have access to the CCIS data base, the carrier can request that a NOQUERY message be displayed on the Operator Position CRT (CCVQUERY=NOQUERY) and that manual validation be performed (CCVVAL=Y) by the operator. However, even if no QUERY or MANUAL validation (CCVVAL=N) is performed, MCCS can still handle 0+ calling card calls. A NOQUERY condition is indicated by the display of the message, AMA VFY, on the Operator Position CRT. The display will also show either MAN or NFY following the credit card number.

If the carrier does not allow calling card billing, any attempt by a subscriber to use this type of billing for an interLATA call is blocked (CCVQUERY=BLK). The following table describes the billing interactions.

Calling card billing for interLATA calls

Query status	Manual validation status	Billing status	MCCS status
QUERY	N	STA_SPL_CLG allowed STA_SPL_CLD allowed PER_SPL_CLG allowed PER_SPL_CLD allowed	Y
NOQUERY	N	STA_SPL_CLG allowed STA_SPL_CLD allowed PER_SPL_CLG allowed PER_SPL_CLD allowed	Y
NOQUERY	Y	STA_SPL_CLG allowed STA_SPL_CLD allowed PER_SPL_CLG allowed PER_SPL_CLD allowed	N
BLK	N	STA_SPL_CLG disallowed STA_SPL_CLD disallowed PER_SPL_CLG disallowed PER_SPL_CLD disallowed	N

Third number billing

Certain fields in the TOPEACAR Table must be set accordingly if third number billing of interLATA calls is allowed for a carrier.

TOPS Inter-LATA Carrier (continued)

If the carrier has access to the CCIS Billed Number Screening (BNS) data base, the data base can be queried if the BNSQUERY field in TOPEACAR is set to QUERY. After the query has been performed, the operator can perform manual validation (BNSVAL=Y).

If the carrier does not have access to the BNS data base, no data base query (BNSQUERY=NOQUERY) can be performed; however, manual validation can be performed if the BNSVAL field is set to Y. Third number billing is blocked only if the BNSQUERY field is set to BLK. The following table describes the billing interactions.

Third number billing for interLATA calls

Query status	Manual validation status	Billing status
QUERY	Y	STA_SPL_CLG allowed STA_SPL_CLD allowed PER_SPL_CLG allowed PER_SPL_CLD allowed
QUERY	N	STA_SPL_CLG allowed STA_SPL_CLD allowed PER_SPL_CLG allowed PER_SPL_CLD allowed
NOQUERY	Y	STA_SPL_CLG allowed STA_SPL_CLD allowed PER_SPL_CLG allowed PER_SPL_CLD allowed
NOQUERY	N	STA_SPL_CLG allowed STA_SPL_CLD allowed PER_SPL_CLG allowed PER_SPL_CLD allowed
BLK	N	STA_SPL_CLG disallowed STA_SPL_CLD disallowed PER_SPL_CLG disallowed PER_SPL_CLD disallowed

Collect number billing

Certain fields in the TOPEACAR Table must be set accordingly if collect number billing of interLATA calls is allowed for a carrier.

If the carrier has access to the CCIS Billed Number Screening (BNS) data base, the data base can be queried if the COLQUERY field in TOPEACAR is set to QUERY. Setting the COLQUERY field to NOQUERY prohibits data

TOPS Inter-LATA Carrier (continued)

base access. In this case, manual validation can be performed if the COLVAL field is set to Y. The following table describes the billing interactions.

Collect number billing for interLATA calls

Query status	Manual validation status	Billing status
QUERY	Y	STA_COL allowed PER_COL allowed
QUERY	N	STA_COL allowed PER_COL allowed
NOQUERY	Y	STA_COL allowed PER_COL allowed
NOQUERY	N	STA_COL allowed PER_COL allowed
BLK	N	STA_COL disallowed PER_COL disallowed

Automatic billing of InterLATA calls

The TOPS Equal Access feature provides a set of structure codes (047XX) that allow billing records to be generated for CAMA and for non-CAMA calls. The TOPS Equal Access Carrier (TOPEACAR) Table defines the billing for each carrier served by the Operating Company.

In a DMS-200 with the TICS software, CAMA billing is activated by setting the OPSERV field in the TOPEACAR Table to SERV or by setting the CAMABILL field to Y if the OPSERV field is set to NOSERV. In a DMS-200 without the TICS software, CAMA billing is activated by setting the CAMABILL field to Y. The CAMABILL field is in the TOPEACAR Table.

Note: If the CAMABILL field is set to Y, the ANI field in the TRKGRP (ATC) Table must be set to N.

The AMA record format provided by the 047XX structure code is very similar to the format provided by the 007XX structure code. The following table shows the fields that are appended to the 007XX record format to create the 047XX record format. This table also lists the structure codes used to produce the AMA records for different types of calls. Refer to functionality “Base

TOPS Inter-LATA Carrier (continued)

TOPS Equal Access" (OSEA0001) for a detailed description of the 047XX structure code.

Structure code 047XX

InterLATA carrier / International carrier (IC/INC) event information	Number of characters
IC/INC PREFIX	6
EVENT DATE	6
EVENT TIME	8
ELAPSED TIME	10
IC/INC CALL EVENT STATUS	4
TRUNK GROUP NUMBER	6
IC/INC ROUTING INDICATOR	2
IC/INC DIALING INDICATOR	2
IC/INC ANI INDICATOR	2

Structure codes produced

SERV_TYPE	CAMABILL	InterLATA call type	Structure code produced
SERV	Y	0-, 0+, 1+	047xx
SERV	N	0-, 0+	047xx
SERV	N	1+	007xx
NOSERV	Y	1+	047xx
NOSERV	Y	0-, 0+	007xx
NOSERV	N	0-, 0+, 1+	007xx

Effect of the NO AMA key on AMA for TICS

The function of the NO AMA key changes when a call is completed by a carrier for whom the Operating Company provides operator service under TICS. For such calls, if the NO AMA key is pressed, the call will route to the CLSVSCRC Table. TOPS Equal Access routing is not bypassed. The AMA record produced for this type of call is a call code 035 record with an X47XX structure code.

TOPS Inter-LATA Carrier (continued)

The affect of the NO AMA key does not change when the call is a carrier call, and the Operating Company does not provide operator service for that carrier. In this situation, pressing the NO AMA key causes the route in the CLSVSCRC Table to be ignored and the call routes to standard translation (HNPACONT Table). The AMA record produced for this type of call is a call code 035 record with an XX7XX structure code.

Calls abandoned before connection to carrier is established

Normally, if a call arrives at the operator position and is canceled before connection to the carrier is established, the Record Date and Record Time fields contain zeros and the Carrier Connect (CC) Date and CC Time fields contain the time of the last restart. (The CC Date and CC Time fields are also called Event Date and Event Time fields.)

However, for TICS, the Operating Company bills the carrier for the operator work time, and therefore needs the information in the Record Date and Time fields. Thus, for TICS, the abandon time will be recorded in the Record Date and Time fields and in the CC Date and Time fields. The time will be the same in both fields. However, a slight difference might exist between the Record Time and the CC Time fields since one is recorded to the second and the other is recorded to the tenth of a second.

The abandon time will be recorded for canceled calls, credit adjustment calls, and calls that are routed to treatment.

The following 4 figures are example billing records that were generated for calls to a carrier for which operator services are provided.

Example AMA record for 0- Hotel Person-Paid InterLATA Call

```
HEX ID: AA STRUCT CODE:04701C CALL TYPE:016C SENSOR TYPE: 036C
SENSOR ID:0000000C REC OFC TYPE:036C REC OFC ID: 0000000C DATE:60102C
TIMING IND:00000C STUDY IND: 0000000C ANSWER:0C SERV OBSERVED: 0C
OPER ACTION: 1C SERV FEAT: 011C ORIG NPA:613C ORIG NO:2391111C
OVERSEAS IND: 0C TERM NPA:00212C TERM NO:2201234C CONN TIME: 2232560C
ELASPED TIME:000000080C OPERATOR_NUMBER: 1010111C CHARGE INDICATOR:0C
AMOUNT OF CHARGE: 00332C OPERATOR WORK TIME:000000140C
IC/INC PREFIX: 02220C CC DATE:60102C CC TIME:2232478C
ELASPED CC: 000000193C IC/INC EVENT:012C TRK GRP:00158C ROUTING: 1C
DIALING:1C ANI:0C
```


TOPS Inter-LATA Carrier (continued)**Example AMA record for 0- Coin Station-Paid InterLATA Call**

```

HEX ID: AA STRUCT CODE:04705C CALL TYPE:010C SENSOR TYPE: 036C
SENSOR ID:0000000C REC OFC TYPE:036C REC OFC ID: 0000000C DATE:60102C
TIMING IND:00000C STUDY IND: 0000000C ANSWER:0C SERV OBSERVED:0C
OPER ACTION: 1C SERV FEAT:001C ORIG NPA:613C ORIG NO: 2391111C
OVERSEAS IND:0C TERM NPA:00212C TERM NO: 2201234C CONN TIME:2216330C
ELAPSED TIME: 000000090C OPERATOR_NUMBER:1010111C CHARGE INDICATOR: 2C
AMOUNT OF CHARGE:00055C SSAS:038C OPERATOR WORK TIME: 000000150C
IC/INC PREFIX:02220C CC DATE: 60102C CC TIME:2216380C
ELAPSED CC:000000198C IC/INC EVENT: 012C TRK GRP:00158C ROUTING:1C
DIALING: 1C ANI:0C

```

Example AMA record for 0- 1FR Station Special Calling InterLATA Call

```

HEX ID: AA STRUCT CODE:04718C CALL TYPE:015C SENSOR TYPE: 036C
SENSOR ID:0000000C REC OFC TYPE:036C REC OFC ID: 0000000C DATE:60102C
TIMING IND:00000C STUDY IND: 0000000C ANSWER:0C SERV OBSERVED:0C
OPER ACTION: 1C SERV FEAT:000C ORIG NPA:613C ORIG NO: 2391111C
OVERSEAS IND:0C TERM NPA:00212C TERM NO: 2201234C CONN TIME:2210050C
ELAPSED TIME: 000000070C OPERATOR_NUMBER:1010111C
BILLING NUMBER: 02122201234C DIALING RATE:4C RAO NUMBER: 000C
BILLING NO CONT:4C BILLING VALID FILE: 0C CREDIT CARD FAIL:000C
OPERATOR WORK TIME: 000000180C IC/INC PREFIX:02220C CC DATE: 60102C CC
TIME:2209528C ELAPSED CC:000000201C IC/INC EVENT: 012C TRK GRP:00158C
ROUTING:1C DIALING: 1C ANI:0C

```

Example AMA record for 0- 1FR Station-Paid InterLATA Call

```

HEX ID: AA STRUCT CODE:04700C CALL TYPE:010C SENSOR TYPE: 036C
SENSOR ID:0000000C REC OFC TYPE:036C REC OFC ID: 0000000C DATE:60102C
TIMING IND:00000C STUDY IND: 0000000C ANSWER:0C SERV OBSERVED:0C
OPER ACTION: 1C SERV FEAT:000C ORIG NPA:613C ORIG NO: 2391111C
OVERSEAS IND:0C TERM NPA:00212C TERM NO: 2201234C CONN TIME:2200540C
ELAPSED TIME: 000000090C OPERATOR_NUMBER:1010111C
OPERATOR WORK TIME: 000000130C IC/INC PREFIX:02220C CC DATE: 60102C
CC TIME:2200479C ELAPSED CC:000000162C IC/INC EVENT: 012C
TRK GRP:00158C ROUTING:1C DIALING: 1C ANI: 0C

```

Station Message Detail Recording

TOPS Inter-LATA Carrier does not affect Station Message Detail Recording.

TOPS Inter-LATA Carrier (continued)

Datafilling office parameters

The following table shows the office parameters used by TOPS Inter-LATA Carrier. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by TOPS Inter-LATA Carrier

Table name	Parameter name	Explanation and action
OFCVAR	TOPS_OTC_ CARRIER_ NUMBER	<p>This parameter is in Access Tandem (AT) switches that contain the TICS software. It reserves a Carrier Access Code (CAC) that designates an Operating Company as a Primary Inter-LATA Carrier (PIC).</p> <p>This designation, PIC, allows all inter-LATA calls presubscribed to that Operating Company to route automatically to the TOPS operator. The CAC for the Operating Company should be datafilled in the TOPS Equal Access Carrier (TOPEACAR) table, the OPSERV field of which should be set to SERV. It is recommended that all of the remaining fields in the TOPEACAR table be set to the default entries.</p> <p>The value range for the parameter, which can be updated at any time, is 000 to 999. The default value for the parameter is NNN.</p> <p>This parameter is in table OFCVAR (Variable Office Parameter).</p> <p>Note: If an Operating Company has been designated as a PIC, the TOPS operator must manually enter the CAC for a carrier when completing or transferring a call.</p>

TOPS Inter-LATA Carrier (continued)**Office parameters used by TOPS Inter-LATA Carrier**

Table name	Parameter name	Explanation and action
DNPIC	DNPIC_MAX_ NUM_DN_ TUPLES	<p>This parameter is in Access Tandem (AT) switches with the TICS software. It limits the number of tuples that can be datafilled into the Directory Number Primary Inter-LATA Carrier (DNPIC) table.</p> <p>The value range for the parameter is 0 to 100, where each number represents ten thousand entries in the DNPIC table.</p> <p>The default value for the parameter is 5.</p>
TOPEATRK	TOPS_EA_ DNPC_LOG_ GENERATION	<p>This parameter is required for a switching unit with the Traffic Operator Position System Inter Local Access and Transport Area Carrier Service (TICS) feature.</p> <p>This parameter stops the generation of the DNPC 100 log.</p> <p>The parameter can have the following values:</p> <ul style="list-style-type: none"> • ALL <p>The value ALL causes the log to be produced for all cases.</p> • TOPS_LEAS_ONLY <p>The value TOPS_LEAS_ONLY causes the log to be produced for only those calls that originate over a TOPS trunk that is providing LATA.</p> <p>Equal Access System (LEAS) Service.</p> <p>TOPS calls without the LEAS Service do not produce the log. This parameter applies only if the datafill in table TOPEATRK (field DNLOOK) indicates that a lookup should be done in table DNPIC to determine the carrier but the calling number is not found in table DNPIC, where Default = ALL and Activation = IMMEDIATE.</p>

TOPS Inter-LATA Carrier (continued)

Datafill sequence

The following table lists the tables that require datafill to implement TOPS Inter-LATA Carrier. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for TOPS Inter-LATA Carrier

Table	Purpose of table
PICNAME	The Primary Inter-LATA Carrier Name (PICNAME) table lists the names of all of the carriers serving the DMS. This table, which is part of the TOPS EA software, eliminates the use of the OCCNAME table during TOPS translations.
OFRT	The Office Route (OFRT) table defines all the carrier routes and operator service routes. Each tuple provides the route number (RTE) and the route list (RTELIST). RTELIST must include a primary route and may include a secondary route.
CARRTRF	Carrier tariff.
TOPEACAR	The TOPS Equal Access Carrier (TOPEACAR) table specifies whether operator services are provided for a certain carrier and defines the billing procedure for the inter-LATA calls associated with that carrier. This table eliminates the need for the OCCINFO table during TOPS translations.
TOPEATRK	<p>The TOPS Equal Access Trunk Group Extension (TOPEATRK) table provides the carrier and the originating end office information necessary for the TOPS software to make a routing decision.</p> <p>The TOPEATRK table also specifies what type of class of service screening must be performed on a call. The TOPS Equal Access software modifies the way in which the AT determines which class of service screening subtable should be used for inter-LATA domestic calls.</p>
DNPIC	<p>The Directory Number Primary Inter-LATA Carrier (DNPIC) table maps the Directory Numbers associated with inter-LATA calls with Primary Inter-LATA Carriers (PIC). This mapping is based on the Directory Number (DN) for those calls, not on the trunk group data for the incoming trunk group carrying the calls.</p> <p>Note: If the DNPIC table is searched for a Directory Number (DN) that it does not contain, a DNPC100 log is generated. The TOPS_EA_DNPC_LOG_GENERATION parameter controls the generation of the DNPC100 log.</p>
TRKGRP(ATC)	The Trunk Group (TRKGRP) table defines the trunks over which traffic is routed. The Access Tandem to Carrier (ATC) trunk group type is dedicated to Equal Access (EA) inter-LATA traffic.
RESTBIL	Restricted billing. Datafill customized ANI ID displays.

TOPS Inter-LATA Carrier (continued)

Datafill tables required for TOPS Inter-LATA Carrier

Table	Purpose of table
OCCINFO	Datafill this table with unique carriers that are used in new table CARRSCRN, field CARRLIST.
CARRSCRN	This table indicates which carriers are permitted to complete an IEC call billed to a particular calling card.
CCVINFO	Table CCVINFO is used for CCV queries and is indexed with any of the following calling card formats: RAO, CIID, CCITT or directory number format. Field PARMSIDX is an index into table CCVPARMS.
TOPSPARM	TOPS parameters. This table allows optional TOPS EA translations of Zenith routing numbers.

Datafilling table PICNAME

Datafill example for table PICNAME

The following example shows sample datafill for table PICNAME.

MAP display example for table PICNAME

VALUE	SYMBOL
0	NODATA
1	NOCAR
2	NILCAR
3	CARR3
4	CARR1
5	CARR2

Note: Refer to "Limitations and restrictions" for a description of the datafill considerations for the PICNAME table.

Datafilling table OFRT

Datafill example for table OFRT

The TOPS Equal Access software allows an AT to output the signaling information for a call to an International Carrier (INC) using FGD Signaling. This is achieved by using the TS route selector in the OFRT table. The TS selector provides the International Operator-Assisted (OA) Call Type Identification digits (1N'X) that are used when 2-stage outputting to international switching centers is required.

TOPS Inter-LATA Carrier (continued)

The following example shows sample datafill for table OFRT.

MAP display example for table OFRT

```

RTE                                RTELIST
-----
310 TS D OGEACAR2 0 N N 3 188
    
```

The 1N'X code represents a 3-digit code that begins with 1 and has a middle digit that is not 0 or 1. The value, N', distinguishes this code from the 1NX code used for Direct-Dialed (DD) international calls. The values for N' and N should be unique, and they should not overlap.

For a TICS-equipped Access Tandem office to interact properly with an Equal Access End Office, PIC conditional routing must be used. This routing method prevents the PIC assigned to a line from overriding the non-PIC Carrier Access Code dialed by the subscriber.

PIC conditional routing ensures that if a subscriber places a call using a Carrier Access Code (CAC) other than the one for the PIC assigned to his line, the call is routed using the carrier specified. The call is not routed based on the IC assigned to the subscriber line in table DNPIC. Conversely, if a subscriber places a call without using a CAC, the call is routed using the PIC assigned to the subscriber line in the DNPIC table.

The following figure provides an example of how a tuple in table OFRT would be set up for PIC conditional routing. Based on the way in which the datafill in this tuple should be set up, the first route is taken if the subscriber places a call using a CAC other than the one for the PIC assigned to his line in the DNPIC table. The second route is taken if the subscriber does not dial a CAC when placing a call.

MAP display example for table OFRT

```

RTE                                RTELIST
-----
100 (CND PIC SK 1) (T OFRT 111) (T OFRT 110)
101 (CND PIC SK 1) (T OFRT 112) (T OFRT 111)
110                                (S D CARR1CLLI1)
111                                (S D CARR1CLLI2)
112                                (S D CARR1CLLI3)
113                                (S D CARR1CLLI4)
    
```

TOPS Inter-LATA Carrier (continued)

Datafilling table TOPEACAR

The following table shows the datafill specific to TOPS Inter-LATA Carrier for table TOPEACAR. Only those fields that apply directly to TOPS Inter-LATA Carrier are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TOPEACAR

Field	Subfield or refinement	Entry	Explanation and action
AUTZPLUS		Y or N	Automate zero plus. Enter Y for 0+ calls to receive automated service.
Note: Only 61 carrier names can be datafilled in the TOPEACAR table.			

Datafill example for table TOPEACAR

The following example shows sample datafill for table TOPEACAR.

MAP display example for table TOPEACAR

CARDIG	CARNAME	OPLSCLD	CAMABILL	OPSERV
009	CARR1	N	N	NOSERV
201	CARR5	Y	Y	NOSERV
324	CARR3	Y	N	SERV QUERY N BLK N NOQUERY Y N N
725	CARR2	N	Y	SERV NOQUERY Y QUERY Y BLK N Y N
889	CARR4	N	N	SERV QUERY N QUERY Y QUERY N Y Y

Datafilling table TOPEATRK

The following table shows the datafill specific to TOPS Inter-LATA Carrier for table TOPEATRK. Only those fields that apply directly to TOPS Inter-LATA

TOPS Inter-LATA Carrier (continued)

Carrier are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TOPEATRK

Field	Subfield or refinement	Entry	Explanation and action
INTRASSC and INTERSSC		alphanumeric	Two fields, INTRASSC and INTERSSC in table TOPEATRK, provide for intrastate and interstate screening. These fields will accommodate carriers providing only inter-LATA interstate service. The screening used for a particular NPA-NXX is specified in the STATE field of the LATAOLA table. If this field is set to INTER, the AT uses the class of service screening subtable specified in the INTERSSC field. If the STATE field is set to INTRA, the subtable specified in INTRASSC is used.
DNLOOK and DFLTPIC			The DNLOOK and the DFLTPIC fields in the TOPEATRK table specify whether a carrier is associated with a 0-, 0+, or 1+ call. Refer to "Operation" for more information.

Datafill example for table TOPEATRK

The following example shows sample datafill for table TOPEATRK.

MAP display example for table TOPEATRK

```

TRUNKGRP ENDOFFICE CARRIER LATANM INTRASSC INTERSSC OVSSCL
SCRNIDX DNLOOK DFLTPIC BYPASS

TOPCOMAMF CONFORM 209 LATA1 TEAD TEAD TEAI
613 Y Y $
TOPCOMBMF NCONFORM 452 LATA2 TEAR TEAN TEAO
919 N Y (HOTEL)
    
```

Datafilling table DNPIC

The following table shows the datafill specific to TOPS Inter-LATA Carrier for table DNPIC. Only those fields that apply directly to TOPS Inter-LATA

TOPS Inter-LATA Carrier (continued)

Carrier are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table DNPIC

Field	Subfield or refinement	Entry	Explanation and action
DNPIC		alphanumeric	The names of the carriers in the DNPIC table must be datafilled in the PICNAME table before they are associated with the Directory Numbers in the DNPIC table.

Datafilling table TRKGRP

EA signaling is allowed on outgoing trunk groups from the AT to an IC/INC. When this type of signaling is used on an outgoing trunk to an INC, the TS route selector must be datafilled in the Office Route (OFRT) table.

Datafill example for table TRKGRP

The following example shows sample datafill for table TRKGRP.

MAP display example for table TRKGRP(ATC)

```

GRPKEY                                GRPINFO

OGEACAR3
  ATC  0 TLA NCRT OG SP MIDL MPRT MSCR 919 ABC Y BELLI COMB
OGEACAR4
  ATC  0 TLA NCRT OG SP MIDL NPRT NSCR 919 XYZ Y EAPLAN COMB
    
```

TOPS Inter-LATA Carrier (continued)

Datafilling table RESTBIL

Datafilling table RESTBIL

Field	Subfield or refinement	Entry	Explanation and action
SCRNDISP		alphanumeric	Enter customized ANI II displays.
BILTYPES			<p>Customizing the ANI II display at the TOPS position can only be done for the following restricted call types:</p> <ul style="list-style-type: none"> • PD - Station Paid or Person Paid • COL - Collect • CC - Credit Card • 3RD - Third Party Billing • SPLCLG - Special Billing Number by Calling Party • SPLCLD - Special Billing Number by Called Party <p>The following call type may also be handled by the TOPS position, but customizing the ANI display is not possible.</p> <ul style="list-style-type: none"> • Call back

Datafill example for table RESTBIL

Following is example datafill for customizing the ANI display for AIN calls for certain restricted billing types. Allowable billing types are given after the example.

TOPS Inter-LATA Carrier (continued)

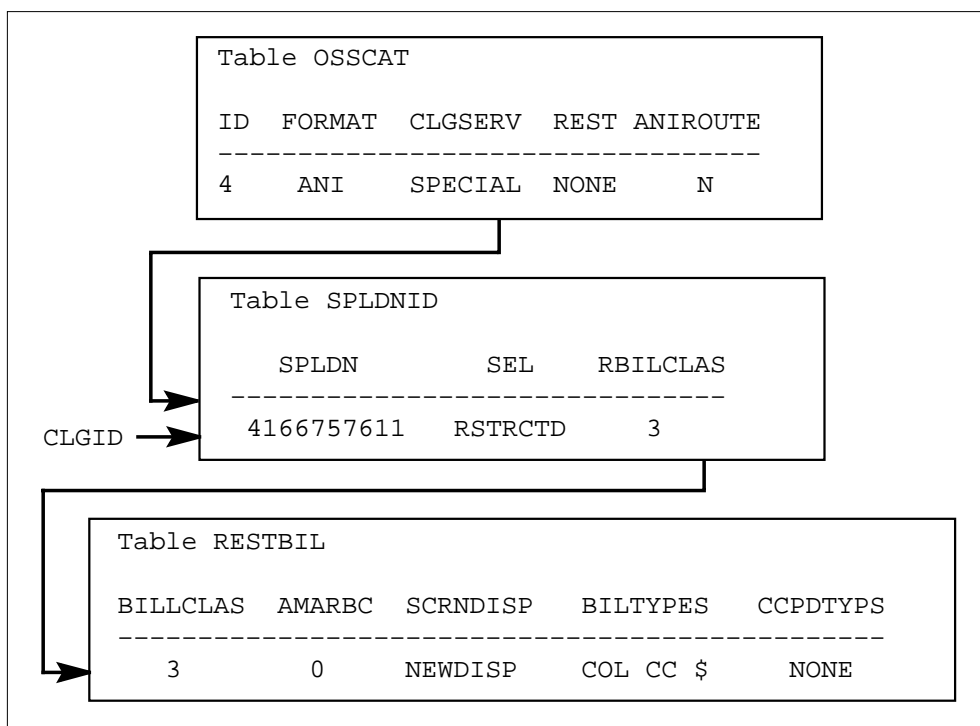


Table OSSCAT is used for any of the OSS, Operator Services Signaling formats that use ANI II digits.

Datafilling table OCCINFO

The following table shows the datafill specific to TOPS Inter-LATA Carrier for table OCCINFO. Only those fields that apply directly to TOPS Inter-LATA Carrier are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table OCCINFO

Field	Subfield or refinement	Entry	Explanation and action
			This table is not changed. Datafill this table with unique carriers that are used in new table CARRSCRN, field CARRLIST.

Datafilling table CARRSCRN

New table CARRSCRN provides calling card/carrier screening. In this table, permitted carriers are datafilled against indices of calling cards.

TOPS Inter-LATA Carrier (continued)

The following table shows the datafill specific to TOPS Inter-LATA Carrier for table CARRSCRN. Only those fields that apply directly to TOPS Inter-LATA Carrier are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table CARRSCRN

Field	Entry	Explanation and action
IDX	0-62	A key into this table defined in table CCVINFO, field CARRIDX. PERMIT - Indicates if ALL, NONE, or SOME carriers are permitted to complete an IEC call. CARRLIST - A listing of up to 16 carriers permitted to complete a call if field PERMIT=SOME. Otherwise, this field is not used. Carriers must be predefined in table OCCINFO.
PERMIT	ALL, NONE, SOME	Indicates if ALL, NONE, or SOME carriers are permitted to complete an IEC call.
CARRLIST		A listing of up to 16 carriers permitted to complete a call if field PERMIT=SOME. Otherwise, this field is not used. Carriers must be predefined in table OCCINFO.
Note: The first two tuples are defaults and cannot be altered or removed.		

Datafill example for table CARRSCRN

The following example shows sample datafill for table CARRSCRN.

MAP display example for table CARRSCRN

IDX	PERMIT	CARRLIST
0	ALL	
1	NONE	
2	SOME	0288
3	SOME	0333
62	SOME	0333,0555

Datafilling table CCVINFO

The following table shows the datafill specific to TOPS Inter-LATA Carrier for table CCVINFO. Only those fields that apply directly to TOPS Inter-LATA

TOPS Inter-LATA Carrier (continued)

Carrier are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table CCVINFO

Field	Entry	Explanation and action
CARRIDX		This field has been added as an index into new table CARRSCRN.
Note: If a given calling card number has no match in this table, then calling card/carrier screening is not performed and the call is allowed to complete.		

Datafill example for table CCVINFO

The following example shows sample datafill for table CCVINFO.

MAP display example for table CCVINFO

CCVDIGS	PARMSIDX	CARRIDX
212220	254	0
677001	55	2
677101	253	2
834001	6	0
836001	254	62
891999	3	0
891288	4	2
891333	1	3
9194	254	0
919781	250	1

Datafilling table TOPSPARM

The following table shows the datafill specific to TOPS Inter-LATA Carrier for table TOPSPARM. Only those fields that apply directly to TOPS Inter-LATA Carrier are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TOPSPARM

Parameter name	Explanation and action
ZENITH_EA_ROUTING	BR30517 adds this parameter to table TOPSPARM to allow optional TOPS EA translations of Zenith routing numbers.

TOPS Inter-LATA Carrier (end)

Translation verification tools

TOPS Inter-LATA Carrier does not use translation verification tools.

SERVORD

TOPS Inter-LATA Carrier does not use SERVORD.

TOPS LNP

Ordering codes

Functional group ordering code: OSEA0101

Functionality ordering code: OSEA0103

Release applicability

TOPS07 and up

TOPS LNP was introduced in TOPS07.

Prerequisites

To operate, TOPS LNP has the following prerequisites:

- Operator Services Basic, OSB00101, and table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- BAS Generic, BAS0003
- Service Switching Point (SSP) Location Routing Number (LRN), LNP00100
- Operator Services Equal Access, OSEA0101
- Table TOPSFTR parameter NUMBER_PORTABILITY = Y
- Advanced Intelligent Network (AIN) Primer, AIN00001
- AIN Essentials, AIN00002
- AIN Call Management, AIN00006
- AIN Call Model Control, AIN00007
- AIN Services Support, AIN00009

Description

Local Number Portability (LNP) is a circuit switched network capability that allows telephone subscribers to keep their directory number (DN) when they change service providers. The subscriber keeps the same DN when the DN is moved (also called ported) to a different end office. Callers can connect to the ported DN without changing their dialing procedure.

In the Traffic Operator Position System (TOPS) system, LNP changes the way the TOPS system handles the routing of numbers. LNP also requires the TOPS system to process more information to bill alternate billing service (ABS) calls and to route busy line verification (BLV) calls.

TOPS LNP (continued)

This functionality is provided by the following features:

Feature number	Feature name
AF6548	TOPS LNP Call Processing (TOPS07)
AF6549	TOPS LNP TCAP Interface (TOPS07)
AF6550	TOPS LNP ISUP/MF Interworking (TOPS07)
AF6551	TOPS LNP BLV/INT (TOPS07)
AF6552	TOPS LNP CI Tool/OLNS/ABS Changes (TOPS07)
AF6553	TOPS LNP Table Control, SOC, and AMA (TOPS07)
BY61398	LNP STDPRT Triggering for TOPS BLV (TOPS07)
AF7498	TOPS: Bill Code Enhancements & STS/SNPA Decoupling (TOPS10) (affects 7 to 10 digit expansion of NPA)
59006865	EOL Notificatoin & EOL of TOPS ACD (TOPS12)

The following are reference documents:

- *TOPS Local Number Portability (LNP) User's Guide*, 297-8403-902, in release LETB0007.
 This document is an all inclusive guide to TOPS LNP containing all of the information that is in this translations guide plus signaling protocol and operator usage.
- *DMS-100/200 LRN-LNP Service Implementation Guide*, 297-8981-021.
 This document is an all inclusive guide to LNP in the DMS-100 switch side containing all of the information that is in the End Office translations guide plus signaling protocol. LNP in the DMS-100 side is a prerequisite for TOPS LNP.
- *North American DMS-100 Translations Guide*, 297-8001-350. This guide provides the following:
 - LNP for the DMS-100 switch side which is a prerequisite for TOPS LNP. Refer to the AIN section, subsection "Introduction to LNP translations".
 - CCS7 translations for LIDB SCP queries. Refer to the "Base Services" volumes, section "Understanding BAS CCS7".
- *North American DMS-100 Feature Description Manual*, 297-8021-801.
 This manual contains descriptions of features.

Operation

The contents of this operation section are the following:

- Overview
 - Call flow example
 - Types of number portability
- Call processing
 - Incoming translations and screening in the TOPS environment
 - Eligibility for an LNP query
 - Routing query
 - AMA query
 - Operator or SN query
 - DN 7- to 10-digit conversion
 - Query failure handling
 - Successful query
 - Outgoing translations and screening
 - Outgoing ported DN digit manipulation
 - Special handling of seven-digit dialing
- Incoming signaling
 - ISUP trunks
 - PTS trunks
- Outgoing signaling
 - ISUP trunks
 - PTS trunks
- BLV
 - Expanding seven digits to ten digits
 - Offices with scramblers
 - Pretranslators for the outgoing leg of the BLV call
 - DMS-200 outgoing trunk to scrambler circuit
 - Pretranslator for the incoming leg of the BLV call
 - Triggering the LNP query on the DMS-100 side
 - DMS-100 incoming trunk of the scrambler circuit

TOPS LNP (continued)

- DMS-100 tables TRIGGRP and TRIGDIG
- DMS-100 table TRKGRP
- DMS-100: BY61398
- DMS-100: BY61398: Express route triggering option (BLV traffic class)
- DMS-100: BY61398: HLRN response processing changes for BLV
- DMS-100: BY61398: Escape TCC DN resident check
- DMS-100: BY61398: LNP trigger criteria check from STDPRT
- DMS-100: BY61398: TRAVER
- DMS-100: BY61398: TRAVER, LNP trigger display
- DMS-100: BY61398: TRAVER, LNP response display
- DMS-100: BY61398: Interactions
- DMS-100: BY61398: Limitations and restrictions
- Offices without scramblers
- Routing BLV calls through a tandem
- LIDB queries
- TCAP interface
- SOC
- OMs
- Logs

Overview

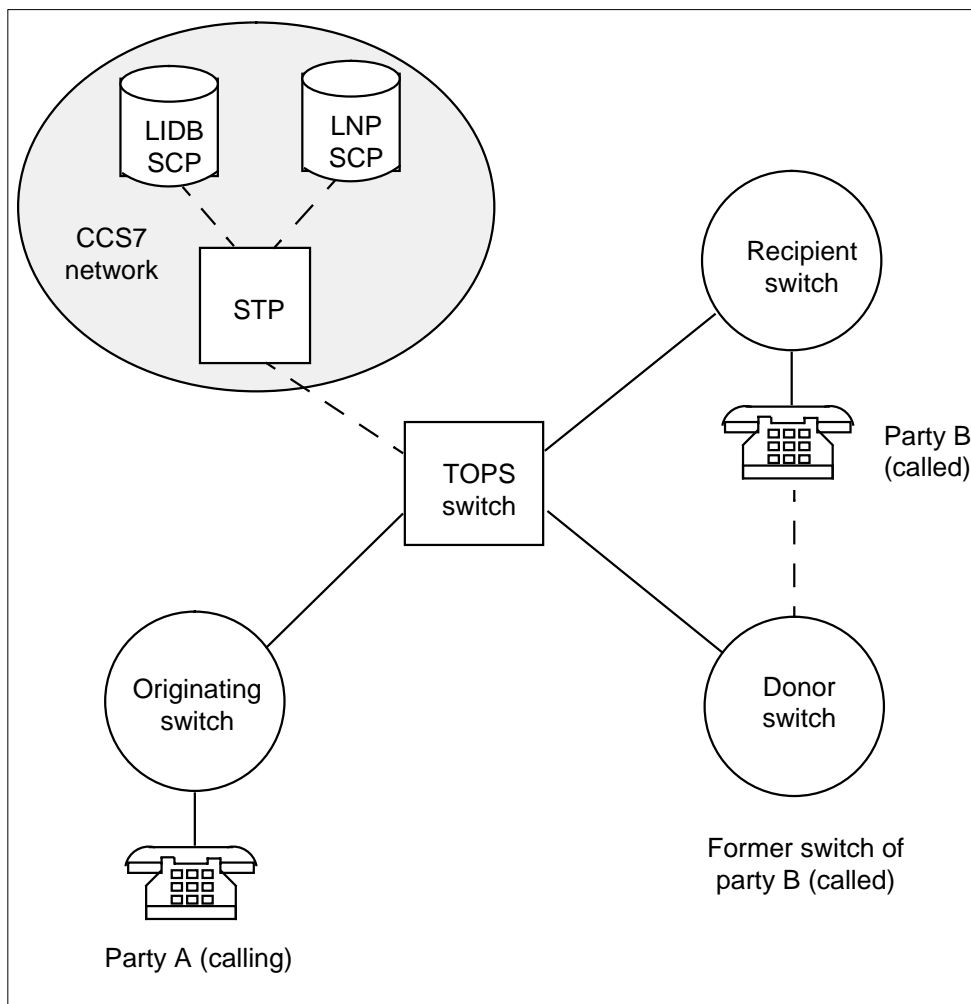
Before LNP, all DNs with the same first six digits, known as the NPA-NXX, belonged to a single telephone switch. With LNP, individual DNs can be ported to different switches. So the NPA-NXX of a DN no longer uniquely identifies the switch that hosts the DN.

This change affects the way a call is routed. LNP introduces a location routing number (LRN) as a way to route calls to subscribers whose DNs have been ported. Each switch that hosts a ported DN is assigned a unique 10-digit LRN. To route a call to the correct destination, the TOPS switch must obtain the LRN assigned to the switch that hosts the ported DN.

TOPS LNP (continued)

An NPA-NXX is referred to as portable if it may include ported directory numbers. In addition, the TOPS system determines if a DN is portable by checking switch datafill (specially new table PORTNUMS).

The following figure shows an LNP network.

LNP network configuration

In the above figure, the originating switch serves party A (the calling party). The donor switch formerly served party B (the called party), but party B has changed service providers. Now the recipient switch serves party B.

Note: The donor switch and recipient switch belong to the same rate center.

TOPS LNP (continued)

With LNP, a subscriber is able to keep the same DN after changing service providers. Thus, the DN of party B has been ported from the donor switch to the recipient switch. And because the DN of party B is portable, the NPA-NXX of party B no longer identifies the switch to which a call from A to B should be routed.

Queries to the LNP and line information database (LIDB) service control points (SCPs) are over a common channel signaling number 7 (CCS7) network through a signal transfer point (STP).

LRNs are of the same form as North American Numbering Plan (NANP) 10-digit numbers. With ISUP trunks, both the LRN and the dialed digits can be signaled. With Per Trunk Signaling (PTF) trunks, only the dialed digits are signaled.

LNP is supported in the TOPS Operator Services System Advanced Intelligent Network (OSSAIN) environment as well as the traditional TOPS environment. OSSAIN follows the same rules and assumptions as the traditional TOPS system regarding LNP-related processing.

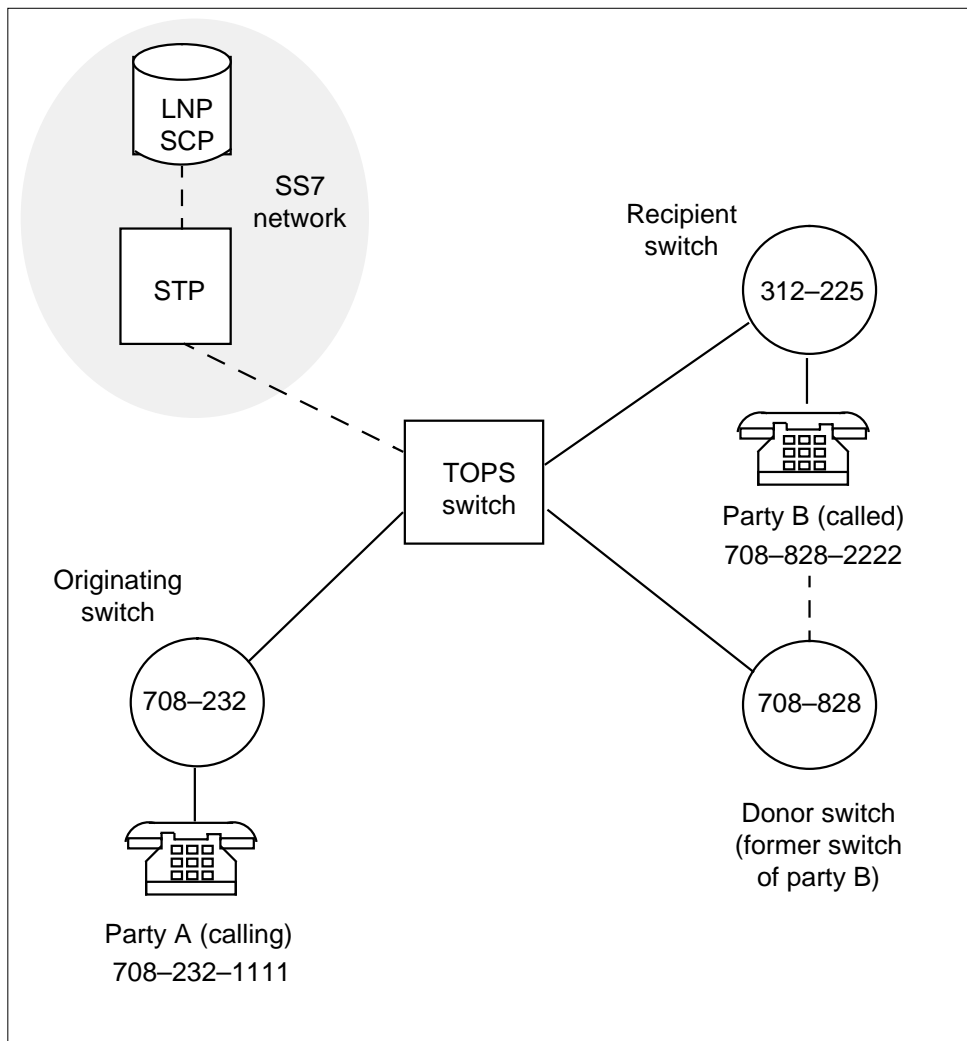
LNP affects the way numbers are translated and outpulsed, and it creates a need for additional information when they are used in billing records. As a result, LNP particularly affects ABS and BLV. ABS calls (for example, collect, person-to-person, third party billed, and calling card) are impacted because of the verification required on the alternative billing information, and the additional information required for billing.

Call flow example

Operation of LNP may be illustrated with an example 0- station paid call flow. The incoming signaling is multi-frequency (MF) and the originating switch signals automatic number identification (ANI) to the TOPS office.

The call comes into a TOPS office from an adjacent end office that hosts ported numbers. The operator enters the called number, class charges the call station paid, and releases the call. The called number is ported.

The following figure shows the network for this example.

TOPS LNP (continued)**Example 0- station paid call**

The steps for this example are as follows:

1. Party A dials 0.
2. The originating switch determines that the call requires operator services, so it seizes a trunk to the TOPS switch and signals the call.
The dialing and signaling in this step are the same as they would be without LNP.
3. The call is presented to an operator, who prompts the caller for the called number and billing method.
4. The caller tells the operator that the called number is 708-828-2222 and that the call should be station paid.

TOPS LNP (continued)

5. The operator enters the called number, 708-828-2222.
6. The TOPS switch performs translations and screening on the called number to establish a route for the call. In checking the datafill, the switch determines that party B is portable.
7. The TOPS switch sends an LNP query to the LNP service control point (SCP) for the called number.
8. The TOPS switch receives a response from the LNP SCP indicating that the called number has been ported and specifying that the LRN of the recipient switch is 312-225-0000.
9. The TOPS switch performs translations and screening on the LRN, which results in a route to the recipient switch.
10. The TOPS switch seizes a trunk to the recipient switch and signals the directory number, 708-828-2222. (Depending on the outgoing signaling, the TOPS switch also may signal the LRN.)
11. The operator class charges the call station paid, enters Position Release, and is released from the call.
12. When the call ends, the TOPS switch generates an AMA record that includes the LNP information.

For additional call flow examples, refer to the *TOPS LNP Users Guide*, 297-8403-902.

Types of number portability

LNP consists of three types of portability, as follows:

- Service provider portability allows the subscriber to change local phone service from one service provider's switch to another service provider's switch without changing telephone number or the location of the telephone.
- Geographic portability allows the subscriber to change the location of the telephone without changing the telephone number.
- Service portability allows the subscriber to change service mix (such as from POTS to ISDN) without changing telephone number.

Service provider portability is the first phase of LNP implementation. With LET007 (TOPS07), LNP functionality addresses facility-based service provider portability within a rate center. TOPS07 LNP does allow limited geographic portability—the telephone can be moved to another end office in the same rate center. Currently, there is no clear industry definition of the term rate center. However, a working definition follows: A line has moved within a

TOPS LNP (continued)

rate center if the rates for all calls to and from the line are the same at the new location as they were at the old location.

Call processing

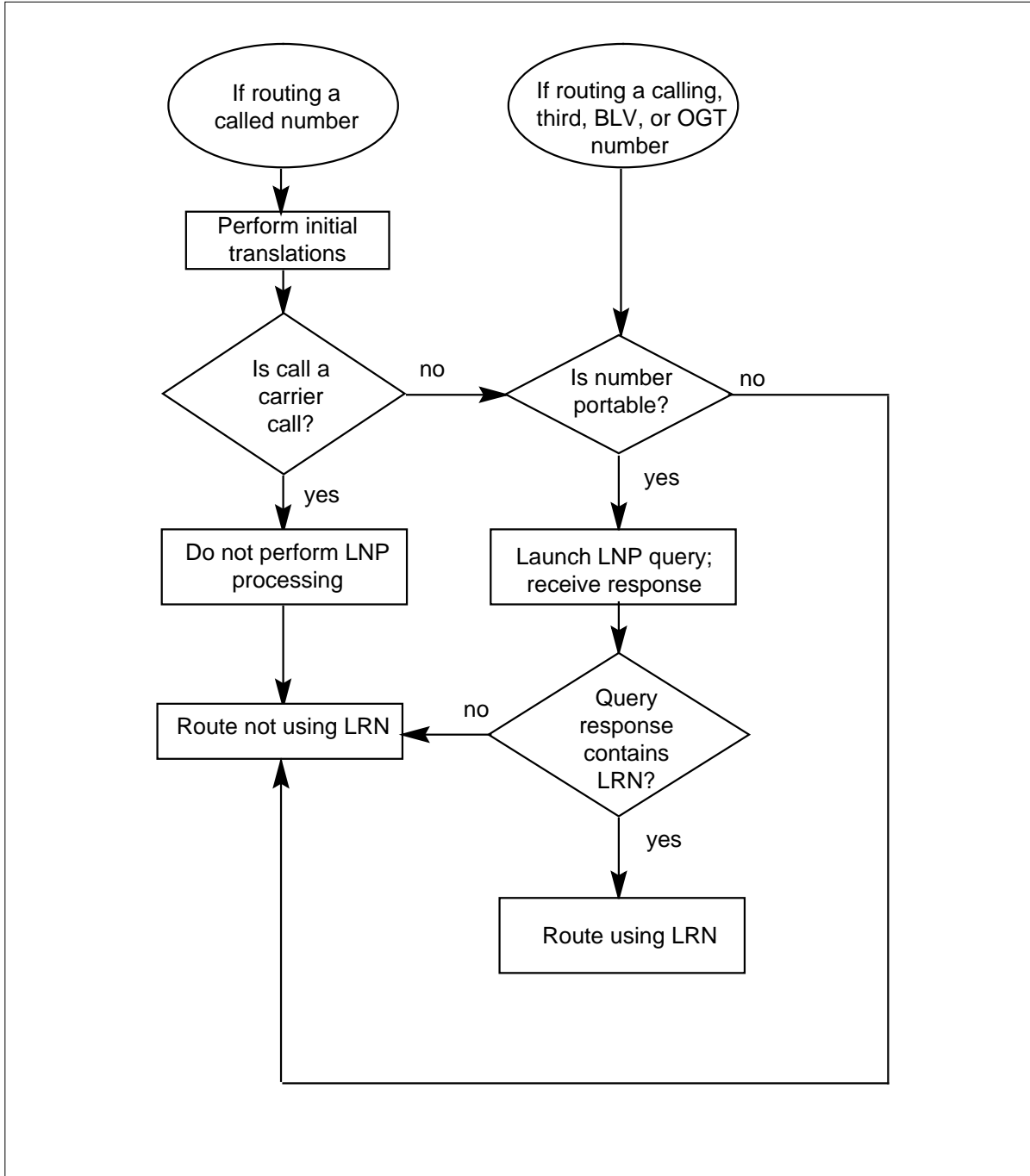
An LNP query determines if a number has been ported, and if it has, the LRN of the recipient switch. During call processing, LNP information about a number may be needed for any of the following three purposes:

- routing
- AMA recording
- by request of an operator or OSSAIN service node (SN)

However, if the LNP information is needed for more than one purpose, only one LNP query (at most) is made for that number. The following figure shown the routing flow.

TOPS LNP (continued)

TOPS LNP routing flow



Incoming translations and screening in the TOPS environment

Some numbers are ineligible for equal access translations, such as calling, third, BLV, and outgoing trunk (OGT) routing numbers. For these numbers, the

TOPS LNP (continued)

LNP query eligibility point occurs before any translations or screening are performed on the DN itself.

However, when a number is eligible for equal access translations, the TOPS system attempts to perform full translations on the DN as soon as it is received. This includes pretranslations and code screening, any indicated class of service screening and local call area screening, and equal access translations and screening. In this case, the LNP query determination point occurs after full translations. So a successful call to a ported number that is eligible for equal access translations needs first to pass DN-based screening.

If equal access translations indicate that the call should be routed to a carrier, then the switch does no LNP processing on the called DN. But if translations establish a valid route that is not to a carrier, or if translations and screening cannot be completed (because not all required information is available), then the switch does perform LNP processing.

For a situation in which the DN is eligible for and receives equal access screening, the LRN may also receive equal access screening. If translations are set up correctly and subscribers are allowed to port only within a rate center, then a call that is determined not to be a carrier call based on the DN should never become a carrier call as a result of equal access screening of the LRN.

Once the TOPS system determines that the call is a non-carrier call, the LRN is used for routing if the number is ported. TOPS LNP call processing supports routing based on the LRN for ported numbers in the following cases:

- the called number is available at call origination
This applies to 0+ and 1+ calls originating on TOPS trunks and on integrated services digital network (ISDN) user part (ISUP) intertoll (IT) and access tandem to carrier (ATC) trunks. (MF IT and ATC trunks to the TOPS office are restricted to inwards and tollfree directory assistance calls.)
- the called number entered by a TOPS toll and assist (TA) operator or an OSSAIN SN
- the requested (or referral) number for directory assistance (DA) (or intercept) call completion
- subsequent called numbers in a calling card sequence call—mechanized calling card service (MCCS) and OSSAIN.
- the forward number is requested indirectly by an operator through billable OGT keying or service number route keying. Billable OGT keying is indicated by field BILLNUM = Y in table: TQOGTKEY.

TOPS LNP (continued)

- the routing number for CCS7 Number Services Center (NSC) E800 database

This applies only to the U.S. variant of NSC calls. TOPS LNP does not support routing to ported numbers in Canadian 800 Plus calls.

- the third number when connection to the number is requested for verification
- the calling number in a delay call
A delay call is originated by either an operator or an OSSAIN SN. The operator or SN provides the calling number, also known as the back number.
- the calling number when an operator or SN requests to establish a back connection after the back party was released
- the number to be verified in a busy line verification (BLV) request

Eligibility for an LNP query

Calls that pass initial DN screening must pass additional requirements before an LNP query can be sent. Since a query can be sent for routing, operator/SN, or automatic message accounting (AMA) purposes, the requirements vary. However, if the LNP information is needed for more than one purpose, only one LNP query (at most) is made for that number.

Routing query: LNP information on the calling, called, and billing numbers may be needed for routing. For example, the calling number is needed to route a delay call; and a billing number is needed to verify third party billing.

All the following conditions must be met before a query is launched for routing:

- The number's NPA-NXX is datafilled in table PORTNUMS, indicating it is portable.
- The software optionality control (SOC) for TOPS LNP is on.
- LNP information on the number is not already known from a previous query.
- Automatic call gapping (ACG) controls are not preventing a query. ACG controls prevent a query during overload.
- The TOPS switch expects to route to the number (that is, the call will not be transferred to a carrier).
- The number is a 7- or 10-digit number.

TOPS LNP (continued)

AMA query: LNP information from a query for routing is recorded on the AMA record. However, LNP information on the calling and billing numbers may be needed for the AMA record even if the TOPS system does not route to the number.

All of the following conditions must be met before a query is launched for AMA recording:

- The number's NPA-NXX is datafilled in table PORTNUMS, indicating it is portable.
- The SOC for TOPS LNP is on.
- LNP information on the number is not already known from a previous query.
- ACG controls are not preventing a query.
- Table TOPSPARM parameter LNP_QUERY_FOR_AMA_ONLY is set to enable a query.
- For a signaled calling number, the following two conditions are met:
 - In table TOPSTOPT, field LNPCLGAM = Y is datafilled against the incoming trunk group. This requirement only applies for a signaled calling number.
 - No LRN is datafilled against the incoming trunk group in new field LRN of table TRKGRP. This requirement only applies for a signaled calling number.

A query is never sent for AMA purposes only on the called number.

Operator or SN query: LNP information on the calling, called, and billing numbers may be needed by an operator or SN. However, for most calls, LNP queries occur automatically in the course of processing a call (such as after the operator enters a number, or after a line information database (LIDB) query).

The result of an automatic LNP query usually is not sent to the operator position (except for a wait indicator, which is sent). However, when the operator explicitly makes an LNP request, then the position displays the result of the LNP query.

If an earlier request resulted in a query failure, the switch relaunches the LNP query and sends the corresponding result to the position.

TOPS LNP (continued)

All of the following conditions must be met before a query is launched that is requested by an operator or SN (Note, these requirements are valid for both carrier and non-carrier calls.):

- The number's NPA-NXX is datafilled in table PORTNUMS, indicating it is portable.
- The SOC for TOPS LNP is on.
- LNP information on the number is not already known from a previous query.
- ACG controls are not preventing a query.

DN 7- to 10-digit conversion

LET007 software changes the way the TOPS system derives the NPA for seven-digit called numbers. The change affects the expansion method used *with or without* LNP.

Before LET007, the called NPA was obtained several different ways, including using table TERMNPA, table TRKGRP, and table OPRTRANS, in addition to directly using the signaled NPA of the calling number. However, because of LNP, a new method to derive the NPA is used in all areas of the TOPS system where called numbers must be expanded to ten digits.

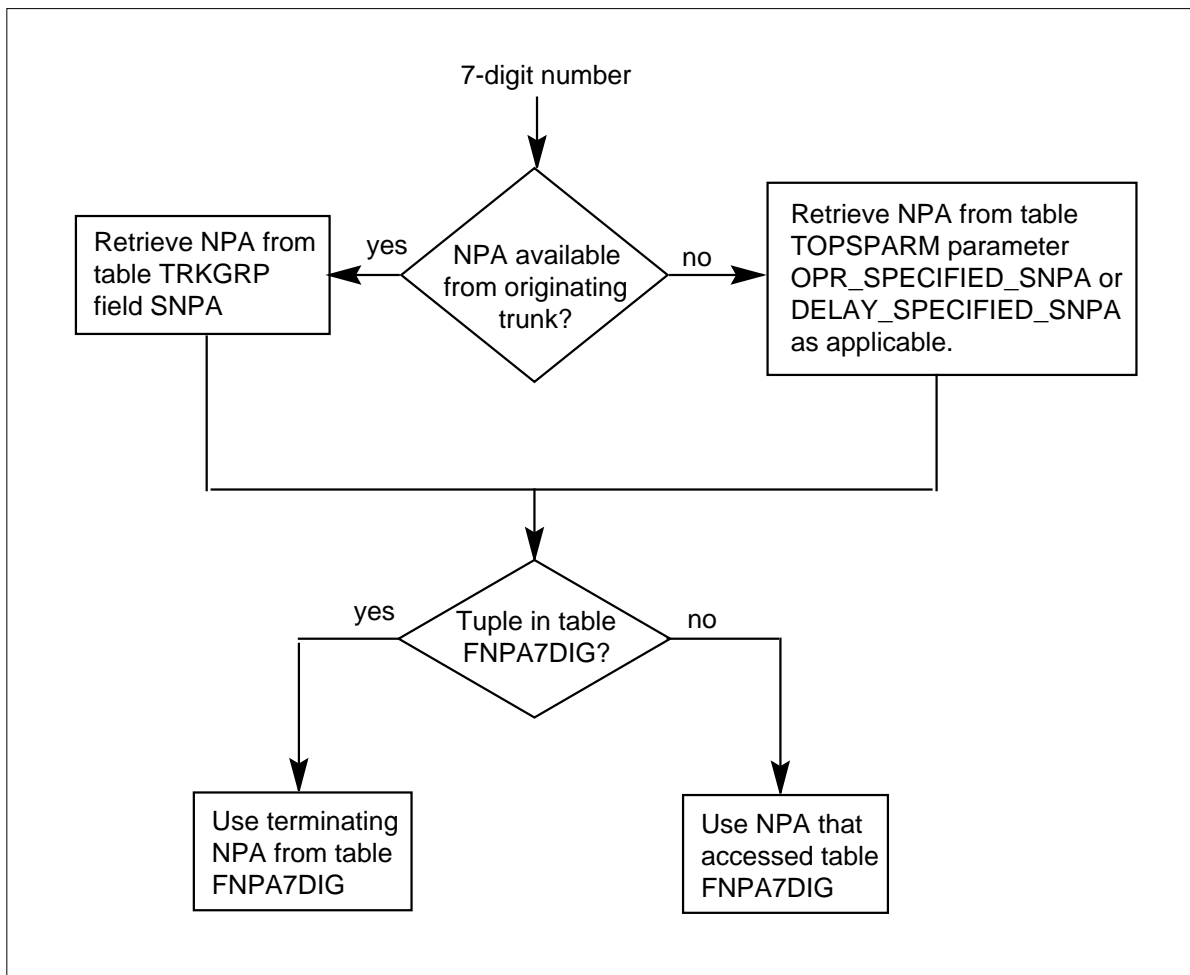
The following areas in the TOPS system use the new expansion method to derive the called NPA:

- LNP queries
- AMA recording
- BLV calls
- external rater queries
- BNS queries
- ACCS CCV four-digit PIN queries
- lookups in tables CCVINFO, BNSINFO, HOTLIST, DOMBILL, REGNUM, SPLDNID, and ILPREGN.
- HOBIC non-inward calls

For the new expansion method, all existing tuples in table TERMNPA are transferred to a new table, FNPA7DIG (Foreign Numbering Plan 7 Digits) during a one night process (ONP) to LET007. Table FNPA7DIG associates an originating NPA and dialed NXX pattern with a terminating NPA. Table TERMNPA is made obsolete by disabling write access. After the table transfer (TABXFER) utility, table TERMNPA is empty.

TOPS LNP (continued)

Beginning in LET007, the TOPS system uses the following process to derive an NPA:

NPA derivation for 7-digit called number

Note: The above method is not used with the external rater XRATE CI tool. The tool uses the NPA from the 10-digit calling number entered at the MAP terminal by the user. Therefore, the tool could derive a different NPA than the actual external rater.

In LET010, the SNPA and STS are decoupled so that the SNPA is used only to expand a 7 digit calling number to 10 digits. And, the STS is used to index the

TOPS LNP (continued)

base translations and screening tables. Therefore, the following related datafill changes are made:

- Table TRKGRP existing field SNPA is used only to expand the calling number. Also, new field STS is added to index translations.
- Table OPRTRANS has new field STS to index translations. Field SNPA is deleted and moved to table TOPSPARM new parameters OPR_SPECIFIED_SNPA (for an operator) and DELAY_SPECIFIED_SNPA (for a delay call).

These changes are reflected in the above figure. For more information on these LET010 changes, refer to functionality TOPS BC/STS/SNPA, OSB00101.

The following sample datafill is used to illustrate some example NPA derivations:

MAP display example for table TRKGRP

GRPKEY	GRPINFO

TBELLIC1	
TOPS 0 TLD NCRT IC MIDL 619 619 PTOP NLCA Y SP COMBINED N Y 0	
0000 NONE BELL 16 10 10 Y N OFFHK N N \$	

MAP display example for table TOPSPARM

PARMNAME	PARMVAL

OPR_SPECIFIED_SNPA	941

MAP display example for table FNPA7DIG

ORIGSTS	FROMNXX	TONXXX	TERMNPA

619	554	558	305

Example 1:

1. The originating agent is TBELLIC1 and the terminator's NXX is 558.
2. The SNPA of 619 from table TRKGRP is retrieved.

TOPS LNP (continued)

3. Table FNPA7DIG is indexed using 619 as the ORIGSTS and 558 as the terminator's NXX.
4. The TERMNPA from FNPA7DIG of 305 is returned as the terminator's NPA.

Example 2:

1. The originating agent is TBELLIC1 and the terminator's NXX is 444.
2. The SNPA of 619 from table TRKGRP is retrieved.
3. Table FNPA7DIG is indexed using 619 as the ORIGSTS and 444 as the terminator's NXX.
4. The tuple is not present in FNPA7DIG; therefore, the 619 from TRKGRP is returned as the terminator's NPA.

Example 3:

1. In a delay call, the terminator's NXX is 333.
2. The SNPA is retrieved from table TOPSPARM parameter DELAY_SPECIFIED_SNPA.
3. Table FNPA7DIG is indexed using 941 as the ORIGSTS and 333 as the terminator's NXX.
4. The tuple is not present in FNPA7DIG; therefore, the 941 from TOPSPARM is returned as the terminator's NPA.

Query failure handling

To handle errors in call processing, default routing is performed based on the DN. This is the same routing used for numbers that are not ported.

The following events require default routing:

- when an LNP query is attempted but cannot be launched for any reason
- when an LNP query is launched but no response is received from the LNP SCP within a datafilled time limit (table TOPSPARM parameter LNP_TIMEOUT)
- when a response is received but cannot be processed successfully

When a query fails, the only situation where a query is retried is when LNP information about the number is subsequently requested by an operator or an OSSAIN service node.

TOPS LNP (continued)

New logs TOPS301, TOPS600, and TOPS601 are generated in cases of errors. Also, new OM group TOPSLNP and new registers in OAPCALP5 are added for tracking query failures.

Successful query

If the LNP SCP indicates that the DN is ported, an LRN is also returned, identifying the recipient switch. If the DN is not ported, the DN is returned and the call is routed as prior to LNP, that is, the DN is used.

Outgoing translations and screening

If the query response indicates that the DN has been ported, then the switch does translations and screening on the LRN and selects a route to the recipient switch based on the LRN. The same class of service screening that was performed on the DN is also performed on the LRN. It is expected that the result of this screening will be the same for the LRN as for the DN.

But local call area (LCA) screening is different. No LCA screening is ever performed on the LRN. If the DN is eligible for LCA screening (that is, if it would have been eligible for LCA screening before LNP), then LCA screening is still performed on the DN even if the number is ported. Whether the call is considered local is determined entirely by LCA screening on the DN.

When translations and screening based on an LRN are unsuccessful, the treatment is the same as it would be for a DN in the same situation. For example, an LRN that is not matched in table HNPACONT.HNPACODE routes to vacant treatment, and an LRN that is explicitly datafilled to receive treatment routes to the datafilled treatment.

Outgoing ported DN digit manipulation

In the LNP environment with outgoing PTS signaling or outgoing ISUP signaling with the signal ported number (SPN) option, LNP digit manipulation must be performed on the ported number. In these two cases, the LRN is not signaled. Therefore, the ported number must be digit-manipulated in the same way as the LRN, and subsequently signaled to the recipient switch.

LNP digit manipulation can be performed only if the digits that were stripped off the LRN during translations match the corresponding digits in the ported number. In cases where LNP digit manipulation cannot be safely applied to the ported number, the call is blocked rather than misrouted. Additionally, an LNP 300 log is generated and reorder treatment is applied.

Note: For more information on LNP digit manipulation, please refer to the *DMS-100/200 LRN-LNP Service Implementation Guide*, 297-8981-021.

TOPS LNP (continued)

The following table illustrates some LNP digit manipulation examples:

Example LNP digit manipulation for PTS and ISUP SPN trunks

Item	Dialed number	Terminating LRN from the LNP-SCP database	Translated LRN	Outpulsed number (manipulated dialed number)
1	613-621-1001	613-623-4000	613-621-4000	613-621-1001
2	613-621-1001	613-623-4000	623-4000	621-1001
3	613-622-1001	613-621-1000	1000	Send to reorder treatment
4	613-621-1001	407-621-1000	621-1000	Send to reorder treatment
5	613-621-1001	407-621-1000	1000	Send to reorder treatment
6	407-621-1001	613-621-1000	613-621-1000	407-621-1001
7	613-622-1001	613-621-1000	1-1000	2-1001

Each of the rows in the above table are discussed in the following list:

1. The number signaled in item 1 is 613-621-1001. No digits were stripped from the LRN, so no digits need to be stripped from the ported number.
2. The number signaled in item 2 is 621-1001. The NPA that was stripped from the LRN matches the NPA of the ported number, so it is safe to strip these three digits from the ported number.
3. The call in item 3 is sent to reorder treatment. The office code that was stripped from the LRN does not match the office code of the ported number, so it would be unsafe to strip the office code from the ported number. The adjacent office assumes that the four-digit number being sent belongs to the 621 office code.
4. The call in item 4 is sent to reorder treatment. The NPA that was stripped from the LRN does not match the NPA of the ported number. The adjacent office assumes that the seven-digit number being sent belongs to the 407 NPA. The call would be misrouted if only seven digits of the ported number were sent.
5. The call in item 5 is sent to reorder treatment. This example is similar to item 4. The digits that were stripped from the LRN do not match the

TOPS LNP (continued)

corresponding digits of the ported number, so LNP digit manipulation cannot be safely performed.

Note: If the NPA is stripped off the LRN during standard (non-LNP) digit manipulation and the NPA is different than the NPA of the ported number, then LNP digit manipulation cannot safely be applied. Therefore, the NPA must not be stripped off the LRN if the LRN can have a different NPA than the ported number.

6. The number signaled in item 6 is 407-621-1001. Because no digits were stripped from the LRN, it is acceptable for the LRN and the ported number to have different NPAs.
7. The number signaled in item 7 is 2-1001. The digits that were stripped from the LRN match the corresponding digits of the ported number, so the ported number can be successfully manipulated.

Special handling of seven-digit dialing

As illustrated in the previous section, seven-digit dialing, translations, and signaling are workable only when subscribers are not allowed to port across NPAs. If porting across NPAs is permitted, then ten-digit dialing, translations, and signaling are strongly recommended.

If it has been determined that signaling seven digits is safe on a particular outgoing route, and if the adjacent office is expecting to receive seven digits, then it is important that translations be in place to strip the NPA from any LRN that will use the route. (All LRNs returned from the SCP database are ten digits.) As explained in the following paragraph, this applies to per-trunk signaling (PTS) and ISUP trunks with or without the SPN option.

If the outgoing route is an ISUP trunk without the SPN option, and translations are not set up to strip digits off the LRN, then a ten-digit LRN is signaled along with the ported number. If the outgoing route is a PTS trunk or an ISUP trunk with the SPN option, then LNP digit manipulation will manipulate the ported number based on the standard manipulation that was performed on the LRN.

Therefore, if translations on the LRN do not strip off the NPA, a ten-digit ported number is signaled. This is true even if only a seven-digit DN was received on the incoming trunk or entered by the operator. In these cases, the NPA is derived for outgoing signaling using the method described in "DN 7- to 10-digit conversion".

This is illustrated in an example which uses the following datafill in subtable STDPRCT.SDTPRT. In the example, the seven-digit ported called number is 522-2000 and the LRN is 407-522-2001.

TOPS LNP (continued)**MAP display example for table STDPRTCT.STDPRT**

FROMDIGS	TODIGS	PRETRTE
4075222001	4075222001	T OA 0 OFRT 815 10 10 NONE

Specific details for the types of signaling are the following:

- Signaling the LRN over an ISUP trunk without the SPN option
If there is a seven-digit ported number, and a ten-digit LRN is returned from the LNP SCP database, the ten-digit LRN (407-522-2001) is signaled as the called number.
- Signaling the DN over a PTS trunk or ISUP trunk with the SPN option
If there is a seven-digit ported number, and a ten-digit LRN is returned from the LNP SCP database, the ten-digit ported number (NPA-522-2000) is signaled as the called number. Since only seven digits of the ported number were received by the TOPS office, the called NPA is obtained using the method described in "DN 7- to 10-digit conversion".

Incoming signaling

LNP is supported for all incoming trunk types to a TOPS office: ATC, IT, and TOPS.

ISUP trunks

The TOPS switch may receive calls over both ISUP IT and ATC trunks. However, LNP requirements indicate that a call destined for operator services should not be sent any LNP data associated with the called number. Therefore, if the TOPS switch receives LNP information, the LNP parameters are not used and the call proceeds as if LNP data were not received.

For datafilling ISUP trunks, refer to functionality GR317/GR394 ISUP to/from TOPS, OSEA0102.

The receipt of LNP information is not logged so as to remain consistent with TOPS ISUP functionality prior to TOPS07.

PTS trunks

TOPS LNP does not change the incoming processing of calls signaled over PTS trunks. When a call is received over an incoming PTS trunk, the calling party's NPA must be determined from datafill in order to proceed with translations. To obtain the NPA for the incoming trunk group, table TOPSBC is used, as prior to LNP. TOPSBC is indexed by the incoming trunk group and

TOPS LNP (continued)

the signalled NXX. With LNP, additional NXXs must be datafilled for ported-in numbers.

Note 1: In release TOPS10, an alternate method to using TOPSBC is available. Refer to the datafill procedure section under table TOPSBC.

Note 2: It is not possible for one trunk group to have more than one NPA for the same NXX.

If the TOPS switch receives LNP information and the LRN is datafilled in table HOMELRN, the call will try to directly terminate as the switch immediately performs DN residency checking upon receipt of the LNP information.

Outgoing signaling

Standard translations are not changed.

ISUP trunks

In an ISUP environment, only IT and ATC trunks are used. When an LRN is available, the LRN is signalled in addition to the DN, unless the SPN option is set. This option is assigned to the recipient switch in table ADJNODE and indicates that the outgoing ISUP trunk is connected to an office that does not support LNP.

For ISUP release handling, there is one new cause value associated with TOPS local number portability which is used to indicate local number portability errors. The new cause value is 26, Misrouted Call To a Ported Number.

The new cause value needs to be associated with a treatment. For trunks, table TMTMAP is examined to determine whether to apply the treatment locally or to send a REL message with a particular cause value specified by TMTMAP. For treatment handling, cause value 26 is mapped to new treatment MISROUTED_CALL_TO_PORTED_DN.

Although the TOPS switch is not an originator, it behaves as an originator when applying treatment for ISUP release with cause messages. The appropriate treatment is applied and an LNP 302 log is generated. After treatment application, a standard release message is passed to the true originator (that is, the end office).

For datafilling ISUP trunks, refer to functionality GR317/GR394 ISUP to/from TOPS, OSEA0102.

PTS trunks

Trunks that use PTS signaling outpulse the DN rather than the LRN.

TOPS LNP (continued)

BLV

This section describes BLV for ported numbers.

Before LNP, the NPA-NXX of the called DN in a BLV request would determine whether the TOPS switch serves the request (that is, the switch has a no-test trunk to the end office). But with LNP, the NPA-NXX of a number no longer uniquely identifies the end office that hosts the number.

With LNP, once the operator receives a BLV call and enters the request, the following steps take place:

1. The switch checks datafill to determine if the number is portable.
 - If portable, a query is made for the LRN. If the number is ported, an LRN is returned. If not ported, the DN is returned.
 - If not portable, no query is made and the DN is used.
2. The switch uses the resulting LRN or DN to determine if the number is served.
 - If served, the switch routes the call to a no-test trunk to perform the BLV request.
 - If not served, a treatment is provided to the operator who looks up the serving office code. Then the operator routes the call to another operator in the serving office to execute the BLV request.

Also with LNP, the switch needs a way to route a BLV call to a no-test trunk if the TOPS switch has a scrambler circuit equipped.

Expanding seven digits to ten digits

For TOPS BLV, ten-digit signaling is strongly recommended. For correct BLV execution, it is recommended that the operator obtain ten digits from the subscriber. However, if the operator enters seven digits, the number will be expanded using the method described in section "DN 7- to 10-digit conversion".

The ten-digit expanded number is displayed to the operator during BLV execution. If the operator enters a seven-digit called number prior to the BLV request and then requests BLV, the seven-digit number is expanded and redisplayed at the position.

Note 1: The ten-digit expanded number that is displayed at the operator position is subsequently used in translations, signaling, and AMA recording. Datafill for both the incoming and outgoing pretranslators for BLV should be changed to support 10-digit signaling. For details on the

TOPS LNP (continued)

pretranslators, refer to subtable STDPRTCT.STDPRT in the datafill procedure section.

Note 2: Effective with LET007, this expansion occurs regardless of whether the number is portable and the TOPS LNP SOC state.

Note 3: Ensure that existing translations supports ten-digit BLV dialing before upgrading to LET007 software.

Offices with scramblers

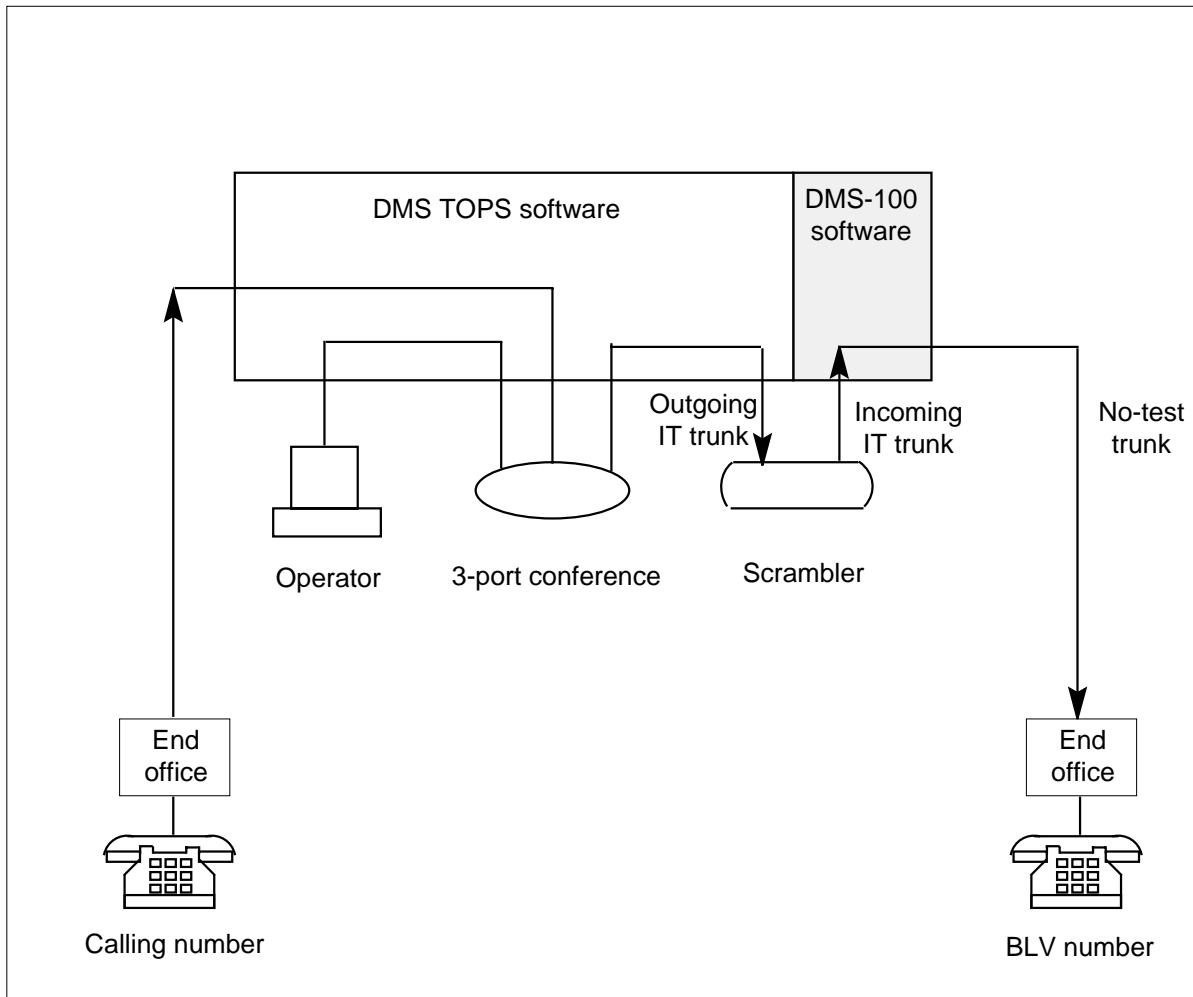
A scrambler circuit is used to scramble the voice path so that the operator cannot understand a subscriber's conversation. The scrambler circuit is a DMS-100 analog trunk circuit pack consisting of an outgoing trunk, an incoming trunk and electronic scrambling equipment. The trunks use PTS.

When a scrambler circuit is equipped at the TOPS switch, the BLV call is routed out of the TOPS software using the outgoing trunk of the scrambler circuit. The call reoriginates on the DMS-100 end office side using the incoming trunk of the scrambler circuit. When the call reoriginates, it is handled by end office or tandem software.

The following figure illustrates BLV routing through a scrambler circuit prior to the LNP capability.

TOPS LNP (continued)

BLV routing through a scrambler circuit to a no-test trunk

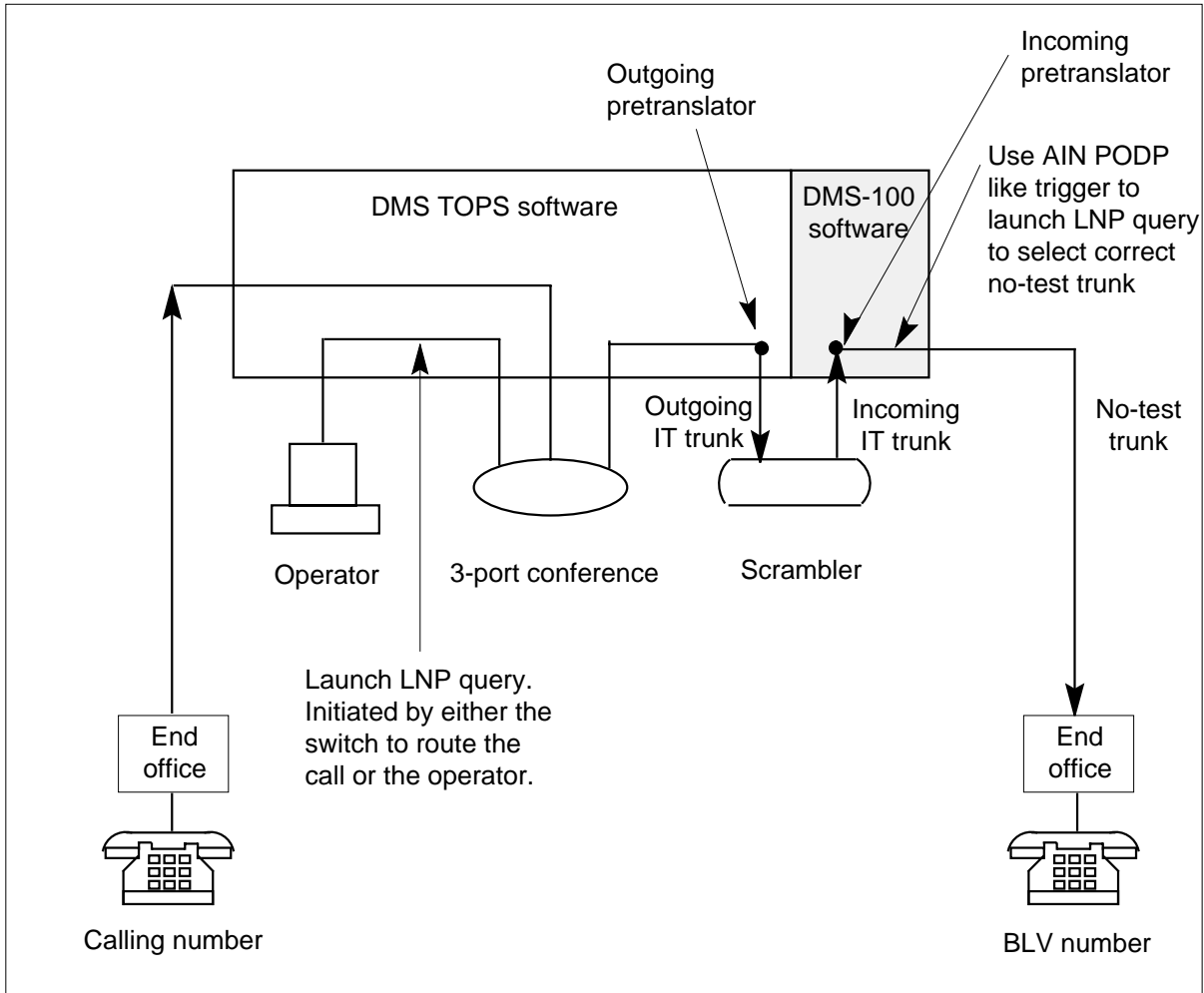


Because PTS signaling is required, only the called DN is signaled through the scrambler. Before LNP, the called DN could be used to route the call to the correct no-test trunk and subscriber at the end office. But with LNP, because the called DN (not the LRN) is signaled through the scrambler, the call cannot be routed to the correct no-test trunk without performing a second LNP query.

The following figure illustrates BLV LNP routing through a scrambler circuit.

TOPS LNP (continued)

BLV LNP routing through a scrambler to a no-test trunk



Pretranslators for the outgoing leg of the BLV call: The outgoing pretranslator name is specified in table OPRTRANS in the VERIFY tuple. The outgoing pretranslator uses the LRN (if the number has been ported) and the ten-digit DN (if the number has not been ported) to determine whether BLV is served and to select the outgoing trunk of the scrambler circuit. In either case, the called DN is outpulsed through the scrambler.

The incoming pretranslator is taken from the incoming TRKGRP of the scrambler circuit. The incoming and outgoing pretranslators for BLV should be changed to support 10-digit signalling

Note: No digit stripping should be done through the scrambler.

TOPS LNP (continued)

DMS TOPS outgoing trunk to scrambler circuit: The outgoing pretranslator should route to treatment all NPA-NXXs where the TOPS switch cannot serve the BLV request. Because the TOPS switch substitutes the LRN for the DN in the case of ported numbers, this treatment identifies unserved numbers regardless of whether they are ported. DNs should not route to treatment.

Note: This treatment should be provided before the call routes to the scrambler so that the announcement is not scrambled. The treatment can be used to tell the operator how to handle the call.

Pretranslator for the incoming leg of the BLV call: When the call reoriginates from the scrambler, it uses the pretranslator datafilled for the incoming trunk group of the scrambler. Because the ten-digit DN (not the LRN) is signaled, the DMS-100 software must perform an LNP query to determine if the number has been ported.

The DMS-100 software launches the LNP query using the AIN LNP trigger. The AIN LNP trigger will not work if served numbers nor ported numbers from unserved offices are routed to treatment.

The DMS-100 software must translate the DN before encountering the AIN LNP trigger. If a portable number routes to treatment, the trigger is not encountered and ported numbers do not route correctly. Therefore, unserved number must route to treatment on the TOPS side.

The DMS-100 software translates either the DN (if not ported) or the LRN (if ported) to route the call to the correct no-test trunk, not the regular call processing route to the office. This route must be datafilled in the incoming pretranslator of the scrambler. In either case, when a valid route to a no-test trunk is determined, the called DN is outpulsed over the no-test trunk.

Triggering the LNP query on the DMS-100 side: To be able to launch the LNP query, the incoming trunk from the scrambler circuit should be datafilled to support the AIN LNP trigger.

Datafill for the LNP trigger involves the following tables:

- Subtable STDPRTCT.STDPRT - The incoming pretranslator for BLV (see the previous figure) should be changed to support 10-digit signalling. This

TOPS LNP (continued)

change is necessary in all offices receiving LET007 (TOPS07), regardless of the TOPS LNP SOC state nor the portability of the number.

- Tables TRIGGRP and TRIGDIG - Datafill the incoming trunk from the scrambler circuit to use the LNP AIN trigger to launch an LNP query.
- Table TRKGRP - The incoming trunk from the scrambler circuit should be datafilled to use new traffic class BLV. This allows AIN triggering from STDPRTCT and bypasses DN residency checking. If this new traffic class is not datafilled, the LNP query is not triggered. Please refer to BY61398 - LNP STDPRT Triggering for TOPS BLV, given in the following section, for more information.

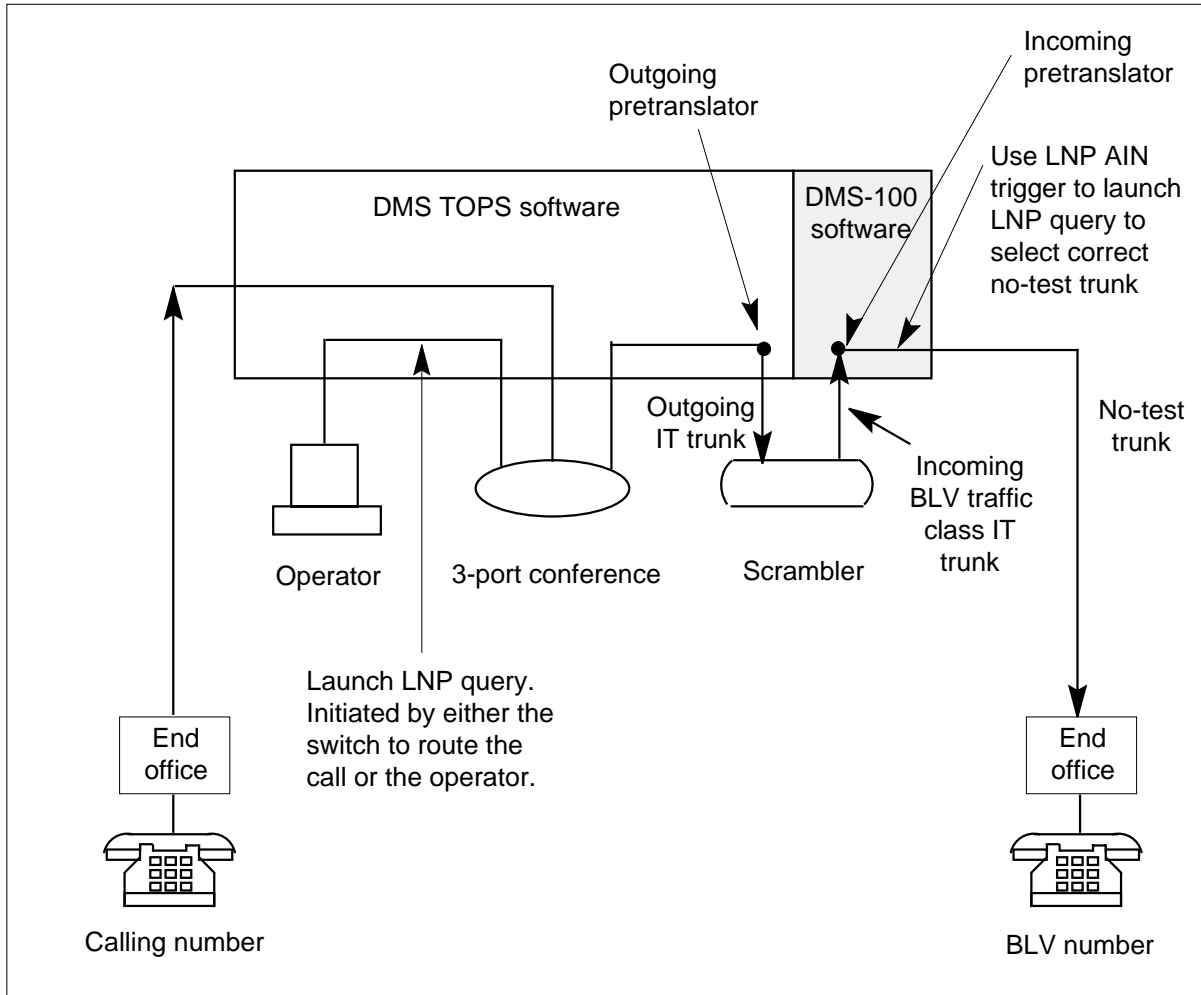
DMS-100: BY61398: In NA007, there is a restriction to bypass the LNP trigger if pre-route is selected through table STDPRTCT. And this restriction needs to be removed for a TOPS/BLV call to route correctly in the LNP environment.

This feature makes the LNP trigger possible through pre-translation and terminates correctly for a TOPS/BLV call. Because of the Callp mirror in the TRAVER tool, TRAVER is modified.

The following figure shows a BLV call routing through a TOPS combo office.

TOPS LNP (continued)

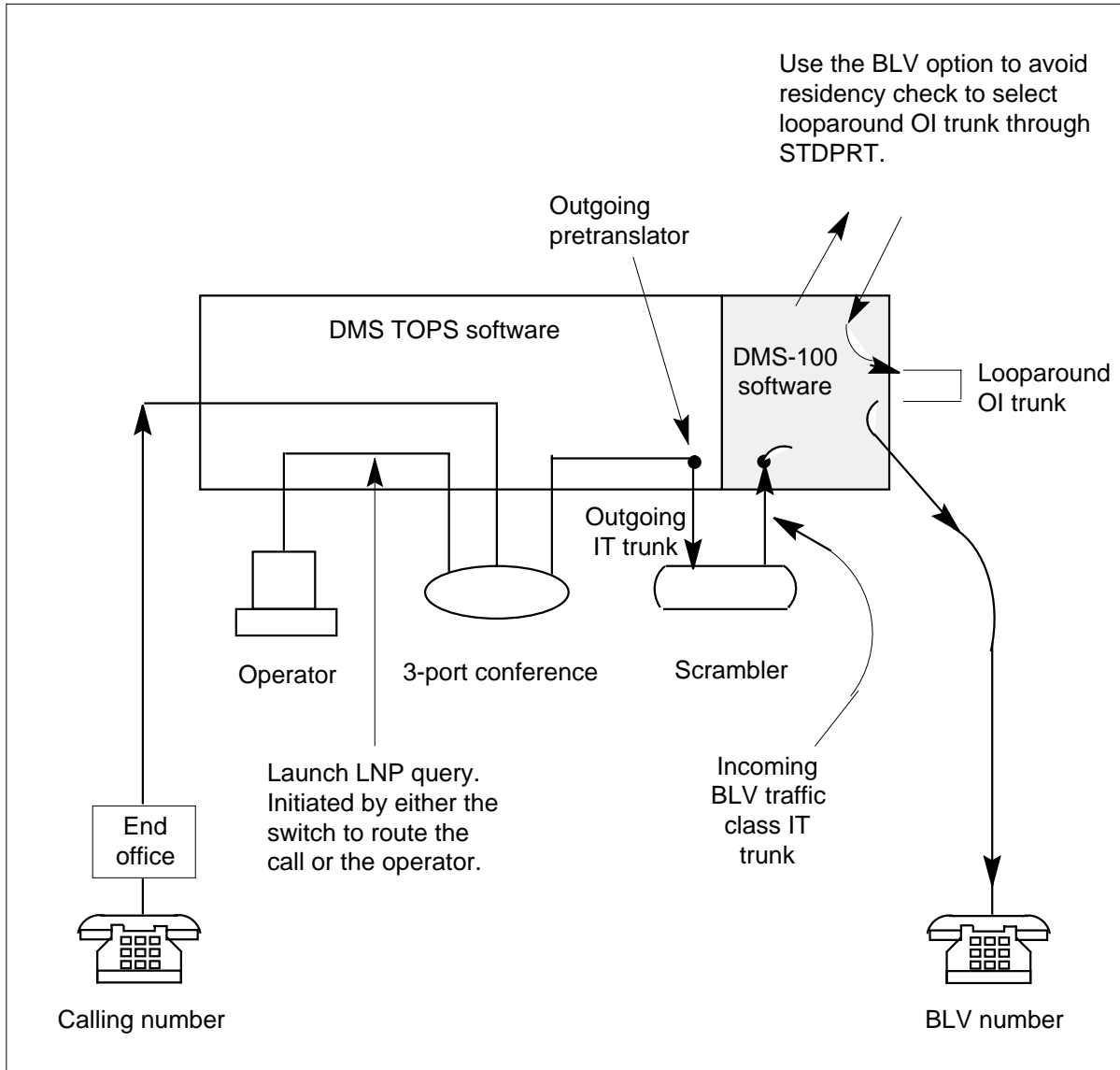
Overview of a BLV call and an LNP STDPRT trigger



The following figure shows a BLV call routing within the TOPS combo end office where a non-residency-check LNP trigger is used to route the call to a looparound operator incoming (IO) trunk.

TOPS LNP (continued)

Overview of a BLV call and a looparound OI trunk termination



DMS-100: BY61398: Express route triggering option (BLV traffic class):

The new BLV traffic class option for IT trunks allows STDPRT Trigger Criteria checking (TCC) to know when to engage. As LNP TCC is not desired on all express routing tuples in STDPRT, this component acts as a filter to only allow those scenarios which should trigger, to trigger.

The traffic class of the incoming IT trunk should be changed to the new BLV value, thus ensuring that only those trunks which are to trigger for STDPRT express routing, trigger, and bypass DN residency checking

TOPS LNP (continued)

An example of a tuple in table TRKGRP where the new BLV traffic class option is datafilled follows:

MAP display example for table TRKGRP

GRPKEY	GRPINFO
TSCRAMBIC1	IT 63 RLO NCRT IC BLV MIDL 619 VERI NSCR 619 NNN Y Y \$

DMS-100: BY61398: HLRN response processing changes for BLV: When the home LRN (HLRN) is returned from the SCP, BLV calls must use this value to route to the MF IT-OI looparound trunk. Routing based on the HLRN is contrary to current LNP HLRN processing, which discards the HLRN and routes on the original called DN, which is used to translate a ported DN.

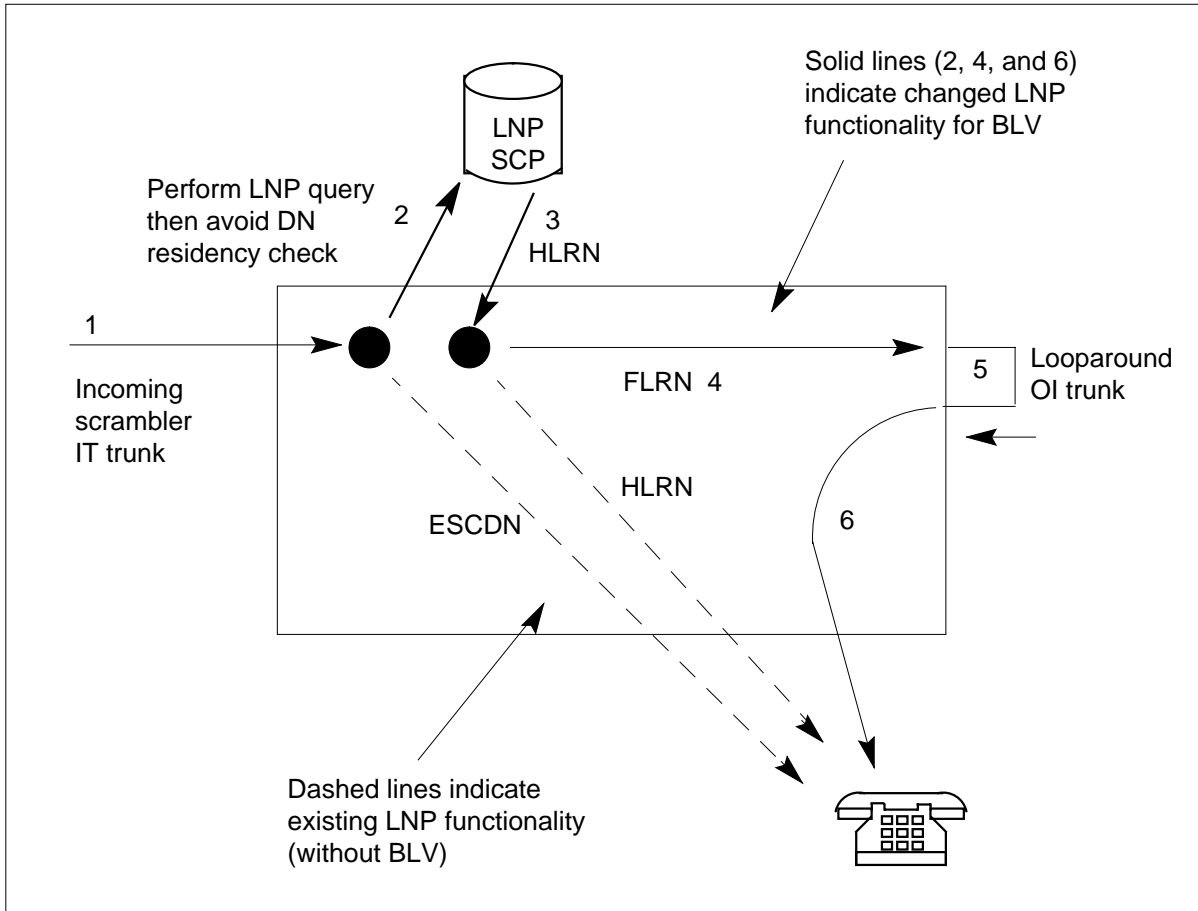
What is required is that when an HLRN is returned, and the incoming trunk is marked as BLV, the HLRN should be translated as if a foreign LRN (FLRN) has been received. This allows the call to route over the looparound MF OI trunk.

In the BLV call termination phase, OI trunk originated BLV calls must be translated based on HNPA translations to terminate on the line.

The following figure shows this change.

TOPS LNP (continued)

New enhanced response processing



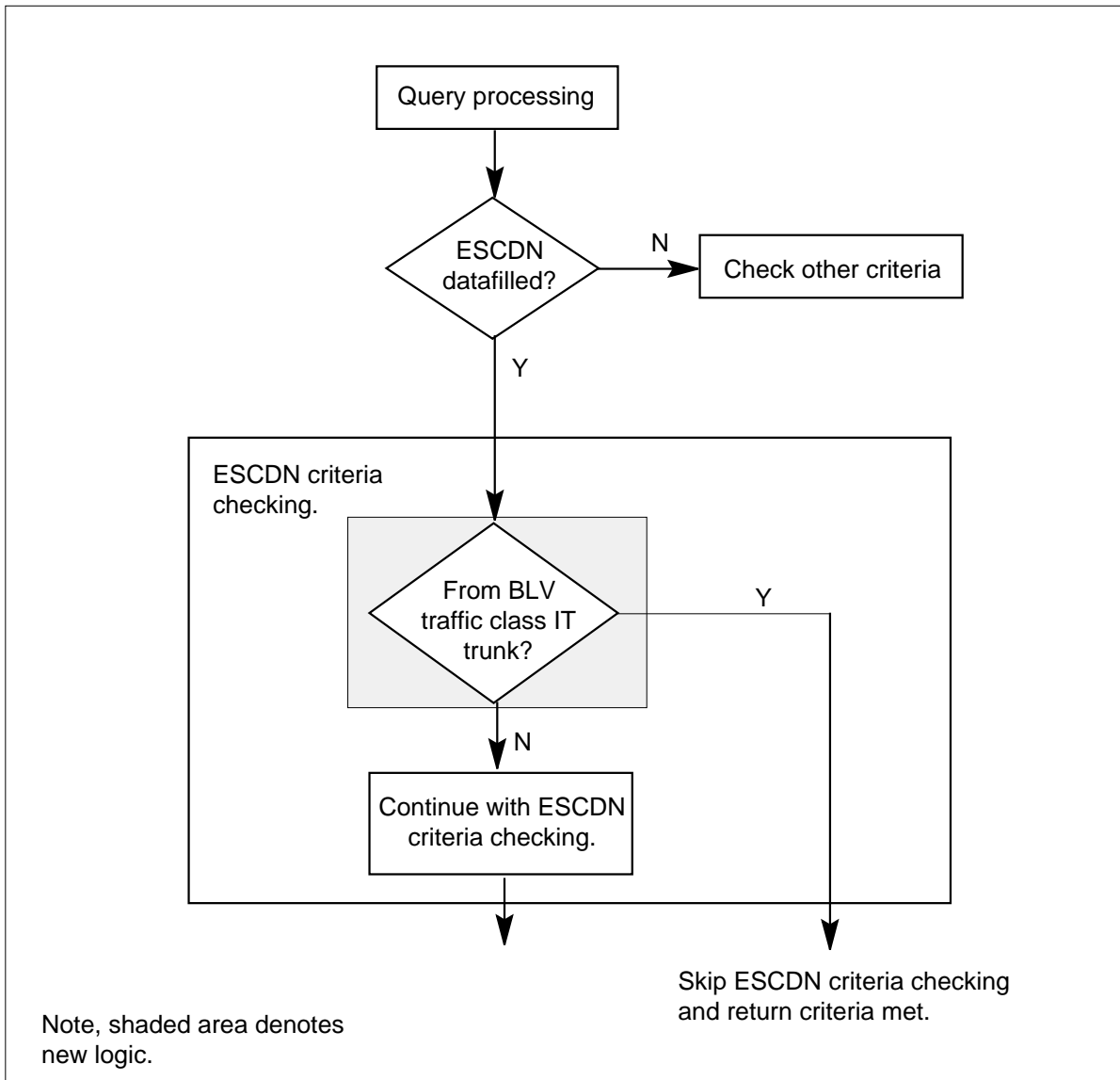
DMS-100: BY61398: Escape TCC DN resident check: One of the TOPS/BLV call terminating requirements is that a BLV call must arrive at the end office from an OI trunk and terminate on a line through table HNPA translation. But for a special case like a scrambler originated DN that is resident in the TOPS combo end office, the call must route to the looparound OI trunk before terminating. Due to this special termination, an LNP true country code (TCC) which escapes DN residency checking is required and routing to the looparound OI trunk is handled by modification in the above mentioned response processing.

To skip the DN residency check during the criteria checking, a check for the origination of a call is added. And if the call originates from a BLV traffic class IT trunk, it returns as if the DN is not resident in a switch.

The following figure shows the logic flow for LNP ESCDN handling.

TOPS LNP (continued)

New enhanced LNP ESCDN handling



DMS-100: BY61398: LNP trigger criteria check from STDPRT: In NA007, when table STDPRTCT or CLSVSCRC supply special handling for the call, LNP triggering needs to be bypassed. Examples of special handling are:

- routing to an OSS
- routing to the TOPS half of a combo switch
- routing over PRI looparounds for AIN

TOPS LNP (continued)

- toll diversion
- special hotel/motel routing

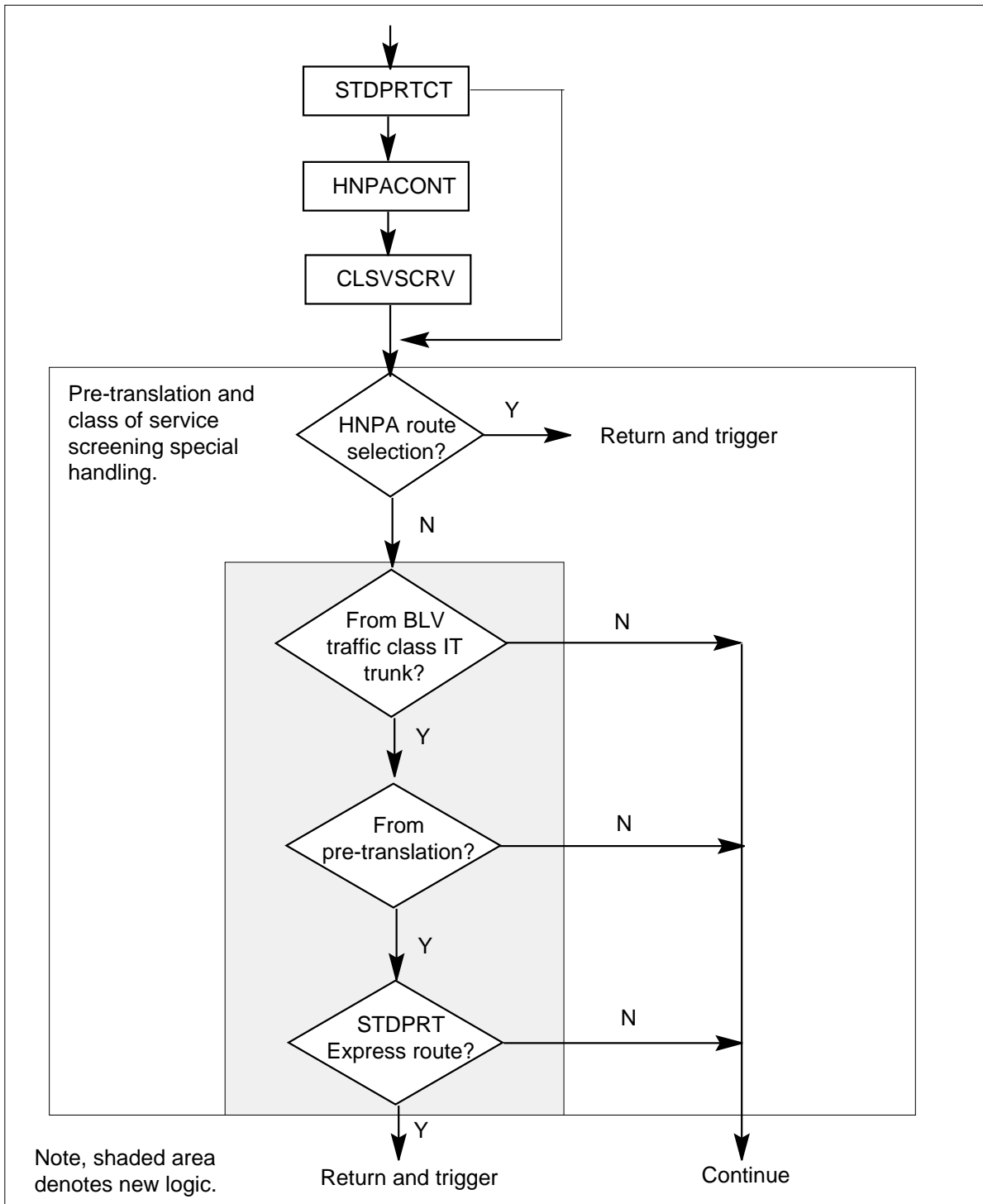
The bypassing LNP trigger during pre-translation doesn't let the BLV call route correctly to its destination if the DN is a ported number. In the LNP environment, call routing is based on the LRN and this LRN is obtained from the SCP Analyzed Route response when the LNP trigger occurs.

In order for BLV calls to route correctly out of the office using the STDPRT pre-selected express route, the LNP triggering restriction must be removed during the pre-translation criteria check.

This feature provides the criteria check which lets the LNP trigger only if a call originate from a BLV traffic class IT trunk and uses the STDPRTCT express route out of the office.

TOPS LNP (continued)

New LNP STDPRTCT trigger handling



TOPS LNP (continued)

DMS-100: BY61398: TRAVER: Changes that are required for the BLV calls (as discussed in the previous sections) in the LNP environment are mirrored in TRAVER. This includes all Query and Response processing:

DMS-100: BY61398: TRAVER, LNP trigger display: The TRACE portion of TRAVER displays the encountering of the LNP trigger in the same way any other trigger at the Info_Analyzed TDP is displayed.

If the LNP trigger is encountered, criteria are met, and QoR is not assigned as an option of that trigger, TRAVER stops tracing and states that a query would be launched to the database.

As stated before, the callp behavior is also reflected in the TRAVER tool. TRAVER shows the LNP trigger display for calls originated from a TOPS scrambler IT trunk (carrying BLV traffic) regardless of DN residency when STDPRTCT express routing is used.

The following output shows the TRAVER result when the LNP trigger of a BLV call is encountered right after table STDPRTCT.STDPRT. In this case, criteria is met and the database is queried.

TOPS LNP (continued)**TRAVER output showing LNP trigger of BLV call after STDPRTCT using T selector**

```

>traver tr TSCRAMBIC1 6637001 b
TABLE TRKGRP
TSCRAMBIC IT 63 IT NCRT IC BLV MIDL 613 PUB NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIG
TABLE STDPRTCT
PUB ( 1) (65021) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE BILLING. CALL TYPE
DEFAULT IS NP. PLEASE REFER TO DOCUMENTATION.
. 6637001 6637001 T NP 0 OFRT 730 3 15 NONE
AIN Info Collected TDP: no subscribed trigger.
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
OFCTRIG INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) (ESCEA ) (ESCOP ) (ESCDN ) (ESCQR )$ NIL
Trigger AIN LNP is applicable to office.
. . TABLE TRIGDIG
. . LNPDIG LNP 613663 LNP EVENT TCAP R01 SS7 AINBLUES DFLT $
. . . TABLE C7GTTYPE
. . . AINBLUES ANSI7 11 $ . . . TABLE C7GTT
. . . AINBLUES 6136637001 6136637001 PCSSN (SIMTOOL RTESET SIMTOOL 0)
$ SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database.

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

```

New BLV traffic class

T selector has been used

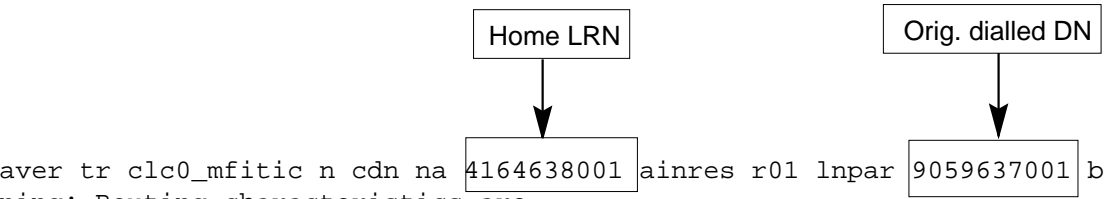
DMS-100: BY61398: TRAVER, LNP response display: TRAVER AINRES parameter has been enhanced in NA007 to permit simulation of LNP SCP response processing, by allowing the user to specify the dialed DN as well as the CalledPartyID on the command line.

Note: Introducing in NA007, this new translation & routing procedure allows a call to terminate to the ported DN at the recipient switch (without having to change operating company's translation datafill).

TOPS LNP (continued)

In the case where HLRN has been received, PORTED DN termination should not be performed. It should behave as if the FLRN has been received so that a route to the IT-OI loop-around trunk can be obtained based on the LERG translation (pre-LNP translation and routing procedure) on LRN.

The following figure shows how TRAVER should look when an HLRN is received for a BLV call.

TOPS LNP (continued)**TRAVER output showing LNP response - HLRN received for BLV call**


```

>traver tr clc0_mfitic n cdn na 4164638001 ainres r01 lpar 9059637001 b
Warning: Routing characteristics are
        present. Originator must be
        able to send in characteristics
        specified.
TABLE RTECHAR
. LECNA (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE TRKGRP
CLC0_MFITIC IT 63 ITTD NCTC IC BLV MIDL 613 PUB NSCR 613 000 N Y $
Warning: Routing characteristics in TRAVER command line will override
any bearer capability datafilled in table TRKGRP.
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIG
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 9059637001
TABLE STDPRTCT
PUB ( 1) (65021) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE BILLING. CALL TYPE
DEFAULT IS NP. PLEASE REFER TO DOCUMENTATINO.
. KEY NOT FOUND
. DEFAULT VALUE IS:  N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE N
TABLE HNPACONT
613 Y 932 2 ( 415) 9 1) (84) ( 0) 2
. SUBTABLE HNPACODE
. 4164638001 4163638001 FRTE 747

```



Perform LERG translation
based on HLRN received

(continued)

TOPS LNP (continued)

TRAVER output showing LNP response - HLRN received for BLV call (continued)

```
TABLE TRIGGRP
OFCTRIG INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. N11 ( DG N11TRAF)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPTRAF)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) (ESCEA ) (ESCOP ) (ESCDN ) (ESCQR )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 747 T OFRT 747
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 747 S D C1S1_MFITOG
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: HNP translation completed on Home LRN due to BLV call.
LNP Info: GAP present.
LNP Info: HNP results are used.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 C1C0_MFITOG          9059637001 ← Orig. called digits outpulsed

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO

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

TOPS LNP (continued)

DMS-100: BY61398: Interactions: This feature interacts with:

- AF6551: TOPS LNP BLV/INT (which is in this functionality, TOPS LNP)
- AR2109 - Response Processing (which is in functionality LNP LRN, LNP00100).
- AR2064 - AIN Query Processing (which is in functionality LNP LRN, LNP00100)

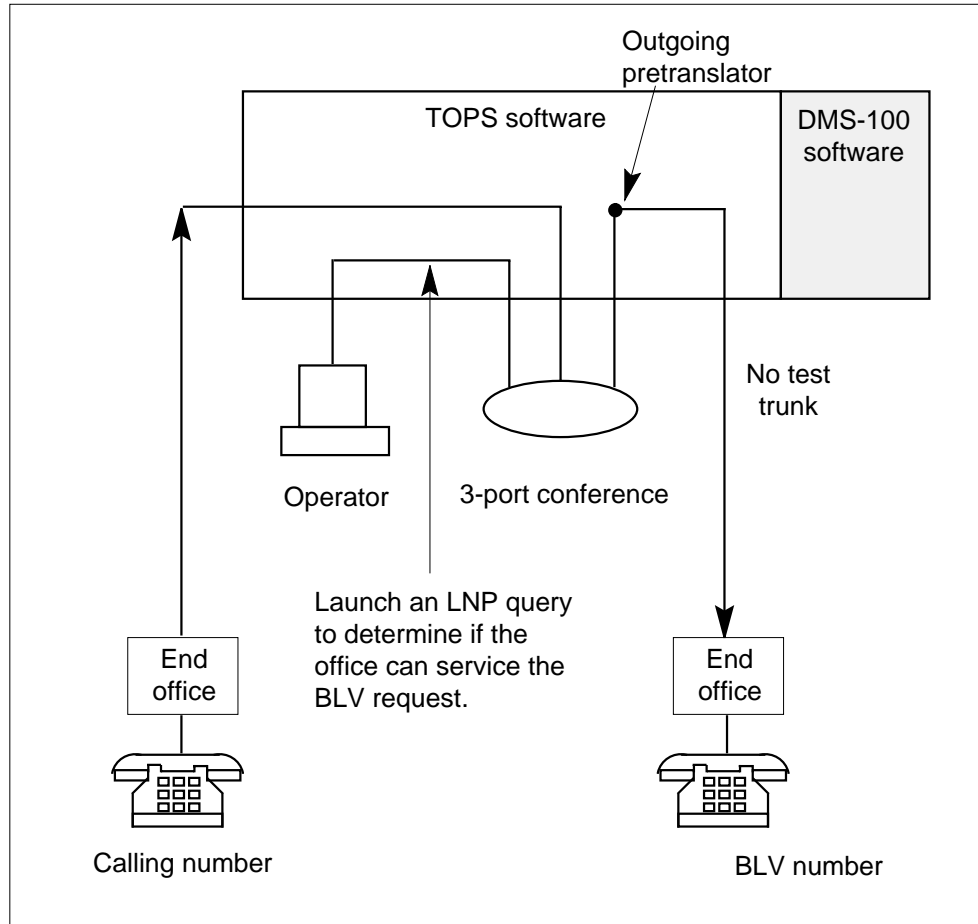
DMS-100: BY61398: Limitations and restrictions: This feature allows an LNP trigger to occur only when the call is a BLV call which uses the STPDRT express route to route the call out of the office. This limitation also applies to the TRAVER tool.

Offices without scramblers

When a scrambler circuit is not equipped, the TOPS switch routes the BLV call to a no-test trunk using the LRN (if the number has been ported) or the DN (if the number has not been ported). The LNP query is not done a second time.

TOPS LNP (continued)

BLV LNP connection (without a scrambler circuit) to a no-test trunk



The outgoing pretranslator in table STDPRTCT.STDPRT for the no-test trunk should be changed to support 10 digit signalling. If the BLV request is for a 7 digit number, the number is expanded to 10 digits using table FNPA7DIG before going through translations, regardless of the portability of the number.

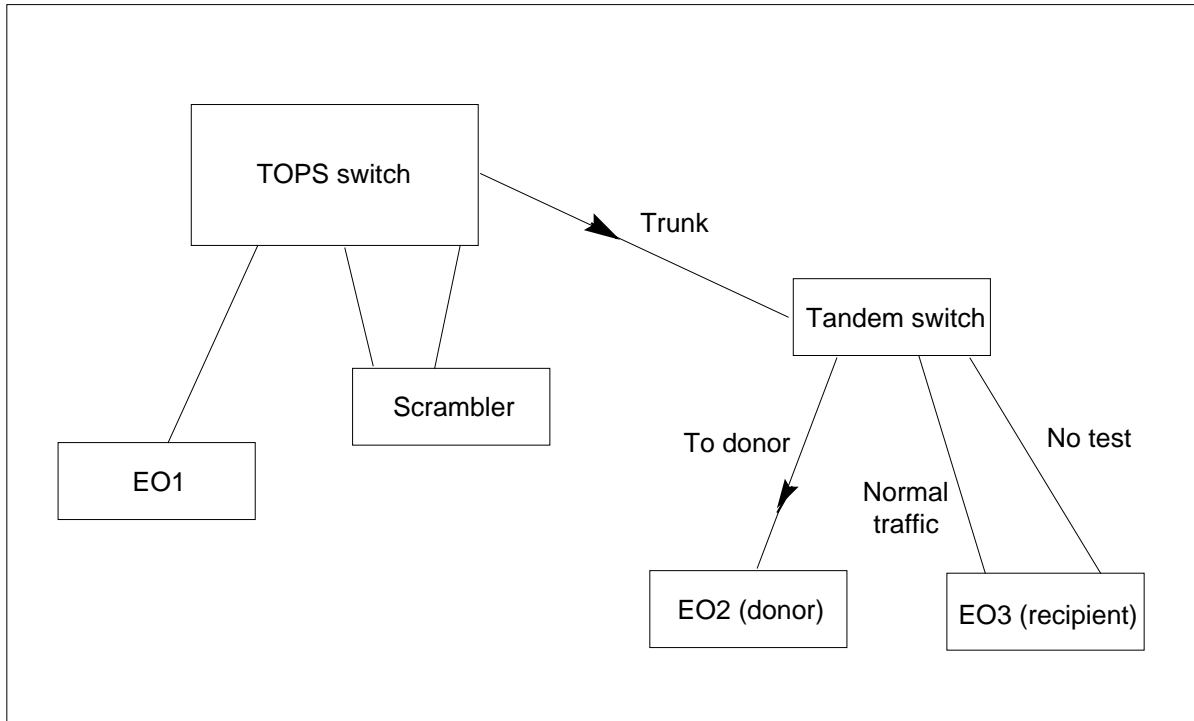
The above change is applicable for all offices receiving an LET007 (TOPS07) load, regardless of the TOPS LNP SOC (OSEA0103) state.

Routing BLV calls through a tandem

In some networks, BLV traffic is completed through a tandem switch between the TOPS switch and the end office. With LNP, it is necessary for the tandem switch to be LNP-capable so that it can route BLV attempts for ported numbers to the recipient office, rather than to the donor office.

TOPS LNP (continued)

The following figure shows a tandem configuration. Assume that a caller in EO 1 wants to verify a line whose DN has been ported from EO 2 to EO 3.

BLV LNP routing through a tandem

A common method of routing BLV traffic through tandems before LNP was for the TOPS switch to replace the NPA of the number to be verified with a pseudo NPA. The tandem used the pseudo NPA to translate to a no-test trunk instead of to a regular traffic trunk.

With LNP, the tandem needs the LRN to identify the recipient switch. The real NPA of the number to be verified is required for the tandem to obtain the LRN. So signaling from the TOPS switch to the tandem switch must include enough information to allow the tandem to perform the following tasks:

- identify the recipient switch when a number has been ported
- select the correct no-test trunk to the recipient switch

With LNP, it is recommended that operating companies use dedicated trunks from the TOPS switch to tandems to carry BLV traffic. Translations in the TOPS office should outpulse the ten-digit DN to be verified. The NPA should not be replaced by a pseudo NPA.

TOPS LNP (continued)

The tandem switch uses the DN to look up the LRN. To select the correct no-test trunk, the tandem uses translations that are specific to the incoming trunk group. For example, if the tandem is a DMS-200, the incoming trunk group should be datafilled as IT and the traffic class should be datafilled as BLV. The pretranslator for the incoming trunk group should be used to translate to the no-test trunk group.

Note: This datafill is similar to the datafill for the incoming trunk of the scrambler circuit. For details, refer to the datafill procedure section.

It is possible to use ISUP trunks between the TOPS switch and the tandem. In this case, the tandem does not need to look up the LRN, because it is received in ISUP signaling. With ISUP signaling, it is not necessary to datafill the traffic class of the trunk group as BLV (but it is acceptable).

Routing BLV calls in an OC network

In an operator centralization (OC) network, an operator on one switch can verify a line in an office served by another OC switch. If the OC network includes direct trunking between the two OC switches, the second switch behaves like a tandem.

As with any other tandem, trunking and translations may need to be changed to accommodate BLV routing. With LNP, it is recommended that operating companies use dedicated trunks to carry BLV traffic. Translations should outpulse the ten-digit DN to be verified. The NPA should not be replaced by a pseudo NPA.

In an OC network, datafill in table PORTNUMS does not need to be the same at all switches. It is not necessary for each switch to be aware of the zones of portability served by the other switches. However, when the datafill is not the same, the first switch will attempt to verify ported numbers that the second switch does not serve. It may be necessary to use TTC codes to hand the call off to an operator in the second switch. The second switch can correctly handle the BLV request if the number is ported.

The operating company has a choice of making table PORTNUMS the same in all switches in the OC network, or changing the methods for BLV between switches in the network to use TTC codes and operator hand-off.

LIDB queries

LIDB queries are used for validating alternate billing numbers. With LNP, the global title translation (GTT) is changed from 6 to 10 digits. Therefore, in table C7GTT, 10 digits may be datafilled in fields FROMDIG and TODIG. For more information, refer to the datafill procedure section and the *TOPS Local Number Portability (LNP) User's Guide*, 297-8403-902.

TOPS LNP (continued)

Effective with LET007, this expansion occurs regardless of whether the number is portable and the TOPS LNP SOC state.

TCAP interface

The Transaction Capability Application Part (TCAP) interface allows the TOPS switch to access the CCS7 network for queries to the LNP SCP. Therefore, the CCS7 tables must be datafilled. For more information, refer to the datafill procedure section and the *TOPS Local Number Portability (LNP) User's Guide*, 297-8403-902.

SOC

All functionality in a product computing module load (PCL) is categorized as either base or optional. Base functionality is available for use immediately. Optional functionality is grouped into commercial units called SOC options.

As a tool for managing the options in a PCL, SOC provides an interface at the MAP terminal. Users can enable or disable options, track the state of SOC options, and generate reports about SOC options.

Operator position software

New messaging between an operator position (IWS and MP) and the switch supports TOPS LNP. It is delivered in the following workstation (non-PCL) software:

- TPC07 for TOPS MP positions
- IWS07 for IWS positions

TOPS LNP SOC state

Of the three types of SOC options—state, usage, and dual—the one that applies to TOPS LNP is state. The state option has a right-to-use (RTU) setting of Y (yes) or N (no). The state can be ON or IDLE. The RTU setting must be Y to change the state of the option; and the state setting must be ON to use TOPS LNP.

If the TOPS LNP option is in the IDLE state, TOPS LNP queries are not launched and module code 720 is not appended to the billing record. All TOPS LNP-related datafill is permitted, but it is ignored.

If the TOPS LNP option is in the ON state, TOPS LNP queries can be launched for directory numbers that are portable, and module code 720 can be appended to the billing record.

As noted in the "Prerequisites" section, TOPS LNP requires the NA100 functionality LNP00100.

TOPS LNP (continued)

Functionalities not controlled by SOC state

The following functionalities are not controlled by the SOC state:

- Changes in the way the switch derives the NPA for seven-digit called numbers. In the Operations section, refer to “DN 7- to 10-digit conversion”.
- BLV ten-digit translations and the BLV display of ten-digits to the operator. Refer to the BLV section.
- TOPS support for ten-digit GTT used in LIDB queries (for OLNS, BNS, and CCV). Refer to table C7GTT in the datafill procedure section.
- The LNPVER query test tool.

OMs

The following OMs are used:

- EXT - TOPS_GEN_TCAP_EXT_BLK is added to the EXT_FORMAT_CODE key type.
- OAPCALP5 - Six LRNREQ registers are added to track the OAP LNP Request/Response messages.
- TOPAAPPL - This is a new group that provides AIN statistics for TOPS applications that use TOPS AIN0.1 TCAP messaging (such as the TOPSLNP application).
- TOPASCCP - This is a new group that provides SCCP statistics for TOPS applications using TOPS AIN0.1 TCAP messaging. A register is pegged when a Unitdata Service (UDTS) message is received for TOPS AIN0.1 applications (TOPSLNP, in this case).
- TOPATCAP - This is a new group that provides TCAP statistics for TOPS applications that use TOPS AIN0.1 TCAP messaging, such as the TOPSLNP application.
- TOPSLNP - This is a new group for tracking usage of LNP queries.

Refer to the *Operational Measurements Reference Guide* for more information.

Logs

The following logs are used:

- AUD642 - This is a new log that is generated whenever a call traps or dies while holding TOPS_GEN_TCAP_EXT_BLK extension blocks.

TOPS LNP (continued)

TOPS_GEN_TCAP_EXT_BLK are used in TCAP messaging to a call process.

- IDPL300 - This is a current log that is generated when the IDPL audit facility has found identifiers that are reserved but not currently in use and has cleaned them up. To avoid generating this report at an unnecessary high frequency, it is only generated after fifty identifiers have been cleaned up.
- IDPL800 - This is a current log that is generated when approximately 80% of the maximum number of TOPSLNP transaction identifiers are currently allocated.
- IDPL801 - This is a current log that is generated when all of the maximum number of TOPSLNP transaction identifiers are currently allocated. This means that no further identifiers of this type are available and call processing may be effected.
- IDPL900 - This is a current log that is generated when the IDPL audit facility has found an identifier that is reserved but not currently in use and has cleaned it up. The actual cleaned-up identifier is displayed.
- LNP 300 - If digit manipulation fails, this new log is generated and the call is routed to reorder treatment.
- LNP 302 - This new log is generated whenever an ISUP Release message with a cause_value of 26 (Misrouted Call to a Ported Number) is received in the querying switch. This log is created by the NA-100 LNP feature AN1954, LNPSSP: LRN/LNP ISUP and PTS Signalling in functionality Local Number Portability, LNP00100.
- TCAP100 - This is a current log that is output when the following occurs. Note that these TCAP100 logs do not occur when the querying entity is LNPVER.
 - RETURN ERROR RECEIVED - TOPSLNP TCAP package received from the LNP SCP contains a Return Error component.
 - REJECT RECEIVED - TOPSLNP TCAP package received from the LNP SCP contains a Reject component.
 - ABORT RECEIVED - TOPSLNP Abort package received from the LNP SCP.
 - ERROR IN RESPONSE - TOPSLNP TCAP package received from the LNP SCP contains a miscellaneous error. An example is receiving an AIN message inappropriate for TOPSLNP (for example, Disconnect).
- TCAP101 - This is a current log that is output when receiving the message "UDTS RECEIVED". This indicates that a TOPSLNP TCAP package was returned to the TOPS switch in an SCCP UDTS message. A problem

TOPS LNP (continued)

occurred when attempting to route the TOPSLNP TCAP package to the LNP SCP database.

- TCAP199 - This is a current log that is output when the following occurs:
 - SCCP FORMAT ERROR -An attempt was made to format SCCP data for a TCAP message and the format failed.
 - BAD PKG RCVD - A package was received by TOPSLNP with no responding transaction id. Since no responding transaction id exists, the querying entity cannot be identified. An example would be receiving a Unidirectional package.
- TOPS 301 - This is a new log generated when a TOPS LNP query is attempted but cannot be launched because the TOPSLNP SCCP subsystem is not in service.
- TOPS 600 - This is a new log generated when a TOPS LNP query times out or when one is attempted but is blocked by Automatic Code Gapping (ACG).
- TOPS 601 - This is a new log generated when the response to an LNP query contains an invalid LRN (not a 10-digit NANP number) or does not contain an LRN or DN.
- TRK138 - The called number field may include an LRN rather than a DN.

Refer to the *Log Report Reference Manual* for more information.

Translations table flow

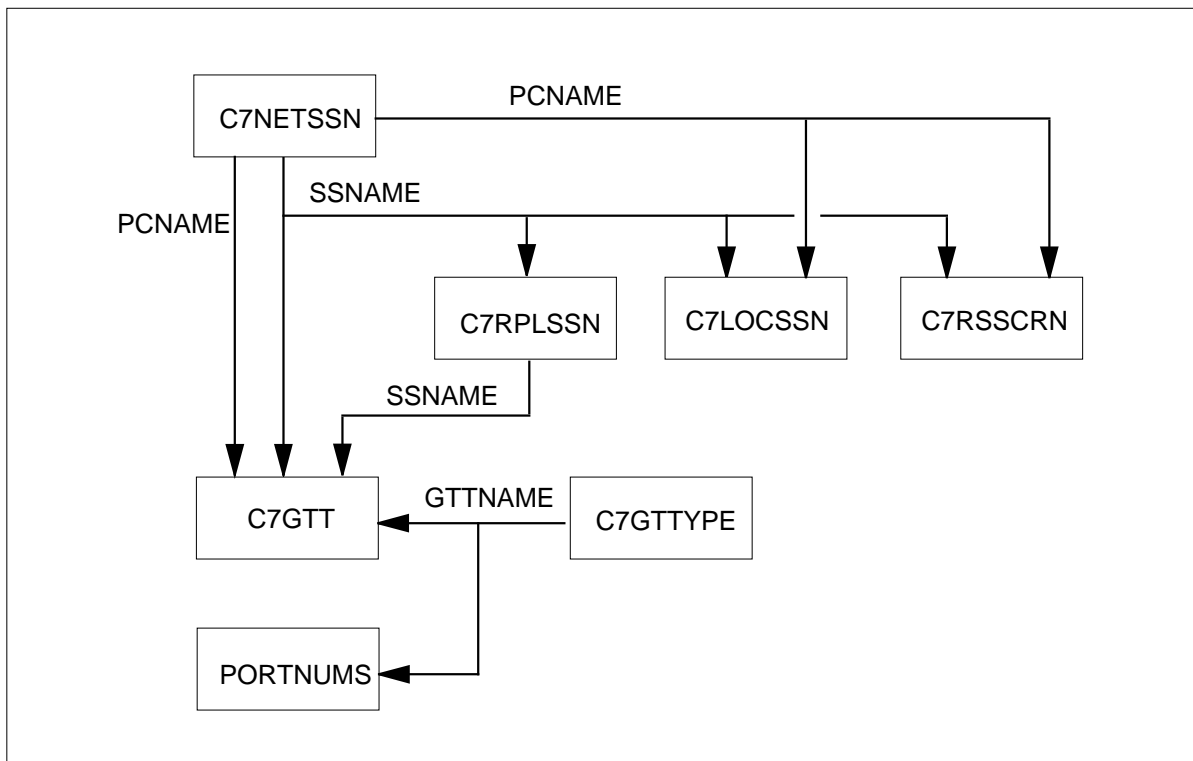
The TOPS LNP translations tables that have a table flow are described in the following list:

- Table C7NETSSN provides the set of remote point cards (PC) and subsystems at the remote PC.
- Table C7LOCSSN provides information about the local subsystem.
- Table C7RPLSSN defines the set of remote subsystem replicate pairs.
- Table C7RSSCRN lists concerned nodes for a remote point code combination.
- Table C7GTTYPE defines the profiles of a global title.
- Table C7GTT maps global titles to CCS7 network addresses.
- PORTNUMS identifies portable DNs.

The TOPS LNP translation process for tables that have a table flow is shown in the flowchart that follows.

TOPS LNP (continued)

Table flow for TOPS LNP



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

Datafill example for TOPS LNP

Datafill table	Example data
C7NETSSN	RTESET1 (TOPSLNP 132) \$
C7LOCSSN	TOPSLNP 132 1 N N \$
C7RPLSSN	TOPSLNP (RETSET1 RETSET2 N) \$
C7RSSCRN	RETSET1 TOPSLNP (RETSET2)\$
GTTYE	LRNGTT ANSI7 54 \$
C7GTT	LRNGTT 0 9 PCSSN (RTESET1 TOPSLNP 0) \$ SSN
PORTNUMS	618 LRNGTT

TOPS LNP (continued)

Limitations and restrictions

The following limitations and restrictions apply to TOPS LNP:

- TOPS LNP is supported only for North American offices.
- In the LET007 release, TOPS LNP does not provide DMS switch support for billing to resellers. The facility-based service provider must accept responsibility for billing resellers.
- In the LET007 release, TOPS LNP does not support geographic number portability outside of the rate center. A rate center is a division of an exchange into zones for billing purposes.
- Before upgrading to LET007 software, existing translations must support ten-digit BLV dialing.
- Ten-digit dialing and signaling must be used if porting across NPAs is permitted.
- With TOPS LNP, the number of CCS7 queries required for a call is higher, because LIDB databases (used for OLNS, BNS, and CCV) do not provide portability information about numbers.
- With TOPS LNP, a single trunk group can have only one NPA associated with each NXX in table TOPSBC. Note, in release TOPS10, an alternate method to using TOPSBC is available. Refer to the datafill procedure section under table TOPSBC.
- The DA access code 555-1212 (or NPA-555-1212) should be excluded from launching LNP queries using table PORTNUMS datafill. The TOPS system does not recognize these numbers as special cases and launches LNP queries on them if they are datafilled as portable numbers.
- 800 numbers and similar service access codes should not be datafilled in table PORTNUMS.
- Operators cannot request or receive LNP information at either TOPS 04 or TOPS BP positions.
- The LNPVER test query tool can be used by only one user at a time.
- Transitional CCITT cards are not supported by TOPS LNP.
- Inwards validation calls (call originations 1160-1162) are not eligible for LNP processing.
- Service Analysis is not informed when LNP queries are made.
- The TOPS system does not check a Zenith routing number for portability. If porting of this type of number is necessary, then the tandem or end office will need to be set up to route the call to its correct destination.

TOPS LNP (continued)

- The TOPS system does not check whether device directory numbers for dial-up auto-quote devices (table HOBICDEV) are ported. It is expected that these numbers are not ported.
- The TOPS system does not check OGT routing numbers for portability when the BILLNUM field is set to N.
- When the TOPS switch receives a call from an equal access end office (EAEO) using Feature Group D cut-through signaling, LNP processing is not done for the call.
- Table FNPA7DIG is a new table that is used by both the TOPS software and DMS-100 end office software.

Interactions

The following paragraphs describe the interactions between TOPS LNP and other functionalities.

Note: Additional interactions are covered in the “Operation” section for the following: busy line verification, Alternate Billing Service LIDB queries, and signaling, routing, and translations.

AMA recording

This section describes interactions and limitations in appending LNP information to AMA records. For additional information, refer to the “Billing” section.

Datafilled LRN overridden by query

When the LRN for the originating trunk is datafilled in table TRKGRP and LNP information for the AMA record is needed for the calling number, the LRN from datafill is used and an LNP module 720 is appended to the AMA record.

However, if the TOPS system must launch an LNP query on the calling number (for routing purposes or because of an explicit request by an operator or SN), it is the LNP information from the query, rather than the datafilled LRN, that appears in the AMA record. If the LNP query fails, the module 720 that is recorded for the calling number indicates a query failure instead of the LRN datafilled in table TRKGRP.

ISUP calling numbers

With incoming ISUP signaling, the TOPS system may receive a Charge Number (CN), a Calling Party Number (CgPN), or both. When both numbers are received and the operator or SN requests to outpulse to a back party after it was released, the TOPS system makes an LNP query for the CgPN for

TOPS LNP (continued)

routing purposes. This query is in addition to any query TOPS already may have made for the CN.

In this case, a module 720 that corresponds to the query for the CgPN is not appended. However, a module 720 that corresponds to the query for the CN is appended with the CN recorded. The reason is that only one LNP module can be recorded for the calling party. If a CN is available, any LNP module for the calling number refers to the CN.

Note: Note: CgPN in the ISUP message is the same as Calling Line Identifier (CLI).

Overwriting a number

If an operator or SN overwrites a billing number or called number for which an LNP query was already done, and if no AMA record was generated when the number was overwritten, then the TOPS system does not store the LNP information about the overwritten number and does not include it in the AMA record.

Module 720 with no corresponding DN

In general, if an LNP query is done, then the LRN is included on the AMA record, even if the DN is subsequently omitted from the record. One example is the AMA record for a call that is class charged to a ported billing number (calling card or third number) but then has its class charge changed by the operator to collect or sent paid. In this case, the AMA record includes the LNP information that corresponds to the billing number.

The presence of a module 720 for the billed party is not an indication that the call was ultimately billed to the party whose LRN appears in the 720. Downstream processing first must consult module 52, Alternate Billing, to determine whether the call was billed to a third number or card number.

If it was, then module 720 (if present) is a reliable indicator of the LRN of the billed number. But if it was not, then any module 720 for the billed party should be disregarded. In particular, if the call was billed collect, then the module 720 for the terminating party is the one that has the LRN of the terminating party.

Special billing without a LIDB query

When the operating company allows a call at the operator position to be billed to a special billing number without a LIDB query (such as when ACG is in effect or office parameters TOPS_MCCS_CCV or TOPS_MCCS_BNS is set

TOPS LNP (continued)

to false), then no LNP processing is done on that billing number for AMA recording.

Note: This interaction applies only to calls at a live operator and not to calls at an automated system.

Multiple LNP requests

At most, one module 720 for a number is recorded, even if the number is queried more than once. The record contains the most recent LNP information.

Operators and operators positions

This section describes interactions and limitations with operators and positions.

Operator requests for LNP information

New messaging between the operator position and the switch allows an operator to request and receive LNP information for a calling, called, or billing (special) number.

Note: The billing number must be a 10-digit third number or a 14-digit line-based calling card number.

The operator uses a new keying action at the operator position to make the LNP request. After receiving the LNP request, the switch sends the following LNP information to the position:

- an indication of the party (calling, called, or special)
- an indication of the status (DN not ported, DN ported, or unknown)
- the 10-digit LRN (if ported)

After receiving the LNP request from the operator position, the switch determines if the DN is portable. If there is not a match for the number in table PORTNUMS, then the DN is not portable and no LNP query is required.

If the DN is portable, the switch determines if it needs to make an LNP query for the DN. It does not need to make an LNP query if it already made one for that DN. The switch uses the information in the previous query response to send the LRN to the operator position.

Note 1: If the previous request resulted in a query failure, the switch relaunches the LNP query and send the corresponding result to the position.

Note 2: If a special verify is in progress when the operator requests LNP information for the called number, the LNP request is blocked.

TOPS LNP (continued)

Note 3: When automatic code gapping (ACG) controls are in effect, an LNP query is not sent.

The following limitations apply to LNP information that is sent to the position:

- If LNP information for a party's number has been obtained and then the party's number is changed, LNP information for the new number is not sent to the position. The operator must make another request for LNP information on that party.
- If LNP information for a party's number has been obtained and then the party's number is cleared, the switch does not inform the position that LNP information should be cleared.
- An operator request for call details does not cause LNP information which was previously sent to the position to be updated.
- LNP information for a party's number is sent to the position only as result of an explicit LNP request by the operator.

Requesting LNP on a seven-digit called number

If the operator requests LNP information on a seven-digit called number, the number is expanded as described in the "Operation" section: "DN 7- to 10-digit conversion". However, the expansion of seven digits is transparent to the operator.

Outstanding LNP queries

When the switch launches an LNP query, it informs the position that a query is in progress. While a query is outstanding, the operator can cancel the call, but cannot perform many keying actions (such as the keying actions denied for LIDB queries).

Canceling calls

A request to cancel the call also cancels any outstanding LNP query. If the call is subsequently resumed, the query that was canceled is not relaunched unless the operator explicitly makes an LNP request.

Outtrunk number

An outtrunk number (the called DN) datafilled in OGT table TQOGTKEY that has the BILLNUM field set to N is not included in the AMA record. TOPS LNP does not change this functionality.

When the TOPS switch routes to this number, the number is assumed to not be ported. The TOPS system does not check table PORTNUMS and does not

TOPS LNP (continued)

launch an LNP query for routing. However, if it is desired that a non-billable outrunk number be ported, then one of the following methods can be used:

- allow the call to route to the donor switch, which would route it to the recipient switch
- assign a native DN to the line in the recipient switch and datafill the native DN in the OGT table

Delayed outpulsing

When an LNP query is launched on a call at position that is otherwise eligible for delayed outpulsing, the call is no longer eligible for delayed outpulsing.

Auto-outpulsing

TOPS LNP does not change the eligibility of a call for auto-outpulsing; however, in some situations, an LNP query may need to be completed before auto-outpulsing begins. For example, suppose the TOPSPARM parameter `AUTO_OUTPULSE_UPON_CCV_SUCCESS` is set to Y and the LIDB reply indicates that billing is accepted. If datafill indicates that LNP information about the calling card number should be recorded for AMA purposes, then an LNP query is automatically launched when the LIDB response is received, and auto-outpulsing does not occur until the LNP query is completed.

Pre-operator screening of calls

Digit translations are usually performed on incoming 0+ and 1+ calls before they are routed to the TOPS position. If the digit translations do not determine a route, the call is routed to treatment instead of to the TOPS position. TOPS LNP does not change this processing.

However, with TOPS LNP, the initial digit translations may succeed but the called number has been ported. In this case, as long as the call is eligible for operator services (it is not a tandem call), re-translation using the LRN is not done until after the call has been presented to a TOPS operator or automated service.

So it is possible that an operator can receive a call that already has the called digits but which will route to treatment when a request is made to outpulse. This situation should not happen if 10-digit translations are in place for the LRN.

ORDB

Some functions performed by Operator Reference Databases (ORDB) may be affected by portability. (One example is an emergency service that uses the calling number.) The Open Information Access (OIA) protocol is not updated in the LET007 release to send the LNP information from the TOPS switch to

TOPS LNP (continued)

the ORDB. If the ORDB is used for finding TTC codes, the operator must enter the LRN manually.

Force management

Whenever possible, LNP queries are made before operator-assisted calls arrive at the position. However, when the operator enters a DN, an LNP query may be needed for it.

Queries can increase average work time (AWT) for calls. Among the factors that affect AWT in an LNP environment are the number of portable NPA-NXXs, the call mix, datafill that enables or disables queries for AMA purposes, and possibly operator practices. While a query is outstanding, however, operator holding time is not affected if the operator is conversing with the subscriber or entering another number.

TOPS 04 and TOPS BP

For TOPS 04 and TOPS BP positions, the TOPS LNP capability is transparent. Operators cannot request or receive LNP information at either type of position.

Directory assistance and intercept call completion

TOPS LNP supports call completion for both DA call completion (DACC) and automatic DACC (ADACC) and intercept calls. If the requested number (DA) or referral number (intercept) is portable, the TOPS system launches an LNP query and routes the call to the recipient switch.

ADACC

The TOPS system performs translations on the requested number before offering call completion to ensure that it finds a valid route. TOPS LNP does not change this functionality. However, if the requested number is portable, the TOPS system does not make the LNP query until after the subscriber has accepted call completion.

If the number has been ported, then the TOPS system performs translations on the LRN. The call is routed to treatment if translations does not result in a valid route.

Intercept call completion

A subscriber with a ported DN who moves outside of a rate center is not able to port the number again. The number can be put on intercept in either the donor switch or the recipient switch. TOPS LNP processing can provide call completion regardless of which switch provides the intercept service. Once it is determined where the intercept service is provided, the referral number can be ported and correctly routed to it.

TOPS LNP (continued)

Module 720s are not appended to intercept records. Up to two module 720s can be appended to an intercept call completion record—one for the calling (intercepted) number and one for the called (referral) number.

OSSAIN

OSSAIN provides an interface between a TOPS switch and external SN. The interface allows an SN to control switch functionality associated with operator services.

The TOPS system does the same LNP processing and provides the same LNP information in the OSSAIN environment as it does in the TOPS environment. OSSAIN does not change the criteria the TOPS system uses to make LNP queries. The SN can request LNP information from the switch for the calling, called, or billing numbers in an OSSAIN call.

If the LNP information is not available from a previous LNP query, the switch launches an LNP query for the number. After launching the LNP query, the switch is in a restricted input mode while waiting for the query response. During this mode the switch does not accept any request until the query is completed.

In OSSAIN, just as in the TOPS system, when an LNP query is launched, an AMA module 720 is appended to the AMA record with the call.

Open Automated Protocol (OAP)

OAP is the interface that allows communication between the switch and an SN. For TOPS LNP, OAP adds an operation that allows the SN to request LNP information. In addition to this operation, a data block that contains the LNP information can be sent with certain existing operations.

For complete information on OAP operations, please refer to the OSSAIN Open Automated Protocol Specification, Q235-1. For complete information on the OSSAIN product, please refer to the OSSAIN User's Guide, 297-8403-901.

Release link trunking (RLT)

RLT increases the capacity of ISUP trunks by releasing ISUP connections between a previous exchange and a TOPS switch. After the RLT operation is performed, ISUP connections to the TOPS switch are released, which makes the trunks available for additional traffic.

RLT exists already for ADACC calls. When RLT is enabled for a trunk group, the TOPS switch sends the requested number back to the previous switch, which completes the call.

TOPS LNP (continued)

The following are two types of RLT for TOPS calls:

- RLT bridging occurs after a forward connection is established through the TOPS switch. The TOPS switch requests that the previous switch bridge the path through the switching network. This eliminates TOPS involvement in the call.
- RLT transfer occurs before a forward connection is established. This functionality is similar to that for ADACC calls, however, it uses a different set of ISUP messages.

RLT and LNP queries

With RLT bridging, the call is already completed when the bridging occurs, so the TOPS switch already would have performed LNP processing. With RLT transfer (and RLT for ADACC), the previous switch is responsible for any LRN lookups that need to be done on the called or requested number.

Unnecessary TOPS LNP queries in RLT scenarios are not expected to occur, because in most cases the previous exchange is a carrier switch. So TOPS equal access translations would indicate a route back to the carrier and the TOPS switch would not perform LNP processing on the called number.

Carrier calls

When a call routes to a carrier, the TOPS system usually does not need to make an LNP query on the called number. However, one exception to this is when the operator makes an LNP request for the called number and the call has already been determined to be a carrier call.

If this happens, all of the following actions take place:

- The request for the LRN is executed.
- A is query launched, if applicable.
- A module 720 module is appended to the AMA record if a query was made.
- The call is still routed based on the carrier identification code (CIC) and the DN (not the LRN).

IntraLATA carriers and intraLATA presubscription (ILP)

TOPS LNP treats calls that qualify for intraLATA carrier handling the same way as calls that qualify for interLATA carrier handling. That is, no LNP query is usually made for the called number.

ILP for Originating Line Number Screening (OLNS) allows a TOPS office to perform intraLATA screening and carrier selection for certain calls using data from the switch and the OLNS LIDB. One criterion for ILP eligibility is that

TOPS LNP (continued)

the originating and terminating number should be in "regions" that are not local to each other. Table ILPREGN maps ten-digit telephone numbers (or their prefixes) to ILP regions, and table ILPELGBL determines which other regions are local to each region.

TOPS LNP does not change ILP eligibility determination. Table ILPREGN continues to be indexed by the actual calling and called numbers (or a prefix of these numbers). Also, when a call is determined to be eligible for ILP, TOPS LNP treats it the same as an interLATA call.

Therefore, ILP regions and LNP zones of portability should be defined in such a way that each zone of portability is entirely contained within an ILP region. If a zone of portability spans multiple regions with different ILP locality attributes, and if a DN were ported from an exchange in one region to an exchange in another region, ILP functionality for the DN would not change when the number was ported.

Table ILPREGN would become unmanageable if an attempt were made to individually datafill each ported DN as belonging to the region containing the exchange to which it was ported.

LATA boundaries

The Generic Switching and Signaling Requirements for Number Portability specification requires that LNP not change interLATA or intraLATA carrier determination. An implication of this requirement is that a rate center must be contained entirely within a LATA. If a rate center could span LATAs, and a subscriber could port within the rate center and change LATAs, then the act of porting would change regardless of whether certain calls to and from this subscriber were interLATA.

Toll-free calls

The TOPS switch supports the following three types of toll-free calls:

- E800, available in the United States
- 800 Plus (also known as 800P and 800+ or, with additional number services, 800+E), available in Canada
- E008, available in Australia

However, TOPS LNP does not support routing to ported numbers with the 800 Plus (Canada) and E008 (Australia) variants. With these variants, TOPS does not perform LNP processing on the routing number returned by the CCS7 Number Services Center (NSC) database.

TOPS LNP (continued)

This restriction does not apply only to the TOPS environment—DMS end offices currently do not support interaction between AIN and the 800 Plus or E008 variants, so these calls do not interwork with LNP in end offices either.

Routing to ported E800 numbers

TOPS LNP supports routing to ported numbers with the E800 (United States) variant for 1+ calls arriving on TOPS trunks, as long as cut-through signaling is not used for these calls. Support is not limited to 800 numbers; it applies to the expanded range of toll-free service access codes provided by feature AG4748, E800 Toll-free Expansion for 800 Exhaust.

Note: For information on feature AG4748, please refer to the *North American DMS-100 Feature Description Manual*, 297-8021-801, release LETB006.

If the NSC database response to a TOPS E800 query provides a DN as a routing number, and if the DN is portable, then TOPS launches an LNP query for that DN. If the DN has been ported, the TOPS system uses the LRN for routing.

There is an existing limitation that the TOPS system does not provide E800 processing for calls that go to an operator position; TOPS LNP does not change this limitation. These calls still must be explicitly routed to a tandem office for E800 processing. If routing to ported numbers is desired for these calls, they must be routed to a tandem with LNP capability.

Note: To avoid unnecessary LNP queries, it is recommended that 800 numbers and similar service access codes not be datafilled in table PORTNUMS.

AMA recording for toll-free calls

TOPS LNP appends a module 720 to the following two types of toll-free calls:

- E800 (United States), which can have a module 720 appended for the calling number and the called number
- 800 Plus (Canada), which can have a module 720 appended for the calling number only

Note: Neither E800 nor 800 Plus can have a module 720 for the billing number. If the E800 database returns a billing number for the call that is different from the routing number, the TOPS system does no LNP processing on this billing number.

TOPS LNP (continued)

Calling card sequence calls

Some calls involve more than one billing period, such as MCCS and OSSAIN calling card sequence calls. For these calls, any LNP information obtained about the card number during the first billing period is carried over into subsequent periods and recorded in subsequent AMA records.

Note: If the operator or service node overwrites the card number, all LNP information about that number is lost and a new query is needed, even if the card number is overwritten with the same card number.

Operator centralization

In an OC network, datafill in table PORTNUMS does not need to be the same at all switches. It is not necessary for each switch to be aware of the zones of portability served by the other switches. However, when the datafill is not the same, the operating company must review the dialing plan and translations for BLV, corridor, and delay calls between offices in the same OC network.

Note: Refer to the Operation section under BLV for a discussion of BLV calls in an OC network.

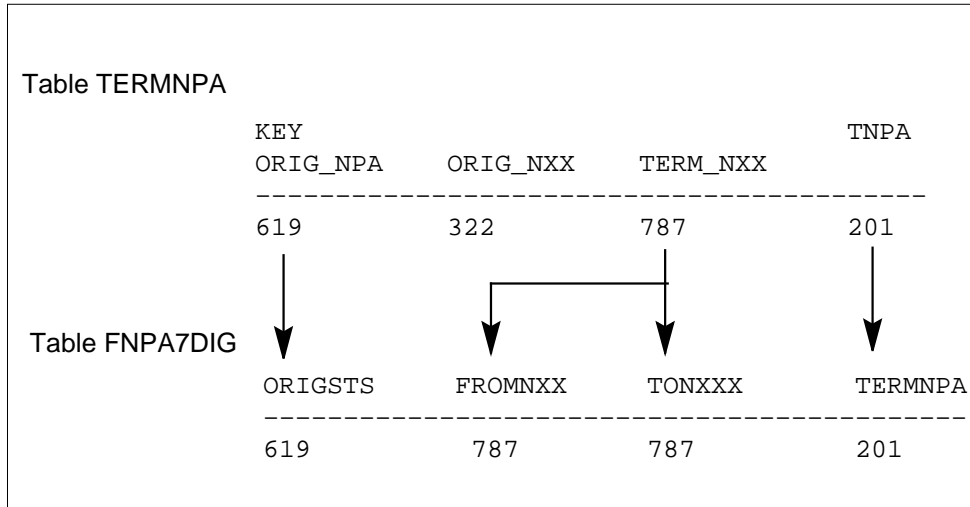
One night process (ONP)

Prior to LET007, table TERMNPA was used in some situations for obtaining the NPA for called numbers. During an ONP from a release prior to LET007 to LET007 or later, TERMNPA datafill is transferred to table FNPA7DIG.

Before the ONP, the craftsperson needs to examine datafill in table TERMNPA and understand the field mappings between TERMNPA and FNPA7DIG. The following figure shows the field mappings between these two tables.

TOPS LNP (continued)

ONP transfer of TERMNPA to FNPA7DIG example



Avoiding tuple fallout during TABXFER

Two scenarios can produce tuple fallout during the TABXFER, as follows:

- extraneous TERMNPA tuples

Table TERMNPA allows datafilling different TNPA's for the same ORIG_NPA and TERM_NXX pair. However, as of LET007, only one terminating NPA can be associated with a given originating NPA and terminating NXX pair. The craftsperson must remove any extraneous tuples from table TERMNPA, because they will be treated as duplicate tuples in FNPA7DIG and fail to transfer.

- overlap between TERMNPA and FNPA7DIG tuples

In an 07 to 07 ONP, table FNPA7DIG can have datafill in the FROM side. Since FNPA7DIG is transferred before TERMNPA, the craftsperson should also ensure that TERMNPA tuples do not overlap the FNPA7DIG tuples. Overlapped tuples from TERMNPA will fail to transfer.

If tuple fallout does occur in either of these scenarios, the following actions take place:

- error messages specify each tuple that failed to transfer
- the TABXFER process is halted

CCS7 base software

This section describes interactions and limitations with the base CCS7 software.

TOPS LNP (continued)

LIU7 support for TOPSLNP application

Each TCAP application in the switch has a corresponding subsystem name, such as "TOPSLNP." Internally, this subsystem name is represented by a numeric value, which is different from the subsystem number.

In a switch that implements TOPS LNP, LIU7s rather than MSB7s must be provisioned. This limitation is because MSB7s only support applications with a numeric value of 70 or less, and the TOPSLNP application value is greater than 70. CCS7 network tables that are affected by this limitation are C7LOCSSN and MSBINV.

Note: For more information on LIU7 support, please refer to the system engineering bulletin, LPP/LIU7 Performance, Throughput, and Capacity, SEB-92-12-001.

Testing tool for TOPSLNP subsystem

Although some DMS TCAP applications support using the TESTSS facility to test CCS7 subsystems, the TOPSLNP application uses the LNPVER tool instead. Refer to the "Translations verification tools" section.

Restrictions for ACG

The following restrictions apply to ACG in TOPS:

- TOPS LNP does not support unsolicited ACG messaging for the TOPSLNP subsystem. The ACG message for TOPSLNP must arrive in the response to the query.
- The TOPSLNP subsystem and AIN01 subsystem have separate ACG controls for LNP. ACG messages that arrive at the TOPSLNP subsystem do not affect the ACG status of the AIN01 subsystem. Likewise, ACG messages for the AIN01 subsystem do not affect the ACG status of the TOPSLNP subsystem.

Unidirectional packages

Unidirectional packages directed to the TOPSLNP subsystem are ignored, because no responding transaction ID exists to map the message to a querying entity.

Interactions with DMS-100 SSP LRN translations

All direct dialed (DD) calls that are destined for the TOPS office (but not over TOPS trunks) must route out of table STDPRTCT to route correctly to the TOPS environment. The incoming pretranslator must be datafilled with a T-Selector and a pointer to table TOPS.

Table HNPACONT can no longer safely route DD calls (over non-TOPS trunks) destined for the TOPS office to the TOPS environment. If a trigger

TOPS LNP (continued)

happens to be datafilled against the number, the call may not route correctly to the TOPS environment. Refer to the datafill procedure section for details on the datafill for table STDPRTCT.

Note: For more information on LNP functionality for the end office, please refer to the *DMS-100/200 LRN-LNP Service Implementation Guide*, 297-8981-021.

Activation/deactivation by the end user

TOPS LNP requires no activation or deactivation by the end user.

Billing

During call processing, the TOPS system may launch an LNP query for the calling, called, or billing number. Call processing stores the LNP information from the query and passes it to an LNP automatic message accounting (AMA) module 720 billing record.

LNP module 720 is specified in the Illinois Commerce Commission *Generic Switching and Signaling Requirements for Number Portability*. Module 720 is used only to record LNP information and it is appended only to North American AMA records.

For more information on AMA recording, refer to the "Limitations and restrictions" and "Interactions" sections.

Obtaining LNP information for the AMA record

Module 720 is replicative: there can be up to three instances of this module in the AMA record—one for the calling number, one for the called number, and one for the billing number.

Besides knowing when to make an LNP query, TOPS LNP call processing must know when to append a module 720 to the AMA record for each number. The following sections explain how call processing determines whether to launch an LNP query and whether to append a module 720 for each type of number.

Note 1: The existence of LNP information about a call is not sufficient reason to produce an AMA record. LNP does not change the criteria that determine whether an AMA record is produced.

Note 2: AMA recording of LNP information can occur on calls being routed from the TOPS switch to a carrier as well as on calls being routed to the end office. Queries for routing purposes are the only ones that are blocked for calls that are known to be routing to a carrier.

TOPS LNP (continued)**Called number**

An LNP query is always needed for a portable called number when the call has been determined to be a non-carrier call. It is a general rule that an LNP module is appended to the AMA record whenever a query is made. Therefore, an LNP module is appended for a called number in a portable NPA-NXX when the call is completed to an operating telephone company.

As a rule, an LNP module is not appended to the AMA record for the called number in a carrier call. However, there are exceptions:

- If a TOPS operator or service node has explicitly requested portability information about the number, and a query has been made to satisfy that request, an LNP module 720 is appended. This is regardless of the carrier status of the call.
- If the call was not known to be a carrier call at the time when the LNP query determination was made for the called number, then an LNP query could be launched and a module 720 would be recorded for the called party. For example, this could happen if translations determines that the call would be handled by the operating telephone company, but then the operator overrode the translation result.

The following table summarizes the factors that determine whether an LNP query is launched for the called number and an LNP module for the called number is appended to the AMA record.

Determining LNP query and module 720 for called number

Routing to carrier	Operator or SN requests LNP info about called number	Table PORTNUMS match	Query launched	LNP module 720 appended
n/a	n/a	No	No	No
Yes	No	n/a	No (note 1)	No (note 1)
n/a	Yes	Yes	Yes	Yes
No	No	Yes	Yes	Yes
Note 1: As noted earlier, there are exceptions.				
Note 2: n/a - Not applicable since other factors are sufficient to determine LNP query and appending of module 720.				

If ACG controls block a query, a module 720 is still appended, indicating a query was not launched. Log TOPS600 is generated.

TOPS LNP (continued)

Calling number

For AMA recording of LNP information about the calling number, there are two types of calling numbers: trunk originations and delay calls.

Trunk originations

The TOPS switch can record the LRN of the switch that hosts a calling number without making an LNP query. An LRN can be datafilled against a trunk group that originates traffic from a single end office, and if the calling number is in a portable NPA-NXX, the TOPS switch retrieves the number from datafill instead of launching a query.

Note that when the LRN is retrieved from datafill, the AMA record can only indicate that the number might be ported, not that it is.

The following table describes the conditions that determine launching of an LNP query and appending LNP module 720. The first two columns are for two relatively infrequent conditions. The next four columns indicate the DMS datafill that affects the LNP behavior. The last two columns specify the resulting TOPS functionality.

Determining LNP query and module 720 for calling number, trunk originations

TOPS routes to calling number (note 1)	Operator or SN requests LNP info about calling number	Table TOPT option LNP-CLGAM	Table PORT-NUMS match	LRN in table TRKGRP	Table TOPSPARM parm LNP_QUERY_FOR_AMA_ONLY includes CLG	Query launched	LNP module 720 appended
n/a	n/a	n/a	No	n/a	n/a	No	No
Yes	n/a	n/a	Yes	n/a	n/a	Yes	Yes (Note 2)

Note 1: For example, the calling party goes onhook and is released by the operator, and then the operator requests to outpulse back.

Note 2: An exception occurs for ISUP originations where both a Charge Number and a Calling Line ID are received. This is discussed below.

Note 3: n/a - Not applicable since other factors are sufficient to determine LNP query and appending of module 720.

TOPS LNP (continued)

Determining LNP query and module 720 for calling number, trunk originations

TOPS routes to calling number (note 1)	Operator or SN requests LNP info about calling number	Table TOPS-TOPT option LNP-CLGAM	Table PORT-NUMS match	LRN in table TRKGRP	Table TOPSPARM parm LNP_QUERY_FOR_AMA_ONLY includes CLG	Query launched	LNP module 720 appended
n/a	Yes	n/a	Yes	n/a	n/a	Yes	Yes (Note 2)
No	No	Y	Yes	Yes	n/a	No	Yes
No	No	Y	Yes	No	Yes	Yes	Yes
No	No	Y	Yes	No	No	No	No
No	No	N, or originating trunk not datafilled in TOPSTOPT	n/a	n/a	n/a	No	No

Note 1: For example, the calling party goes onhook and is released by the operator, and then the operator requests to outpulse back.

Note 2: An exception occurs for ISUP originations where both a Charge Number and a Calling Line ID are received. This is discussed below.

Note 3: n/a - Not applicable since other factors are sufficient to determine LNP query and appending of module 720.

The following describes call type handling for trunk originations:

- carrier calls

The criteria presented in the above table are applied in the same way for calls that route to a carrier as for calls that route to an end office. Also, the TOPS system does not consider whether services are provided for a carrier when it determines whether to launch an LNP query or record a module 720. The criteria are the same for an access record as for a billing record.

- Feature Group D (FGD) cut-through calls

When the TOPS office receives a call from an EAEO using Feature Group D cut-through signaling, no LNP processing is done for the call.

TOPS LNP (continued)

- incoming ISUP

With incoming ISUP signaling, the TOPS office may receive a charge number (CN), a Calling Party Number (CgPN), or both. When only one number is received, LNP uses this number as the calling number for call processing and AMA recording purposes. However, when both a CN and CgPN are received, LNP uses the CN—not the CgPN—in the AMA record.

Note: The CgPN is also known as the Calling Line Identifier (CLI).

- billing periods

Some calls involve more than one billing period, such as sequence calls, DA multiple requests, and GEN AMA. For these calls, any LNP information obtained about the calling number during the first billing period is carried over into subsequent periods and recorded in subsequent AMA records.

- intercept call completion

For an intercept call with call completion, the TOPS system treats the intercepted number as the calling number. The module 720 for the intercepted number indicates that the record is for the calling number. The module 720 applies only to the call completion portion of the call; the intercept portion of the call does *not have a module 720 appended*.

Delay calls

On a delay call, the operator or SN can provide a back number (calling number) and then request to connect to the back number. Before connecting to the back number, the TOPS system needs to launch an LNP query for routing purposes. (Making this query assumes that the calling DN is portable and a query was not already made for AMA purposes.) When a query is made for routing, a module 720 is appended to the AMA record.

TOPS LNP (continued)

The following table shows how the TOPS switch decides whether to record an LNP module for the calling party in a delay call. With delay calls, a query is always needed if an LNP module is to be recorded for the back party.

Determining LNP query and module 720 for calling number, delay call

Route to back party	Operator or SN requests LNP info about calling number	Table PORTNUMS match	Table TOPSPARM parm LNP_QUERY_FOR_AMA_ONLY includes CLG	Query launched	LNP module 720 appended
N/A	N/A	No	N/A	No	No
Yes	N/A	Yes	N/A	Yes	Yes
N/A	Yes	Yes	N/A	Yes	Yes
No	No	Yes	Yes	Yes	Yes
No	No	Yes	No	No	No

Note: N/A - Not applicable since other factors are sufficient to determine LNP query and appending of module 720.

Billed number

The billing number does not refer to the called number in a collect call or the calling number in a sent-paid call. Billing number refers to a North American Numbering Plan (NANP) third number and an NANP 14-digit line-based calling card number. A billing number is also referred to as a special number.

When a call is billed to the originating or terminating number, the LNP module for the originating or terminating party should be consulted instead. The criteria described in previous sections ("Called number" and "Calling number") determine whether an LNP module is recorded for an originating or terminating number.

TOPS LNP's determination of whether to obtain LNP information about a special billed number interworks closely with LIDB queries, especially for a call that is at a live operator rather than an automated system. The LNP query determination immediately follows the LIDB response (or time-out). However, there are situations in which an operator can charge a call to a special number and float the call without a LIDB query ever having been launched. Some examples are when a card is listed in table HOTLIST, when the

TOPS LNP (continued)

VALTYPE selector in table CCVPARMS or BNSPARMS is MANUAL, and when code gapping prevents the query.

In these situations in which an operator charges a call to a special number and floats the call without a LIDB query having been launched, there is no LNP query for the special number unless the operator explicitly requests it.

The presence of a module 720 for the billed party is not an indication that the call was ultimately billed to the party whose LRN appears in the 720. Downstream processing first must consult module 52 (Alternate Billing), to determine whether the call was billed to a third number or card number.

If the call was billed to a third number or card number, then module 720 (if present) is a reliable indicator of the LRN of the billed number. But if it was not, then any module 720 for the billed party should be disregarded. In particular, if the call was billed collect, then the module 720 for the terminating party is the one that has the LRN of the terminating party.

The next two sections provide more details about cards and third numbers.

14-digit line-based calling card number

If a line-based card number passes LIDB screening, table PORTNUMS and TOPSPARM parameter LNP_QUERY_FOR_AMA_ONLY determine whether a query is made and whether an LNP module is recorded.

If LIDB screening causes a card number to be rejected, an LNP query is not made on the DN part of the card number, and an LNP module is not appended for that DN.

TOPS LNP (continued)

The following table shows how the TOPS switch decides whether to launch an LNP query and record an LNP module for a 14-digit calling card number.

Determining LNP query and module 720 for billed number: 14-digit calling card number

LIDB CCV screening result	Operator or SN requests LNP info about card number	Table PORTNUMS match	Table TOPSPARM parm LNP_QUERY_FOR_AMA_ONLY includes SPL	Query launched	LNP module 720 appended
N/A	N/A	No	N/A	No	No
Number accepted	N/A	Yes	Yes	Yes (note 1)	Yes
Number accepted	Yes	Yes	N/A	Yes	Yes
Number accepted	No	Yes	No	No	No
Number rejected	N/A	N/A	N/A	No	No

Note 1: If the DN in the card number is the same as the called number, and if a query has already been made for that number, then the result of the previous query is used in module 720. A second query is not launched for the same DN.

Note 2: N/A - Not applicable since other factors are sufficient to determine LNP query and appending of module 720.

Some calls involve more than one billing period, such as sequence calls, DA multiple requests, and GEN AMA. For these calls, any LNP information obtained about the card number during the first billing period is carried over into subsequent periods and recorded in subsequent AMA records.

If the operator or SN overwrites the card number, all LNP information about that number is lost and a new query is needed, even if the card number is overwritten with the same card number.

Third number

An LNP query for routing purposes may be necessary for third number verification. If a query is made, an LNP module for the third number is recorded.

TOPS LNP (continued)

For third number calls that involve more than one billing period, any LNP information obtained about the third number during the first billing period is carried over into subsequent periods and recorded in subsequent AMA records.

The following table shows how the TOPS switch decides whether to make an LNP query and whether to record an LNP module for the third number.

Note: Only NANP third numbers are considered here. An RAO third number, also referred to as a “special special number,” is not an NANP number and is therefore ineligible for LNP work.

Determining LNP query and module 720 for billed number: third number

LIDB BNS screening result	Route to third number for verification	Operator or SN requests LNP info about third number	Table PORT- NUMS match	Table TOPS-PARM parm LNP_QUERY_FOR_AMA_ONLY includes SPL	Query launched	LNP module 720 appended
N/A	N/A	N/A	No	N/A	No	No
N/A	Yes	N/A	Yes	N/A	Yes	Yes
Verification required	No	N/A	Yes	Yes	Yes	Yes
Verification required	No	Yes	Yes	No	Yes	Yes
Verification required	No	No	Yes	No	No	No
Number accepted	No	N/A	Yes	Yes	Yes	Yes
Number accepted	No	Yes	Yes	No	Yes	Yes

Note: N/A - Not applicable since other factors are sufficient to determine LNP query and appending of module 720.

TOPS LNP (continued)**Determining LNP query and module 720 for billed number: third number**

LIDB BNS screening result	Route to third number for verification	Operator or SN requests LNP info about third number	Table PORT- NUMS match	Table TOPS-PARM parm LNP_QUERY_FOR_AMA_ONLY includes SPL	Query launched	LNP module 720 appended
Number accepted	No	No	Yes	No	No	No
Number rejected	No	N/A	N/A	N/A	No	No

Note: N/A - Not applicable since other factors are sufficient to determine LNP query and appending of module 720.

LNP module 720

Module 720 can be appended to most call codes that are specific to TOPS operations, such as (currently in TOPS07) call codes 189 to 199, and 251. It also can be appended to call codes that are not specific to the TOPS system but which can be generated in a TOPS environment, such as call codes 006, 110, 134, 141, and 142. The module is not appended to call code 215, intercept calls, even when the operator requests it.

The TOPS system supports three types of 800 calls - E800 for Bellcore, 800Plus for Telecom Canada and E008 for Telecom Australia. E008 for Telecom Australia does not use the North American Numbering Plan, so it is not eligible for LNP. 800Plus for Telecom Canada can have a 720 module attached for the calling number, but never the called number. E800 for Bellcore can have a 720 module attached for the calling number as well as the called number. Neither E800 for Bellcore nor Telecom Canada have a module 720 for the billing number.

A new (non TOPS) office parameter, RECORD_LNP_MODULE_719, is introduced which impacts release TOP09. It indicates whether an office should record LNP information according to the ICC Generic Operator Services Switching Requirements for Number Portability (module 720) or according to GR-2936-CORE LNP Capability Specification Switch Feature Requirements (module 719). The 800 calls (mentioned above) in a North American office which combos with TOPS produces the module specified by RECORD_LNP_MODULE_719. The 800 calls (mentioned above) in a solo

TOPS LNP (continued)

TOPS load continues to produce a 720 module. No other calls in a TOPS environment are impacted by this new office parameter.

For details on module code 720, refer to the *TOPS Local Number Portability (LNP) User's Guide*, 297-8403-902, in release LETB0007.

For more information on call codes, please refer to the *Bellcore Format Automatic Message Accounting Reference Guide*, 297-1001-830.

Station Message Detail Recording

TOPS LNP does not affect Station Message Detail Recording.

Datafilling office parameters

The following table shows the office parameters used by TOPS LNP. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by TOPS LNP

Table name	Parameter name	Explanation and action
OFCENG	CRS_SUBRU_POOL2_SIZE	<p>TOPS LNP uses data storage from extension block CRS_SUBRU_POOL2 to store LNP information for AMA record 720. This use requires an increase to parameter CRS_SUBRU_POOL2_SIZE.</p> <p>Use of this extension block depends on the percent of TOPS LNP calls that involve ported numbers and that there are at most three MRUs per AMA record (one for each of the calling, called, and billing numbers).</p> <p>The following formula should be added to the existing formula:</p> $\text{<existing equation>} +$ $\text{maximum number of TOPS system busy hour call attempts} * .05 * n$ <p>Where <i>n</i> is the expected average number of module 720s appended to the AMA record (<i>n</i> is less than or equal to three).</p>

TOPS LNP (continued)**Datafill sequence**

The following table lists the tables that require datafill to implement TOPS LNP. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for TOPS LNP

Table	Purpose of table
CCS7 tables	
C7NETSSN	CCS7 Network Subsystem Routing provides the set of remote point cards (PC) and subsystems at the remote PC.
C7LOCSSN	CCS7 Local Subsystem provides information about the local subsystem.
C7RPLSSN	CCS7 Replicate Subsystem defines the set of remote subsystem replicate pairs.
C7RSSCRN	CCS7 Remote Subsystem Concerned Node lists concerned nodes for a remote point code combination.
C7GTTTYPE	CCS7 Global Title Translations Type defines profiles of a global title.
C7GTT	CCS7 Global Title Translations maps global titles to CCS7 network addresses.
For datafilling other required CCS7 tables, refer to the "Base Services" volumes, section "Understanding BAS CCS7" in this translations manual.	
Call processing tables	
STDPRTCT.ST DPRT	Subtable Standard Pretranslator screening and routing of calls.
FNPA7DIG	Foreign Numbering Plan Area 7-digit number indicates the called number.
TERMNPA	Termination NPA is replaced by table FNPA7DIG.
TRKGRP	Trunk group is changed to indicate the ported calling number.
TOPSTOPT	TOPS Trunk Options contains new field LNPCLGAM.
TOPSPARM	TOPS Parameters contains new parameters for LNP.
PORTNUMS	Portable numbers contains portable NPA-NXXs served by the TOPS switch.
TMTMAP	Treatment map is changed to handle a misrouted LNP call to a ported number.
TOPSBC	TOPS Billing Code provides billing information for each trunk.
ADJNODE	Adjacent node indicates if the outgoing office supports LPN.

TOPS LNP (continued)

Datafill tables required for TOPS LNP

Table	Purpose of table
BLV tables	
OFRT	Office route identifies the CLLI of the outgoing trunk.
STDPRTCT.ST DPRT	Subtable Standard Pretranslator screening and routing of calls.
TRKGRP	Trunk group contains information on each trunk group type in the switch.
OPRTRANS	TOPS Operator Translations defines the pretranslator for operator originated calls.
TRIGDIG	Trigger digits specifies trigger digit criteria based on the dialed digits.
TRIGGRP	Trigger group defines criteria for AIN triggers.

CCS7 tables

This section provides guidelines for datafilling the principle CCS7 tables. For datafilling the other required CCS7 tables, refer in this translations manual to the "Base Services" volume, section "Understanding BAS CCS7".

Datafilling table C7NETSSN

The following table shows the datafill specific to TOPS LNP for table C7NETSSN. Only those fields that apply directly to TOPS LNP are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table C7NETSSN

Field	Subfield or refinement	Entry	Explanation and action
			Datafill a tuple for queries and error messages to the LNP SCP database.
	SSNAME	TOPSLNP	New value TOPSLNP can be datafilled.

Datafill example for table C7NETSSN

The following example shows sample datafill for table C7NETSSN.

TOPS LNP (continued)

MAP display example for table C7NETSSN

PCNAME	SSNAMES
-----	-----
RTESET1	\$
RTESET2	(TOPSLNP 132) \$

Datafilling table C7LOCSSN

The following table shows the datafill specific to TOPS LNP for table C7LOCSSN. Only those fields that apply directly to TOPS LNP are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table C7LOCSSN

Field	Subfield or refinement	Entry	Explanation and action
			Datafill a tuple for queries and error messages to the LNP SCP database.
SSNAME		TOPSLNP	New value TOPSLNP can be datafilled.

Datafill example for table C7LOCSSN

The following example shows sample datafill for table C7LOCSSN.

MAP display example for table C7LOCSSN

SSNAME	SSNUMBER	MININST	REPLINFO	TFMI	PCNAMES
-----	-----	-----	-----	-----	-----
TOPSLNP	132	1	N	N	\$

Datafilling table C7RPLSSN

The following table shows the datafill specific to TOPS LNP for table C7RPLSSN. Only those fields that apply directly to TOPS LNP are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table C7RPLSSN

Field	Subfield or refinement	Entry	Explanation and action
SSNAME		TOPSLNP	New value TOPSLNP can be datafilled.

TOPS LNP (continued)

Datafill example for table C7RPLSSN

The following example shows sample datafill for table C7RPLSSN.

MAP display example for table C7RPLSSN

```

SSNAME                                     REPLIST
-----
TOPSLNP                                     (RETSET1  RETSET2 N) $
    
```

Datafilling table C7RSSCRN

The following table shows the datafill specific to TOPS LNP for table C7RSSCRN. Only those fields that apply directly to TOPS LNP are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table C7RSSCRN

Field	Subfield or refinement	Entry	Explanation and action
SSNAME		TOPSLNP	New value TOPSLNP can be datafilled.

Datafill example for table C7RSSCRN

The following example shows sample datafill for table C7RSSCRN.

MAP display example for table C7RSSCRN

```

PCSSN                                     PCNAMES
-----
RETSET1  TOPSLNP                          (RETSET) $
    
```

TOPS LNP (continued)

Datafilling table C7GTTYE

The following table shows the datafill specific to TOPS LNP for table C7GTTYE. Only those fields that apply directly to TOPS LNP are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table C7GTTYE

Field	Subfield or refinement	Entry	Explanation and action
			This table is not changed. Datafill a tuple for queries to the LNP SCP database.

Datafill example for table C7GTTYE

The following example shows sample datafill for table C7GTTYE.

MAP display example for table C7GTTYE

GTTNAME	GTTYE	GTTID
LRNGT	ANSI7	244 \$

Datafilling table C7GTT

Table C7GTT is used for interfacing to the CCS7 network for LIDB and LNP queries. Prior to LET007, 6-digit Global Title Translations (GTTs) were used for routing LIDB queries. Now, LET007 allows up to 10 digits.

The following table shows the datafill, starting with LET007, for table C7GTT. Only those fields that apply directly to TOPS LNP are shown. For a

TOPS LNP (continued)

description of the other fields, refer to the data schema section of this document.

Datafilling table C7GTT

Field	Subfield or refinement	Entry	Explanation and action
GTTKEY	FROMDIGS	up to 10 digits	<p>Datafill a tuple for queries to the LNP SCP database.</p> <p>Up to 10 digits can now be datafilled in LET007 for translations types ACCSGT, OLNSGT, and BNSGT. Prior to LET007, only 6 digits were allowed. If more than 10 digits are entered, a routing failure may occur.</p> <p>Since 10 digits are now required for all LIDB queries, check the FROMDIGS and TODIGS for the following translations types supported by the TOPS system:</p> <ul style="list-style-type: none"> • ACCSGT - used for Billed Number Screening (BNS) and Calling Card Validation (CCV) • OLNSGT - used for Originating Line Number Screening (OLNS) • BNSGT - used for Billed Number Screening (BNS) in Canada • LNPGT - used for LNP
GTTKEY	TODIGS	up to 10 digits	Up to 10 digits can now be datafilled.
GTTSLT	SSNAME	TOPSLNP	New value TOPSLNP can be datafilled.

Datafill example for table C7GTT

The following example shows sample datafill for table C7GTT.

MAP display example for table C7GTT using GTT

```

GTTKEY                                     GTTSLT
-----
LRNGTT 0 9                               PCONLY (RTESET1 0) $ GT
    
```

TOPS LNP (continued)

MAP display example for table C7GTT without using GTT

GTTKEY	GTTRSLT

LRNGTT 0 9	PCSSN (RTESET1 TOPSLNP 0) \$ SSN

Queries can be routed using GTT or without using GTT. The above examples show the datafill for each method.

Call processing tables

This section provides guidelines for datafilling the call processing tables.

Datafilling subtable STDPRTCT.STDPRT

All incoming direct dialed (DD) calls to the DMS-100/200 switch (but not over TOPS trunks) that are destined for the TOPS environment within the switch must route out of subtable STDPRTCT.STDPRT to route correctly to the TOPS environment. Subtable STDPRT must be datafilled with a T-selector and a pointer to table TOPS. Note, this pretranslator is not the line pretranslator, but the incoming side of the looparound trunk to the TOPS environment.

Prior to LNP, table HNPACONT also could contain datafill to route to the TOPS environment. However with LNP, table HNPACONT cannot safely route DD calls to the TOPS environment because of a possible conflict with the AIN LNP trigger. For further information on the AIN LNP trigger, refer to the *DMS-100/200 LRN-LNP Service Implementation Guide*, 297-8981-021.

The following table shows the datafill specific to TOPS LNP for subtable STDPRTCT.STDPRT. Only those fields that apply directly to TOPS LNP are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling subtable STDPRTCT.STDPRT

Field	Subfield or refinement	Entry	Explanation and action
PRETRTE	PRERTSEL	T	Pretranslator route selector. Use a T-selector for routing to the TOPS environment.
	TABID	TOPS	Table name. Point to table TOPS.

TOPS LNP (continued)

Datafill example for table STDPRTCT.STDPRT

The following figures show example datafill for routing to the TOPS environment before LNP.

MAP display example for subtable STDPRTCT. STDPRT (before LNP)

FROMDIGS	TODIGS	PRETRTE
555	555	N DD 0 NA

MAP display example for subtable HNPACONT.HNPACODE (before LNP)

FROMDIGS	TODIGS	CDRRTMT
555	555	HRTE 900

MAP display example for subtable HNPACONT.RTEREF (before LNP)

RTE	RTELIST
900	(T TOPS 555) \$

The following figure shows example datafill for routing to the TOPS environment after LNP.

MAP display example for subtable STDPRTCT. STDPRT (after LNP)

FROMDIGS	TODIGS	PRETRTE
555	555	T DD 0 TOPS 555 7 7 NONE

Datafilling table FNPA7DIG

Foreign numbering plan area seven digits (FNPA7DIG) is a new table that associates an originating NPA and dialed NXX pattern with a terminating NPA. TOPS LNP uses datafill in table FNPA7DIG to derive the NPA of the called number (the terminating NPA) when the switch receives only seven digits from the originator. TOPS call processing requires ten digits to check table PORTNUMS before it launches an LNP query.

For information on other reasons for expanding the called number, refer to the "Operation" section under "DN 7- to 10-digit conversion".

TOPS LNP (continued)

This table is accessed if the TOPS office does not receive the called party's 10-digit number over the incoming trunk. If there is no datafill for a particular NXX pattern, it is assumed that the terminating NPA is the same as the one datafilled in TRKGRP (or in TOPSPARM parameter DELAY_SPECIFIED_SNPA for a delay call).

The following is a description of the fields.

Datafilling table FNPA7DIG

Field	Subfield or refinement	Entry	Explanation and action
ORIGSTS		3-digit NPA	Originating service translations scheme. Enter the NPA of the originator. This is must be datafilled in table TRKGRP or TOPSPARM parameter OPR_SPECIFIED_SNPA or DELAY_SPECIFIED_SNPA.
FROMNXX		3-digits	Enter the start of the range of dialed NXX to be associated with the TERMNPA field.
TONXX		3-digits	Enter the end of the range of the dialed NXX to be associated with the TERMNPA field.
TERMNPA		3-digits	Terminating numbering plan area. Enter the NPA to be associated with the dialed NXX in the specified range.

Datafill example for table FNPA7DIG

The following example shows sample datafill for table FNPA7DIG.

MAP display example for table FNPA7DIG

ORIGSTS	FROMNXX	TONXXX	TERMNPA
613	762	764	819

The above example indicates that a 7-digit dialed call with an NXX between 762 and 764 originated from an agent with the 613 NPA, and the terminating NPA is 819 instead of the default value of 613.

Datafilling table TERMNPA

Table TERMNPA is replaced by table FNPA7DIG . Table TERMNPA was used for obtaining the NPA for called numbers. During an ONP to TOP07, all TERMNPA tuples are transferred to table FNPA7DIG, *except* for equivalent

TOPS LNP (continued)

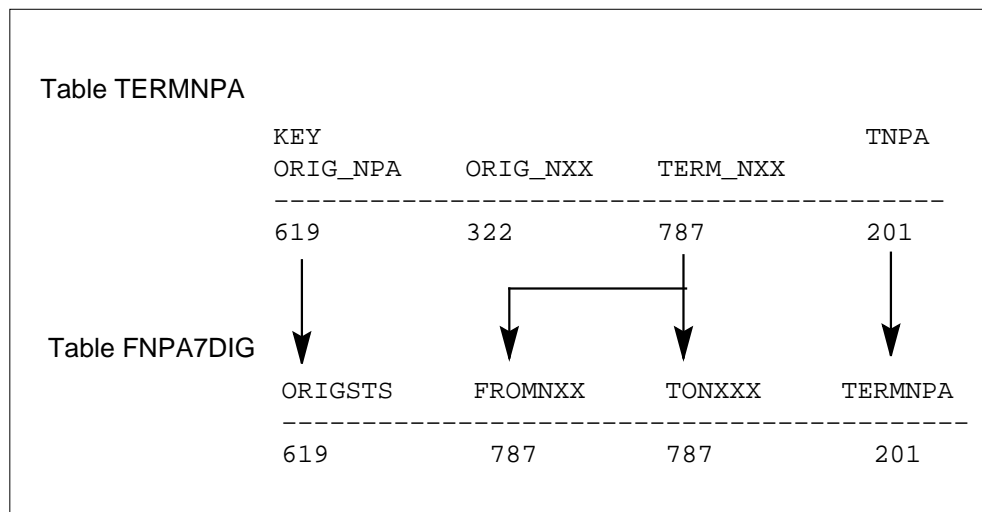
key fields between the tables. This is to prevent corruption of the current datafill (if any) in table FNPA7DIG. After the ONP, table TERMNPA is empty and no new datafill is allowed.

Datafilling table TERMNPA

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	Key. This field is the key into the table and consists of subfields ORIG_NPA, ORIG_NXX, and TERM_NXX.
	ORIG_NPA	200 to 999	Originating NPA.
	ORIG_NXX	200 to 999	Originating NXX. The information is preserved in the ONP.
	TERM_NXX	200 to 999	Terminating NXX. During the ONP, this field is copied to both the FROM_NXX and TO_NXX fields in table FNPA7DIG.
TNPA		200 to 999	Terminating NPA.

The following figure shows the transfer process:

ONP transfer of TERMNPA to FNPA7DIG example



The above figure shows that the ORIG NXX field in table TERMNPA is no longer used. During the ONP, the TERM NXX field in TERMNPA is copied into both the FROM NXX and TO NXX fields in FNPA7DIG. FNPA7DIG provides flexibility of datafilling terminating NXX ranges.

TOPS LNP (continued)**Tuple changes during TABXFR**

The following situations show how tuples can be duplicated, compressed, or overlap.

Duplicate tuples

Table TERMNPA allows datafilling different terminating NPAs (TNPA) for the same originating NPA (ORIG_NPA) and terminating NXX (TERM_NXX) pair. However, as of LET0007, only one TNPA can be associated with a given ORIG_NPA and TERM_NXX pair. The following figure shows this scenario. The second tuple is not written to table FNPA7DIG during the TABXFR.

MAP display example for table TERMNPA on the dump side

KEY			TNPA
ORIG NPA	ORIG NXX	TERM NXX	
619	322	787	201
619	444	787	407

MAP display example for table FNPA7DIG on the restore side

ORIG NPA	FROM NXX	TO NXX	TERMNPA
619	787	787	201

In the above example, it is important to note that the second tuple in TERMNPA falls out during an ONP since the ORIG NPA and TERM NXX range is already defined in the first tuple in TERMNPA. Therefore, it is important to note that with different originating NXXs for a given originating NPA, different terminating NPAs are *no longer supported* in table FNPA7DIG.

Table TERMNPA also allows datafilling the same terminating NPAs (TNPA) for the same ORIG_NPA and TERM_NXX pair. The following figure shows this scenario. Again, the second tuple is not written to table FNPA7DIG during the TABXFR.

MAP display example for table TERMNPA on the dump side

KEY			TNPA
ORIG NPA	ORIG NXX	TERM NXX	
619	322	787	201
619	444	787	201

TOPS LNP (continued)

MAP display example for table FNPA7DIG on the restore side

ORIG NPA	FROM NXX	TO NXX	TERMNPA
619	787	787	201

When the TABXFR process encounters duplicate tuples, the DMS switch produces a warning message, but continues TABXFR processing. The following figure shows an example of the TABXFR warning message.

MAP display example of TABXFR warning message

WARNING: TUPLE [619 444 787 407] FROM TABLE TERMNPA IS A DUPLICATE TUPLE IN TABLE FNPA7DIG.

Compressed tuples

Because table FNPA7DIG is a digilator table, the fields FROMNXX and TONXX represent a range of digits. So, when two or more tuples from table TERMNPA have the same terminating NPA associated with a ORIG_NPA and sequential TERM_NXX pair, the tuples are compressed into a single tuple in table FNPA7DIG. The following figure shows this compression.

MAP display example for table TERMNPA on the dump side

KEY	ORIG NPA	ORIG NXX	TERM NXX	TNPA
619	322	787	787	201
619	444	788	788	201
619	488	789	789	201

MAP display example for table FNPA7DIG on the restore side

ORIG NPA	FROM NXX	TO NXX	TERMNPA
619	787	789	201

Overlapping tuples

In an 07 to 07 ONP, table FNPA7DIG can have datafill in the FROM side. Since FNPA7DIG is transferred before TERMNPA, users should also ensure

TOPS LNP (continued)

that TERMNPA tuples do not overlap the FNPA7DIG tuples. Overlapped tuples are not written to table FNPA7DIG during the TABXFR.

Datafilling table TRKGRP

The following table shows the datafill specific to TOPS LNP for table TRKGRP. Only those fields that apply directly to TOPS LNP are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TRKGRP

Field	Subfield or refinement	Entry	Explanation and action
	GRPTYP	ATC, IT, TOPS	Trunk group type. The change to this table in field OPTION is applicable to trunk group types ATC, IT, and TOPS.
	DIR	IC or 2W	Direction. New OPTION LNP is applicable to incoming and 2-way TOPS trunks. There are no restrictions on direction for ATC and IT trunks.
	SIGTYPE	AMR5, BELL, COMFGD, DANI, EAFGD, EAOSS, EAOSSIC, MODBELL, ONI, or OSS	Signaling type. New OPTION LNP is applicable to the indicated signaling types for TOPS trunks. For ATC trunks, there are no restrictions on the signalling type. IT trunks do not have signalling types.

TOPS LNP (continued)

Datafilling table TRKGRP

Field	Subfield or refinement	Entry	Explanation and action
	OPTION	LNP	<p>New value LNP (local number portability) can be datafilled. This option allows datafill of the location routing number (LRN) against the originating trunk group for use in the AMA module 720 record.</p> <p>If table TOPSTOPT field LNPCLGAM = Y and the calling number is in table PORTNUMS, the calling LRN is required for the AMA record. This number can be obtained by an LNP query; however, a query can be avoided if this LNP option is datafilled.</p> <p>The following restrictions apply to the LNP option:</p> <ul style="list-style-type: none"> • It can be datafilled only for incoming and two-way trunk groups. • The LRN must be entered and must contain ten digits. • Only one LNP option is allowed for each trunk group.
	LRN	10-digit directory number	<p>Location routing number. If field OPTION = LNP, datafill a 10-digit directory number that identifies the adjacent end office and is used in recording AMA module 720 of the calling number. Exactly 10 digits must be datafilled.</p>

Datafill example for table TRKGRP

The following example shows sample datafill for table TRKGRP.

MAP display example for table TRKGRP

```

GRPKEY
                                                                 GRPINFO
-----
TBELLIC1
TOPS 0 TLD NCRT IC MIDL 619   PTOP NLCA  Y  SP COMBINED N Y  0 0000
NONE BELL  16   10   10  Y  N OFFHK  N  N (LNP 9198513361) $
    
```

TOPS LNP (continued)**Error messages for table TRKGRP**

The following error messages apply to table TRKGRP.

Error messages for table TRKGRP

Error message	Explanation and action
LNP OPTION NOT ALLOWED FOR THIS SIGNALLING TYPE	A TOPS trunk group with the LNP option must be datafilled with one of the following signalling type: AMR5, BELL, COOMFGD, DANI, EAFGD, EAOSS, EAOSSIC, MODBELL, ONI, or OSS.
LRN MUST BE 10 DIGITS.	This error message is displayed for either of the following requirements: <ul style="list-style-type: none"> • The LRN parameter must be exactly 10 digits in length. • The LNP option must have the LRN parameter datafilled.
MULTIPLE LNP OPTIONS NOT ALLOWED.	Only one LNP option is allowed per trunk group.
LRN USED ONLY FOR IC OR 2W TRUNKS.	The LNP option can only be datafilled for incoming or 2-way TOPS trunk groups.

Datafilling table TOPSTOPT

New field LNPCLGAM is added.

The following table shows the datafill specific to TOPS LNP for table TOPSTOPT. Only those fields that apply directly to TOPS LNP are shown.

TOPS LNP (continued)

For a description of the other fields, refer to the data schema section of this document.

Datafilling table TOPSTOPT

Field	Subfield or refinement	Entry	Explanation and action
LNPCLGAM		Y or N	<p>Local number portability calling number AMA. This field specifies whether to append a module 720 to the AMA record for calls that originate on the trunk group. The value Y indicates that the LRN of the calling number should be included in the AMA record. The default is N, indicating LNP information for AMA is not required. If a trunk is not datafilled in TOPSTOPT, then LNP information for AMA is not required.</p> <p>A value of N does not always prevent an LNP module for the calling number from being appended to the AMA record. For example, a module 720 is appended if a query is made for the purpose of routing to that calling number.</p> <p>Likewise, a value of Y does not always cause an LNP module for the calling number to be appended to the AMA record. For example, even when this value is Y, no module 720 is appended if an LRN is not datafilled against the incoming trunk group (table TRKGRP) and the parameter LNP_QUERY_FOR_AMA_ONLY does not include the value CLG (table TOPSPARM).</p>

Datafill example for table TOPSTOPT

The following example shows sample datafill for table TOPSTOPT.

MAP display example for table TOPSTOPT

GRPKEY	ACDDATA	DISPCLG	ADASERV	ADASANS	ANITOCCLI		
OLNSQRY	DCIBIDX	LNPCLGAM	TRKSPID				
TBELLQMSIC3	QMSCAM	CORECAM	N	N	NONE	NA	N
NONE	0	N	N				

Datafilling table TOPSPARM

New parameters LNP_TIMEOUT and LNP_QUERY_FOR_AMA_ONLY are added.

TOPS LNP (continued)

The following table shows the datafill specific to TOPS LNP for table TOPSPARM. Only those parameters that apply directly to TOPS LNP are shown. For a description of the other parameters, refer to the data schema section of this document.

Datafilling table TOPSPARM

Field PARMNAME	Field PARMVAL	Explanation and action
LNP_TIMEOUT	1 - 60	This parameter is referenced when an LNP query is launched to determine how long TOPS call processing waits for a response to its query. The range is 1 - 60 seconds. The default is 2.
LNP_QUERY_F OR_AMA_ ONLY	CLG, SPL, ALL, or NONE	<p>This parameter specifies which numbers are valid for LNP queries for AMA module 720 recording purposes only. The values are:</p> <ul style="list-style-type: none"> • CLG - calling number Including CLG in the set has no effect unless TOPSTOPT field LNPCLGAM is `Y' for the originating trunk group. • SPL - Special (third and 14-digit line-based calling card) numbers • ALL - All (CLG and SPL) numbers. This is the default value. A value of ALL does not always cause LNP modules to be appended. For example, if table TOPSTOPT has the LNPCLGAM field set to N (for calling number), then no LNP information for AMA is required. So no LNP module would be appended. • NONE - No numbers. A value of NONE does not prevent appending LNP modules for calling and special billing numbers since: <ul style="list-style-type: none"> • Queries for these numbers can be made for reasons other than AMA recording. For example, in a delay call, an LNP query is made for the calling number so it can route to the back party. • The LRN associated with the calling number may be datafilled against the incoming trunk group. <p>The called number is not included as a value, because if LNP information is required, the query is made for routing rather than for AMA purposes. AMA information on a called number is recorded without consulting this parameter.</p>

TOPS LNP (continued)

Datafill example for table TOPSPARM

The following example shows sample datafill for table TOPSPARM.

MAP display example for table TOPSPARM

PARMNAME	PARMVAL
LNP_TIMEOUT	2
LNP_QUERY_FOR_AMA_ONLY	CLG

Datafilling table PORTNUMS

Table PORTNUMS (Portable Numbers) is new in LET007. It identifies portable numbers served by the TOPS switch. Before TOPS call processing can launch an LNP query for any number (calling, called, billing), the number must be within a range found in table PORTNUMS. Table PORTNUMS also identifies the Global Title Translations (GTT) name used to route the LNP query.

TOPS call processing needs ten digits to check table PORTNUMS. So, if the number is only seven digits, the NPA must first be derived using the method described in section "Operation", subsection "DN 7- to 10-digit conversion".

TOPS call processing does not check AIN tables TRIGGRP and TRIGDIG to determine if a DN is in a portable NPA-NXX.

References in this document to a portable NPA-NXX refer to a number that is portable as defined in table PORTNUMS.

The value in the GTTNAME field must be datafilled in field GTTNAME of table C7GTTTYPE in order to be used in this table. If a GTT is datafilled in table PORTNUMS, it will not be allowed to be deleted from table C7GTTTYPE.

Table PORTNUMS is specific to the the TOPS system implementation of LNP.

To avoid unnecessary queries, the following types of numbers should not be datafilled in table PORTNUMS:

- 800 numbers and similar service access codes
- NPA-555 numbers

TOPS LNP (continued)

The following describes the fields.

Datafilling table PORTNUMS

Field	Subfield or refinement	Entry	Explanation and action
LNPKEY		3 to 10 digits	Local number portability key. This is the key into the table. Enter the portable number. The range is from 3 to 10 digits and specifies ranges of portable numbers. Note: The excessive use of ten-digit datafill will exhaust table PORTNUMS.
GTTNAME		name from table C7GTTYPE	Global title translation name. Enter a GTT name for use in obtaining portability information from the LNP database.

Datafill example for table PORTNUMS

The following example shows sample datafill for table PORTNUMS.

TOPS LNP (continued)

MAP display example for table PORTNUMS

LNPKEY	GTTNAME
617	LRNGTT
6182201234	LRNGTT
61932	LRNGTT
619330	LRNGTT
619331	LRNGTT
619332	LRNGTT
619333	LRNGTT
619334	OSLRNGT
619335	LRNGTT
619336	LRNGTT
619337	LRNGTT
619338	LRNGTT
6193390	LRNGTT
6193391	LRNGTT
6193392	LRNGTT
6193393	LRNGTT
6193394	LRNGTT
6193395	OSLRNGT
6193396	LRNGTT
6193397	LRNGTT
6193398	LRNGTT
6193399	LRNGTT

Error messages for table PORTNUMS

The following error messages apply to table PORTNUMS.

Error messages for table PORTNUMS

Error message	Explanation and action
The key must contain 3 to 10 digits.	The LNPKEY field identifies a range of portable numbers. It is a digilator field which can contain 10 digits. If an attempt is made to add a number with an incorrect number of digits, this error message is displayed.

Datafilling table TMTMAP

The following table shows the datafill specific to TOPS LNP for table TMTMAP. Only those fields that apply directly to TOPS LNP are shown. For

TOPS LNP (continued)

a description of the other fields, refer to the data schema section of this document.

Datafilling table TMTMAP

Field	Subfield or refinement	Entry	Explanation and action
	TMT	LNPM, QRNF	Treatment. The following new values are added: <ul style="list-style-type: none"> LNPM: LNP Misrouted Call to a Ported Number. This treatment is used to indicate that an LNP call to a ported number was misrouted. LNPM can be mapped to a DRAM announcement that indicates the call was unable to complete. This is mapped to Cause 26. QRNF: Query on Release Number not Found - This treatment is used if the number is not found at the donor switch during a Query on Release routing attempt. This is mapped to Cause 27.

Datafill example for table TMTMAP

The following example shows sample datafill for table TMTMAP.

MAP display example for table TMTMAP

TMTMPKEY		TMTMPVAR					

Q764	LNPM	ALLBC	ISUP	NOLOCAL	MISRCALL	LOCLNET	N
Q764	QRNF	ALLBC	ISUP	NOLOCAL	DOOSRVC	LOCLNET	N

Datafilling table TOPSBC

Table TOPSBC is used to obtain the calling NPA for incoming PTS trunk groups that signal 7-digit ANI. For trunk groups that signal 10-digit ANI, TOPSBC is used to verify the calling NPA-NXX. This table is indexed by the incoming trunk group and the signalled NXX.

An existing restriction is that with TOPS LNP, a single trunk group can have only one NPA associated with each NXX.

TOPS LNP (continued)

When a number with a new NPA-NXX is ported into an end office, table TOPSBC must be updated in the TOPS switch.

Note: In release TOPS10 an optional enhancement allows billing code information to be moved from table TOPSBC to other tables and requires less datafill. This enhancement is due in part to the large increase of datafill in TOPSBC from LNP. For information, refer to functionality TOPS BC/STS/SNPA, OSB00101.

The following table shows the datafill specific to TOPS LNP for table TOPSBC. Only those fields that apply directly to TOPS LNP are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TOPSBC

Field	Subfield or refinement	Entry	Explanation and action
BILLCODE			This table is not changed. Bill code. Datafill new NXXs for ported numbers.
ACTUALBC			Actual billing code. Enter the NPA and NXX of the originating trunk group for new ported numbers.

Datafill example for table TOPSBC

The following example shows sample datafill for table TOPSBC.

MAP display example for table TOPSBC

CLLI	BILLCODE	LCANAME	SCRNCL	ACTUALBC	CHGCLSS
TBELLIC1	522	NLCA	NSCR	407522	TOPS

TOPS LNP (continued)

Datafilling table ADJNODE

The following table shows the datafill specific to TOPS LNP for table ADJNODE. Only those fields that apply directly to TOPS LNP are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table ADJNODE

Field	Subfield or refinement	Entry	Explanation and action
	OPTIONS	SPN	Options. New value SPN can be datafilled that indicates the outgoing ISUP trunk is connected to an office that does not support LNP. This option only applies to ISUP trunks. When SPN is assigned, the ported DN, not the LRN, is signaled on the outgoing trunk.

Datafill example for table ADJNODE

The following example shows sample datafill for table ADJNODE.

MAP display example for table ADJNODE

ADJNODEK	SIGDATA		

ISUPNODE	ISUP	DMS	(SPN) \$

BLV tables

This section provides guidelines for datafilling the BLV tables.

Datafilling table OFRT

Table OFRT identifies the CLLI of the outgoing trunk group used in the scrambler circuit. It also controls LNP digit manipulation.

Datafilling table OFRT

Field	Subfield or refinement	Entry	Explanation and action
			This table is not changed.

TOPS LNP (continued)

Datafill example for table OFRT

The following figure shows example datafill. For the example, assume that the operator attempts to perform BLV on number 407-333-1234. It is a portable number and the LRN is 407-522-0000.

In the example, the first tuple shows the office route obtained from the outgoing pretranslator (subtable SDTPRTCT.STDPRT) routing to a scrambler circuit TSCRAMBOG1. The number that is signaled through the scrambler circuit is 407-333-1234 (the ported DN) on this PTS trunk. (The LRN is not signaled, it is used only to determine a route.)

The second tuple shows the office route obtained from the incoming pretranslator routing to a no-test trunk BLVTOPSTRK. Digits 00 are prefixed to the number, which results in signaling 004073331234 on this PTS trunk. (The LRN is not signaled, it is used only to determine a route.)

The third tuple shows the office route obtained from the incoming pretranslator routing to vacant treatment.

MAP display example for table OFRT

RTE	RTELIST
810	(N D TSCRAMBOG1 0 N N) \$
817	(N D BLVTOPSTRK 0 00 N) \$
819	(TRMT VACT) \$

Datafilling subtable SDTPRTCT.STDPRT

Subtable SDTPRTCT.STDPRT specifies the outgoing route for a range of digits. For TOPS LNP BLV routing, the pretranslator must support 10-digit translations (even if the called number has not been ported). Both the NPA-NXX of the called number and the NPA-NXX of the LRN must be datafilled in subtable SDTPRT to support 10-digit translations.

This applies to offices with and without scramblers and all called number (ported and non-ported). Also, this applies to all offices receiving an LET007 (TOPS07) load, regardless of the TOPS LNP SOC (OSEA0103) state. Refer to the "Operation" section under "BLV" for details.

The following table shows the datafill specific to TOPS LNP for subtable SDTPRTCT.STDPRT. Only those fields that apply directly to TOPS LNP are

TOPS LNP (continued)

shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling subtable STDPRTCT.STDPRT

Field	Subfield or refinement	Entry	Explanation and action
FROMDIGS and TODIGS		up to 18 digits	<p>From digits and To digits. The requirements are the following:</p> <ul style="list-style-type: none"> • For TOPS LNP BLV routing, the outgoing pretranslator must support 10-digit translations. • Both the NPA-NXX of the called number and the NPA-NXX of the LRN must be datafilled to support 10-digit translations.

DMS-200 software outgoing pretranslator

The following figure shows example datafill in STDPRTCT.STDPRT for the OPVE pretranslator (obtained from table OPRTRANS tuple VERIFY). For this example, assume that the operator attempts to perform BLV on number 407-333-1234. It is a portable number and the LRN is 407-522-0000. The 407-333 office is not served by this TOPS switch, but the 407-522 office is served.

Treatment should be datafilled for offices that are not served for BLV requests. The first tuple shows that the donor office (407-333) is not served. So numbers resident in the 407-333 office route to vacant treatment.

The LRN of the number to be verified is used to find an outgoing office route through the scrambler circuit. In the example, the second tuple shows that numbers resident in or ported to the 407-522 office route using OFRT 810.

Note: If the number to be verified was not portable or not ported, the ten-digit DN would be used to find the office route instead.

MAP display example for table STDPRTCT.STDPRT (OPVE)

FROMDIGS	TODIGS	PRETRTE
407333	407333	D VACT
407522	407522	T OA 0 OFRT 810 10 10 NONE

TOPS LNP (continued)

DMS-100 software incoming pretranslator

The incoming pretranslator is associated with the DMS-100 switch incoming trunk of the scrambler circuit. The target DN is first translated using the incoming pretranslator to determine if a valid route to the number exists. If the number is portable and a valid route to the number exists, then the LNP trigger initiates an LNP query. If no valid route to the DN exists, then the trigger does not launch a query and the call is routed to treatment. This is why it is recommended that unserved offices should be caught by datafill in the outgoing pretranslator rather than in the incoming pretranslator datafill. If the number is not portable, the trigger does not launch an LNP query and the call continues processing as before.

If an LRN is returned from the LNP query, then a second pass is made through translations using the LRN. This selects the correct route to the no-test trunk by the datafill in the incoming pretranslator. If a DN is returned, the call continues processing as before using the 10-digit signalled DN.

In all cases, if a valid route to a no-test trunk is determined, the DN is outpulsed over the no-test trunk.

The following figure shows example datafill in STDPRTCT.STDPRT for the VERI pretranslator (obtained from table TRKGRP). Once the DMS-100 end office software launches the LNP query, the incoming pretranslator is used to obtain a route to the no-test trunk.

Valid translations for the DN must be datafilled for the incoming pretranslator. If they are not datafilled, the AIN LNP trigger will not be hit and the call will route to treatment.

MAP display example for table STDPRTCT.STDPRT (VERI)

FROMDIGS	TODIGS	PRETRTE
407333	407333	T DD 0 OFRT 819 10 10 NONE
407522	407522	T DD 0 OFRT 817 10 10 NONE

In the above example, the first tuple shows that even though 407-333 is not served, a valid route is datafilled. The second tuple shows the route used (OFRT 817) for the LRN 407-522-0000 of the ported number. These routes were defined in the DMS-200 TOPS software table OFRT, given earlier and repeated below.

TOPS LNP (continued)**MAP display example for table OFRT for DMS-200 outgoing route for references purposes**

RTE	RTELIST
810	(N D TSCRAMBOG1 0 N N) \$
817	(N D BLVTOPSTRK 0 00 N) \$
819	(TRMT VACT) \$

In the above example, route 819 sends unserved numbers to treatment and route 817 is for the no-test trunk.

Datafilling table TRKGRP

Table TRKGRP identifies the outgoing and incoming instances of the looparound trunk of the scrambler circuit.

In the DMS-100 software, the incoming trunk from the scrambler circuit should be datafilled to use new traffic class BLV. This allows LNP AIN triggering from table STDPRTCT and bypasses DN residency checking. Implementation of this requirement is covered in feature BY61398 - LNP STDPRT Triggering. Feature BY61398 is in Functionality LNP LRN, LNP00100. However, since this feature was created after the LEC0007 release, this feature is given in full (rather than referenced) in the "Operation" section.

Please refer to AR2064 - LNPSSP AIN Query Processing for more information. For further information on this feature and LNP in a DMS-100 office, refer to the list of references in the "Description" section at the beginning of this functionality.

The following table shows the datafill specific to TOPS LNP for table TRKGRP. Only those fields that apply directly to TOPS LNP are shown. For

TOPS LNP (continued)

a description of the other fields, refer to the data schema section of this document.

Datafilling table TRKGRP

Field	Subfield or refinement	Entry	Explanation and action
	CLLI	up to 16 characters	Common language location identifier. Enter the CLLI names of the outgoing and incoming trunks of the scrambler circuit.
	TRAFCLS	BLV	Traffic class. Enter BLV for the incoming trunk of the scrambler circuit.

Datafill example for table TRKGRP

The following figure shows example datafill for the looparound trunk of the scrambler circuit. The second tuple shows the BLV traffic class and the VERI pretranslator for the incoming trunk group of the scrambler.

MAP display example for table TRKGRP

GRPKEY	GRPINFO
TSCRAMBOG1	IT 32 ELO NCTC OG NIL MIDL 619 NPRT NSCR 619 000 Y Y \$
TSCRAMBIC1	IT 63 ELO NCRT IC BLV MIDL 619 NPRT VERI 619 NNN Y Y \$

Datafilling table OPRTRANS

Table OPRTRANS identifies the pretranslator name in the VERIFY tuple for BLV calls.

The following table shows the datafill specific to TOPS LNP for table OPRTRANS. Only those fields that apply directly to TOPS LNP are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table OPRTRANS

Field	Subfield or refinement	Entry	Explanation and action
PRTNM		up to 4 characters	Pretranslator name. Enter the pretranslator name for the VERIFY tuple.

TOPS LNP (continued)

Datafill example for table OPRTRANS

The following example shows sample datafill for table OPRTRANS.

MAP display example for table OPRTRANS

KEY	STS	SCRNCL	PRTNM	LCANAME
-----	-----	-----	-----	-----
VERIFY	619	NSCR	OPVE	NCLA

Datafilling table TRIGDIG (DMS-100 software)

Table TRIGDIG is an existing table that specifies the AIN trigger digit criteria. A BLV call that comes through a scrambler circuit requires an LNP query on the DMS-100 end office side so that it can route properly to a no-test trunk. For a BLV call, the AIN LNP trigger provides for the LNP query.

The following table shows the datafill specific to TOPS LNP for table TRIGDIG. Only those fields that apply directly to TOPS LNP are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TRIGDIG

Field	Subfield or refinement	Entry	Explanation and action
			<p>This table is controlled by DMS-100 functionality AIN Essentials, AIN00002.</p> <p>This table is used by offices equipped with a scrambler circuit for BLV calls. Verify that LNP trigger group tuples are datafilled to cover all DNs on the incoming trunk from the scrambler circuit. These triggers are used for launching LNP queries. An LNP trigger is datafilled similarly to an AIN 0.1 trigger.</p>
KEY	TRIGGER	LNP	New value LNP can be datafilled.
TRIGGER		LNP	New value LNP can be datafilled.

The following example shows sample datafill for table TRIGDIG.

TOPS LNP (continued)

MAP display example for table TRIGDIG

KEY	ACTION		TRIGGER			OPTIONS
LNPDIG	LNP	6132241234	LNP			
	EVENT	TCAP R01	SS7	AINJAZZ	DFLT	\$

Datafilling table TRIGGRP (DMS-100 software)

Table TRIGGRP defines the trigger criteria. When the LNP trigger criteria is met, the switch launches an LNP query to the SCP. The result of this query determines how the BLV call is routed to the no-test trunk.

The following table shows the datafill specific to TOPS LNP for table TRIGGRP. Only those fields that apply directly to TOPS LNP are shown. For a description of the other fields, refer to the data schema section of this document.

The following describes relevant datafill for table TRIGGRP:

Datafilling table TRIGGRP

Field	Subfield or refinement	Entry	Explanation and action
			<p>This table is controlled by DMS-100 functionality AIN Essentials, AIN00002.</p> <p>This table is used by offices equipped with a scrambler circuit for BLV calls. Verify that an LNP trigger group is datafilled. This is used for the incoming trunk from the scrambler circuit to launch an LNP query. An LNP trigger is datafilled similarly to an AIN 0.1 trigger.</p>
TRIGDATA	CRITERIA	ESCA, ESCOP, ESCDN, ESCCN, ESCQR	It is recommended to use the ESCA, ESCOP, ESCDN, ESCCN, and ESCQR escape criteria.

The following example shows sample datafill for table TRIGGRP.

TOPS LNP (continued)**MAP display example for table TRIGGRP**

```

KEY
TRIGGDATA
-----
LNPGRP  INFOANAL
(LNP (DG LNPDIG) (ESCEA) (ESCOPE) (ESCDN) (ESCCN DD_OA) (ESCQR) $ NIL)$

```

Translation verification tools

A new CI increment, LNPVER (LNP verification), is provided at the maintenance and administration position (MAP) display to create, send, and review responses for TOPS LNP service control point (SCP) queries. This allows testing of TOPS LNP queries and the database without initiating a real call. The TOPS LNP CI Tool uses the same interface as regular TOPS call processing to send queries but does not use call processing.

TOPS LNPVER is not affected by SOC. That is, LNPVER is available whether this functionality's SOC is ON, IDLE, or OFF.

Detailed descriptions of the commands are given at the end of this section.

The following are the steps (which are described in the following sections) for using LNPVER:

1. enter LNPVER
2. use the help commands as necessary
3. set up the query parameters
4. launch the query and examine the results
5. quit LNPVER

Enter LNPVER

Enter LNPVER at the MAP display as follows:

CI:

>LNPVER <cr>

LNPVER:

For a list of available commands type: HELP LNPVER.

TOPS LNP (continued)

Only one user at a time is allowed in the LNPVER increment. If a second user attempts to access the LNPVER tool, the following error message is displayed with the name of the user currently using the LNPVER tool:

```
CI :  
  
>LNPVER  
  
LNPVER currently being used by ADMIN  
  
>
```

Help commands

The following commands provide assistance in using LNPVER:

- **HELP LNPVER** - gives a brief description of LNPVER and a list of available commands
- **HELP <command>** - describes entered command

Set up the parameters

The following commands define and display (if no argument is entered) the parameters and other characteristics of the query:

- **USERID** - indicates the calling 10-digit DN party
- **BEARER** - defines the capability (that is, speech) of the DN being queried (the same party as in the QUERYNO command)
- **QUERYNO** - indicates the DN being queried (called, calling, or billing number; but usually the called number)
- **ACGENC** -simulates setting of Automatic Code Gapping (ACG) controls. This simulation is only for call process messaging but not the actual setting of ACG controls which might prohibit queries. That is, this command does not prohibit queries.
- **RESETENC** - resets the ACGENC parameter to the default values indicating no ACG controls are in effect.
- **RESET** - set default values for all parameters
- **TIMEOUT** - set the maximum waiting period for an LNP reply
- **QACG** - indicates if automatic call gapping is active for the given number.
- **SHOW** - lists all parameters' values for the LNPVER tool.

Launch query and examine results

Enter command LRNREQ to send a query to the LNP SCP database.

TOPS LNP (continued)**Successful query**

If the query is successful (no errors), the parameters are displayed according to the DISPLAY command. The arguments are SHORT (a brief status report) and LONG (many parameters are displayed, given in the following table). The following list shows all of the possible parameters that may be displayed when DISPLAY is set to the LONG format. (Note, these parameters are defined in Bellcore AIN 0.1 Specification TR-1285.)

Successful response parameters

Parameter	Description
Calling Party ID	The DN of the calling party. Associated fields and values are: <ul style="list-style-type: none"> Nature of Address= [spare, subscriber number, national number, international number] Numbering Plan= [unknown, ISDN numbering plan, private number plan]
Charge Number	The ANI of the calling party. Associated fields and values are: <ul style="list-style-type: none"> Nature of Address Indicator=["ANI of the calling party; subscriber number", "ANI of the calling party; national number", ANI of the called included; subscriber", "ANI of the called party; not included", "ANI of the called party included; national number"] Numbering Plan = [unknown, ISDN]
Charge Party	The calling station type. This parameter is based on the originating line information ISDNUP parameter. This parameter has the following values: <ul style="list-style-type: none"> 0 = No Indication 1 = Selected carrier identification code presubscribed and not input by calling party 2 = Selected carrier identification code presubscribed and input by calling party 3 = Selected carrier identification code presubscribed, no indication of whether input by calling party 4 = Selected carrier identification code not presubscribed and input by calling party
Called Party ID	The DN of the called party. Associated fields and values are: <ul style="list-style-type: none"> Nature of Address=[spare, subscriber number, national number, international number] Numbering Plan = [unknown, ISDN numbering plan, private number plan]
Outpulse Number	The outpulse number for routing over private facilities.

TOPS LNP (continued)

Successful response parameters

Parameter	Description
Tcm	<p>The traveling class mark of the user. Associated fields and values are:</p> <ul style="list-style-type: none"> • Nature of Number = ["Not Applicable", "International (private)", "national(private)", network-specific(private)"] • Numbering Plan = ["unknown" or "not applicable", " ISDN numbering plan", "private"]
Primary Trunk Group	<p>A primary alternate trunk group rate index (1 of 3 trunk groups sent for routing to a trunk group). The fields and values are:</p> <ul style="list-style-type: none"> • Number to Outputse = [Outputse Number, Normal Routing Number] • Simulated Facility Group Indicator = [NotSFG, SFG] • Call Treatment Indicator = ["No overflow and no return", "overflow", "off-hook queue overflow", "ring back queue- no overflow and no return", "ring back queue - overflow", "off-hook queue-return", "ring back queue - return"] • Route Index = 8 BCD digits
Alternate Trunk Group	<p>Indicates an alternate trunk group route index to one of three trunk groups sent when a call is to be routed to a trunk group. The fields and values are:</p> <ul style="list-style-type: none"> • Number to Outputse = [Outputse Number, Normal Routing Number] • Simulated Facility Group Indicator = [NotSFG, SFG] • Call Treatment Indicator = ["No overflow and no return", "overflow", "off-hook queue overflow", "ring back queue- no overflow and no return", "ring back queue - overflow", "off-hook queue-return", "ring back queue - return"] • Route Index = 8 BCD digits
Second Alternate Trunk Group	<p>Indicates a second alternate trunk group route index to one of three trunk groups sent when a call is to be routed to a trunk group. The fields and values are:</p> <ul style="list-style-type: none"> • Number to Outputse = [Outputse Number, Normal Routing Number] • Simulated Facility Group Indicator = [NotSFG, SFG] • Call Treatment Indicator = ["No overflow and no return", "overflow", "off-hook queue overflow", "ring back queue- no overflow and no return", "ring back queue - overflow", "off-hook queue-return", "ring back queue - return"] • Route Index = 8 BCD digits

TOPS LNP (continued)**Successful response parameters**

Parameter	Description
Primary Carrier	<p>The carrier selection information to which the call was routed. The fields and values are:</p> <ul style="list-style-type: none"> Carrier Selection = ["No Indication", "Selected carrier identification code presubscribed and not input by calling party", "Selected carrier identification code presubscribed and input by calling party", "Selected carrier identification code presubscribed, no indication of whether input by calling party", "Selected carrier identification code not presubscribed and input by calling party"] Carrier Id = 4 BCD digits
Alternate Carrier	<p>Alternate carrier selection information to which the call was routed. The fields and values are:</p> <ul style="list-style-type: none"> Carrier Selection = ["No Indication", "Selected carrier identification code presubscribed and not input by calling party", "Selected carrier identification code presubscribed and input by calling party", "Selected carrier identification code presubscribed, no indication of whether input by calling party", "Selected carrier identification code not presubscribed and input by calling party"] Carrier Id = 4 BCD digits
Second Alternate Carrier	<p>Second alternate carrier selection information to which the call was routed. Associated fields and values are:</p> <ul style="list-style-type: none"> Carrier Selection = ["No Indication", "Selected carrier identification code presubscribed and not input by calling party", "Selected carrier identification code presubscribed and input by calling party", "Selected carrier identification code presubscribed, no indication of whether input by calling party", "Selected carrier identification code not presubscribed and input by calling party"] Carrier Id = 4 BCD digits
Passive Leg Treatment	<p>Specifies the request for a specific type of alerting treatment to a passive leg. The values are:</p> <ul style="list-style-type: none"> ["alertingOnPattern0Normal", "alertingOnPattern1DistinctiveIntergroup", "alertingOnPattern2DistinctiveSpecial"]
Redirecting Party ID	<p>Indicates the reason for forwarding the call from the DN of the first and last redirecting party and indicates the number of forwardings that occurred. Associated fields and values are:</p> <ul style="list-style-type: none"> Original Redirecting Reason = ["unknown/not applicable", "user busy", "no reply", "unconditional"] Redirecting Reason= ["unknown/not applicable", "user busy", "no reply", "unconditional"] Redirection Counter= Integer Range (1-10)

TOPS LNP (continued)

Successful response parameters

Parameter	Description
Primary Billing Indicator	Provides information for the primary trunk group and for services when the primary trunk group is not provided. The fields are: <ul style="list-style-type: none"> • AMA Call Type • Service Feature ID
Alternate Billing Indicator	Provides information for the alternate trunk group and for services when the alternate trunk group is not provided. The fields are: <ul style="list-style-type: none"> • AMA Call Type • Service Feature ID
Second Alternate Billing Indicator	Provides information for the second alternate trunk group and for services when the second alternate trunk group is not provided. The fields are: <ul style="list-style-type: none"> • AMA Call Type • Service Feature ID
Overflow Billing Indicator	Provides information for the carrier that is used to route the call. The fields are: <ul style="list-style-type: none"> • AMA Call Type • Service Feature ID
AMA Alternate Billing Number	Identifies an alternate billing number to which the AIN service should be billed.
AMA Business Customer ID	This is an 11 digit number, indicating the following: <ul style="list-style-type: none"> • Digit 1 = Context Identifier which is the type of customer ID • Digits 2-11 = AMA Business Customer ID
Sequence of AMA Line Number	Includes information such as the calling party ID, incoming terminating number, or Automatic Number Identification (ANI). There are 3-15 digits, defined as follows: <ul style="list-style-type: none"> • Digits 1-3 = AMA line number type • Digits 4-n = AMA line number
AMA Slp ID	Indicates that the SSP should override normal switch-based recording and invoke AIN AMA record generation.
Sequence of AMA Digits Dialed WC (with Context)	Provides 3-27 digits which indicate the following: <ul style="list-style-type: none"> • Digits 1-3 = context ID to indicate the name of the digit string • Digits 4-n = digit string that the customer dialed

The following is a sample display in the LONG format of a successful query.

TOPS LNP (continued)**Example response display of a successful LNP query in the LONG format**

```

LNPVER:
>SENDING LRN QUERY...
Response Msg=  E8 3F E9 3D CF 02 01 00 D1 02 65 01 30 33 93 07 03 14 02
21 02 99 99 92 07 03 11 02 21 02 78 78 8F 07 03 10 02 21 02 89 89 9F 29
04 02 04 21 21 9F 2B 06 01 10 02 31 43 27 8B 06 01 E9 E9 19 15 2C
-----
CHARGE NUMBER
  Directory Number:      2012209999
  Nature of Number:     ANI of the calling party; national number
  Numbering Plan:       ISDN numbering plan
-----
CALLING PARTY ID
  Directory Number:      2012208787
  Nature of Number:     unique national (significant) number
  Numbering Plan:       ISDN numbering plan
  Screening Indicator:   User provided, passed network screening
  Presentation Indicator: Presentation Allowed
-----
CALLED PARTY ID
  Ported Status:        NOT PORTED
  Response Number:      2012209898
  Nature of Number:     national significant
  Numbering Plan:       ISDN numbering plan
-----
PRIMARY CARRIER
  Carrier Selection:     presubscribe input
  Carrier ID:           1212
-----
AMP
  AMP Do Not Alert:     DO NOT ALERT CALL
  AMP AMA Treatment:    DO NOT MARK AMA RECORDED AS PART OF TEST CALL
  AMP C Log Level:      NOT REQUESTED
AMP TIME
  Year:                 THIS YEAR
  Month:                JUNE
  Date:                 21
  Hour:                 12
  Minute:                15
-----
elapsed time = 0.1 secs

```

The following is an example display for a number that is not ported and the display parameter is set to **SHORT**.

TOPS LNP (continued)

Example response display of a successful LNP query

```
>display short
DISPLAY:          SHORT
>lrnreq
SENDING LRN QUERY...
Ported Status:   NOT PORTED
Response Number: 2012209898
-----
elapsed time = 0.9 secs
```

Unsuccessful query

This section describes unsuccessful queries.

Query blocked by ACG controls The query was not sent, due to ACG controls being active. The query was made during a period when ACG controls are active and the gap period specified by ACG has not elapsed since the last successful query. The following is an example display:

Example unsuccessful response display: Query blocked by ACG controls

```
>LRNREQ
SENDING LRN QUERY...
QUERY FAILURE - QUERY BLOCKED BY ACG CONTROLS
Automatic Code Gapping for 2012209898
  Gap Duration:          32_SEC
  Gap Interval:         1_SEC
  Control Digits:       10
  Translation Number:   244
  Control Cause:        SMS
ACG Controls expire in 28 secs
```

The user action for the above error is to wait until the end of the ACG duration, then execute the LRNREQ command again.

Query Response timed-out - The TOPS switch did not receive a response from the LNP SCP within the maximum time allowed. The elapsed query time given is the total time that LNPVER waited for the LNP SCP response. The length of time that the LNPVER tool waits before timing out is definable using the TIMEOUT command. The following is an example display:

TOPS LNP (continued)

Example unsuccessful response display: Query Response timed-out

```
>LRNREQ
SENDING LRN QUERY...
QUERY FAILURE - QUERY RESPONSE TIMEOUT
-----
elapsed time = 2.0 secs
```

The user action for the above error is to change the TIMEOUT parameter to a higher value, then execute the LRNREQ command again.

Subsystem out of service - The TOPS switch could not send a message to the LNP SCP because the TOPS LNP subsystem is out of service. The following is an example display:

Example unsuccessful response display: Subsystem out of service

```
>LRNREQ
SENDING LRN QUERY...
QUERY FAILURE - SUBSYSTEM OUT OF SERVICE
```

The user action for the above error is to check the TOPSLNP subsystem and make sure it is in service, then execute the LRNREQ command again.

UDTS message - The TOPS switch received an SCCP UDTS message when a query could not be delivered to the LNP SCP. The following is an example display:

Example unsuccessful response display: UDTS message

```
>LRNREQ
SENDING LRN QUERY...
QUERY FAILURE - UDTS message
```

The user action for the above error is to execute the LRNREQ command again.

CalledPartyID not included in the response The TOPS LNP subsystem is expecting a CalledPartyID parameter as part of the Analyze Route message, which is the expected response to an LRNREQ command. The CalledPartyID parameter is required by the ICC. A warning message is displayed, when the CalledPartyID is not included in the AnalyzeRoute message. The following is an example display:

TOPS LNP (continued)

Example unsuccessful response display: CalledPartyID not included

```
>LRNREQ
SENDING LRN QUERY...
WARNING: The required parameter, CalledPartyID, was
not included in the message received.
```

Signaling messages. The following signaling messages can occur:

- If a protocol error is found during the TCAP decode:
"WARNING: TCAP could not decode received message"
- If a DISCONNECT, UNKNOWN or SEND TO RESOURCE MESSAGE is found during the decode:
" WARNING: miscellaneous decode error"
- Also, if a SEND TO RESOURCE MESSAGE is found during the decode:
" WARNING: received SendtoResource message."
- If an error notification message was found during the decode:
"WARNING: Received error message from SCP"
- A miscellaneous problem message which contains a message that has no protocol error, but cannot be recognized by the tool:
"ERROR: Unknown TCAP event"

The user action for the above errors is to execute the LRNREQ command again.

Quit LNPVER

Enter command QUIT to leave LNPVER.

Commands

The commands are described in the following table.

TOPS LNP (continued)

Note, entering a command without any parameters causes the current value of the parameter to be displayed.

LNPVER commands

Command	Description
ACGENC <scp overload> <sms controls> <control digits>	<p>Automatic code gapping controls are encountered. This command is used to simulate call processing. This command has the following arguments:</p> <ul style="list-style-type: none"> • scp overload - Indicates whether scp overload controls are encountered. The values are Y or YES (encountered) and N or NO (not encountered). The default is N. The "scp overload" and "sms controls" arguments cannot both be set to Y or N. That is, one of these arguments must be Y and the other N. • sms controls - Indicates whether service management system (sms) initiated controls are encountered. The values are Y (encountered) and N (not encountered). The default is N. Note, arguments "scp overload" and "sms controls" cannot both be set to Y or N. That is, one of these arguments must be Y and the other N. • control digits - Indicates the number of digits under ACG control that are encountered. The range is 1-10. That is, 1-digit control to 10-digit control. Digit control starts with the beginning digits, that is the NPA. Therefore, if 3 is entered, the NPA digits are under control. <p>The default is 0 and only used by the RESET and RESETENC commands to indicate that ACG controls are not encountered. Therefore, value 0 cannot be directly entered.</p> <p>AIN ACG controls specify that SCP overload control digits should be set to 6 or SMS controls control digits should be set to 3, 6, 7, 8, 9, or 10.</p> <p>Call processing ACG information overrides any value set by this command. If there are any ACG controls in effect, the tool abides by those controls.</p> <p>This command simulates setting of ACG controls. This simulation is only for call process messaging but not the actual setting of ACG controls which might prohibit queries. That is, this command does not prohibit queries.</p> <p>To indicate that no ACG controls are encountered, use the RESETENC command, which sets default values for the arguments. This sets "scp overload" = N, "sms controls" = N, and "control digits" = 0.</p> <p>If both SMS overload and SCP controls are set to Y/YES, the following message is displayed:</p> <p>WARNING: Only one control cause indicator may be set.</p> <p>If both SMS overload and SCP controls are set to N/NO, the following message is displayed:</p> <p>WARNING: Only one control cause indicator must be set.</p>

TOPS LNP (continued)

LNPVER commands

Command	Description
	The following are examples:
>ACGENC	(request current value)
	ACG Encountered Information
	SCP Overload Controls: N
	SMS Controls: Y
	Control Digits : 0
>ACGENC Y N 6	(set value)
	ACG Encountered Information
	SCP Overload Controls: Y
	SMS Controls: N
	Control Digits : 6
BEARER	Bearer. This command specifies the capability of the number being queried (calling, called, or billing party). This is the same party (calling, called, or billing) as in the QUERYNO command. This parameter is always set to the default value of "speech". It cannot be changed by the user.
	Following are examples:
>BEARER <cr>	(request current value)
	Bearer Capability: SPEECH

TOPS LNP (continued)**LNPVER commands**

Command	Description
DISPLAY	<p>This command specifies the display format of the query response message received after the LRNREQ command. The values are as follows:</p> <ul style="list-style-type: none"> • SHORT - Only the portable status of the DN and the response number for the directory number that was sent in the QUERYNO field are displayed. This is the default value. • LONG - All of the fields of the response message in the raw hex format, followed by the parameters in formatted style are displayed. <p>The following are examples:</p> <pre>>DISPLAY (request current value)</pre> <p>Display: SHORT</p> <pre>>DISPLAY LONG (set value)</pre> <p>Display: LONG</p> <p>When the display format is changed with this command, the REDISPLAY command will display the query results.</p>
HELP<command>	<p>Help. This command provides a description of a command. Following is an example:</p> <pre>> HELP USERID</pre> <p>Display or update the userid.</p> <p>NOTE: The userid must be a 10 digit number enclosed in single quotes.</p> <p>Parms: [<Userid> STRING]</p> <p>SYNTAX: userid <10 digit DN></p>

TOPS LNP (continued)

LNPVER commands

Command	Description
HELP LPNVER	<p>This command gives a brief description of LNPVER and a list of available commands.</p> <p>The following is the display:</p> <pre>>HELP LNPVER</pre> <p>TOPS LNPVER (LNP Verification) test tool.</p> <p>The LNPVER tool allows the user to create LNP queries and send them to an SCP database, and view the query responses.</p> <p>The following are a list of LNPVER parameter commands which both display and update the LNPVER parameter values: USERID BEARER ACGENC QUERYNO</p> <p>To display, enter the command without any arguments, for example: USERID</p> <p>To update, enter the new value as an argument, for example: USERID '9913349879'</p> <p>Other LNPVER commands are:</p> <pre>LRNREQ DISPLAY SHOW REDISPLAY QACG RESENTENC RESET TIMEOUT QUIT SETACG CLEARACG</pre>

TOPS LNP (continued)

LNPVER commands

Command	Description
LRNREQ	<p>Local number portability request. This command sends an LNP query to the LNP SCP database and then displays the response message. The format (SHORT or LONG) of the response message is controlled by the DISPLAY command.</p> <p>The following is an example:</p> <pre>>LRNREQ SENDING LNP QUERY... (Refer to section "Query responses" for responses)</pre> <p>If the queryno parameter is not datafilled in table PORTNUMS (indicating the number is portable), the following warning message is displayed:</p> <pre>WARNING: The DN must be datafilled in table PORTNUMS WARNING: The query was not made WARNING: Cannot encode query parameters Information needed in table PORTNUMS</pre>

TOPS LNP (continued)

LNPVER commands

Command	Description
QACG <10 digits>	<p>Query Automatic Code Gapping. This command queries the status of ACG controls for the entered DN, enclosed in single quotes. The DN must be 10 digits. If ACG is active on the DN, the duration of ACG, the gap period and the amount of time until the ACG duration controls expire are displayed. If ACG is not active, a message stating that ACG is not active is displayed.</p> <p>If the 10 digit number is not datafilled in table PORTNUMS, the following warning appears:</p> <pre>WARNING: <10 digits> is not found in TABLE PORTNUMS</pre> <p>The DN must be in table PORTNUMS before a query can be done.</p> <p>The following is an example where ACG is active for the entered DN:</p> <pre>>QACG '2012209898'</pre> <p>Automatic Code Gapping for 2012209898.</p> <pre> Gap Duration: 32_SEC Gap Interval: 1_SEC Control Digits: 10 Translations Number: 244 Control Cause: SMS ACG duration controls expire in 28 secs </pre> <p>The following is an example where ACG is not active for the entered DN:</p> <pre>>QACG '6193217899'</pre> <pre>ACG INFORMATION COULD NOT BE FOUND FOR THE DN GIVEN.</pre>

TOPS LNP (continued)**LNPVER commands**

Command	Description
QUERYNO <dn> <nature of number> <numbering plan>	Query number. This command identifies the directory number sent in the query. This could be the called, calling, or billing number. This is the same party (called, calling, or billing) as in the BEARER command. The values of the arguments are as follows:
QUERYNO <dn> <nature of number>	<ul style="list-style-type: none"> • Directory number - Enter a 10 digit number enclosed in single quotes. The default value is `0000000000'. Note, when the LNPREQ command is executed, table PORTNUMS is checked for this number. If the number cannot be found, the query is not launched and an error message is given.
or	
QUERYNO <dn>	<ul style="list-style-type: none"> • Nature of number - the nature of the number for the given DN. The values are: <ul style="list-style-type: none"> — Inp_unknown - unknown or not applicable — Inp_subscriber - subscriber number — Inp_national2 - — Inp_national_significant - national (significant) number (default value) — Inp_international - international number — Inp_subscriber_0plus - subscriber number, operator requested (0+ call) — Inp_national_0plus - national number, operator requested (0+ call) — Inp_international_0plus - international number, operator requested (0+ call) — Inp_noaddr_opr - no address present, operator requested — Inp_noaddr_cut - no address present, cut-through call to carrier — Inp_hotel_900 - 900+ call from LEC public station or hotel/motel, or non-EAEO — Inp_testline - test line test code • Numbering plan - The numbering plan for the given DN. The values are: <ul style="list-style-type: none"> — Inp_np_isdn - ISDN numbering plan (default value) — Inp_np_private - private number plan — Inp_np_unknown - unknown or not applicable

TOPS LNP (continued)

LNPVER commands

Command	Description
	<p>The default values are:</p> <ul style="list-style-type: none">• Directory number: '0000000000'• Nature of address; lnp_national_significant• Numbering plan: lnp_np_isdn <p>When entering the command, at least the first parameter must be entered. If any of the remaining parameters are not entered, default values are used for the missing parameters.</p> <p>As mentioned above, the entered DN must be 10 digits. If 10 digits are not entered, the following error message is displayed:</p> <p>ERROR: The parameter must be a 10-digit number enclosed in single quotes.</p> <p>SYNTAX: queryno <10 digit DN> <nature of number></p> <p><numbering plan></p>

TOPS LNP (continued)**LNPVER commands**

Command	Description
	The following are examples:
	>QUERYNO (request current value)
	Query Number
	Directory Number: 0000000000
	Nature of Number: national significant
	Numbering Plan: ISDN numbering plan
	>QUERYNO '2012209898' LNP_SUBSCRIBER LNP_NP_PRIVATE
	Query Number
	Directory Number: 2012209898
	Nature of Number: subscriber number
	Numbering Plan: private numbering plan
	>QUERYNO '2012209898' LNP_SUBSCRIBER
	Query Number
	Directory Number: 2012209898
	Nature of Number: subscriber number
	Numbering Plan: ISDN numbering plan
	>QUERYNO '2012209898'
	Query Number
	Directory Number: 2012209898
	Nature of Number: national significant
	Numbering Plan: ISDN numbering plan

TOPS LNP (continued)

LNPVER commands

Command	Description
QUIT	<p>Quit. This command exits the LNPVER CI increment.</p> <p>Following is an example:</p> <pre>LNPVER: > QUIT CI:</pre>
REDISPLAY	<p>This command redisplay the last query. The most useful time for this command is after the DISPLAY command to change the format of the response data.</p> <p>This command can only redisplay query response information if the query is successful. (Successful means a valid analyze route or ACG component is received as part of the response from the LNP SCP.)</p> <p>If there is no query response information to display to the user and the user executes the redisplay command, the following warning appears:</p> <pre>WARNING: there is no information to redisplay</pre> <p>The following is an example:</p> <pre>>DISPLAY SHORT Display: SHORT >REDISPLAY Ported Status: PORTED Response Number: 3452129999</pre>
RESET	<p>Reset. This command resets the LNPVER parameters to their default values.</p> <p>LNPVER parameters are initialized to default values after any restart. Entering and leaving the LNPVER increment does not change parameter values. For example, the parameters keep the values assigned by the user even if the user quits the tool and then reenters the tool.</p>

TOPS LNP (continued)**LNPVER commands**

Command	Description
	<p>Following are the parameters and their default values:</p> <pre> Parameter Default ----- ACGENC SCP Overload = N SMS Controls = N Control Digits = 0 BEARER SPEECH DISPLAY SHORT QUERYNO Directory Number = 0000000000 Nature of Number = national (significant) number Numbering Plan = ISDN numbering plan TIMEOUT 2 User Identification = 0000000000 The following is an example: >RESET This will reset all parameters to default values. Are you sure you want to do this? Please confirm ("YES", "Y", "NO", or "N"): >yes The parameters have been reset to default values.</pre>

TOPS LNP (continued)

LNPVER commands

Command	Description
RESETENC	<p>This command resets the ACGENC parameter arguments to their default values without resetting all of the required query parameters. This indicates that ACG controls are not encountered. This allows queries to take place. The arguments are set to:</p> <ul style="list-style-type: none">• scp overload = N• sms controls = N• acg encountered = 0. <p>Note: The ACGENC and RESETACG commands do not affect call processing. The following is an example:</p> <pre>>RESETENC</pre> <p>The ACGENC information has been reset to its default value.</p>

TOPS LNP (continued)**LNPVER commands**

Command	Description
SHOW	<p>Show. This command displays the value of the LNPVER parameters.</p> <p>The display format is determined by the DISPLAY command. If after viewing the display the format needs to be changed, use the DISPLAY format and then the REDISPLAY command to view the response message again. This way the LRNREQ command does not need to be re-entered.</p> <p>The following is an example:</p> <pre>>SHOW User Identification: 6198321234 Bearer Capability: SPEECH Query Number Directory Number: 6198321234 Nature of Number: national significant Numbering Plan: ISDN numbering plan ACG Encountered information SCP Overload Controls: N SMS Controls: Y Control Digits: 7 Timeout: 2 secs Display: SHORT</pre>

TOPS LNP (end)

LNPVER commands

Command	Description
TIMEOUT <1 to60>	<p>Time out. This command specifies the maximum waiting period for receiving a reply from an LNP SCP query. The range is 1 to 60 (seconds). The default is 2.</p> <p>If an entry is outside of the range, the following warning message is displayed:</p> <pre>ERROR: Parameter value must be in the range 1-60.</pre> <p>SYNTAX: timeout <1-60></p> <p>The following are examples:</p> <pre>>TIMEOUT (request current value) Timeout: 30 secs >TIMEOUT 10 (set value) Timeout: 10 secs</pre>
USERID <10 digits>	<p>This command defines the 10-digit DN of the calling party.</p> <p>The default is 0000000000.</p> <p>The DN must be 10 digits, enclosed in single quotes. If it is not entered as such, the following error message is displayed.</p> <pre>ERROR: The userid must be a 10 digit number enclosed in single quotes.</pre> <p>SYNTAX: userid <10 digit DN></p> <p>This command does not affect call processing.</p> <p>The following are examples:</p> <pre>>USERID (request current value) User Identification: 9108813456 >USERID '9109917331' (set value) User Identification: 9109917331</pre>

SERVORD

TOPS LNP does not use SERVORD.

2 Datafilling Operator Services Information

This chapter provides a variety of information for operator services:

- Datafill procedures for operator centralization links (adding and deleting voice/data link member and trunks) and MPX positions.
- Descriptions for BCS36 packages that were not directly migrated into TOPS03 functionalities, but were absorbed into other functionalities:
 - NTX731AA - TOPS Position Controller - version I
 - NTXP86AA - ANI to ISUP Conversion
 - NTX676 - TOPS Automated Billing
 - NTXA90 - TOPS MP Terminal Handler High Speed
 - NTXA91 - NT Standard Interface - TPC
- List of TOPS office parameters; and guidelines for TOPS trunk selection, MPX datafill, and DA datafill.

Procedure: Adding an MPX Position

Adding an MPX position

Following are the datafill procedures to add a TOPS MPX position.

Adding an MPX position

Step	Table	Field	Explanation and action
1			Acquire the following information from your supervisor. Position type (IC, ASST, OPR). Call services set (INTCSERV, DASERV). If position type above is OPR, also acquire the following Transfer set (GEN, XFR1, XFR2, DA, or ALL).
2			At the newly installed position, press the `CMD' key and type: `STAT'. Press the `ENTER' key. The following information will be displayed: DEFPOS LN NPID POS 0 (40-7F) (0-19) where:LN = Logical Net ID. This is always 0.NPID = Token ring no. in range 40-7F.POS = Position no. within token ring in range 0-19. This number is used in steps 13 and 14.
3	TOPSPOS	POSNO	Determine the position number by examining a label on the front, lower left-hand corner of the monitor. Enter this position number.
4		PMTYPE	Enter `TMS'.
5			Use step 3 information to determine the position number of each position adjacent to the new position. Then, enter table TOPSPOS and list all tuples on the printer. In the listing, locate the 2 adjacent position numbers in the first field, POSNO. In these tuples, locate the values for fields TMSNO, TMSCKTNO, TMSCKTTS, TPCNO, TPCPOSNO, and TEAM. These values will be used in some of the following steps.
6		TMSNO	Enter the same value as used in field TMSNO of step 5.

Procedure: Adding an MPX Position (continued)

Adding an MPX position

Step	Table	Field	Explanation and action
7		TMSCKTNO	Enter the same value as used in field TMSCKTNO of step 5. If the 2 tuples have different values, look at field TMSCKTTS of step 5 for both tuples. If the values are 21 and 1, enter the value for field TMSCKTNO from the tuple with TMSCKTTS = 21. If the values for field TMSCKTTS are 22 and 2, enter the value for field TMSCKTNO from the tuple with TMSCKTTS = 2. If there is only 1 adjacent position, use the same value as used in field TMSCKTNO of step 5.
8		TMSCKTTS	Enter the missing value between the 2 tuples in field TMSCKTTS of step 5. The number range is 1-4, 7-10, 13-16, and 19-22. For example, if the numbers are 22 and 2, enter 1.
9		VCPDGRP	Enter `NPDGP'.
10		CARDCODE	Enter `DS1SIG'.
11		DATATYPE	Enter `TMS'.
12		POSTYPE	Enter `BP'.
13		PROTOCOL	Enter `ASCII'.
14		TPCNO	Enter the same value as used in field TPCNO for both tuples in step 5. If the values are different, examine field TPCPOSNO in the 2 tuples.- If the values are 2 and 0, use the value in field TPCNO of the tuple with TPCPOSNO = 2.- If the values are 3 and 1, use the value in field TPCNO of the tuple with TPCPOSNO = 1.
15		TPCPOSNO	Using the position no. from step 2,if position no. = 0,4,8,12, or 16; enter `0'if position no. = 1,5,9,13, or 17; enter `1'if position no. = 2,6,10,14, or 18; enter `2'if position no. = 3,7,11,15, or 19; enter `3'
16		POS	Enter value determined in step 1. Range is ASST, IC, and OPR.
17		TEAM	Enter value determined in step 5.
18		SVCSET	Enter value determined in step 1. Range is DASERV and INTCSERV.

Procedure: Adding an MPX Position (continued)

Adding an MPX position

Step	Table	Field	Explanation and action
			If field POS = OPR in step 16, perform step 19. Otherwise, skip step 19.
19		XFRSET	Enter value determined in step 1. Range is GEN, XFR1, XFR2, DA, and ALL. Following is example datafill.

MAP display example for table TOPSPOS

POS NO	VCCKT	VCPD GRP	CARD CODE	DATAPATH	POSAREA
100	TMS 0 0	1 NPDGRP	DS1SIG	TMS BP ASCII	0 0 OPR 2 DASERV ALL
101	TMS 0 0	2 NPDGRP	DS1SIG	TMS BP ASCII	0 1 OPR 2 DASERV ALL
102	TMS 0 0	3 NPDGRP	DS1SIG	TMS BP ASCII	0 2 OPR 2 DASERV ALL
103	TMS 0 0	4 NPDGRP	DS1SIG	TMS BP ASCII	0 3 OPR 2 DASERV ALL
104	TMS 0 0	7 NPDGRP	DS1SIG	TMS BP ASCII	1 0 OPR 2 DASERV ALL
105	TMS 0 0	8 NPDGRP	DS1SIG	TMS BP ASCII	1 1 OPR 2 DASERV ALL
106	TMS 0 0	9 NPDGRP	DS1SIG	TMS BP ASCII	1 2 OPR 2 DASERV ALL
107	TMS 0 0	10 NPDGRP	DS1SIG	TMS BP ASCII	1 3 OPR 2 DASERV ALL
108	TMS 0 0	13 NPDGRP	DS1SIG	TMS BP ASCII	2 0 OPR 2 DASERV ALL
109	TMS 0 0	14 NPDGRP	DS1SIG	TMS BP ASCII	2 1 OPR 2 DASERV ALL
110	TMS 0 0	15 NPDGRP	DS1SIG	TMS BP ASCII	2 2 OPR 2 DASERV ALL
111	TMS 0 0	16 NPDGRP	DS1SIG	TMS BP ASCII	2 3 OPR 2 DASERV ALL
111	TMS 0 0	19 NPDGRP	DS1SIG	TMS BP ASCII	3 0 IC 2 DASERV ALL
112	TMS 0 0	20 NPDGRP	DS1SIG	TMS BP ASCII	3 1 ASST 2 DASERV ALL
113	TMS 0 0	21 NPDGRP	DS1SIG	TMS BP ASCII	3 2 OPR 2 DASERV ALL
114	TMS 0 0	22 NPDGRP	DS1SIG	TMS BP ASCII	3 3 OPR 2 DASERV ALL
115	TMS 0 1	1 NPDGRP	DS1SIG	TMS BP ASCII	4 0 OPR 2 DASERV ALL
116	TMS 0 1	2 NPDGRP	DS1SIG	TMS BP ASCII	4 1 OPR 2 DASERV ALL
117	TMS 0 1	3 NPDGRP	DS1SIG	TMS BP ASCII	4 2 OPR 2 DASERV ALL

Adding an MPX position

Step	Table	Field	Explanation and action
			If field TPCPOSNO = 0 or 1 in step 15, perform the remaining steps. Otherwise (TPCPOSNO = 2 or 3), stop (do not perform any more steps).
20	SPECCON N	SCSEL	Enter `DS1'.
21		PMTYPE	Enter `TMS'.

Procedure: Adding an MPX Position (continued)

Adding an MPX position

Step	Table	Field	Explanation and action
22		TMSNO	Enter the same value as in step 6.
23		TMSCKTNO	Enter the same value as in step 7.
24		TMSCKTTS	Using the position no. from step 2, if position no. = 0, enter `5' if position no. = 1, enter `6' if position no. = 4, enter `11' if position no. = 5, enter `12' if position no. = 8, enter `17' if position no. = 9, enter `18' if position no. = 12, enter `23' if position no. = 13, enter `24' if position no. = 16, enter `29' if position no. = 17, enter `30'
25		SCSEL	Enter `DCHCHNL'.
26		ISGNO	Examine the datafill example that follows for table SPECCONN. Use the values for fields TMSCKTNO and TMSCKTTS from steps 24 and 25 and locate the tuple in the datafill example with the same field values for fields TMSCKTNO (column 4) and TMSCKTTS (column 5). When the tuple is located, use the value in field ISGNO (column 7) and CHNL (column 8) for steps 26 and 27, respectively. For example, if TMSCKTNO = 4 and TMSCKTTS = 23, then ISGNO = 3 and CHNL = 6.
27		CHNL	Enter the value determined in step 26.
28		CONTYPE	Enter `CON'.
29		STATUS	Enter `ACTIVE'. Following is example datafill.

Procedure: Adding an MPX Position (end)

MAP display example for table SPECCONN

ENDPT1				ENDPT2					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
DS1	TMS	0	0	5	DCHCHNL	0	1	CON	ACTIVE
DS1	TMS	0	0	6	DCHCHNL	1	14	CON	ACTIVE
DS1	TMS	0	0	11	DCHCHNL	1	1	CON	ACTIVE
DS1	TMS	0	0	12	DCHCHNL	0	14	CON	ACTIVE
DS1	TMS	0	0	17	DCHCHNL	2	1	CON	ACTIVE
DS1	TMS	0	0	18	DCHCHNL	0	18	CON	ACTIVE
DS1	TMS	0	0	23	DCHCHNL	3	1	CON	ACTIVE
DS1	TMS	0	0	24	DCHCHNL	0	22	CON	ACTIVE
DS1	TMS	0	1	5	DCHCHNL	0	5	CON	ACTIVE
DS1	TMS	0	1	6	DCHCHNL	2	14	CON	ACTIVE
DS1	TMS	0	1	11	DCHCHNL	1	5	CON	ACTIVE
DS1	TMS	0	1	12	DCHCHNL	2	18	CON	ACTIVE
DS1	TMS	0	1	17	DCHCHNL	2	5	CON	ACTIVE
DS1	TMS	0	1	18	DCHCHNL	1	18	CON	ACTIVE
DS1	TMS	0	1	23	DCHCHNL	3	5	CON	ACTIVE
DS1	TMS	0	1	24	DCHCHNL	1	22	CON	ACTIVE
DS1	TMS	0	2	5	DCHCHNL	0	9	CON	ACTIVE
DS1	TMS	0	2	6	DCHCHNL	3	14	CON	ACTIVE
DS1	TMS	0	2	11	DCHCHNL	1	9	CON	ACTIVE
DS1	TMS	0	2	12	DCHCHNL	3	18	CON	ACTIVE
DS1	TMS	0	2	17	DCHCHNL	2	9	CON	ACTIVE
DS1	TMS	0	2	18	DCHCHNL	3	22	CON	ACTIVE
DS1	TMS	0	2	23	DCHCHNL	3	9	CON	ACTIVE
DS1	TMS	0	2	24	DCHCHNL	2	22	CON	ACTIVE
DS1	TMS	0	3	5	DCHCHNL	0	2	CON	ACTIVE
DS1	TMS	0	3	6	DCHCHNL	1	13	CON	ACTIVE
DS1	TMS	0	3	11	DCHCHNL	1	2	CON	ACTIVE
DS1	TMS	0	3	12	DCHCHNL	0	13	CON	ACTIVE
DS1	TMS	0	3	17	DCHCHNL	2	2	CON	ACTIVE
DS1	TMS	0	3	18	DCHCHNL	0	17	CON	ACTIVE
DS1	TMS	0	3	23	DCHCHNL	3	2	CON	ACTIVE
DS1	TMS	0	3	24	DCHCHNL	0	21	CON	ACTIVE
DS1	TMS	0	4	5	DCHCHNL	0	6	CON	ACTIVE
DS1	TMS	0	4	6	DCHCHNL	2	13	CON	ACTIVE
DS1	TMS	0	4	11	DCHCHNL	1	6	CON	ACTIVE
DS1	TMS	0	4	12	DCHCHNL	2	17	CON	ACTIVE

MAP display example for table SPECCONN (continued)

ENDPT1				ENDPT2					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
DS1	TMS	0	4	17	DCHCHNL	2	6	CON	ACTIVE
DS1	TMS	0	4	18	DCHCHNL	1	17	CON	ACTIVE
DS1	TMS	0	4	23	DCHCHNL	3	6	CON	ACTIVE
DS1	TMS	0	4	24	DCHCHNL	1	21	CON	ACTIVE
DS1	TMS	0	5	5	DCHCHNL	0	10	CON	ACTIVE
DS1	TMS	0	5	6	DCHCHNL	3	13	CON	ACTIVE
DS1	TMS	0	5	11	DCHCHNL	1	10	CON	ACTIVE
DS1	TMS	0	5	12	DCHCHNL	3	17	CON	ACTIVE
DS1	TMS	0	5	17	DCHCHNL	2	10	CON	ACTIVE
DS1	TMS	0	5	18	DCHCHNL	3	21	CON	ACTIVE
DS1	TMS	0	5	23	DCHCHNL	3	10	CON	ACTIVE
DS1	TMS	0	5	24	DCHCHNL	2	21	CON	ACTIVE

Field names are:

- (1) - SCSEL
- (2) - PMTYPE
- (3) - TMSNO
- (4) - TMSCKTNO
- (5) - TMSCKTTS
- (6) - SCSEL
- (7) - ISGNO
- (8) - CHNL
- (9) - CONTYPE
- (10) - STATUS

Procedure: Adding an OC Data Link Group

Adding a TOPS OC data link group between a host and remote office

Step	Table	Field	Explanation and Action
1	CLLI	CLLI	Enter table CLLI and list all tuples at the printer. If your supervisor has provided a CLLI name, enter that name and go on to step 2. Otherwise, locate and mark other CLLI names used for data links. Field ADMININF describes the purpose of the CLLI. Then, use one of these CLLI names with a minor alteration. A maximum of 16 characters can be entered. Create and enter the new name. A maximum of 3 data link assignments can be made per switch.
2		ADNUM	Examine field ADNUM in the listing of step 1. Enter the next unused value. The maximum of 15 characters is one less than the size of table CLLI shown in table DATASIZE.
3		TRKGRSIZ	Examine the marked tuples in step 1. Enter the same value given in field TRKGRSIZ. Otherwise, ask your supervisor for a recommended value. The range is 0-2047. A suggested value is 64.
4		ADMININF	This field is used to describe the purpose of the tuple. Enter up to 32 characters. Following is example datafill for remote and host offices.

MAP display example for table CLLI (remote office)

CLLI	ADNUM	TRKGRSIZ	ADMININF
HOSTDL	87	32	HOST_DATA_LINK

Procedure: Adding an OC Data Link Group (continued)

MAP display example for table CCLI (host office)

CLLI	ADNUM	TRKGRSIZ	ADMININF
REMDL	71	32	REMOTE_DATA_LINK

Adding a TOPS OC data link group between a host and remote office

STEP	Table	Field	Explanation and Action
5	DCMINV		Enter table DCMINV and list all tuples at the printer. In the listing, mark all tuples with field DCMTYPE = DCM.
6		DCMTYPE	Enter "DCM".
7		DCMNO	Examine field DCMNO of the marked tuples from step 5. Enter the next unused value. (Each data link group must be assigned a unique DCMNO. Up to three data link groups can be assigned per switch.)
8		FRTYPE	Enter "DCE".
9		FRNO	Supplied by your supervisor.
10		SHPOS	Supplied by your supervisor.
11		FLOOR	Supplied by your supervisor.
12		ROW	Supplied by your supervisor.
13		FRPOS	Supplied by your supervisor.
14		EQPEC	Examine field EQPEC of the marked tuples from step 5. Enter the same value. This value will be either "2X313AC" or "2X313AJ".
15		LOAD	Examine field LOAD of the marked tuples from step 5. Enter the same value.
16		LKDATA	Examine field LKDATA of the marked tuples from step 5. Enter the same values.
17		EXECS	Enter "DCMEX".

Procedure: Adding an OC Data Link Group (continued)

Adding a TOPS OC data link group between a host and remote office

STEP	Table	Field	Explanation and Action
18		USER	Enter "OCDL".
19		VARINFO	Examine field VARINFO of the marked tuples from step 5. Enter the same values. Following is example datafill for host and remote offices.

MAP display example for table DCMINV

```

DCMNM  FRTYPE FRNO SHPOS FLOOR ROW FRPOS      EQPEC          LOAD
LKDATA                                EXECS    USER
VARINFO
-----
DCM  0  DCE    0   18    6  B   20      2X31AC          RDCMHA02
( 1  0) ( 0 27) ( 0 42) ( 1 26)$          DCMEX    OCDL
DCM ( 0 DEFAULT N) (1 DEFAULT N)(2 DEFAULT N)(3 DEFAULT N)(4 DEFAULT N)

DCM  1  DCE    0   32    6  B   20      2X31AC          RDCMHA02
( 1 18) ( 0 38) ( 0 17) ( 1 44)$          DCMEX    OCDL
DCM ( 0 DEFAULT N) (1 DEFAULT N)(2 DEFAULT N)(3 DEFAULT N)(4 DEFAULT N)
    
```

Adding a TOPS data link group between a host and remote office

STEP	Table	Field	Explanation and Action
20	TOPSHDLC	DLGRP	Enter the CLLI name from step 1.
21		EXTRKNM	Enter "1".
22		PMTYPE	Enter "DCM".
23		DCMNO	Enter the same value as in step 7.
24		DCMCKTNO	Enter "0" (must always be 0 for data links).
25		DCMCKTTS	Enter "1" (must always be 1 for data links). Following is example datafill for host and remote offices.

Procedure: Adding an OC Data Link Group (continued)

MAP display example for table TOPSHDLC (remote office)

DLGRP	EXTRKNM	PMTYPE	DCMNO	DCMCKTNO	DCMCKTTS
HOSTDL	1	DCM	0	0	1
HOSTDL	2	DCM	1	0	1

MAP display example for table TOPSHDLC (host office)

DLGRP	EXTRKNM	PMTYPE	DCMNO	DCMCKTNO	DCMCKTTS
REMDL	1	DCM	0	0	1
REMDL	2	DCM	1	0	1

Adding a TOPS data link group between a host and remote office

STEP	Table	Field	Explanation and Action
26	OCGRP		Enter table OCGRP and list all tuples at the printer. Mark all tuples with field VLGRP equal to the CLLI values marked in step 1. These are existing data link groups.
27		OFFICE	Examine the value of field OFFICE in the marked tuples of step 26. Enter the same value.
28		OFCTYPE	If a remote office, enter "HOST". If a host office, enter "REMOTE".
29		VLGRP	Examine the value of field VLGRP in the marked tuples of step 26. Enter the same value.
30		DLSEL	Enter "HDLC".
31		DLGRP	Enter the new CLLI name from step 1.
32		BCSLEVEL	Examine the value of field BCSLEVEL in the marked tuples of step 26. Enter the same value. Following is example datafill for host and remote offices.

MAP display example for table OCGRP (remote office)

OFFICE	OFCTYPE	VLGRP	DLSEL	DLGRP	BCSLEVEL
HOSTOFFICE	HOST	HOSTVLIC	HDLC	HOSTDL	34

Procedure: Adding an OC Data Link Group (end)

MAP display example for table OCGRP (host office)

OFFICE	OFCTYPE	VLGRP	DLSEL	DLGRP	BCSLEVEL
REMOTEOFFICE	REMOTE	REMVLOG	HDLC	REMDL	34

Procedure: Adding an OC Data Link Member

Adding an OC data link member

Adding a TOPS OC data link member between a host and remote office

Step	Table	Field	Explanation and Action
1	CLLI		<p>Enter Table CLLI to determine the name (field CLLI) of the data link group. Start by listing all tuples at the display or printer, whichever is more convenient. Then examine field ADMININF for a description indicating a voice link. The value in field CLLI is used in field DLGRP of Table TOPSHDLC.</p> <p>Following is sample datafill for remote and host offices.</p>

MAP display example for table CLLI (remote office)

CLLI	ADNUM	TRKGRSIZ	ADMININF
HOSTDL	87	32	HOST_DATA_LINK

MAP display example for table CLLI (host office)

CLLI	ADNUM	TRKGRSIZ	ADMININF
REMDL	71	32	REMOTE_DATA_LINK

Adding a TOPS OC data link member between a host and remote office

Step	Table	Field	Explanation and Action
2	DCMINV		Enter Table DCMINV and list all tuples at the printer. In the listing, mark all tuples with field DCMTYPE = DCM.
3		DCMTYPE	Enter "DCM".
4		DCMNO	Examine field DCMNO of the marked tuples from step 2. Enter the next unused value.
5		FRTYPE	Enter "DCE".
6		FRNO	Supplied by your supervisor.

Procedure: Adding an OC Data Link Member (continued)

Adding a TOPS OC data link member between a host and remote office

Step	Table	Field	Explanation and Action
7		SHPOS	Supplied by your supervisor.
8		FLOOR	Supplied by your supervisor.
9		ROW	Supplied by your supervisor.
10		FRPOS	Supplied by your supervisor.
11		EQPEC	Enter "2X313AC".
12		LOAD	Examine field LOAD of the marked tuples from step 2. Enter the same value.
13		LKDATA	Examine field LKDATA of the marked tuples from step 2. Enter the same values.
14		EXECS	Enter "DCMEX".
15		USER	Enter "OCDL".
16		VARINFO	Examine field VARINFO of the marked tuples from step 2. Enter the same values.

Following is example datafill for a host and remote office.

MAP display example for table DCMINV

```

DCMNM  FRTYPE FRNO SHPOS FLOOR ROW FRPOS      EQPEC          LOAD
LKDATA          EXEC      USER
VARINFO

-----
DCM  0  DCE    0   18    6  B   20      2X31AC          RDCMHA02
( 1 0) ( 0 27) ( 0 42) ( 1 26)$          DCMEX   OCDL
DCM ( 0 DEFAULT N) (1 DEFAULT N)(2 DEFAULT N)(3 DEFAULT N)(4 DEFAULT N)

DCM  1  DCE    0   32    6  B   20      2X31AC          RDCMHA02
( 1 18) ( 0 38) ( 0 17) ( 1 44)$          DCMEX   OCDL
DCM ( 0 DEFAULT N) (1 DEFAULT N)(2 DEFAULT N)(3 DEFAULT N)(4 DEFAULT N)

```

Procedure: Adding an OC Data Link Member (end)

Adding a TOPS OC data link member between a host and remote office

STEP	Table	Field	Explanation and Action
17	TOPSHDLC		Enter Table TOPSHDLC and list all tuples at the printer. Mark all tuples with field DLGRP equal to the value determined in step 1 (CLLI name). The maximum allowed number of these tuples is 3.
18		DLGRP	Examine the value of field DLGRP in the marked tuples of step 17. Enter the same value.
19		EXTRKNM	Examine the value of field EXTRKNM in all tuples of step 17. Enter the next unused value.
20		PMTYPE	Enter "DCM".
21		DCMNO	Enter the same value as in step 4.
22		DCMCKTNO	Enter "0".
23		DCMCKTTS	Enter "1". Following is example datafill for a host and remote office.

MAP display example for table TOPSHDLC (remote office)

DLGRP	EXTRKNM	PMTYPE	DCMNO	DCMCKTNO	DCMCKTTS
HOSTDL	1	DCM	0	0	1
HOSTDL	2	DCM	1	0	1

MAP display example for table TOPSHDLC (host office)

DLGRP	EXTRKNM	PMTYPE	DCMNO	DCMCKTNO	DCMCKTTS
REMDL	1	DCM	0	0	1
REMDL	2	DCM	1	0	1

Procedure: Adding an OC Voice Link Group

Adding a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
1	CLLI	CLLI	Enter Table CLLI and list all tuples at the printer. If your supervisor has provided a CLLI name, enter that name and go on to step 2. Otherwise, locate and mark other CLLI names used for voice links. Field ADMININF describes the purpose of the CLLI. Then, use one of these CLLI names with a minor alteration. A maximum of 16 characters can be entered. Create and enter the new name.
2		ADNUM	Examine field ADNUM in the listing of step 1. Enter the next unused value. The maximum is one less than the size of Table CLLI shown in Table DATASIZE. Following is example datafill for a remote office.
3		TRKGRSIZ	Examine the marked tuples in step 1. Enter the same value given in field TRKGRSIZ. Otherwise, ask your supervisor for a recommended value. The range is 0-2047. A suggested value is 64.
4		ADMININF	This field is used to describe the purpose of the tuple. Enter up to 32 characters. Following is example datafill for remote and host offices.

MAP display example for table CLLI (remote office)

CLLI	ADNUM	TRKGRSIZ	ADMININF
HOSTDL	87	64	HOST_VOICE_LINK_INCOMING

Procedure: Adding an OC Voice Link Group (continued)**MAP display example for table CLLI (host office)**

CLLI	ADNUM	TRKGRSIZ	ADMININF
REMVLOG	71	64	REMOTE_VOICE_LINK_OUTGOING

Adding a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
6		CLLI	Enter the new CLLI name from step 1.
7		GRPTYP	Enter `IT`.
8		TRAFSNO	Examine the marked tuples of step 5. Enter the same value given in one of the tuples for field TRAFSNO.
9		PADGRP	Examine the marked tuples of step 5. Enter the same value given in one of the tuples for field PADGRP.
10		NCCLS	If a remote office, enter `NCRT`. If a host office, enter `NTCT`.
11		DIR	If host office, enter `OG`. If remote office, enter `IC`.
12		TRAFCLS	Enter `IA`.
13		SELSEQ	Enter `MIDL`.
14		CONNGNPA	Examine the marked tuples of step 5. Enter the same value given in one of the tuples for field CONNGNPA.
15		PRTNM	Enter `NPRT`.
16		SCRNCL	Enter `NSCR`.
17		SNPA	Examine the marked tuples of step 5. Enter the same value given in one of the tuples for field SNPA.
18		TERMTC	Enter `000`.
19		TOLLCOMP	Enter `N`.
20		CCWKVLD	Enter `N`.
21		OPTIONS	Enter `\$`.
			Following is example datafill for remote and host offices.

Procedure: Adding an OC Voice Link Group (continued)

MAP display example for table TRKGRP (remote office)

GRPKEY	GRPINFO
HOSTVLIC IT 99 EML6 NCRT IC IA MIDL	316 NPRT NSCR 316 000 N N \$

MAP display example for table TRKGRP (host office)

GRPKEY	GRPINFO
REMVLOG IT 99 EML6 NCTC OG IA MIDL	316 NPRT NSCR 316 000 N N \$

Adding a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
22	TRKSGRP		Enter Table TRKSGRP and list all tuples at the printer. Mark all tuples with field CLLI equal to the values marked in step 1. These are existing voice link groups.
23		CLLI	Enter the new CLLI name from step 1.
24		SGRP	Examine the marked tuples of step 22. Enter the same value given in one of the tuples for field SGRP. The range is 0-1.
25		CARDCODE	Enter `DS1SIG'.
26		SIGDATA	Enter `STD'.
27		DIR	If remote office, enter 'IC'. If host office, enter 'OG'.
28		IPULSTYP	If a remote office, enter `DP'. If a host office, leave blank.
29		ISTARTSG	If a remote office, enter `IM'. If a host office, leave blank.
30		OVLP	If a remote office, enter `Y'. If a host office, leave blank.
31		PSPDSEIZ	If a remote office, examine the marked tuples of step 22. Enter the same value given in one of the tuples for field PSPDSEIZ. If a host office, leave blank.
32		PARTDIAL	If a remote office, examine the marked tuples of step 22. Enter the same value given in one of the tuples for field PARTDIAL. If a host office, leave blank.

Procedure: Adding an OC Voice Link Group (continued)

Adding a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
33		OPULSTYP	If a host office, enter `NP'. If a remote office, leave blank.
34		OSTARTSG	If a host office, enter `IM'. If a remote office, leave blank.
35		IDGTIME	If a host office, enter `0'. If a remote office, leave blank.
36		NUMSTOPS	If a host office, enter `0'. If a remote office, leave blank.
37		CCONT	Enter `NO'.
38		RNGBCK	Enter `NO'.
39		ESUPR	Examine the marked tuples of step 22. Enter the same value given in one of the tuples for field ESUPR.
40		SAT	Enter `N'.
41		REMBSY	If a host office, enter `N'. If a remote office, enter `Y'.
42		DIALMODE	If a host office, leave blank. If a remote office, examine the marked tuples of step 22. Enter the same value given in one of the tuples for field DIALMODE.
43		TRKGRDTM	Examine the marked tuples of step 22. Enter the same value given in one of the tuples for field TRKGRDTM. Following is example datafill for remote and host offices.

MAP display example for table TRKSGRP (remote office)

SGRPKEY	CARCODE	SGRPVAR
HOSTVLIC	0 DS1SIG STD C DP DD N 10 10 NO NO N N Y M UNEQ	

Procedure: Adding an OC Voice Link Group (continued)

MAP display example for table TRKSGRP (host Office)

SGRPKEY	CARCODE	SGRPVAR
REMVLOG	0 DS1SIG STD OG DP DD	0 0 NO NO N N Y 70 UNEQ

Adding a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
44	TRKMEM		Enter Table TRKMEM and list all tuples at the printer. Mark all tuples with field CLLI equal to the values marked in step 1. These are existing voice link groups. Examine the values of field PMTYPE. These values should all be the same, either DCM or DTC. (Values of the other fields in the marked tuples will be used in later steps.)
45	DCMINV		Enter Table DCMINV and list all tuples at the printer. In the listing, mark all tuples with field DCMTYPE = DCM.
46		DCMTYPE	Enter `DCM'.
47		DCMNO	Examine field DCMNO of the marked tuples from step 45. Enter the next unused value. (Each data link group must be assigned a unique DCMNO. Up to three data link groups can be assigned per switch.)
48		FRTYPE	Enter `DCE'.
49		FRNO	Supplied by your supervisor.
50		SHPOS	Supplied by your supervisor.
51		FLOOR	Supplied by your supervisor.
52		ROW	Supplied by your supervisor.
53		FRPOS	Supplied by your supervisor.
54		EQPEC	Examine field EQPEC of the marked tuples from step 45. Enter the same value. This value will be either `2X313AC' or `2X313AJ'.
55		LOAD	Examine field LOAD of the marked tuples from step 45. Enter the same value.
56		LKDATA	Examine field LKDATA of the marked tuples from step 45. Enter the same values.

Procedure: Adding an OC Voice Link Group (continued)

Adding a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
57		EXECS	Enter `DCMEX'.
58		USER	Enter `OCDL'.
59		VARINFO	Examine field VARINFO of the marked tuples from step 45. Enter the same values. Following is example datafill for a host and remote office.

MAP display example for table DCMINV

```

DCMNM  FRTYPE FRNO  SHPOS FLOOR ROW  FRPOS      EQPEC          LOAD
LKDATA
VARINFO
-----
DCM  0  DCE    0    18    6  B   20      2X31AC        RDCMHA02
( 1 0) ( 0 27) ( 0 42) ( 1 26)$      DCMEX  OCDL
DCM ( 0 DEFAULT N) (1 DEFAULT N)(2 DEFAULT N)(3 DEFAULT N)(4 DEFAULT N)

DCM  1  DCE    0    32    6  B   20      2X31AC        RDCMHA02
( 1 18) ( 0 38) ( 0 17) ( 1 44)$      DCMEX  OCDL
DCM ( 0 DEFAULT N) (1 DEFAULT N)(2 DEFAULT N)(3 DEFAULT N)(4 DEFAULT N)
    
```

Adding a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
60	TRKMEM	CLLI	Enter the new CLLI name from step 1.
61		EXTRKNM	Examine all of the values of field EXTRKNM in the marked tuples of step 44. Enter the next unused value.
62		SGRP	Examine the values of field SGRP in the marked tuples of step 44. Then, note a pattern to these values and preserve this pattern when entering a value for this field. The range is 0-1.
63		PMTYPE	Enter the value determined in step 44. It should be either DCM or DTC. Perform steps 64-66 only if PMTYPE = DCM in step 63.

Procedure: Adding an OC Voice Link Group (continued)

Adding a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
64		DCMNO	Examine all values of fields DCMNO and DCMCKTNO in the marked tuples of step 44. If DCMCKTNO is the maximum (4), enter the next unused value of field DCMNO in field DCMNO. Otherwise, enter the largest used value. The range is 0-511.
65		DCMCKTNO	Examine all values of fields DCMCKTNO and DCMCKTTS in the marked tuples of step 44. If DCMCKTTS is the maximum (24), enter the next unused value of field DCMCKTNO in field DCMCKTNO. Otherwise, enter the largest used value. The range is 0-4. Number 0 cannot be used. This number is reserved for data links.
66		DCMCKTTS	Examine all values of field DCMCKTTS in the marked tuples of step 44. Enter the next unused value. The range is 1-24. Number 1 cannot be used. This number is reserved for data links. Perform steps 67-69 only if PMTYPE = DTC in step 63.
67		DTCNO	Examine all values of fields DTCNO and DTCKTNO in the marked tuples of step 44. If DTCKTNO is the maximum (4), enter the next unused value of field DTCNO in field DCMNO. Otherwise, enter the largest used value. The range is 0-511.
68		DTCKTNO	Examine all values of fields DTCKTNO and DTCKTTS in the marked tuples of step 44. If DTCKTTS is the maximum (24), enter the next unused number of field DTCKTNO in field DCMCKTNO. Otherwise, enter the largest used value. The range is 0-4.
69		DTCKTTS	Examine all values of field DTCKTTS in the marked tuples of step 44. Enter the next unused value. The range is 1-24. Following is example datafill fo remote and host offices.

MAP display example for table TRKMEM (remote office)

CLLI	EXTRKNM	SGRP	MEMVAR
HOSTVLIC	3701	0	DCM 0 0 21
HOSTVLIC	3702	0	DCM 0 0 22
HOSTVLIC	3703	0	DCM 0 0 23

Procedure: Adding an OC Voice Link Group (continued)

MAP display example for table TRKMEM (host office)

CLLI	EXTRKNM	SGRP	MEMVAR
REMVLOG	3701	0	DCM 0 0 21
REMVLOG	3702	0	DCM 0 0 22
REMVLOG	3703	0	DCM 0 0 23

Adding a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
70	OCGRP		Enter Table OCGRP and list all tuples at the printer. Mark all tuples with field VLGRP equal to the CLLI values marked in step 1. These are existing voice link groups.
71		OFFICE	Examine the value of field OFFICE in the marked tuples of step 70. Enter the same value.
72		OFCTYPE	If a remote office, enter `HOST`. If a host office, enter `REMOTE`.
73		VLGRP	Enter the new CLLI name from step 1.
74		DLSEL	Enter `HDLC`.
75		DLGRP	Examine the value of field DLGRP in the marked tuples of step 70. Enter the same value.
76		BCSLEVEL	Examine the value of field BCSLEVEL in the marked tuples of step 70. Enter the same value. Following is example datafill for remote and host offices.

MAP display example for table OCGRP (remote office)

OFFICE	OFCTYPE	VLGRP	DLSEL	DLGRP	BCSLEVEL
HSTOFFICE	HOST	HSTVLI	HDLC	HSTDL	34

Procedure: Adding an OC Voice Link Group (end)

MAP display example for table OCGRP (host office)

OFFICE	OFCTYPE	VLGRP	DLSEL	DLGRP	BCSLEVEL
REMOTEOFFICE	REMOTE	REMVLOG	HDLC	REMDL	34

Adding a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
77	VLMEM		Enter Table VLMEM and list all tuples at the printer. Mark all tuples with field VLGRP equal to the CLLI values marked in step 1. These are existing voice link groups.
78		OFCNAME	Examine the value of field OFCNAME in the marked tuples of step 77. Enter the same value.
79		OFCINDEX	Examine the value of field OFCINDEX in all tuples of step 77. Enter the next unused value.
80		VLGRP	Examine the value of field VLGRP in the marked tuples of step 77. Enter the same value.
81		VLEXTRK	Enter the same value entered in step 61 (field EXTRKNM in Table TRKMEM). Following is example datafill for remote and host offices.

MAP display example for table VLMEM (remote office)

OFCNAME	OFCINDEX	VLGRP	VLEXTRK
HOSTOFFICE	0	HOSTVLIC	3701
HOSTOFFICE	1	HOSTVLIC	3702
HOSTOFFICE	2	HOSTVLIC	3703

MAP display example for table VLMEM (host office)

OFCNAME	OFCINDEX	VLGRP	VLEXTRK
REMOTEOFFICE 0	0	REMVLOG	3701
REMOTEOFFICE 1	1	REMVLOG	3702
REMOTEOFFICE 2	2	REMVLOG	3703

Procedure: Adding an OC Voice Link Member

Adding a TOPS voice link member between a host and remote office

STEP	Table	Field	Explanation and Action
1	CLLI		<p>Enter Table CLLI to determine the name (CLLI) of the voice link group. Start by listing all tuples at the display or printer, whatever is more convenient. Then examine field ADMININF for a description that indicates a voice link. The value in field CLLI is then used in field CLLI of Table TRKMEM and field VLGRP of Table VLMEM.</p> <p>Following is example datafill for remote and host offices.</p>

MAP display example for table CLLI (remote office)

CLLI	ADNUM	TRKGRSIZ	ADMININF
HOSTVLIC	87	64	HOST_VOICE_LINK_INCOMING

Procedure: Adding an OC Voice Link Member (continued)

MAP display example for table CLLI (host office)

CLLI	ADNUM	TRKGRSIZ	ADMININF
REMVLOG	71	64	REMOTE_VOICE_LINK_OUTGOING

Adding a TOPS voice link member between a host and remote office

STEP	Table	Field	Explanation and Action
2	TRKMEM		<p>Enter Table TRKMEM and list all tuples at the printer. Mark all tuples with field CLLI equal to the values marked in step 1. These are existing voice link groups. Examine the values of field PMTYPE. These values should all be the same, either DCM or DTC. (Values of the other fields in the marked tuples will be used in later steps.)</p> <p>If PMTYPE = DCM, examine all values of fields DCMNO and DCMCKTNO in the marked tuples of step 2. Check for available time slots on the DCMs. This is done by examining fields DCMCKTNO (range is 0-4, 0 is reserved for data links) and DCMCKTTS (range is 1-24, 1 is reserved for data links). If all values in these ranges are used, then a new DCM tuple must be datafilled. Otherwise, skip steps 3-17.</p> <p>Following is example datafill.</p>

MAP display example for table TRKMEM

CLLI	EXTRKNM	SGRP	MEMVAR
HOSTVLIC	3701	0	DCM 0 0 21
HOSTVLIC	3702	0	DCM 0 0 22
HOSTVLIC	3703	0	DCM 0 0 23

Adding a TOPS voice link member between a host and remote office

STEP	Table	Field	Explanation and Action
2 (cont)			Perform steps 3-17 only if step 2 determined that a new DCM tuple must be datafilled.
3	DCMINV		Enter Table DCMINV and list all tuples at the printer. In the listing, mark all tuples with field DCMTYPE = DCM.
4		DCMTYPE	Enter `DCM`.

Procedure: Adding an OC Voice Link Member (continued)

Adding a TOPS voice link member between a host and remote office

STEP	Table	Field	Explanation and Action
5		DCMNO	Examine field DCMNO of the marked tuples from step 3. Enter the next unused value. (Each data link group must be assigned a unique DCMNO. Up to three data link groups can be assigned per switch.)
6		FRTYPE	Enter `DCE`.
7		FRNO	Supplied by your supervisor.
8		SHPOS	Supplied by your supervisor.
9		FLOOR	Supplied by your supervisor.
10		ROW	Supplied by your supervisor.
11		FRPOS	Supplied by your supervisor.
12		EQPEC	Examine field EQPEC of the marked tuples from step 3. Enter the same value. This value will be either `2X313AC` or `2X313AJ`.
13		LOAD	Examine field LOAD of the marked tuples from step 3. Enter the same value.
14		LKDATA	Examine field LKDATA of the marked tuples from step 3. Enter the same values.
15		EXECS	Enter `DCMEX`.
16		USER	Enter `OCDL`.
17		VARINFO	Examine field VARINFO of the marked tuples from step 3. Enter the same values. Following is example datafill for host and remote offices.

MAP display example for table DCMINV

DCMNM	FRTYPE	FRNO	SHPOS	FLOOR	ROW	FRPOS	EQPE	LOAD	
LKDATA							EXECS	USER	
VARINFO									
DCM 0	DCE	0	18	6	B	20	2X31AC	RDCMHA02	
(1 0)	(0 27)	(0 42)	(1 26)				DCMEX	OCDL	
DCM (0	DEFAULT N)	(1	DEFAULT N)	(2	DEFAULT N)	(3	DEFAULT N)	(4	DEFAULT N)
DCM 1	DCE	0	32	6	B	20	2X31AC	RDCMHA02	

Procedure: Adding an OC Voice Link Member (continued)

Adding a TOPS voice link member between a host and remote office

STEP	Table	Field	Explanation and Action
18	TRKMEM	CLLI	Enter the CLLI name determined in step 1.
19		EXTRKNM	Examine all of the values of field EXTRKNM in the marked tuples of step 2. Enter the next unused value.
20		SGRP	Examine the values of field SGRP in the marked tuples of step 2. Then, note a pattern to these values and preserve this pattern when entering a value for this field. The range is 0-1.
21		PMTYPE	Examine the values of field PMTYPE in the marked tuples of step 2. These values should all be the same. Enter the same value. It should be either DCM or DTC. Perform steps 22-24 only if PMTYPE = DCM in step 21.
22		DCMNO	Examine all values of fields DCMNO and DCMCKTNO in the marked tuples of step 2. If DCMCKTNO is the maximum (4), enter the next unused value of field DCMNO in field DCMNO. Otherwise, enter the largest used value. The range is 0-511.
23		DCMCKTNO	Examine all values of fields DCMCKTNO and DCMCKTTS in the marked tuples of step 2. If DCMCKTTS is the maximum (24), enter the next unused value of field DCMCKTNO in field DCMCKTNO. Otherwise, enter the largest used value. The range is 0-4. Number 0 cannot be used. This number is reserved for data links.
24		DCMCKTTS	Examine all values of field DCMCKTTS in the marked tuples of step 2. Enter the next unused value. The range is 1-24. Number 1 cannot be used. This number is reserved for data links. Perform steps 25-27 only if PMTYPE = DTC in step 21.
25		DTCNO	Examine all values of fields DTCNO and DTCCKTNO in the marked tuples of step 2. If DTCCKTNO is the maximum (4), enter the next unused value of field DTCNO in field DCMNO. Otherwise, enter the largest used value. The range is 0-511.

Procedure: Adding an OC Voice Link Member (continued)

Adding a TOPS voice link member between a host and remote office

STEP	Table	Field	Explanation and Action
26		DTCKTNO	Examine all values of fields DTCKTNO and DTCKTTS in the marked tuples of step 2. If DTCKTTS is the maximum (24), enter the next unused number of field DTCKTNO in field DCMCKTNO. Otherwise, enter the largest used value. The range is 0-4.
27		DTCKTTS	Examine all values of field DTCKTTS in the marked tuples of step 2. Enter the next unused value. The range is 1-24. Following is example datafill for remote and host offices.

MAP display example for table TRKMEM (remote office)

CLLI	EXTRKNM	SGRP	MEMVAR
HOSTVLIC	3701	0	DCM 0 0 21
HOSTVLIC	3702	0	DCM 0 0 22
HOSTVLIC	3703	0	DCM 0 0 23

MAP display example for table TRKMEM (host office)

CLLI	EXTRKNM	SGRP	MEMVAR
REMVLOG	3701	0	DCM 0 0 21
REMVLOG	3702	0	DCM 0 0 22
REMVLOG	3703	0	DCM 0 0 23

Adding a TOPS voice link member between a host and remote office

STEP	Table	Field	Explanation and Action
28	VLMEM		Enter Table VLMEM and list all tuples at the printer. Mark all tuples with field VLGRP equal to the value determined in step 1 (CLLI name).
29		OFCNAME	Examine the value of field OFCNAME in the marked tuples of step 28. Enter the same value.
30		OFCINDEX	Examine the value of field OFCINDEX in all tuples of step 28. Enter the next unused value.

Procedure: Adding an OC Voice Link Member (end)

Adding a TOPS voice link member between a host and remote office

STEP	Table	Field	Explanation and Action
31		VLGRP	Examine the value of field VLGRP in the marked tuples of step 28. Enter the same value.
32		VLEXTRK	Enter the same value entered in step 19 (field EXTRKNM in Table TRKMEM). Following is example datafill for remote and host offices.

MAP display example for table VLMEM (remote office)

OFCNAME	OFCINDEX	VLGRP	VLEXTRK
HOSTOFFICE	0	HOSTVLIC	3701
HOSTOFFICE	1	HOSTVLIC	3702
HOSTOFFICE	2	HOSTVLIC	3703

MAP display example for table VLMEM (host office)

OFCNAME	OFCINDEX	VLGRP	VLEXTRK
REMOTEOFFICE 0	0	REMVLOG	3701
REMOTEOFFICE 1	1	REMVLOG	3702
REMOTEOFFICE 2	2	REMVLOG	3703

Procedure: Deleting an MPX Position

Deleting an MPX position

Following are the datafill procedures to remove a TOPS MPX position.

Deleting a TOPS MPX position

Table	Field	Explanation and Action
TOPSPOS	POSNO	Determine the position number by examining a label on the front, lower left-hand corner of the monitor. Position on this tuple (field POSNO is the key field) and delete the tuple.

Procedure: Deleting an OC Data Link Group

Deleting an OC data link group

Deleting a TOPS OC data link group between a host and remote office

Step	Table	Field	Explanation and Action
1			Ask your supervisor for the CLLI name to be deleted.
2	OCGRP		Enter table OCGRP and list all tuples at the printer. Mark all tuples with field DLGRP equal to the CLLI value from step 1. Delete these tuples. Following is example datafill for remote and host offices.

MAP display example for table OCGRP (remote office)

OFFICE	OFCTYPE	VLGRP	DLSEL	DLGRP	BCSLEVEL
HOSTOFFICE	HOST	HOSTVLIC	HDLC	HOSTDL	34

MAP display example for table OCGRP (host office)

OFFICE	OFCTYPE	VLGRP	DLSEL	DLGRP	BCSLEVEL
REMOTEOFFICE	REMOTE	REMVLOG	HDLC	REMDL	34

Deleting a TOPS data link group between a host and remote office

Step	Table	Field	Explanation and Action
3	TOPSHDLC		Enter table TOPSHDLC and list all tuples at the printer. Mark all tuples with field DLGRP equal to the CLLI value from step 1. Delete these tuples. Following is example datafill for remote and host offices.

MAP display example for table TOPSHDLC (remote office)

DLGRP	EXTRKMN	PMTYPE	DCMNO	DCMCKTNO	DCMCKTTS
HOSTDL	1	DCM	0	0	1
HOSTDL	2	DCM	1	0	1

Procedure: Deleting an OC Data Link Group (continued)

MAP display example for table TOPSHDLC (host office)

DLGRP	EXTRKNM	PMTYPE	DCMNO	DCMCKTNO	DCMCKTTS
REMDL	1	DCM	0	0	1
REMDL	2	DCM	1	0	1

Deleting a TOPS data link group between a host and remote office

Step	Table	Field	Explanation and Action
4	DCMINV		Enter table DCMINV and list all tuples at the printer. In the listing, mark all tuples with field DCMTYPE = DCM and field DCMNO equal to field DCMNO in the marked tuples of step 3 (table TOPSHDLC). Delete these DCM number tuples in table DCMINV. Following is example datafill for a host and remote office.

MAP display example for table DCMINV

```

DCMNM  FRTYPE FRNO  SHPOS FLOOR ROW  FRPOS      EQPEC          LOAD
LKDATA                                EXEC5        USER
VARINFO
-----
DCM  0  DCE    0    18    6  B   20      2X31AC          RDCMHA02
( 1  0) ( 0 27) ( 0 42) ( 1 26)$          DCMEX   OCDL
DCM ( 0 DEFAULT N) (1 DEFAULT N)(2 DEFAULT N)(3 DEFAULT N)(4 DEFAULT N)

DCM  1  DCE    0    32    6  B   20      2X31AC          RDCMHA02
( 1 18) ( 0 38) ( 0 17) ( 1 44)$          DCMEX   OCDL
DCM ( 0 DEFAULT N) (1 DEFAULT N)(2 DEFAULT N)(3 DEFAULT N)(4 DEFAULT N)
    
```

Deleting a TOPS data link group between a host and remote office

Step	Table	Field	Explanation and Action
5	CLLI		Position on the CLLI name from step 1 and delete this tuple. Following is example datafill for remote and host offices.

MAP display example for table CLLI (remote office)

CLLI	ADNUM	TRKGRSIZ	ADMININF
HOSTDL	87	32	HOST_DATA_LINK

Procedure: Deleting an OC Data Link Group (end)

MAP display example for table CLLI (host office)

CLLI	ADNUM	TRKGRSIZ	ADMININF
REMDL	71	32	REMOTE_DATA_LINK

Procedure: Deleting an OC Data Link Member

Deleting an OC data link member

Deleting a TOPS OC data link member between a host and remote office

Step	Table	Field	Explanation and Action
1			Your supervisor should provide the DCM number to be deleted.
2	TOPSHDLC		List at the monitor or print (whichever is more convenient) all tuples and check field DCMNO for the DCM number to be deleted (from step 1). Position on this tuple and delete it. The following is example datafill for remote and host offices.

MAP display example for table TOPSHDLC (remote office)

DLGRP	EXTRKNM	PMTYPE	DCMNO	DCMCKTNO	DCMCKTTS
HOSTDL	1	DCM	0	0	1
HOSTDL	2	DCM	1	0	1

MAP display example for table TOPSHDLC (host office)

DLGRP	EXTRKNM	PMTYPE	DCMNO	DCMCKTNO	DCMCKTTS
DL	1	DCM	0	0	1
DL	2	DCM	1	0	1

Deleting a TOPS OC data link member between a host and remote office

STEP	Table	Field	Explanation and Action
3	DCMINV		Use the DCMNO from step 1 to position on a tuple and delete it. Following is example datafill for a host and remote office.

Procedure: Deleting an OC Data Link Member (end)

MAP display example for table DCMINV

DCMNM	FRTYPE	FRNO	SHPOS	FLOOR	ROW	FRPOS	EQPEC	LOAD
LKDATA							EXECS	USER
VARINFO								
DCM 0	DCE	0	18	6	B	20	2X31AC	RDCMHA02
(1 0)	(0 27)	(0 42)	(1 26)	\$			DCMEX	OCDL
DCM (0 DEFAULT N) (1 DEFAULT N)(2 DEFAULT N)(3 DEFAULT N)(4 DEFAULT N)								
DCM 1	DCE	0	32	6	B	20	2X31AC	RDCMHA02
(1 18)	(0 38)	(0 17)	(1 44)	\$			DCMEX	OCDL
DCM (0 DEFAULT N) (1 DEFAULT N)(2 DEFAULT N)(3 DEFAULT N)(4 DEFAULT N)								

Procedure: Deleting an OC Voice Link Group

Deleting a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
1			Ask your supervisor for the CLLI name to be deleted.
2	OCGRP		Enter Table OCGRP and list all tuples, looking for the tuple with field VLGRP equal to the CLLI value of step 1. Delete this tuple. Following is example datafill for remote and host offices.

MAP display example for table OCGRP (remote office)

OFFICE	OFCTYPE	VLGRP	DLSEL	DLGRP	BCSLEVEL
HSTOFFICE	HOST	HSTVLIC	HDLC	HSTDL	34

MAP display example for table OCGRP (host office)

OFFICE	OFCTYPE	VLGRP	DLSEL	DLGRP	BCSLEVEL
RMTEOFFICE	REMOTE	RMVLOG	HDLC	RMDDL	34

Deleting a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
3	VLMEM		Enter Table VLMEM and list all tuples at the printer. Mark all tuples with field VLGRP equal to the CLLI value from step 1. Delete these tuples. Following is example datafill for remote and host offices.

Procedure: Deleting an OC Voice Link Group (continued)

MAP display example for table VLMEM (remote office)

OFCNAME	OFCINDEX	VLGRP	VLEXTRK
HOSTOFFICE	0	HOSTVLIC	3701
HOSTOFFICE	1	HOSTVLIC	3702
HOSTOFFICE	2	HOSTVLIC	3703

MAP display example for table VLMEM (host office)

OFCNAME	OFCINDEX	VLGRP	VLEXTRK
REMOTEOFFICE 0	0	REMVLOG	3701
REMOTEOFFICE 1	1	REMVLOG	3702
REMOTEOFFICE 2	2	REMVLOG	3703

Deleting a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
4	TRKMEM		<p>Enter Table TRKMEM and list all tuples at the printer. Mark all tuples with field CLLI equal to the value from step 1. Also, note the value of field PMTYPE. If DCM, note the value of the next field, DCMNO. This information will be used later on. Then, delete these tuples.</p> <p>Following is example datafill for remote and host offices.</p>

MAP display example for table TRKMEM (remote office)

CLLI	EXTRKNM	SGRP	MEMVAR
HOSTVLIC	3701	0	DCM 0 0 21
HOSTVLIC	3702	0	DCM 0 0 22
HOSTVLIC	3703	0	DCM 0 0 23

Procedure: Deleting an OC Voice Link Group (continued)

MAP display example for table TRKMEM (host office)

CLLI	EXTRKNM	SGRP	MEMVAR
REMVLOG	3701	0	DCM 0 0 21
REMVLOG	3702	0	DCM 0 0 22
REMVLOG	3703	0	DCM 0 0 23

Deleting a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
4 (cont)			Perform step 5 only if PMTYPE = DCM in step 4.
5	DCMINV		Enter Table DCMINV and position on the tuple with the DCMNO determined in step 4. Delete this tuple. Following is example datafill for a host and remote office.

MAP display example for table DCMINV

DCMNM	FRTYPE	FRNO	SHPOS	FLOOR	ROW	FRPOS	EQPEC	LOAD	LKDATA	EXEC	USER				
DCM	0	DCE	0	18	6	B 20	2X31AC								
RDCMHA02	(1 0)	(0 27)	(0 42)	(1 26)			DCMEX				OCDL				
DCM	(0	DEFAULT	N)	(1	DEFAULT	N)	(2	DEFAULT	N)	(3	DEFAULT	N)	(4	DEFAULT	N)
DCM	1	DCE	0	32	6	B 20	2X31AC								
RDCMHA02	(1 18)	(0 38)	(0 17)	(1 44)			DCMEX				OCDL				
DCM	(0	DEFAULT	N)	(1	DEFAULT	N)	(2	DEFAULT	N)	(3	DEFAULT	N)	(4	DEFAULT	N)

Deleting a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
6	TRKSGRP		Enter Table TRKSGRP and list all tuples, looking for the tuple with field CLLI equal to the value from step 1. Delete this tuple. Following is example datafill for remote and host offices.

Procedure: Deleting an OC Voice Link Group (continued)

MAP display example for table TRKSGRP (remote office)

SGRPKEY	CARCODE	SGRPVAR
HOSTVLIC	0 DS1SIG STD IC DP IM	Y 10 10 NO NO N N Y M

MAP display example for table TRKSGRP (host office)

SGRPKEY	CARCODE	SGRPVAR
REMVLOG	0 DS1SIG STD OG NP IM	0 0 NO NO N N Y 70

Deleting a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
7	TRKGRP		Enter Table TRKGRP and list all tuples, looking for the tuple with field CLLI equal to the value from step 1. Delete this tuple. Following is example datafill for remote and host offices.

MAP display example for table TRKGRP (remote office)

GRPKEY	GRPINFO
HOSTVLIC	IT 99 EML6 NCRT IC IA MIDL 316 NPRT NSCR 316 000 N N \$

MAP display example for table TRKGRP (host office)

GRPKEY	GRPINFO
REMVLOG	IT 99 EML6 NCTC OG IA MIDL 316 NPRT NSCR 316 000 N N \$

Deleting a TOPS voice link group between a host and remote office

STEP	Table	Field	Explanation and Action
8	CLLI	CLLI	Enter Table CLLI and list all tuples, looking for the tuple with field CLLI equal to the value from step 1. Delete this tuple. Following is example datafill for remote and host offices.

Procedure: Deleting an OC Voice Link Group (end)

MAP display example for table CLLI (remote office)

CLLI	ADNUM	TRKGRSIZ	ADMININF
HOSTDL	87	64	HOST_VOICE_LINK_INCOMING

MAP display example for table CLLI (host office)

CLLI	ADNUM	TRKGRSIZ	ADMININF
REMVLOG	71	64	REMOTE_VOICE_LINK_OUTGOING

Procedure: Deleting an OC Voice Member

Following are the datafill procedures to remove a voice link member between a host and remote office. This procedure is applicable to a host and remote office.

Deleting a TOPS voice link member between a host and remote office

STEP	Table	Field	Explanation and Action
1	CLLI		Enter Table CLLI to determine the name (CLLI) of the voice link group. Start by listing all tuples at the display or printer, whatever is more convenient. Then examine field ADMININF for a description that indicates a voice link. The value in field CLLI is then used in field CLLI of Table TRKMEM and field VLGRP of Table VLMEM. Following is example datafill for host and remote offices.

MAP display example for table CLLI (host office)

CLLI	ADNUM	TRKGRSIZ	ADMININF
REMDL	87	64	HOST VOICE LINK INCOMING

MAP display example for table CLLI (remote office)

CLLI	ADNUM	TRKGRSIZ	ADMININF
REMDL	71	64	REMOTE VOICE LINK OUTGOING

Deleting a TOPS voice link member between a host and remote office

STEP	Table	Field	Explanation and Action
2	VLMEM		<p>From your supervisor, acquire the EXTRKNM (external trunk name) of the link to be deleted.</p> <p>Enter Table VLMEM and list all tuples at the terminal. Note the tuple with field VLEXTRK equal to EXTRKNM provided by your supervisor. Delete this tuple.</p> <p>Following is example datafill for host and remote offices.</p>

Procedure: Deleting an OC Voice Member (end)

MAP display example for table VLMEM (remote office)

OFCNAME	OFCINDEX	VLGRP	VLEXTRK
HOSTOFFICE	0	HOSTVLIC	3701
HOSTOFFICE	1	HOSTVLIC	3702
HOSTOFFICE	2	HOSTVLIC	3703

MAP display example for table VLMEM (host office)

OFCNAME	OFCINDEX	VLGRP	VLEXTRK
REMOTEOFFICE 0	0	REMVLOG	3701
REMOTEOFFICE 1	1	REMVLOG	3702
REMOTEOFFICE 2	2	REMVLOG	3703

Deleting a TOPS voice link member between a host and remote office

STEP	Table	Field	Explanation and Action
3	TRKMEM		Enter Table TRKMEM and position on the CLLI name from step 1 and the EXTRKNM from step 2. Delete this tuple. Following is example datafill for host and remote offices.

MAP display example for table TRKMEM (remote office)

CLLI	EXTRKNM	SGRP	MEMVAR
HOSTVLIC	3701	0	DCM 0 0 21
HOSTVLIC	3702	0	DCM 0 0 22
HOSTVLIC	3703	0	DCM 0 0 23

MAP display example for table TRKMEM (host office)

CLLI	EXTRKNM	SGRP	MEMVAR
REMVLOG	3701	0	DCM 0 0 21
REMVLOG	3702	0	DCM 0 0 22
REMVLOG	3703	0	DCM 0 0 23

Reference: ANI to ISUP Conversion

Ordering codes

Functional group ordering code: not applicable

Functionality ordering code: not applicable

Release applicability

BCS33 and up

Prerequisites

To operate, Reference: ANI to ISUP Conversion has the following prerequisites:

- BAS Generic, BAS00003
- SS7 Trunk Signaling, SS700001
- TEL CCS7 Base, TEL00008

Description

This functionality is provided by the following features:

Feature number	Feature name
NC0303	ANI to ISUP Conversion

Note: This functionality is for a DMS-200 Toll Office. However, this functionality contains recommended datafill for a TOPS Toll Office connected over a TOPS trunk group.

This functionality (formerly package NTPX86AA, ANI to ISUP Conversion) converts ANI digits received over MF CAMA trunks at a Toll Office switch into the Calling Party Number parameter of an outgoing CCS7 Initial Address Message (IAM). Both 800 Plus calls including 800 Plus Southbound calls and non-800 Plus toll calls are supported. This capability provides Calling Line ID (CLID) information.

Also, this functionality allows blocking of the DN to prevent its display to the called party.

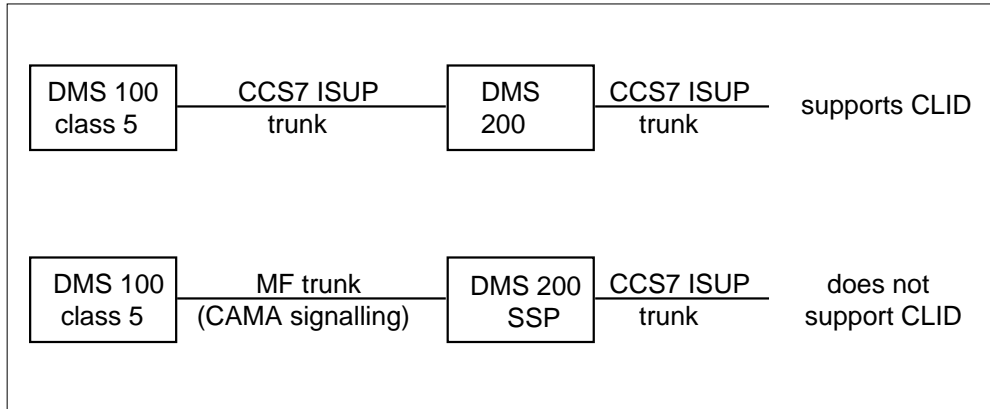
Operation

CCS7 ISUP trunks between a Toll office and a DMS-100 class 5 office provide CLID. However many DMS-100 class 5 offices are connected to SSP Toll offices over MF trunks using CAMA signalling. The MF trunk provides ANI

Reference: ANI to ISUP Conversion (continued)

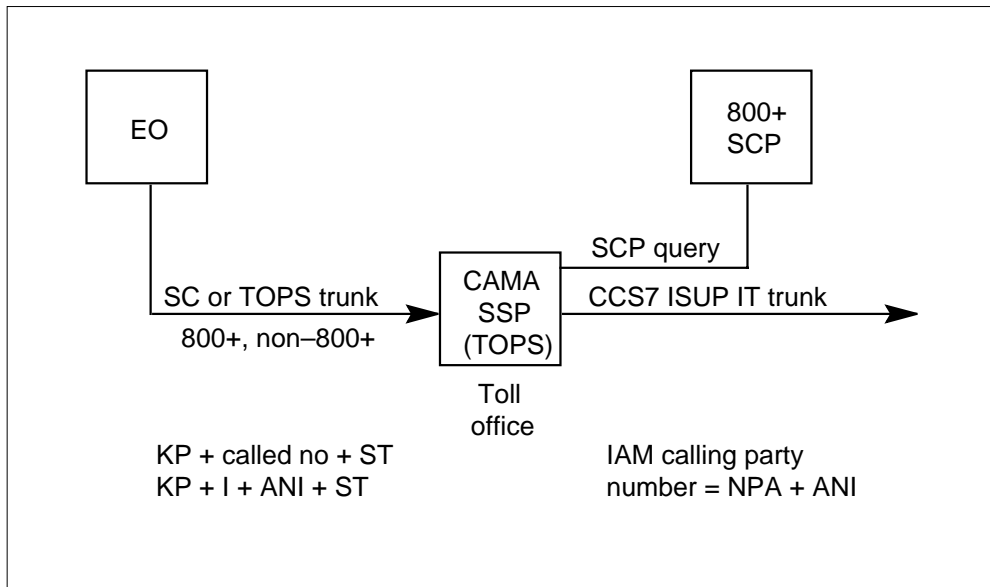
spill for billing. In this case, CLID is not supported. The following figure shows these two network configurations.

Network configurations



This package can be used to provide CLID for the second case. The following figure shows the network configuration in greater detail supported by this package.

MF CAMA to calling party number conversion



As shown in the figure above, two MF trunk group types supporting CAMA signalling can be used between the EO and DMS-200 Toll Office switch: SuperCAMA (SC) and TOPS. TOPS trunks are used when connecting to a

Reference: ANI to ISUP Conversion (continued)

TOPS Toll Office switch and can carry strictly OA traffic or combined DD and OA traffic. SC trunks are used when connecting to a non-TOPS Toll Office to carry combined OA and DD traffic but may also be used when connecting to a TOPS Toll Office to carry strictly DD traffic. Both the SC and TOPS trunk group types are supported by this feature.

Converting ANI digits into the Calling Party Number (CPN) is only supported when terminating to CCS7 ISUP Intertoll (IT) trunk group types. Other CCS7 ISUP trunk group types are not supported.

The first digit stream received using CAMA signalling consists of the called number. For 800 Plus call originations the digit sequences 800+7 digits or 00Y+7 digits can be received as the called number. The 00Y code is a number representing the originating NPA of the EO and is received when the EO resides in a different NPA boundary than the Toll Office switch. On non-800 Plus toll calls, a 7 or 10 digit called number may be received.

The second digit stream received using CAMA signalling consists of an Information digit (I) followed by a 7-digit ANI number (i.e. NXX+XXXX). The 7-digit ANI number is converted into a 10-digit number by prefixing an NPA. The 10-digit number is then included in the address digits field of the CPN parameter.

The 7-digit ANI number is actually a billing number and may or may not be the DN of the line originating the call. This feature does not attempt to distinguish between a billing number and originating line's DN. The 7-digit ANI number received is always interpreted as the originating line's DN and placed in the CPN parameter.

ANI to calling party number conversion

The ANI spill received over the SC and TOPS trunks consists of just 7 digits excluding the NPA. The 7-digit ANI number is converted into a 10-digit number and placed in the CPN parameter. Converting to the 10-digit number requires an NPA be derived and prefixed onto the 7 ANI digits. The NPA is derived as follows:

- 800 Plus calls, 800 Plus Southbound calls:

If the called number received over the SC trunk or TOPS trunk consists of 800+7 digits the NPA is derived from tables BILLCODE and TOPSBC

Reference: ANI to ISUP Conversion (continued)

respectively. The serving NPA is datafilled in these tables on a per trunk group basis.

If the called number received over the SC trunk or TOPS trunk consists of 00Y+7 digits, the NPA is derived from table NSCSNPA. Table NSCSNPA provides a mapping between 00Y codes and SNPA codes.

- Non-800 Plus toll calls:

The NPA is always derived from table BILLCODE and table TOPSBC for call originations over SC and TOPS trunks respectively.

Handling of ONI and ANI failure calls

In the event of ONI or ANI failure no ANI digits are received over the SC or TOPS trunk. If the calltype is an 800 Plus call or a non-800 Plus toll call the ANI information is collected via a TOPS position or CAMA position before a database query is sent. Therefore a 10-digit number can be derived as described above and placed in the IAM Calling Party Number parameter.

If routing to a TOPS position or CAMA position is not performed (i.e. as in the case of CAMA suspension) the ANI information is not available when completing to the CCS7 ISUP trunk. In this case the CPN parameter is not included in the IAM. Absence of the CPN parameter serves as an indication to the terminating office that CLID information is unavailable.

ANIATTRS screening table

New table ANIATTRS is created to list subscribers that choose to have their DN suppressed from display. The CPN parameter indicates blocking of the DN. However the full 10 address digits are still sent.

This table contains only one field, ANIKEY. All ANI digits, in 10-digit format (i.e. NPA+NXX+XXXX) that are to be blocked must be datafilled

Following is example datafill.

MAP display example for table ANIATTRS

ANIKEY
919 843 26 00
919 843 26 50
618 848 17 54

A TOPS Toll Office can provide operator services for OA calls routed from non-TOPS Toll Offices. These calls arrive at the TOPS Toll Office over TOPS type trunk groups. In order to provide screening at the TOPS Toll Office for

Reference: ANI to ISUP Conversion (continued)

these types of OA calls, the ANIATTRS datafill in the originating non-TOPS Toll Office must be duplicated in the TOPS Toll Office. This duplicated datafill is only required in the TOPS Toll Office when parameter SUPPRESS_ANI_TO_CLID_DISPLAY is set to `N`. If it is set to `Y` all calls in the TOPS Toll Office are blocked regardless of the datafill in table ANIATTRS.

SUPPRESS_ANI_TO_CLID_DISPLAY office parameter

New office parameter SUPPRESS_ANI_TO_CLID_DISPLAY is created by this feature to suppress the display of the received ANI digits on a per office basis. Both 800 Plus and non-800 Plus toll call originations are affected by this parameter. This parameter is in table OFCENG and only appears when this package is present.

The default setting of the SUPPRESS_ANI_TO_CLID_DISPLAY parameter is `Y.` When set to `Y` both 800 Plus and non-800 Plus toll call originations are blocked from display at the called party. Even when blocked from display the full 10 address digits are sent.

When this parameter is set to `N` display of ANI for both 800 Plus calls and non-800 Plus toll calls is permitted. A lookup into the ANIATTRS screening table is performed to determine if the ANI should be suppressed from display.

Translations table flow

Table flow does not apply since only one standalone table is datafilled.

Limitations and restrictions

The following limitations and restrictions apply to Reference: ANI to ISUP Conversion:

- This feature does not attempt to distinguish between a billing number and originating line's directory number. The ANI spill received from the EO is always converted into the address digits of the Calling Party Number parameter.
- This feature does not support the Originating Line Information parameter. The OLI parameter is never included in the outgoing IAM.
- This feature only supports SC and TOPS type trunks. For 800 Plus calls, 800 Plus Southbound calls, and non-800 Plus toll calls arriving at a DMS-200 Toll Office over an MF trunk type that does not support CAMA signalling the Calling Party Number parameter is not included in the IAM.
- A TOPS Toll Office can provide operator services for OA calls routed from non-TOPS Toll Offices. These calls arrive at the TOPS Toll Office over TOPS type trunk groups. In order to provide screening at the TOPS Toll

Reference: ANI to ISUP Conversion (continued)

Office for these types of OA calls the ANIATTRS datafill in the originating non-TOPS Toll Office must be duplicated in the TOPS Toll Office. This duplicated datafill is only required in the TOPS Toll Office when parameter SUPPRESS_ANI_TO_CLID_DISPLAY is set to `N.` If it is set to `Y' all calls in the TOPS Toll Office is blocked from display at the called number location regardless of the datafill in table ANIATTRS.

Interactions

Reference: ANI to ISUP Conversion has no functionality interactions.

Activation/deactivation by the end user

The subscriber must choose blocking of DN display to the called party.

Billing

Reference: ANI to ISUP Conversion does not affect billing.

Station Message Detail Recording

Reference: ANI to ISUP Conversion does not affect Station Message Detail Recording.

Datafilling office parameters

The following table shows the office parameters used by Reference: ANI to ISUP Conversion. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by Reference: ANI to ISUP Conversion

Table name	Parameter name	Explanation and action
OFCENG	SUPPRESS_ANI_TO_CLID_DISPLAY	This parameter enables/disables display of the calling number to the called party on an office basis. Set to Y disable display or set to N to enable display. The default is Y. When set to N, table ANIATTRS is checked for blocking on a DN basis.

Reference: ANI to ISUP Conversion (end)

Datafill sequence

The following table lists the tables that require datafill to implement Reference: ANI to ISUP Conversion. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Reference: ANI to ISUP Conversion

Table	Purpose of table
ANIATTRS	Automatic Number Identification Attributes Table. DNs to block display to called party.

Datafilling table ANIATTRS

The following table shows the datafill specific to Reference: ANI to ISUP Conversion for table ANIATTRS. Only those fields that apply directly to Reference: ANI to ISUP Conversion are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table ANIATTRS

Field	Entry	Explanation and action
ANIKEY	10 digits	Enter the subscribers number in 10-digit format (NPA + NXX + XXXX) that requested calling number blocking to the called number party.

Datafill example for table ANIATTRS

The following example shows sample datafill for table ANIATTRS.

MAP display example for table ANIATTRS

ANIKEY
919 843 26 00
919 843 26 50
618 848 17 54

Translation verification tools

Reference: ANI to ISUP Conversion does not use translation verification tools.

SERVORD

Reference: ANI to ISUP Conversion does not use SERVORD.

Reference: DA Guidelines

Datafill Guidelines for Directory Assistance

This section provides datafill guidelines for Directory Assistance.

TOPS MP DA Translations (BCS30)

Datafill requirements specific to MPX DA are being covered in a separate TAB. Translating DA and Intercept in an office with MPX would then require information from both TABs.

This bulletin covers datafill for the following Directory Assistance and Intercept arrangements:

- Documentation
- Increasing The Number Of TOPS Positions
- Increasing The Number Of Operator Login IDs
- Basic Directory Assistance (DA) Tables
- TOPS MP DA Billing Tables
- TPC Datafill Via TAMI
- Combined Trunks Carrying DA Traffic
- Dedicated DA Trunks
- Dedicated Intercept (INTCPT) Trunks
- Office Identification Code (OIC) Trunks
- Inward Directory Assistance Calls

TOPS MP Directory Assistance features were available in BCS28.

DA calls can be recognized as follows:

- By digits dialed (411, 555-1212, NPA-555-1212)
- By the TOPS MP operator keying SERVICES DA followed by START
- By originating over dedicated DA trunks

Intercept calls can be recognized as follows:

- By ANI ID digit(s) on combined trunks
- By originating over dedicated INTCPT trunks

DOCUMENTATION

This bulletin is intended to be used with the existing BNR Design and NTI Product Documentation listed below:

Reference: DA Guidelines (continued)

The following documents are in NTXA62AA.

- AF0739 TOPSMPVR FOLDBACK: ARU & DATALINK
- AF0740 TOPSMPVR FOLDBACK: FORCE MANAGEMENT
- AF0741 TOPSMPVR FOLDBACK: CALL PROCESSING
- AF0742 TOPSMPVR FOLDBACK: ARU CALLP

The following documents are in NTX030CC.

- AF0476 TOPS MP FOLDBACK: DA Queueing
- AF0477 TOPS MP FOLDBACK: Force Management
- AF0478 TOPS MP FOLDBACK: TRUNKING
- AF0479 TOPS MP FOLDBACK: OGT Keys/XFR Keys
- AF1784 TOPS Base Changes (includes TOPS Intercept Service, TOPS Call Queueing, TOPS Assignable Grade of Service)
- BR14147 Specifying DA Billing Options by Restricted Billing Class

BCS28 Documents

The following documents are in BCS28.

- NTXA62AA TOPS MP DA/AUDIO RESPONSE
- NTXA63AA TOPS MP AUDIO RESPONSE INTERFACE I
- NTX724AA TOPS MP INTERFACE

Other related documentation (NTX188AA)

The following are other related documents.

- AF1152 AMA for TOPS MP DA Calls
- AL0420 TOPS Call Code 009 for DA

Increasing the Number of TOPS Positions in an In-service Office

When TOPS positions (TOPS MP, MPX, or TOPS IV) are being added to an inservice switch, the Regional Software Systems Engineer must contact the operating company.

1. In the live BCS N switch, increase the value of field TRKGRSIZ of both pseudo-CLLIs (TOPSPOS and TOPSPOSDATA) in table CLLI (they must be the same size) to the new value. There will be no effect on the live switch. These values are only referred to when the first tuple is added to table TOPSPOS, to allocate the proper amount of datastore.
2. Then, when the BCS upgrade from the BCS N switch to the BCS N' switch is performed, the increased CLLI sizes will be present when the

Reference: DA Guidelines (continued)

first tuple is added to table TOPSPOS in the BCS N' switch, and an increased amount of data store will be allocated so that the larger number of positions may be filled.

Increasing the Number of Operator Login IDS in an In-service Office:

Most offices that are adding TOPS positions will also require an increase of office parameter TOPS_MAX_OPERATOR_NUM in Table OFCENG. This value, supplied by the operating company, must be submitted via PARMMAIL (reference BCS30 Office Parameter Questionnaire, #109, or NT Access Office Parameter Calculator Report).

Table OPRCMPLX is new in BCS30, and maps a DMS-200 operator login ID to IBM DAS complex and unit numbers, and optionally to a DAS operator ID. When BCS30 offices are upgraded to a BCS31 or higher software load, TOPS_MAX_OPERATOR_NUM will also control the range of operator login IDs assigned in table OPRCMPLX.

Basic DA Tables

The following tables are necessary to provide TOPS MP DA and Intercept service. They are the basic tables to be used for DA/INTC traffic, regardless of trunking arrangement.

Table TOPS

Assigns a position type (POSTYPE) and service type (SERVTYP) to each call origination type routing to TOPS. Field POSTYPE: GEN, XFR1, XFR2. DA Field SERVTYP: DASERV, TASERV

The SERVTYP assigned in Table TOPS allows all 4 queues to be used for either TA or DA service. The queue into which a call is directed does not determine the service type. Instead, calls are stamped with their service type (DA or TA) based on call origination type in Table TOPS.

INTCSERV is added as a service type (SERVTYP) in BCS30. NTXE05AA provides the ability to separate DA and Intercept calls and route them to different vendors' systems.

It is recommended that offices that provide both TA and DA service allow only one service type in each queue to allow separate Force Management statistics for each service type.

For TOPS offices going from BCS27 or lower to BCS28 or higher, datatools will set the value of field SERVTYP as follows: If POSTYPE = GEN, XFR1, or XFR2, then SERVTYP = TASERV. If POSTYPE = DA, then SERVTYP = DASERV.

Reference: DA Guidelines (continued)

Field CO:

HOM555 and FOR555 are added to existing COs 411, 555, INTC, and 131 used for DA/Intercept calls.

555 calls must be screened and routed to Table TOPS, either in standard pretranslators or HNPA code and route reference tables. They can be grouped together with CO type 555, or split into HOM555 and FOR555 CO types.

Note: Force Management commands allow QT5 tables to be used exclusively for DA calls, if required. See *TOPS MP Force Management Guide* (AX command).

Table TOPSPOS

Field POSAREA lists the queues that the position is capable of serving: DA, GEN, XFR1, XFR2, and ALL. Table TOPSPOS is changed significantly in BCS30.

Field CNTRLR is expanded to include TMSTPC. Field PMTYPE is expanded to include TMS.

Following is a summary of the rules for upgrading an existing version of Table TOPSPOS at BCS29 or lower to BCS30:

CNTRLR	=	NT4X71
DATAPATH	=	DMODEM
POSTYPE	=	SP
PROTOCOL	=	ASCII
DATA_CIRCUIT	=	the old value of
DATA_CIRCUIT	=	the old value of
DATA_PADGRP	=	the old value of
DATA_PADGRP	=	the old value of
XMISSION	=	BELL108

CNTRLR	=	TPC
DATAPATH	=	DMODEM
POSTYPE	=	MP
PROTOCOL	=	ASCII
DATA_CIRCUIT	=	the old value of
DATA_CIRCUIT	=	the old value of
DATA_PADGRP	=	the old value of
DATA_PADGRP	=	the old value of
XMISSION	=	BELL202

Reference: DA Guidelines (continued)

CNTRLR	=	TMSTPC
DATA PATH	=	TMS
POSTYPE	=	MP
PROTOCOL	=	ASCII
TPCNO	=	the old value of TPCNO
TPCPOSNO	=	the old value of MPNO

Table OPRDAT

Field XFRSET specifies the set of queues the operator is capable of serving: DA, GEN, XFR1, XFR2, ALL.

The intersection of these two fields, POSAREA and XFRSET, determine the TOPS operator's ability to handle calls in a particular queue.

Table OPRDAT should only be input to directly when first adding new operator login IDs on an initial load or data extension. All other modifications to operator profiles should be made via FM commands from the FADS/TADS.

Table SERVICES

Datalink protocol defined. Entries required for each service type to support CCI DAS interface are:

TASERV	
DASERV	CCI MPC1 0000

In BCS30, IBM is added as a valid protocol. However, CCI is the only valid protocol for DA implemented with TOPS MP positions. INTCSEV is added as a service type with NTXE05AA, and the field DATALINK is expanded to include MPC1 and MPC2, to provide separate service capability for DASERV and INTCSEV. In offices upgrading to BCS30, MPC will be set MPC1 during the BCS upgrade.

Field DATALINK = STUB is used primarily in a lab environment when the DA simulator is being used for testing, rather than an actual MPC link. But sometimes STUB is used in configurations that do not have DMS-DAS links.

Field LSDBID, Listing Services Database Identifier, is a four digit code used to identify the Directory Assistance System (DAS) vendor for each DA or Intercept call. The code is stored in the AMA record when EBAF Phase 1 or 2 is being used.

Reference: DA Guidelines (continued)

Table MPCFASTA

INDEX = TOPSVR1 for the DA application assigns MPC circuits to an application. TOPSVR1 represents TOPS voice response.

AUDITFRQ	= 60	or	1
UNITS	= SECONDS		MINUTES
RECOVERY	= REGULAR		

In BCS30, capability is provided for different vendors to handle DA and INTC traffic on the same DMS-200. Application names TOPSVR1 and TOPSVR2 can be used to differentiate MPC links for the two services. When upgrading to BCS30, assign the datafill for TOPSVR to application name TOPSVR1.

Table MPC

This table identifies MPC card to the DMS CC. There is one tuple per MPC and it must be datafilled before Table MPCLINK.

Note: Offices at BCS28: Patch TTW00 is required to change the load file name in Table MPC. Reference Broadcast Notice #1255. No problem in offices at BCS29 or higher.

Table MPCLINK

This table replaced X25LINK in BCS29. It provides protocol support and link information for each MPC card datafilled in Table MPC. MPCLINK stores the name of the MPC download file. Only links 2 and 3 can be used for DA.

PROTOCOL	= X25ORIG
LINKNABL	= 55
CONVNABL	= 55
NUMPVCS	= 1
T25	= 120
CLKSRCE	= EXTERNAL

All other MPCLINK parameters should be left at default.

Table MPCLSET

Table MPCLSET MUST NOT be used for the DA application. Attempts to assign link sets for DA WILL CAUSE PROBLEMS.

All logical links assigned to TOPSVR are eligible for receiving transferred messages when error conditions exist on one of the links. Under normal conditions, messages are distributed among all the links assigned to TOPSVR as evenly as possible.

Reference: DA Guidelines (continued)

Table ARUMEMBR

Associates TOPSARU trunk members with Directory Assistance System (DAS) IDs. DMS informs DAS which circuit has been selected so that DAS can seize the other end and begin playing an announcement.

With BCS29 and above, there are no assignment rules for TOPSARU trunk member numbers. IN BCS28, there was a datafill restriction that TOPSARU trunk members had to be numbered sequentially, starting with 0 (zero).

DASTRKID assignments must be unique across DMS-200s that are using the same DAS Gateway.

Table TRKGRP

GRPTYP = TOPSARU; outgoing trunks to vendor ARUs

Table TRKSGRP

OPULSTYP = NP

Table TRKMEM

TOPSARU member circuits assigned; datafill before Table ARUMEMBR.

Table ARURTE

POOLID must match those assigned in the DAS OFRTIDX; route to TOPSARU trunk group.

POOLIDs have to be unique across DSM-200s served by the same DAS if the DAS dedicates each pool to a particular switch. Otherwise, the pool numbers can be repeated.

Table ARURTE indicates if a call may be connected to an operator after being connected to a specified DAS announcement. This table is required for both DA and Intercept calls.

Table VROPT

AUTO_INT_TIMEOUT must match ARU_REQUEST timeout in the CCI Directory Assistance System (DAS). Data governs the duration of timeouts and number of recalls allowed.

Reference: DA Guidelines (continued)

LOGINOUT_TIMEOUT should be set to 20 to match the CCI DAS datafill.

Although the default for POST_ANN_TIMEOUT is 5, DDOC AF1777 recommends 10 seconds.

Table RTSNT

TVR_NODE is added with NTXA62AA.

Table RTSALGO

TVR_NODE is added with NTXA62AA.

Table TMTCNTL, Position TOPS, Subtable TREAT

Treatment EMR5 is given when a DA call (411, 555, or 131) is deflected. Deflection thresholds are datafilled in the QT tables.

When calls are deflected and given an EMR type treatment, the called digits are NOT retained. The software has removed them in preparation for going to a TOPS position. Therefore, DA calls that are deflected and routed to another office for DA handling cannot be separated based on dialed digits (411 versus 555) on the outgoing trunk.

Treatment EMR6 is given when an Intercept call is deflected.

TOPS MP DA Billing Tables

More detailed information on DA billing is found in DDOC AF1152

Table DATRKOPT

If billing is required for ANY DA calls on the trunk group, Field BILLRQD = Y. Further refinement of billed versus free calls is done in Table DABILL.

If DA calls are not to be billed in the TOPS office, and the calling number is not to be input by the operator, set BILLREQ = N and CLGREQ = N. The dedicated DA trunk group must also have STATCLAS = DA and CLGID = ONI.

Table DATRKOPT must be datafilled in an Intercept-only switch, even though all fields will be set to N.

When Field BILLRQD = N, a no-charge AMA record is still produced (Call Code 035).

DA calls on TOPS, IT, and ATC trunk groups access Table DATRKOPT. DA calls are defined as SERV Typ = DASERV or INTCSERV in Table TOPS. All trunk groups that carry DA traffic (dedicated and combined) must appear in DATRKOPT, even if all options are set to N (NONE).

Reference: DA Guidelines (continued)

Table DABILL

Data only used if Table DATRKOPT Field BILLRQD = Y. The key is a combination of Call Origination (CO) type from Table TOPS and Service Class (SERVCLS), which is defined by the Calling Service Feature (CLGSERV) in Table BELLCAT or OSSCAT for combined trunk groups.

Beginning with BCS29, a restricted billing class number from Table SPLDNID was added as part of the key field DABKEY in Table DABILL.

If Field ENHAMA = N, Call Code 009 is produced for all DA calls on that trunk group, unless the operator hits the NO AMA key. There is no service feature field to indicate DA or Intercept service.

If Field ENHAMA = Y, the call code produced for DA calls on that trunk group is the appropriate one for the class charge. A service field indicates the type of DA or Intercept service.

If an entry is not found in Table DABILL, it is assumed that SERVNAME = TOLLFREE, and CLGREQ and REQRQD = N.

If Field SERVNAME = TOLLFREE, the DA call is not billable.

If Field SERVNAME = other than TOLLFREE, then field CLGREQ must be set to Y, except for INTC call origination (CO) type.

Field REQRQD must be set to Y.

When SERVNAME = other than TOLLFREE, the call maps into Table SRVRS, where the actual charges for the call are obtained.

Field NOAMA in Table TOPS supercedes the use of SERVNAME in Table DABILL.

Tables DATRKOPT and DABILL are only used for those calls which have been routed to a POSTYPE of DA in Table TOPS.

Table DARSTBIL

This table defines billing restrictions for DA calls and allows DA and TA calls to have separate billing restrictions apply via tables DARSTBIL and RESTBIL, respectively. The key into DARSTBIL is the BILCLASS number from Table SPLDNID (same as for RESTBIL). This table is added in BCS29.

Table SERNAME

This table lists service names (SERVNAME) from Table DABILL.

Reference: DA Guidelines (continued)

Table SRVRS

Key is a combination of the subscriber's tariff and SERVNAME defined in Table DABILL.

Table OFCVAR

TOPS_TANDEMED_411_CC009 does not apply when TOPS is providing DA service.

TOPS_411_RECORD_NPA_IN_AMA does not apply when TOPS is providing DA service.

TPC Datafill Via TAMI

Reference: *TOPS Maintenance Reference Manual*.

The TPC Administration and Maintenance Interface (TAMI) inputs the TPC datafill required for Directory Assistance service.

1. Selection 1, Define Hardkeys, allows the operating company to define six keys to perform six of their most frequently used operator functions. There are 36 operator functions which may be defined as hardkeys to be displayed in menu form when the FNCTS key is pressed twice by the operator.
2. Selection 2, Define Positions, defines the TOPS MP positions as Operator (TA), In-charge, Assistance, or Force Management positions. MUST be compatible with the assignments made in DMS Table TOPSPOS.
3. Selection 3, Define OGT keys, defines a list of XFR functions and/or frequently used numbers.
4. Selection 4, Define Protocol Parameters, defines protocol parameters for the High Speed Data Access (HSDA) cards and their associated MPC links. The TPC software load is delivered with default values for level 2 and level 3 protocol.
5. Selection 5, Define Services, defines the languages provided by the ARU and to specify the time interval at which audits are performed.
6. Selection 6, Format Floppy, formats floppies so that they can be used when copying datafill.
7. Selection 7, Copy Datafill, copies the position settings (including hardkeys and OGT keys) to or from the floppy disk. This is a convenient method of ensuring that all TOPS MP positions have the same outgoing trunk and hardkey assignments without manually datafilling each TPC from the TAMI.

Reference: DA Guidelines (continued)

For any of these selections, all the positions controlled by the TPC (up to 4 positions) must be either in a ManB or OffL state for the TAMI and ManB or INB from the MAP.

The user is prompted to specify if the TOPS MP position settings or High Speed Data Access (HSDA) settings are to be copied. Only position settings apply to TA service. HSDA refers to the circuit pack that provides the data interface for Directory Assistance (DA) functions.

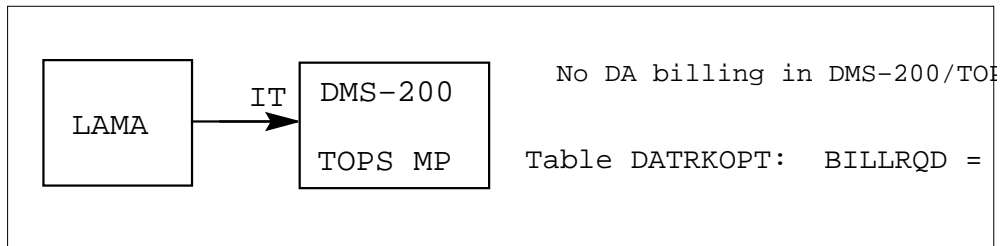
Combined TOPS Trunks Carrying DA/Intercept Traffic

When DA calls are combined with 0+, 0-, and/or 1+ traffic incoming on TOPS trunk groups, DA traffic is identified by screening the incoming digits in the Standard Pretranslator. DA calls on combined TOPS trunks are ALWAYS BILLED AT THE TOPS SWITCH.

Note: If a TOPS trunk group is set up to expect ANI in the DMS-200, then ANI must be sent forward from the End Office on ALL calls arriving on that trunk group. Any call that does not have ANI (at least KP + ID digit + ST) will be interpreted as ANI fail. Therefore, if DA calls are being billed in the End Office and ANI is not being sent forward, the DA calls CANNOT be combined on a trunk group with TA (0+, 0-, 1+ coin) operator traffic.

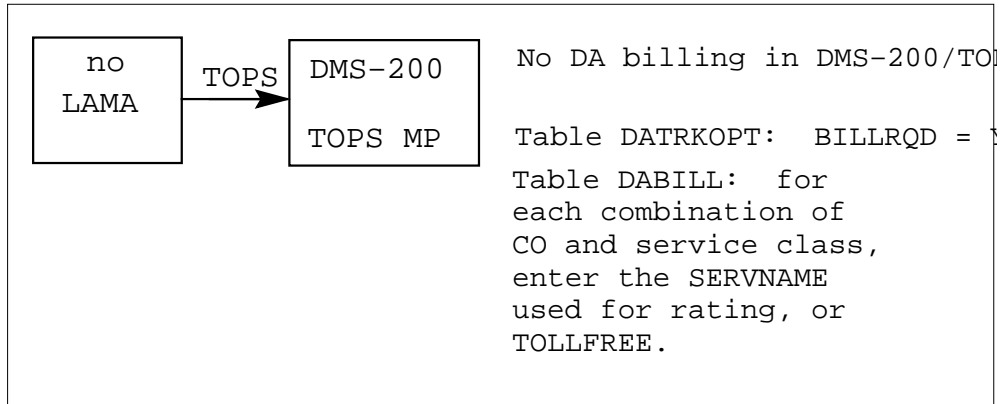
Intercept calls may be sent over a COMBINED trunk group by identifying them using the ANI ID digits.

DA TRAFFIC from END OFFICE with LAMA:



Reference: DA Guidelines (continued)

DA TRAFFIC from END OFFICE without LAMA:



Tables Used for Combined Trunks: Specific Datfill Requirements

DA traffic incoming on combined trunks can be screened using standard pretranslators or home NPA translations:

Table STDPRTCT, SUBTABLE STDPRT

Use T selector to point to Table TOPS.

```
411 411 T NL 0 TOPS 411 3 3 NONE
```

Table HNPACONT, SUBTABLE HNPACODE

Use SCD3 as code type and route to Table TOPS via HNPACONT.RTEFEF.

```
SUB HNPACODE
411 411 SCD3 4
SUB RTEFEF
4 T TOPS 411
```

Table TRKGRP

GRPTYP = TOPS:

Billing to be done at TOPS switch.

STATCLAS = COMBINED, NONCOIN, COIN, HOTEL, or RESTBIL

If CLGID = ONI:

No ANI string is expected. Only the called digits (411, 555) are sent.

Reference: DA Guidelines (continued)

If CLGID = BELL:

The called number will be sent followed by ANI. ANI ID digits are interpreted via Table BELLCAT.

If CLGID = OSS:

The called number will be sent followed by ANI. ANI ID digits will be interpreted via Table OSSCAT.

GRPTYPE = IT

No billing to be done at the TOPS switch. The End office sends called digits to identify DA call in Table TOPS.

Note: A TOPS trunk group with STATCLAS = NONCOIN and CLGID = ONI is equivalent to an IT trunk group.

Table BELLCAT

A single ID digit is not sufficient to distinguish the three types of Intercept. Generally all three types are identified by the digit 9, for traditional Bell operator signaling format.

When an incoming call has the ID digit defined as INTC in Table BELLCAT, the software sends the called number to the Intercept database for lookup.

Table OSSCAT

In most cases, the three types of Intercept are identified as follows:

30	INTC	(Regular Intercept)
31	BLDNINTC	(Blank Number Intercept)
32	TRBLINTC	(Trouble Intercept)

When an incoming call has ID digits defined as INTC, BLDNINTC, or TRBLINTC IN Table OSSCAT, the software sends the called number to the Intercept database for lookup.

Messaging between DMS-200 and CCI DAS currently distinguishes between INTC and BLDNINTC. TRBLINTC is not currently used.

Combined TOPS trunk groups carrying DA traffic must be datafilled in tables DABILL and DATRKOPT, because the billing for DA calls on combined trunks is done at the TOPS office.

Reference: DA Guidelines (continued)

Dedicated DA Trunk Groups

These trunk groups carry local 411 calls for the served NPA only; therefore, no called digits are required (seizure only).

Table TRKGRP

```

GRPTYP      = TOPS
STATCLAS   = DA
If CLGID    = ONI: no ANI spill is expected.
If CLGID    = any other value, ANI spill is expected.
                                     Format: KP + ID DIGIT(S) + CALLING
DIGITS + ST

```

And,

```

TONEREPT = NA:

```

End Office expects answer supervision when the call reaches the operator. Dedicated DA trunkgroups are always STATION traffic; no ZIPtones for coin are ever required.

Table TRKSGRP

```

IPULSTYP   = NP
ISTARTSG   = WK

```

The calling service feature is set to STATION for dedicated DA trunks. Because call origination type (COTYPE) forms the index into Table DABILL, DA from COIN cannot be routed on a TOPS trunk with STATCLAS = DA.

Table TOPS

The software automatically assigns a call origination type of 411 to calls coming in on dedicated DA trunks. This is the CO type index into Table TOPS.

Table DATRKOPT

This table stores options associated with DA calls relating to AMA, multiple DA requests, operator handled call completion, and primary/secondary language for each trunk group. There are no specific data requirements for dedicated DA trunks.

Reference: DA Guidelines (continued)

If no billing record or collection of calling number is required, set BILLREQ = N and CLGREQ = N.

Table DABILL

Data only used if Table DATRKOPT Field BILLRQD = Y.

Tables DATRKOPT and DABILL are only used for those calls which have been routed to a POSTYPE of DA in Table TOPS.

Dedicated 555 traffic:

With ANI:

```
GRPTYP      = TOPS
STATCLAS    = COMBINED, NONCOIN, etc. as appropriate (not DA)
CLGID       = BELL, OSS, etc. (not ONI)
```

Without ANI:

```
GRPTYP      = TOPS
STATCLAS    = COMBINED, NONCOIN, etc. as approp. (not DA)
CLGID       = ONI
OR
GRPTYP      = IT
```

Dedicated Intercept Trunk Groups

These trunks carry Intercept traffic exclusively. When no initial called digit stream is expected, field IPULSTYP in Table TRKSGRP is set to NP, and the called number is sent as the ANI spill. A wink signal is sent to initiate the sending of this "ANI spill":

```
KP + ID + CALLED DIGITS + ST
```

The single ID digit is interpreted in Table AISCAT.

On a dedicated INTCPT trunk group where a called digit stream is sent before the "ANI", it must be in the form of KP + ST3P, the called number stream for a 0- call.

Following is the required datafill:

Reference: DA Guidelines (continued)

Table TRKGRP

```
GRPTYP      = TOPS
STATCLAS    = INTCPT
CLGID       = AIS
```

If no called start pulse signaling is expected (AIS signaling), Table TRKSGRP datafill:

```
IPULSTYP = NP
ISTARTSG = WK
```

If called start pulse signaling is sent, it must be in the format KP + ST3P representing a 0- station call, followed by ANI spill containing the called number (see above). Table TRKSGRP datafill:

```
IPULSTYP = MF
ISTARTSG = WK
```

When dedicated Intercept trunk carries ONI traffic only, Table TRKGRP datafill:

```
GRPTYP      = TOPS
STATCLAS    = INTCPT
CLGID       = ONI
```

The Intercept call type is automatically set to regular Intercept (INTC) for ONI/ANIFAIL.

The calling service feature is set to STATION for dedicated INTCPT trunks. The call origination (CO) index into table TOPS is INTC. The Intercept calling service feature is set in Table AISCAT.

Reference: DA Guidelines (continued)

Intercept call types used by ARUs to refine announcements played to the subscriber:

- INTC (Regular Intercept) is a call to a recently changed or disconnected number.
- BLDNINTC (Blank Number Intercept): BLDNINTC (Blank Number Intercept) is the dialed number is unassigned or vacant.

TRBLINTC (Trouble/Special Intercept)

Temporary trouble with an essential number (fire, police, etc.) or the dialed number now requires a split referral (old business number now maps into two or more numbers for different locations). Not currently used.

Table AISCAT

Identifies the ID digit sent with the called number in AIS signaling format and defines the Intercept call type as INTC, BLDNINTC, or, TRBLINTC.

Office Identification Code (OIC) Trunk Groups

OIC trunks are dedicated DA/INTC trunks that carry a combination of DA call origination types (411, HOM555, FOR555, INTC). A two-digit Office Identification Code (OIC) is passed to the DMS-200/TOPS as the called digits after seizure by a tandem office. The tandem office determines which OIC code to send based upon the translation of the dialed digits (555, 411, etc.) from the originating office, then sends the appropriate OIC to the TOPS office in place of the dialed digits.

Datafill in tables BELLCAT and OSSCAT indicates what is expected in the ANI spill - ID digit(s) only or ID digit(s) + called number.

KP + I + CALLED # + ST (CLGID = BELL)

KP + II + CALLED # + ST (CLGID = OSS)

Following are the datafill requirements:

Table TRKGRP

GRPTYP	=	TOPS
STATCLAS	=	OIC

Calls arriving on TOPS trunk with OIC station class have calling service feature set to STATION.

Reference: DA Guidelines (continued)

Table TOPSOIC

Key is trunk group CLLI and two-digit OIC and defines call origination (CO) key into Table TOPS.

If CO = INTC, Table BELLCAT (TOPS TRKGRP CLGID = BELL) or Table OSSCAT (TOPS TRKGRP CLGID = OSS) is accessed to further determine the type of Intercept call.

Table OICBC

This table defines billing code for OIC trunks based on CLLI, OIC, and originating NXX (obtained from ANI). Table OICBC specifies the charge class (CHGCLSS) of the call. CHGCLSS = TOPS for TOPS Bellcore AMA format.

Table BELLCAT

Indexed by the ANI ID digit to determine type of Intercept: INTC, BLDNINTC, or TRBLINTC. BELLCAT data is also used to determine whether or not the calling number ANI is expected with the ID digit. This lets the DMS determine if there is an ANI fail.

Table OSSCAT

This table is indexed by the ANI ID digits to determine type of Intercept: INTC, BLDNINTC, TRBLINTC. OSSCAT data is also used to determine whether or not the calling number ANI is expected with the ID digit. This lets the DMS determine if there's an ANI fail.

Inward DA Calls

An inward DA call is a call originated from an operator and routed to a DA operator at another operator services center by a toll center code plus 131 or NPA + 131. Inward DA Calls come into the TOPS switch on IT or ATC type trunks.

The digits are screened in the standard pretranslator and routed to Table TOPS.

Table TRKGRP

GRPTY: IT (within LATA) or ATC (from an IC's operator)

Table STDPRTCT; SUBTABLE STDPRT

131 131 T OA 0 TOPS 131 3 3 NONE

TOPS MP DA Tables In Datafill Order:

Reference: DA Guidelines (continued)

OFCENG
 CLLI
 TRKGRP
 ARUMEMBR
 DATRKOPT
 TRKSGRP
 TOPSPOS
 TOPSDEV
 OFRT
 STDPRTCT .STDPRT
 HNPACONT .RTEREF
 MPC
 MPCLINK
 TOPS
 OPRDAT
 SERVNAME
 SERVSCRN
 SRVRS
 BELLCAT
 OSSCAT
 MPCFASTA
 TOPSOIC
 OICBC
 DABILL
 AISCAT
 SERVICES
 XANNINFO
 ARURTE
 VROPT
 DACCSUR
 DACCSURI

TOPS DA Billing (BCS26)

The callcode produced in a TOPS switch for either 411, 555, or NPA+555 is 009. A TOPS switch does NOT support callcode 033. In order to ensure proper billing, the following tables must be datafilled:

Table SERVNAME

VALUE	SYMBOL
-----	-----
3	LOCALDA
4	FOREIGNDA

Reference: DA Guidelines (end)

The 3 is an index, range is 2-63.

LOCALDA and FOREIGNDA are customer definable service rating names.

Table SERVSCRN

CALLED_NUMBER -----	SERVNAME -----
411	LOCALDA
555	LOCALDA
919555	FOREIGNDA

The 411 and 555 are examples of dialed digits.

The 919555 is an example of NPA555. In reality all NPAs followed by 555 should be datafilled.

LOCALDA or FOREIGNDA are the service rating names.

Prior to BCS25, if a default service rating name of TOLLFREE was datafilled in Table SERVSCRN, no AMA billing was produced. In BCS25 and above, a special callcode of 074 is produced.

Table SRVRS

TARIFF -----	SERVNAME -----	SCHNAME -----	RATESTEP -----
TARIFF1	FOREIGNDA	SCHED1	1
TARIFF1	LOCALDA	SCHED1	2

TARIFF1 is the tariff name.

FOREIGNDA is the service rating name.

SCHED1 is the schedule name.

The 1 or 2 is the rate step.

Using the above examples, all foreign NPAs will receive one charge while calls to local Directory Assistance will receive another. The actual amount is specified using the standard charging tables and the specified schedule name and ratestep. The callcode produced for any of the above is 009.

Reference: TOPS Call Descriptions

Release applicability

BCS20 and up

Reference: TOPS Call Descriptions was introduced in BCS20.

Introduction

Note: In TOPS09, translations are changed. Refer to functionality Translations and Routing, UNBN0003.

Following are the contents of this section:

- Introduction
- TOPS overview
- TOPS basic call progression
- TOPS interLATA call type descriptions
 - TOPS basic interLATA call progression (zero-plus interLATA combined EAEO non-coin)
 - One-plus interLATA coin non-EAEO DP
 - Zero-minus interLATA combined EAEO MF hotel
 - Zero-minus interLATA combined EAEO MF non-coin
 - Zero-minus interLATA dnlookup non-EAEO DP
 - Zero-plus interLATA restbil non-EAEO MF
 - Zero-zero-minus feature group C call progression
 - Feature group B call progression
- TOPS intraLATA call type descriptions
 - TOPS basic intraLATA call progression (zero-plus intraLATA combined EAEO non-coin)
 - One-plus hotel intraLATA dnlookup non-EAEO DP
 - Zero-minus intraLATA coin EAEO MF
 - Zero-plus intraLATA combined EAEO MF hotel
 - Zero-plus intraLATA restbil non-EAEO MF
 - Zero-plus intraLATA special EAEO MF non-coin

Reference: TOPS Call Descriptions (continued)

- TOPS office parameters
- Station classes

The TOPS Call Descriptions contain information that familiarizes Operating Telephone Company (OTC) personnel with the basic call types directed to, or handled by a TOPS operator position in the DMS-200 TOPS environment. This section also contains variations of the basic call types, up to and including BCS 20.

The TOPS Call Descriptions may be used to ensure that all table entries (tuples) are correct, and with the aid of call progression maps, may assist in locating potential problem areas during and after initial TOPS translations. It also provides the user with supplemental data guideline information, used to analyze data input variations to the DMS-100 Family (DMS-100F) of switches during TOPS office translations. Additionally, it serves as a supplemental document to existing TOPS translations information.

Note: The TOPS Call Descriptions may be used with Data Schema located in this manual.

The TOPS Call Descriptions may be used by OTC and NT personnel responsible for performing basic TOPS translations and those:

- Requiring specific translations information and a complete understanding of TOPS, TOPS tables and their relationships on a call-type basis.
- Responsible for trouble shooting the DMS-100 Family of switches to correct possible translation errors.
- Requiring additional translations knowledge and an understanding of TOPS datafill information and procedures.

This section also provides users with the basic concepts needed to fully understand TOPS local and Equal Access translations.

TOPS overview

The Traffic Operator Position System (TOPS) is an option compatible with most of the DMS-100 Family of switches. This section deals strictly with the DMS-200 Toll office. A TOPS office, functioning in association with a DMS-200 Toll office, provides automation of operator functions, also providing them with the ability to:

- Originate or extend incoming calls to any accessible dialing location, or to other toll operators.
- Input verbally obtained information about calling or called numbers, call types, billing and other call identification data into a DMS switch.

Reference: TOPS Call Descriptions (continued)

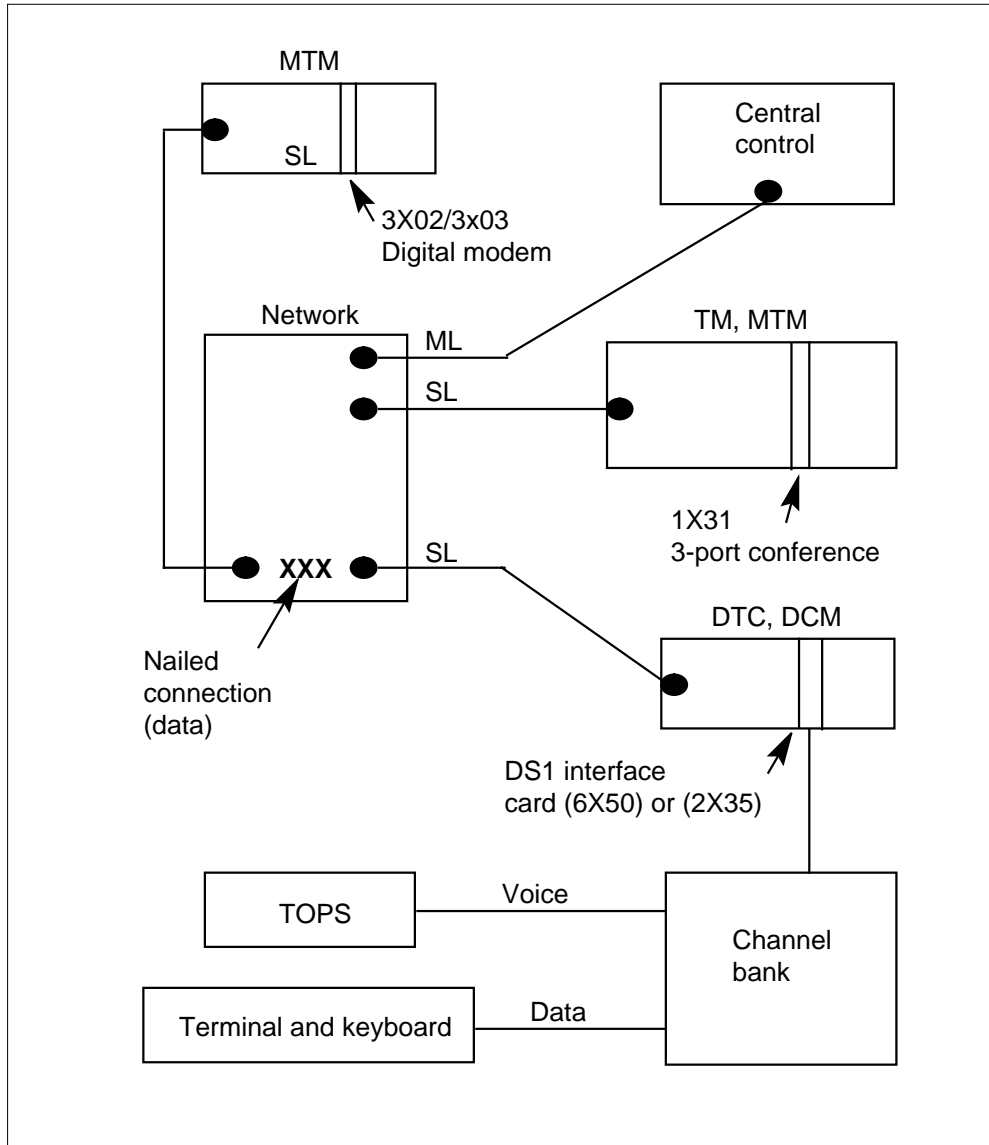
- Alter the call and billing type of incoming calls.
- Obtain rate and charging information.
- Place calls on hold.
- Originate busy verification calls.
- Transfer calls to supervisors for assistance.
- Transfer calls to other position systems such as Directory Assistance or other common carriers.
- Log trouble reports.

Key benefits of the TOPS system are that virtual elimination of manual timing, ticketing, and call supervision results in significant reduction of operator work time, and the size of operator teams required for call processing.

The TOPS system consists of operator and administration positions, printers, and service circuits. Refer to the following figure. The service circuits (conference circuits and digital modems) of the operator position are terminated on the traffic peripherals of DMS-200 offices appropriate to the type of transmission facilities (analog/digital) being used. If analog facilities are used, each position is terminated by two four-wire trunk circuits. Where digital facilities are used, a maximum of 12 positions may share one 24 channel input port (two channels per position). This section describes only the digital TOPS configuration.

Reference: TOPS Call Descriptions (continued)

TOPS digital configuration



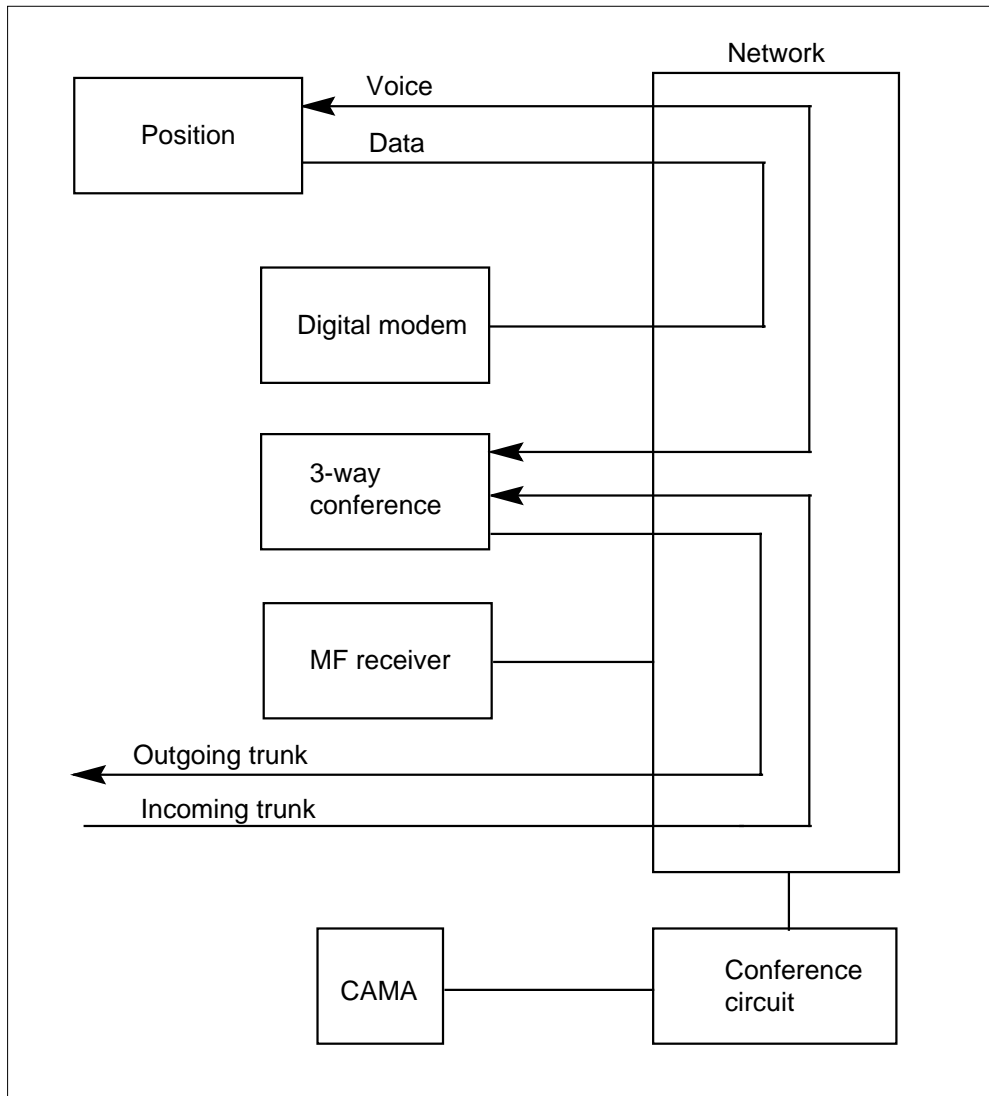
The TOPS operator position consists of a Cathode Ray Tube (CRT) display, a keyboard, two headset jacks, and a position controller. This equipment is terminated on a DMS-200/TOPS switch, giving an operator the ability to input verbally obtained information into the switching system. This ability enhances the processing and storage of data, using the Automatic Message Accounting (AMA) billing system.

Service circuits (voice and data channels) are connected by the switching network to digital modems mounted on trunk modules, or to a designated port

Reference: TOPS Call Descriptions (continued)

of the three-port conference circuit. The digital modems convert data received from the Central Processing Unit (CPU) to a digitized format that is ultimately displayed at the operator position. Refer to the following figure.

TOPS call using a 3-port conference circuit



Calls are connected to the TOPS operator position only if operator assistance is required. At the appropriate point in call handling, the operator releases the call(s) from the position, and they are processed through the switch (DMS-200) to an appropriate outgoing trunk. The switching system provides the necessary call disposition functions needed to process a particular call,

Reference: TOPS Call Descriptions (continued)

based on start signals, prefix digits, class of service screening on incoming trunk groups, and/or other information.

When operator assistance is required, the incoming call is connected to the calling port of the three-port conference circuit associated with the selected operator position. The call arrival is signaled to the operator through a "call arrival tone," and the pertinent data is displayed at the operator position.

Upon position release, the DMS-200 TOPS office establishes a direct connection between the incoming and outgoing trunk group. The office also makes the operator position conference circuit available for the next call.

The TOPS operator handles various call types, and performs different functions. Call types are identified by the class of service of the incoming trunk, service codes, Automatic Number Identification (ANI) spill of the calling number, class-of-service tones, and by verbal responses to an operator query.

Major functions performed at the operator position are:

- Busy line verifications
- Hotel connections and services
- Inquiry services
- Time and charge services
- Notify services
- Coin service
- Operator Number Identification (ONI) services
- 0+ and 0- call handling capabilities
- Mobile telephone service
- Toll stations.

For additional TOPS information, see the TOPS04 Product Guide, NTP 297-2271-010.

TOPS basic call progression

In the TOPS Equal Access (EA) environment, translations processes calls into two basic call categories: inter-Local Access and Transport Area (interLATA) and intra-Local Access and Transport Area (intraLATA) type calls. Incoming calls on TOPS trunk groups fall into one of these two categories for most basic routing purposes.

Reference: TOPS Call Descriptions (continued)

InterLATA calls are routed directly out of a DMS-200 TOPS office without involving Operating Telephone Company (OTC) operator positions. InterLATA carriers may provide operator services, billing, and final routing for interLATA calls.

Note: Zero-minus interLATA calls are handled by TOPS operator positions.

IntraLATA calls, however, are usually handled by OTC operator positions. The DMS-200 TOPS office provides the OTC with operator services and billing capabilities for intraLATA calls.

The initial basic call progression for interLATA and intraLATA calls is similar. Both call types are received at the DMS-200 TOPS office on trunks with the group type TOPS. The incoming digits of interLATA and intraLATA call types are analyzed in the Standard Pretranslator Control (STDPRT) Subtable and validated in the Home Numbering Plan Area Control (HNPACODE) Subtable and the Class of Service Screening (CLSVSCRC) tables.

InterLATA and intraLATA call types also have a route number and an outgoing trunk group CLI name assigned in the HNPACONT (HNPACONT.RTEREF) Subtable. Although this may not be the only route taken by a inter/intraLATA call types, this route is still required to satisfy DMS-100 system requirements.

Once the inter/intraLATA calls reach the LATA Translations (LATA XLA) Table and are defined as either interLATA or intraLATA (this is referred to as a LATA status check), the two call types are translated differently. InterLATA calls route from the Class of Service Screening (CLSVSCRC) Table (defined in the TOPEATRK Table), while intraLATA calls route from the HNPACONT Table, unless otherwise overridden by information found in the TOPS Billing Code (TOPSBC) Table, or the standard pretranslator as defined in Operator Translation (OPRTRANS) Table.

An OTC has flexibility in handling 0- traffic. It can route all 0- traffic to its own operator positions or it can route all interLATA (0-) traffic to InterLATA Carrier (IC) operator positions. If an OTC elects to route all 0- traffic to an IC operator position, these calls are handled by the IC regardless of whether they are interLATA or intraLATA.

Note: When the call type examples are described, only the tables that are different or that require entries that are different from the basic call progression tables are presented.

Reference: TOPS Call Descriptions (continued)

Translations for interLATA and intraLATA calls are very similar. The call progression (flow) for these categories of calls are relatively the same, except that translations tables accessed by an interLATA/intraLATA call, beyond the Local Access Transport Area Translations (LATAXLA) table, are different. In some instances, the screening for interLATA calls is different from the screening for intraLATA calls.

Following is a list of all tables that must be datafilled when performing TOPS translations for both interLATA and intraLATA calls. These data tables are in the correct datafill order.

- CLLI
- HNPACONT
- PFXTREAT
- LCASCRCN
- STDPRTCT
- SCRNCCLAS
- POSNAME
- OCCNAME
- OCCINFO
- LATANAME
- TRKGRP
- TRKSGRP
- TRKMEM
- TOPSPOS
- LCASCRCN.LCASCRC
- CLSVSCRC
- OFRT
- HNPACONT.RTEREF
- POSITION
- HNPACONT.HNPACODE
- STDPRTCT.STDPRT
- CLSVSCRC.CLSVSCRC
- TOPS
- OPRTRANS

Reference: TOPS Call Descriptions (continued)

- TOPSBC
- SPLDNID
- TOPEATRK
- RESTBIL
- LATAXLA
- FXDNMAP

TOPS basic interLATA call progression

The following section describes the call progression for a zero-plus (0+) non-coin interLATA call. For this example, the call is routed from an Equal Access End Office (EAEO) over a combined trunk group. The end office uses Multifrequency (MF) outpulsing and Feature Group C (FGC) signaling.

Many of the tables discussed in the Basic InterLATA Call Progression are common for other interLATA calls. Therefore, when the interLATA call type examples are described, only the tables that are different or that require entries that are different from the basic call progression tables are presented.

For the following call progression, the caller dials 0+212-992-5555. The calling party's number is (919) 927-1812. The end office strips the "0" and outpulses a key pulse (KP), plus the called number and the appropriate start signal as KP+2129925555+ST3P. The start signal is then followed by the ANI spill, which in this example is KP+0+9271812ST.

Following is a list of the data tables used by a DMS-200 TOPS office when processing 0+ interLATA non-coin calls. The data tables are not listed in datafill sequence and are not necessarily in the exact order in which the information in these tables is accessed. Refer to the previous TOPS basic call progression section for a datafill sequence list.

- TRKGRP.TOPS
- STDPRTCT.STDPRT
- HNPACONT.HNPACODE
- HNPACONT.RTEFEF
- TOPSBC
- LCASCRCN
- LCASCRCN.LCASCR
- PFXTREAT
- CLSVSCRC

Reference: TOPS Call Descriptions (continued)

- CLSVSCRC.CLSVSCR
- TOPEATRK
- LATAXLA
- CLSVSCRC
- CLSVSCRC.CLSVSCR
- OFRT
- TRKGRP.ATC

Following is a description of the table flow for this basic interLATA call. The tables are not listed in datafill sequence and are not necessarily in the exact order in which a DMS-200 TOPS office accesses the information contained in these tables when processing a call.

TRKGRP.TOPS Table

The Trunk Group (TRKGRP) Table defines the translation scheme for the incoming digits. The TRKGRP Table is accessed when calls arrive at a DMS-200 TOPS office. The trunk group type is TOPS, which is the group type used to carry digits from originating end offices to a DMS-200 TOPS office.

The TRKGRP Table can also be used for assigning class of service screening and local calling area screening in place of the TOPS Billing Code (TOPSBC) Table.

Note: These applications are suggested only when routing is not based on the called number's NXX and the originating station. For example, calls dialed as "911" may be routed to different terminating stations depending upon the location of the originating station. It is recommended that class of service screening and local calling area screening be assigned in the TOPSBC Table.

Associated with the TRKGRP Table are the following tables:

- The Common Language Location Identifier (CLLI) Table which provides information about the CLLI name of the TOPS trunk group type.
- The Trunk Subgroup (TRKSGRP) Table which provides information about the signaling characteristics of the trunk group.
- The Trunk Member (TRKMEM) Table which provides information about the hardware location of the individual trunk group members.

Reference: TOPS Call Descriptions (continued)

- The TOPS Equal Access Trunk Group Data (TOPEATRK) Table which supports the TOPS trunk group in the Equal Access environment.
- The TOPS ANI ID Digits Mapping (BELLCAT) Table which defines the format of the ANI spill for calls on the trunk group as Bell standard signaling.

Following is an example of a tuple in table TRKGRP.TOPS.

Note: The numbers within parentheses () are called reference pointers. These reference pointers indicate that the entries in these fields relate to fields in other tables.

MAP display example for table TRKGRP.TOPS

GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	SELSEQ	SNPA
PRTNM	LCANAME	SCRNCL	OHNXXSCR	TRAFCLS	STATCLAS	TIMEOUT	
NPANXXTQ	DISPLAY	CLGID	NOBILLCD	ANISEIZ	ANIPDIAL	TRTMTSUP	
COINTYPE	PADSTAT0	PADSTAI					

DRHMNC01DS1 (1)	TOPS	0	ELO	NCRT	IC	MIDL	919 (2)
SPRT (3)	NLCA	NSCR	N	SP	COMBINED	N	
N	0	BELL	6	10	10	N	
CDF	ENABLED	DISABLED					

In the previous example, the noted fields in the TRKGRP table are used as follows:

- Field GRPKEY defines the trunk group name as DRHMNC01DS1 (reference 1). This field entry also provides an index into the TOPSBC and TOPEATRK tables.
- Field GRPTYP, entry TOPS, defines the trunk group type as TOPS.
- Field DIR, entry IC, defines the direction of traffic on the trunk group as incoming.
- Field SNPA, entry 919 (reference 2), defines the trunk group's Serving NPA code. The SNPA provides an index into the Home Numbering Plan Area Code (HNPACONT.HNPACODE) Subtable associated with "919" for digit screening.
- Field PRTNM, entry SPRT (reference 3), assigns the pretranslator name for the trunk group. This name in this field is used as an index into the Standard Pretranslator Subtable where pretranslation digit analysis is performed.

Reference: TOPS Call Descriptions (continued)

- Field LCANAME, entry NLCA, indicates that local calling area screening is not assigned. The local calling area screening name can be defined in either the TRKGRP Table or the TOPSBC Table, however, it cannot be defined in both. It is recommended that the local calling area screening name be assigned in the TOPSBC Table.
- Field SCRNCL, entry NSCR, indicates that class of service screening is not assigned. A class of service screening name must be assigned in the TOPEATRK Table and another class of service screening name can be assigned in either the TRKGRP Table or the TOPSBC Table. However, class of service screening cannot be defined in both the TRKGRP and the TOPSBC Table. It is recommended that the class of service screening be assigned in the TOPSBC Table.
- Field OHNXXSCR, entry N, indicates that NXX screening for operator-handled calls is not required.
- Field STATCLAS, entry COMBINED, tells a DMS-200 TOPS office that the trunk group carries combined traffic (0+, 0-, 1+, coin, non-coin, etc.) and sends the full range of start pulses: ST, STP, ST2P, and ST3P.
- Field TIMEOUT, entry N, indicates that a time-out is not required because the outpulsing on the trunk group is MF.
- Field CLGID, entry BELL, indicates that the trunk group carries ANI traffic (and possibly ONI traffic) using Bell standard signaling format.

Note: Feature Group C (FGC) signaling is another term for Bell or Traditional signaling.

- Field NOBILLCD, entry 6, represents the number of billing codes that are allocated for use in the TOPSBC Table for this trunk group. This field must be sized adequately to accommodate all NXXs (and the "000" entry, if used, for ONI and ANIFAIL calls) served by the TOPS trunk group and all special billing codes. In addition, it must be sized large enough to allow for the growth of the trunk group.

Note: If allowances for growth of the trunk group are not made, updating field NOBILLCD would require deleting all existing data associated with the trunk group, adding the new information, and datafilling the deleted data again.

- Field ANISEIZ, entry 10, indicates that the trunk group waits 10 seconds for reception of the first digits of the ANI spill. If the first digits are not received within 10 seconds, then the trunk group times-out. The entry in this field can be lower or higher depending upon the capabilities of the end office serving the trunk group.

Reference: TOPS Call Descriptions (continued)

- Field ANIPDIAL, entry 10, indicates that the trunk group waits 10 seconds for reception of each ANI signal or digit after the first digit is received. The entry in this field can be lower or higher depending upon the capabilities of the end office serving the trunk group.
- Field TRTMTSUP, entry N, indicates that an off-hook signal is not sent to the end office if a call is routed to a treatment. Setting this field to "Y" can result in an AMA record being generated and the customer charged for a call that routes to an announcement or that receives circuit busy tone.
- Field COINTYPE, entry CDF, indicates that the kind of coin phone serviced by the trunk group is dial tone first coin service.
- Field PADSTAT0, entry ENABLED, indicates that the state of the digitone key pad for a 0- or 0+ coin call that routes to a TOPS operator position is enabled. (This information is supplied by the end office.) A "pad enable" coin signal is not sent by a DMS-200 TOPS office to enable the key pad.
- Field PADSTAT1, entry DISABLED, indicates that the state of the digitone key pad for a 1+ coin call that routes to a TOPS operator position is disabled. (This information is supplied by the end office.) A "pad enable" coin signal is sent by a DMS-200 TOPS office to enable the key pad.

STDPRTCT.STDPRT Subtable

The Standard Pretranslator (STDPRTCT.STDPRT) Subtable analyzes the incoming digits of the called number. A DMS-200 TOPS office is pointed to the STDPRTCT.STDPRT Subtable by the name listed in field PRTNM in the TRKGRP Table.

The Standard Pretranslator Control (STDPRTCT) Table lists the names assigned by an Operating Telephone Company (OTC) for each standard pretranslator subtable.

Following are example tuples in the STDPRTCT and STDPRTCT.STDPRT tables.

Note: The number within parentheses () is called a reference pointer. This reference pointer indicates that the entry in this field relates to a field in another table.

MAP display example for table STDPRTCT

EXPRTNM ----- SPRT (3)

Reference: TOPS Call Descriptions (continued)

MAP display example for subtable STDPRTCT.STDPRT

FROMDIGS	TODIGS	PRETSEL	TYPCALL	NOPREDIG	TRANSYS
2	9	N	NL	0	NA

In the previous example, the noted fields in the STDPRTCT.STDPRT Subtable perform the following functions:

- Field EXPRTNM, entry SPRT (reference 3), contains the index from the TOPS TRKGRP Table.
- Fields FROMDIGS and TODIGS represent the range within which the incoming digits fall.
- Field PRETSEL, entry N, defines a selector that indicates further digit analysis is required.
- Field TYPCALL, entry NL, indicates that the start signal is to be read to determine the call type.

Note: The call type is actually determined by the TOPS trunk group software. The software determines the call type by reading the start signal in the ANI information. The DMS stores this call type in memory and uses it later during the call progression. The "NL" entry in field TYPCALL allows the OTC to combine 0+ and 1+ traffic on the same trunk group by not defining the call type as operator-assisted (OA) or direct-dialed (DD).

- Field NOPREDIG, entry 0, tells a DMS-200 TOPS office not to interpret any of the incoming digits as prefix digits.
- Field TRANSYS, entry NA, indicates that the call proceeds to the Home Numbering Plan Area Control (HNPACONT) Table as a domestic call.

HNPACONT.HNPACODE Subtable

The Home Numbering Plan Area Code (HNPACONT.HNPACODE) Subtable checks to ensure that the incoming digits are valid for the SNPA associated with the trunk group. This table also assigns a code type to a call, which is used for routing the call to another table or to a treatment.

Associated with the HNPACONT.HNPACODE Subtable is the Home Numbering Plan Area Control (HNPACONT) Table. The HNPACONT Table lists all of the valid NPAs that are served by a DMS-200 TOPS office. The NPAs listed in this table are used as an index into the HNPACODE Subtable.

Reference: TOPS Call Descriptions (continued)

Following is an example tuple in the HNPACONT.HNPACODE Subtable.

Note: The number within parentheses () is called a reference pointer. This reference pointer indicates that the entry in this field relates to a field in another table.

MAP display example for table HNPACONT

NPA

919 (2)

MAP display example for subtable HNPACONT.HNPACODE

FROMDIGS	TODIGS	CD	RR
-----	-----	-----	-----
212	212	FRTE	5

In the previous example, the noted fields HNPACONT.HNPACODE Subtable perform the following functions:

- Field NPA, entry 919 (reference 2), identifies the SNPA of the trunk group. The entry of "919" is the index from the TOPS TRKGRP Table.
- Fields FROMDIGS and TODIGS, entry 212, represent the range of the NPA of the called number.
- Field CD, entry FRTE, indicates that the called number is outside of the Home NPA.
- Field RR, entry 5, is the index into the HNPACONT.RTEREF Subtable.

HNPACONT.RTEREF Subtable

The Home Numbering Plan Area Route Reference (HNPACONT.RTEREF) Subtable defines the route number and trunk group CLLI name for calls routing out of a DMS-200 TOPS office. InterLATA calls do not take this route. Instead, interLATA calls route using the class of service defined in the TOPEATRK Table.

Following is an example tuple in the HNPACONT.RTEREF Subtable.

Note: The number within parentheses () is called a reference pointer. This reference pointer indicates that the entry in this field relates to a field in another table.

Reference: TOPS Call Descriptions (continued)

MAP display example for table HNPACONT

NPA ----- 919 (2)

MAP display example for subtable HNPACONT.RTEREF

RTE	RTESEL	CONNTYPE	CLLI	DELDIGS	PRFXDIGS
CANCNORC					

5	N	D	GRBONC01ITO2	0	N
N					

In the previous example, the noted fields in the HNPACONT.HNPACODE Subtable perform the following functions:

- Field NPA, entry 919 (reference 2), identifies the SNPA of the trunk group. The entry of "919" is the index from the TOPS TRKGRP Table.
- Field RTE, entry 5, identifies the route assigned for the outgoing call. This is the route assigned prior to the performing of a "LATA status check" (determining whether the call is interLATA or intraLATA).
- Field RTESEL, entry N, indicates that standard digit manipulation is automatically canceled and the required digit deletion and prefixing must be specified.
- Field CLLI contains the name of the trunk group associated with the route number.
- Field DELDIGS, entry 0, indicates that no digits are deleted from the called number during outpulsing.
- Field PRFXDIGS, entry N, indicates that no digits are prefixed to the called number during outpulsing.
- Field CANCNORC, entry N, indicates that the OTC's normal procedure of either charging or not charging for the call is continued.

TOPSBC Table

The TOPS Billing Code (TOPSBC) Table performs the following functions:

- Checks the incoming ANI information to verify that the NXX is valid for the trunk group. This is used for ANIFAIL and ONI calls.
- Determines whether class of service screening is used for the call.
- Determines whether local calling area screening is required.

Reference: TOPS Call Descriptions (continued)

The TOPSBC Table can be used to assign local calling area screening to a call by defining a screening name in field LCANAME. The TRKGRP Table also contains the LCANAME field, which can be used in the same manner as field LCANAME in the TOPSBC Table. However, it is recommended that the local calling area name be defined in the TOPSBC Table.

Note: Assigning local calling area screening in the TRKGRP Table limits all traffic arriving on the TOPS trunk group to local calling area screening. Assigning local calling area screening in the TOPSBC Table allows for screening by individual NXX.

A call requiring local calling area screening proceeds to the LCASCRCN.LCASCRC Subtable. The LCASCRCN.LCASCRC Subtable determines whether the status of the call is local or non-local.

The TOPSBC Table can be used to assign class of service screening to a call by defining a class of service screening name in field SCRNL. The TRKGRP Table also contains the SCRNL field, which can be used in the same manner as the SCRNL field in the TOPSBC Table. However, it is recommended that the class of service screening name be defined in the TOPSBC Table.

Note: Assigning class of service screening in the TRKGRP Table restricts all traffic arriving on the TOPS trunk group to the same routing. For instance, all emergency services calls ("911"), regardless of the location (town) of the calling station, would route to the same terminating station.

A call requiring class of service screening proceeds to the CLSVSCRC Table and CLSVSCRC.CLSVSCR Subtable. The CLSVSCRC.CLSVSCR Subtable can overwrite the route specified in the HNPACONT.RTEREF Table and direct the call to another route.

Following is an example tuple in the TOPSBC Table.

Note: The number within parentheses () is called a reference pointer. This reference pointer indicates that the entry in this field relates to a field in another table.

MAP display example for table TOPSBC

CLLI CHGCLSS	BILLCODE	LCANAME	SCRNL	ACTUALBC
DRHMNC01DS1 (1) TOPS	927	LCA1	EMER	919927

Reference: TOPS Call Descriptions (continued)

In the previous example, the noted fields in the TOPSBC Table perform the following functions:

- Field CLLI contains the CLLI name (reference 1) from the TRKGRP Table.
- Field BILLCODE, entry 927, represents the NXX served by the trunk group.
- Field LCANAME, entry LCA1, identifies the subtable where local calling area screening is performed. (For this interLATA call, the dialed digits are not found in the LCASCRCN.LCASCRCR Subtable.)
- Field SCRNL, entry EMER, identifies the subtable where class of service screening is performed. (For this interLATA call, this class of service screening does not result in rerouting of the call.)
- Field ACTUALBC, entry 919927, contains the actual six-digit billing code (NPA + NXX) that is entered in the AMA record.
- Field CHGCLSS, entry TOPS, identifies the charge class to which the billcode is assigned.

LCASCRCN Table

The Local Calling Area Screening Control (LCASCRCN) Table lists each local calling area screening subtable name and the SNPA to which each subtable name belongs. The SNPA defined in the TRKGRP Table and the LCA name listed in the TOPSBC Table form a key into the LCASCRCN Table. The subtable name defined in this table is used to index into the LCASCRCN.LCASCRCR Subtable.

Following is an example tuple in the LCASCRCN Table.

Note: The number within parentheses () is called a reference pointer. This reference pointer indicates that the entry in this field relates to a field in another table.

MAP display example for table LCASCRCN

STS	LCANAME	PFXSELEC	PFXFOR10
919 (2)	LCA1	MAND	N

Reference: TOPS Call Descriptions (continued)

In the previous example, the noted fields in the LCASCRCN Table perform the following functions:

- Field STS, entry 919 (reference 2), contains the index from the TRKGRP Table. The entry of "919" represents the SNPA of the incoming TOPS trunk group.
- Field LCANAME, entry LCA1, contains the index from the TOPSBC Table.
- Field PFXSELEC, entry MAND, indicates that dialing of the prefix digit "1" is mandatory.
- Field PFXFOR10, entry N, indicates that all calls do not have to be dialed as a prefix digit (0 or 1) plus 10 digits.

LCASCRCN.LCASCRCR Subtable

The Local Calling Area Screening Code (LCASCRCN.LCASCRCR) Subtable determines whether a call is local or non-local based on the digits dialed. If the incoming digits are listed in this subtable, the call is considered local. If the digits are not listed in this subtable, the call is considered non-local.

A DMS-200 TOPS office indexes the LCASCRCN.LCASCRCR Subtable by reading the tuple with the SNPA and LCA name defined in the LCASCRCN Table.

Following is an example tuple in the LCASCRCN.LCASCRCR Subtable. In the example, the dashes (-) mean that the "212" code is not found.

MAP display example for table LCASCRCN

STS	LCANAME
919 (2)	LCA1

MAP display example for table LCASCRCN.LCASCRCR

FROMDIGS	TODIGS
-	-

PFXTREAT Subtable

The Prefix Treatment (PFXTREAT) Subtable screens for misdialed calls and determines the treatment calls receive. This determination is based on the prefix selector assigned to the call in the LCASCRCN Table, the type of call

Reference: TOPS Call Descriptions (continued)

defined in the STDPRTCT.STDPRT Subtable, and the local calling area status in the LCASCRCN.LCASCRC Subtable (found or not found).

Following is an example tuple in the PFXTREAT Table.

MAP display example for table PFXTREAT

PFXSELEC	TYPALL	LOCAL	UPDTYPCA	TREAT	ITEM
MAND	OA	N	OA	UNDT	E

In the previous example, the noted fields in the PFXTREAT Table perform the following functions:

- Field PFXSELEC, entry MAND, represents the prefix selector defined in field PFXSELEC in the LCASCRCN Table.
- Field TYPALL, entry OA, identifies the call type as operator-assisted. The call type is determined by reading the start signal (ST3P) of the called number spill (KP+2129925555+ST3P).
- Field LOCAL, entry N, indicates that the NPA digits (212) of the called number (212-992-5555) were not found in the LCASCRCN.LCASCRC Subtable. Consequently, the called number is non-local.
- Field UPDTYPCA, entry OA, indicates that the call is not updated.
- Field TREAT, entry UNDT, indicates that the call does not route to a treatment, but is allowed to route out of a DMS-200 TOPS office without being blocked.

CLSVSCRC Table

The Class of Service Screening Control (CLSVSCRC) Table lists the screening class referenced in field SCRNCN in the TOPSBC Table. The CLSVSCRC Table allows a DMS-200 TOPS office to screen by type of call (OA or DD) and the digits dialed.

Following is an example tuple in the CLSVSCRC Table.

Note: The number within parentheses () is called a reference pointer. This reference pointer indicates that the entry in this field relates to a field in another table.

Reference: TOPS Call Descriptions (continued)**MAP display example for table CLSVSCRC**

STS	SCRNCL	TYPCALL	NORSLTS	SCRNSEL	POSN
919 (2)	EMER	OA	2	N	NONE
919	EMER	DD	2	N	NONE

In the previous example, the noted fields in the CLSVSCRC Table perform the following functions:

- Field STS, entry 919 (reference 2), contains the index from the TOPS TRKGRP Table.
- Field SCRNCL, entry EMER, contains the screening class name defined in the TOPSBC Table.
- Field TYPCALL, entry OA, identifies the call type as operator-assisted. The call type is determined by reading the start signal (ST3P) in the called number spill (KP+2129925555+ST3P). The TOPS trunk group software is hard-coded to examine the incoming start signal in the ANI information.
- Field NORSLTS, entry 2, indicates the number of routes required. This field should always be set to 2. An entry of 2 allows calls to be screened on a digit basis as well as on a call type basis, OA or DD. (For example, calls can be routed to different outgoing trunk groups according to the digits dialed.) To perform this routing, a DMS-200 TOPS office proceeds to the CLSVSCRC.CLSVSCR Subtable.
- Field SCRNSEL, entry N, indicates the translation is to proceed to the CLSVSCRC.CLSVSCR Subtable for routing of the call.

CLSVSCRC.CLSVSCR Subtable

The Class of Service Screening (CLSVSCRC.CLSVSCR) Subtable allows the OTC to overwrite the route specified in the HNPACONT.RTEREF Subtable. The datafill for this table is based upon the screening requirements of the OTC.

Following is an example tuple in the CLSVSCRC.CLSVSCR Subtable. In the example, the dash (-) indicates that the called number digits are not found.

MAP display example for table CLSVSCRC

STS	SCRNCL	TYPCALL
919 (2)	EMER	OA

Reference: TOPS Call Descriptions (continued)

MAP display example for table CLSVSCRC.CLSVSCR

FROMDIGS	TODIGS	SCRNSEL	RTEREFIX

-	-		

TOPEATRK Table

The TOPS Equal Access Trunk Group Data (TOPEATRK) Table is automatically datafilled with default values whenever a TOPS trunk group type is assigned in the TRKGRP Table. The TOPEATRK Table supports the TOPS trunk group in the Equal Access environment. It is required for:

- Assigning the LATA name the call uses to index into the LATA Translation (LATA XLA) Table for a "LATA status check" on the call.
- Determining whether the originating end office is an Equal Access End Office (EAEO) or a Non-Equal Access End Office (Non-EAEO). The entry (CONFORM, NCONFORM, or NONE) in the ENDOFFCE field determines whether or not a carrier is present on 0- calls. For a Non-EAEO (sometimes referred to as a non-conforming end office), the operator does not have to enter the carrier access code. However, the operator must enter the carrier access code for an EAEO (sometimes referred to as a conforming end office).
- Naming the domestic and/or overseas class of service screening subtable where screening is performed for routing interLATA calls.
- Identifying the default carrier that handles interLATA traffic for the trunk group. This carrier access code is used as an index into the CLSVSCRC.CLSVSCR Subtable.

Following is an example tuple in the TOPEATRK Table.

Note: The number within parentheses () is called a reference pointer. This reference pointer indicates that the entry in this field relates to a field in another table.

MAP display example for table TOPEATRK

TRUNKGRP	ENDOFFCE	CARRIER	LATANM	DOMSCL
OVSSCL	SCRNIDX	BYPASS		

DRHMNC01DS1 (1)	CONFORM	288 (4)	LATA1 (5)	DOM1 (6)
OVS1	919 (2)	\$		

Reference: TOPS Call Descriptions (continued)

In the previous example, the noted fields in the TOPEATRK Table perform the following functions:

- Field TRUNKGRP contains the CLLI name (reference 1) from the TRKGRP Table.
- Field ENDOFFCE, entry CONFORM, identifies the originating end office as an EAEO.
- Field Carrier, entry 288 (reference 4), defines the carrier access code of the default carrier that handles interLATA traffic for the trunk group. An EAEO can have this carrier overridden by operator input. This carrier access code is defined in the Other Common Carrier Information (OCCINFO) Table.
- Field LATANM, entry LATA1 (reference 5), defines the LATA name served by a DMS-200 TOPS office. This name is pointed to in the LATAXLA Table.
- Field DOMSCL, entry DOM1 (reference 6), defines the class of service screening subtable where the screening for domestic calls is performed.
- Field OVSSCL, entry OVS1, defines the name of the overseas class of service screening subtable where screening for overseas calls is performed.
- Field SCRNIIDX, entry 919 (reference 2), contains the SNPA defined in the TRKGRP Table. The entries in the SCRNIIDX and DOMSCL (or OVSSCL) fields are used to form a key into the CLSVSCRC Table (reference 2), where screening is performed for domestic interLATA and overseas calls.
- Field BYPASS, entry \$, indicates that all zero-minus (0-) and hotel-originated calls are routed to an OTC operator position and not bypassed to an InterLATA Carrier (IC) for operator services. The dollar sign (\$) in this field is a default value that is interpreted as a nil (blank) entry.
 - A HOTEL entry routes all hotel calls, regardless of the LATA status (inter or intra) and call type (OA or DD), to an IC operator position.
 - A ZEROM entry routes all 0- traffic, regardless of the LATA status, to an IC operator position.

LATAXLA Table

The LATA Translation (LATAXLA) Table determines whether a call is interLATA or intraLATA. After the LATA status is checked, intraLATA and interLATA calls are translated differently.

Reference: TOPS Call Descriptions (continued)

Associated with the LATA XLA Table is the LATA Name (LATANAME) Table. The LATANAME Table defines the names of the LATA served by a DMS-200 TOPS office.

Following is an example tuple in the LATA XLA Table.

Note: The number within parentheses () is called a reference pointer. This reference pointer indicates that the entry in this field relates to a field in another table.

MAP display example for table LATA XLA

LATANM	DIGITS	LATA	STATE	EATYPE

LATA1 (5)	212	INTER	INTER	STD

In the previous example, the noted fields in the LATA XLA Table perform the following functions:

- Field LATANM, entry LATA1 (reference 5), identifies the LATA served by a DMS-200 TOPS office. The LATA1 entry is found in the LATANM field in the TOPEATRK Table.
- Field DIGITS, entry 212, represents the NPA of the calling number.
- Field LATA, entry INTER, determines that the call is interLATA.
- Field EATYPE, entry STD, satisfies the table editor. The TOPS trunk group software does not use this field.

OCCNAME Table

The Other Common Carrier Names (OCCNAME) Table for Equal Access lists the names of all interLATA carriers serving a DMS-200 TOPS office.

OCCINFO Table

The Other Common Carrier Information (OCCINFO) Table for Equal Access defines the name and carrier access code for carriers serving the DMS-200 TOPS office. It is used primarily to validate the carrier access code entered by a TOPS operator position.

CLSVSCRC Table

The Class of Service Screening Control (CLSVSCRC) Table lists the screening class referenced in the DOMSCL or OVSSCL field (reference 8) in the TOPEATRK Table. The CLSVSCRC Table allows a DMS-200 TOPS office to screen by type of call (OA or DD) and the carrier access code found in the TOPEATRK Table (reference 5).

Reference: TOPS Call Descriptions (continued)

Following is an example tuple in the CLSVSCRC Table.

Note: The number within parentheses () is called a reference pointer. This reference pointer indicates that the entry in this field relates to a field in another table.

MAP display example for table CLSVSCRC

STS	SCRNCL	TYPCALL	NORSLTS	SCRNSEL	POSN
919 (2)	DOM1 (6)	OA (7)	2	N	NONE
919	DOM1	DD	2	N	NONE

In the previous example, the noted fields in the CLSVSCRC Table perform the following functions:

- Field STS, entry 919 (reference 2), contains the index from the TOPS TRKGRP Table.
- Field SCRNCL, entry DOM1 (reference 6), contains domestic screening class name defined in the TOPEATRK Table.
- Field TYPCALL, entry OA (reference 7), identifies the call type as operator-assisted. The call type is determined by reading the start signal ("ST3P") in the called number spill (KP+2129925555+ST3P).
- Field NORSLTS, entry 2, indicates the number of routes required. This field should always be set to 2. An entry of 2 allows calls to be screened on a digit basis as well as on a call type basis, OA or DD. (For example, calls can be routed to different outgoing trunk groups according to the digits dialed.) To perform this routing, the DMS-200 TOPS office proceeds to the CLSVSCRC.CLSVSCR Subtable.
- Field SCRNSEL, entry N, indicates the translation is to proceed to the CLSVSCRC.CLSVSCR Subtable for routing of the call.

CLSVSCRC.CLSVSCR Subtable

The Class of Service Screening (CLSVSCRC.CLSVSCR) Subtable specifies a route out of a DMS-200 TOPS office office for interLATA traffic. The index into this table is the entry found in field CARRIER in the TOPEATRK Table (reference 4). This is the access code for the default carrier that serves the trunk group. The datafill for this table is based upon the screening requirements of the OTC.

There are several options available to the OTC for routing interLATA calls to a carrier. For example, 0- calls can be routed to the carrier on a separate trunk group (reference 4A in the following datafill example). However, normally

Reference: TOPS Call Descriptions (continued)

interLATA calls are routed as shown in reference 4. The carrier access code is used strictly for screening and is not outpulsed with the called number.

Following is an example tuple in the CLSVSCRC.CLSVSCR Subtable.

Note: The number within parentheses () is called a reference pointer. This reference pointer indicates that the entry in this field relates to a field in another table.

MAP display example for table CLSVSCRC

STS	SCRNCL	TYPCALL
919 (2)	DOM1 (6)	OA (7)

MAP display example for table CLSVSCRC.CLSVSCR

FROMDIGS	TODIGS	SCRNSEL	RTEREFIX
288 (4)	288	T	15 (8)
288000 (4A)	288000	T	25

In the previous example, the noted fields in the CLSVSCRC.CLSVSCR Subtable perform the following functions:

- Fields FROMDIGS and TODIGS, entry 288 (reference 4), represent the carrier access code from field CARRIER in the TOPEATRК Table. There is a maximum of six digits allowed in these fields.
- Field SCRNSEL, entry T, points the call to the Office Route (OFRT) Table.
- Field RTEREFIX, entry 15 (reference 8), is the index into the OFRT Table. In the OFRT Table, a DMS-200 TOPS office reads the tuple with a Route Reference Index of 15 (reference 8).

OFRT Table

The Office Route (OFRT) Table contains the route lists that are pointed to from the CLSVSCRC.CLSVSCR Subtable. The OFRT Table has the index number and CLLI name of the outgoing trunk group that takes the call to a carrier or the OFRT Table can point to another route list.

Following is an example tuple in the OFRT Table.

Note: The number within parentheses () is called a reference pointer. This reference pointer indicates that the entry in this field relates to a field in another table.

Reference: TOPS Call Descriptions (continued)

MAP display example for table OFRT

RTE	RTESEL	CONNTYPE	CLLI	DELDIGS	PRFXDIGS	CANCNORC
15 (8)	N	D	RHMDVA01IT20	0	N	N \$

In the previous example, the noted fields in the OFRT Table perform the following functions:

- Field RTE, entry 15 (reference 8), is the route number of the outgoing trunk group that the call takes. The entry of 15 is defined in the CLSVSCRC.CLSVSCR Subtable (reference 8).
- Field RTESEL, entry N, indicates that standard digit manipulation is automatically canceled and the required digit deletion and prefixing must be specified.
- Field CLLI contains the name of the trunk group routing the call out of a DMS-200 TOPS office.
- Field DELDIGS, entry 0, indicates that no digits are deleted from the called number within the outpulsing to the IC.
- Field PRFXDIGS, entry N, indicates that no digits are prefixed to the called number within the outpulsing to the IC.
- Field CANCNORC, entry N, indicates that the OTC's normal procedure of either charging or not charging for the call is continued.

(ATC) TRKGRP Table

Access to Carrier (ATC) trunk groups are used to carry Equal Access traffic between the DMS-200 TOPS office and ICs. One or more ATC trunk groups must be reserved for each carrier that is served by the office.

Following is an example tuple in the (ATC) TRKGRP Table.

Note: The number within parentheses () is called a reference pointer. This reference pointer indicates that the entry in this field relates to a field in another table.

Reference: TOPS Call Descriptions (continued)

MAP display example for table TRKGRP.ATC

GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	TRAFCLS	SELSEQ
PRTNM	SCRNCL	SNPA	CARRNM	ANI	SIGTYPE	STNCLS	
RHMDVA01IT20	ATC	0	ELO	NCRT	2W	TC	MIDL
NPRT	NSCR	919 (2)	ABC	Y	BELLI	COMB	

In the previous example, the noted fields in the (ATC) TRKGRP Table perform the following functions:

- Field CLLI defines the outgoing trunk group name as RHMDVA01IT20.
- Field GRPTYP, entry ATC, defines the trunk group type as ATC.
- Field DIR, entry 2W, defines the direction of traffic on the trunk group as two-way.
- Field PRTNM, entry NPRT, indicates that pretranslation is not required on the trunk group.
- Field SCRNCL, entry NSCR, indicates that calls on the trunk group do not require class of service screening.
- Field SNPA, entry 919 (reference 2), defines the trunk group's Serving NPA code. This is the same SNPA defined in the TOPS Trunk Group Table.
- Field CARRNM, entry ABC, represents the name of the IC that the trunk group serves.
- Field ANI, entry Y, indicates that Automatic Number Identification (ANI) information is required by the IC.
- Field SIGTYPE, entry BELLI, defines the ANI signaling format on the trunk group as Feature Group C with one ANI ID digit.
- Field STNCLS, entry COMB, defines signaling on the trunk group as combined.

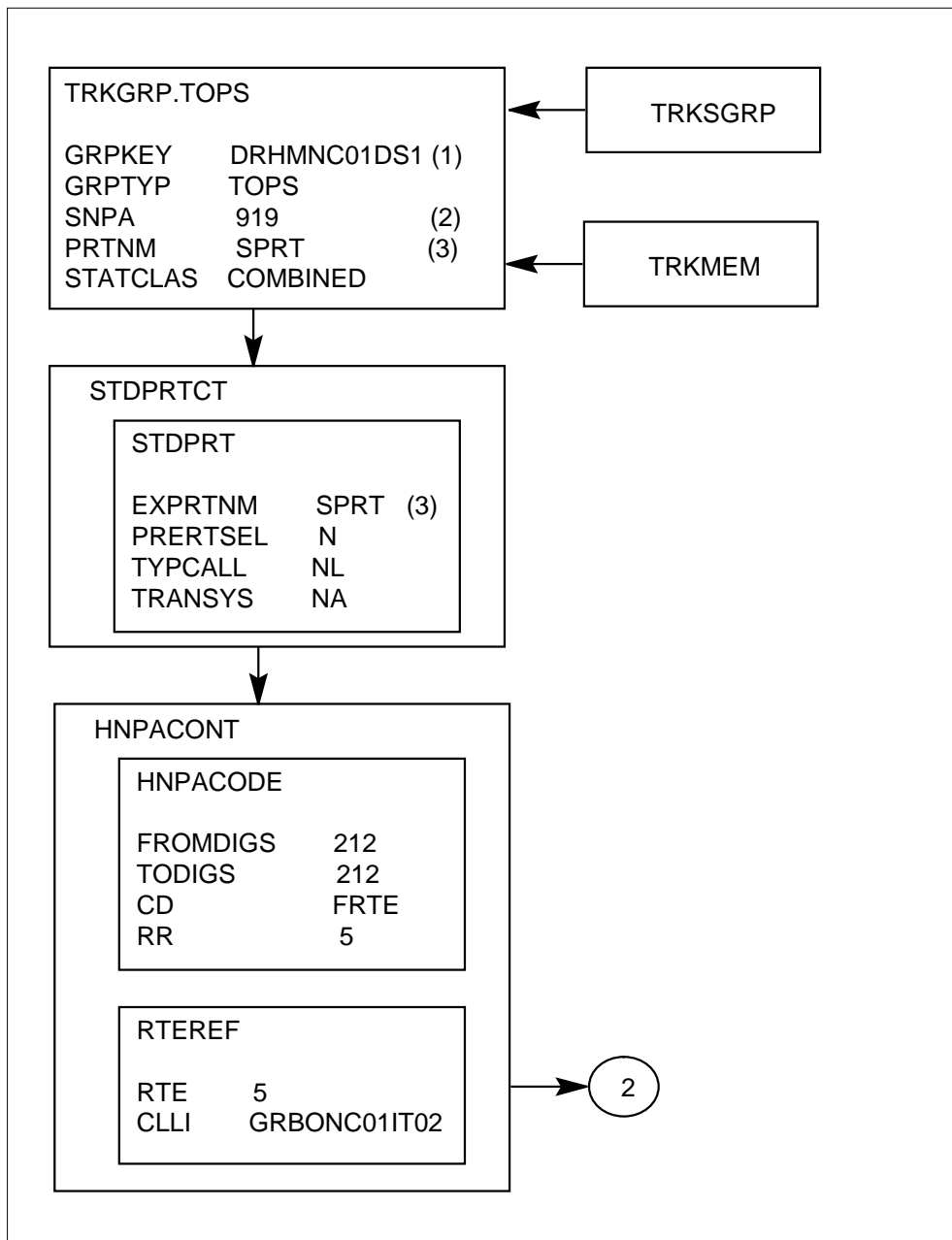
A DMS-200 TOPS office outpulses this call to the IC as KP+2129925555+ST3P. The start signal is then followed by the ANI spill KP+0+9271812+ST.

Basic InterLATA Call Map

The following figure is a call map illustrating the basic table flow for 0+ interLATA non-coin calls over a combined trunk group.

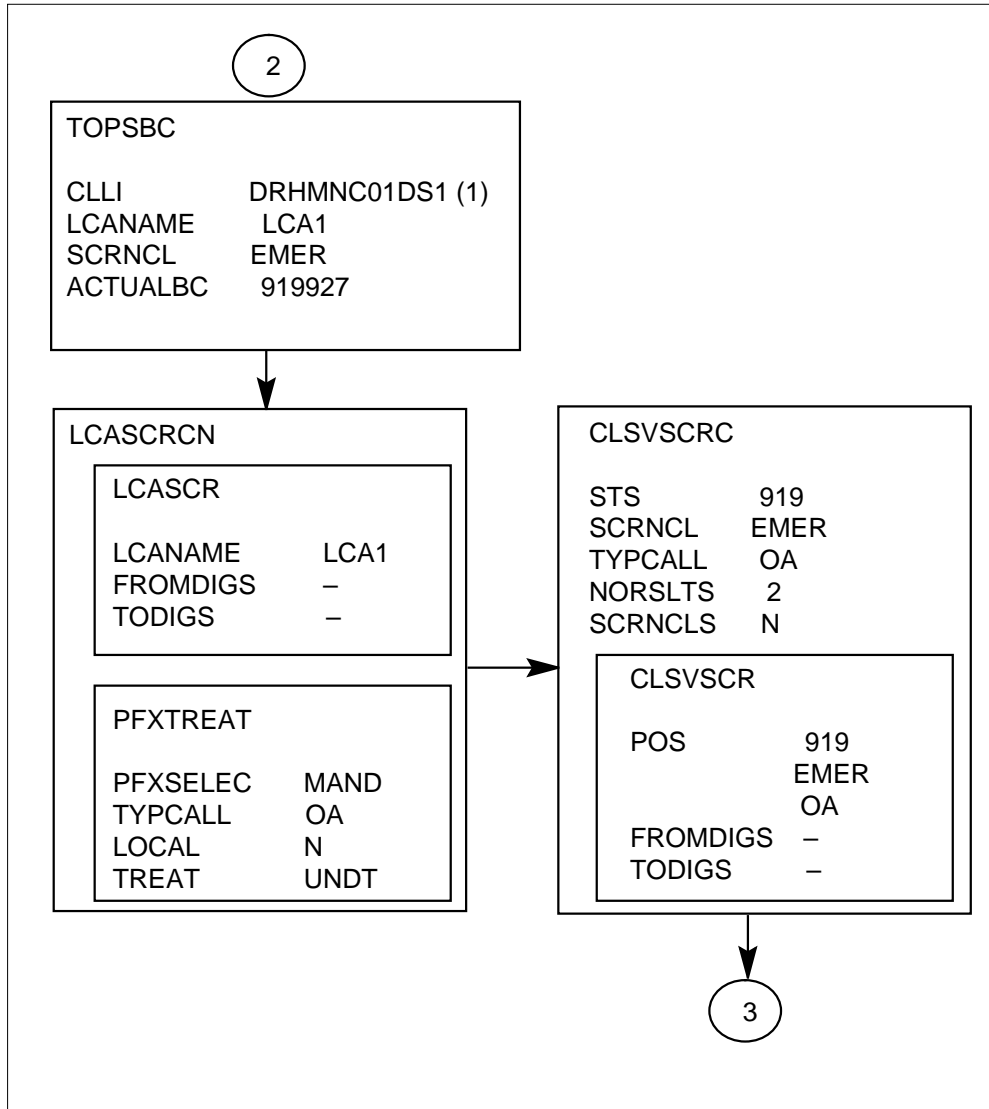
Reference: TOPS Call Descriptions (continued)

Basic interLATA call map



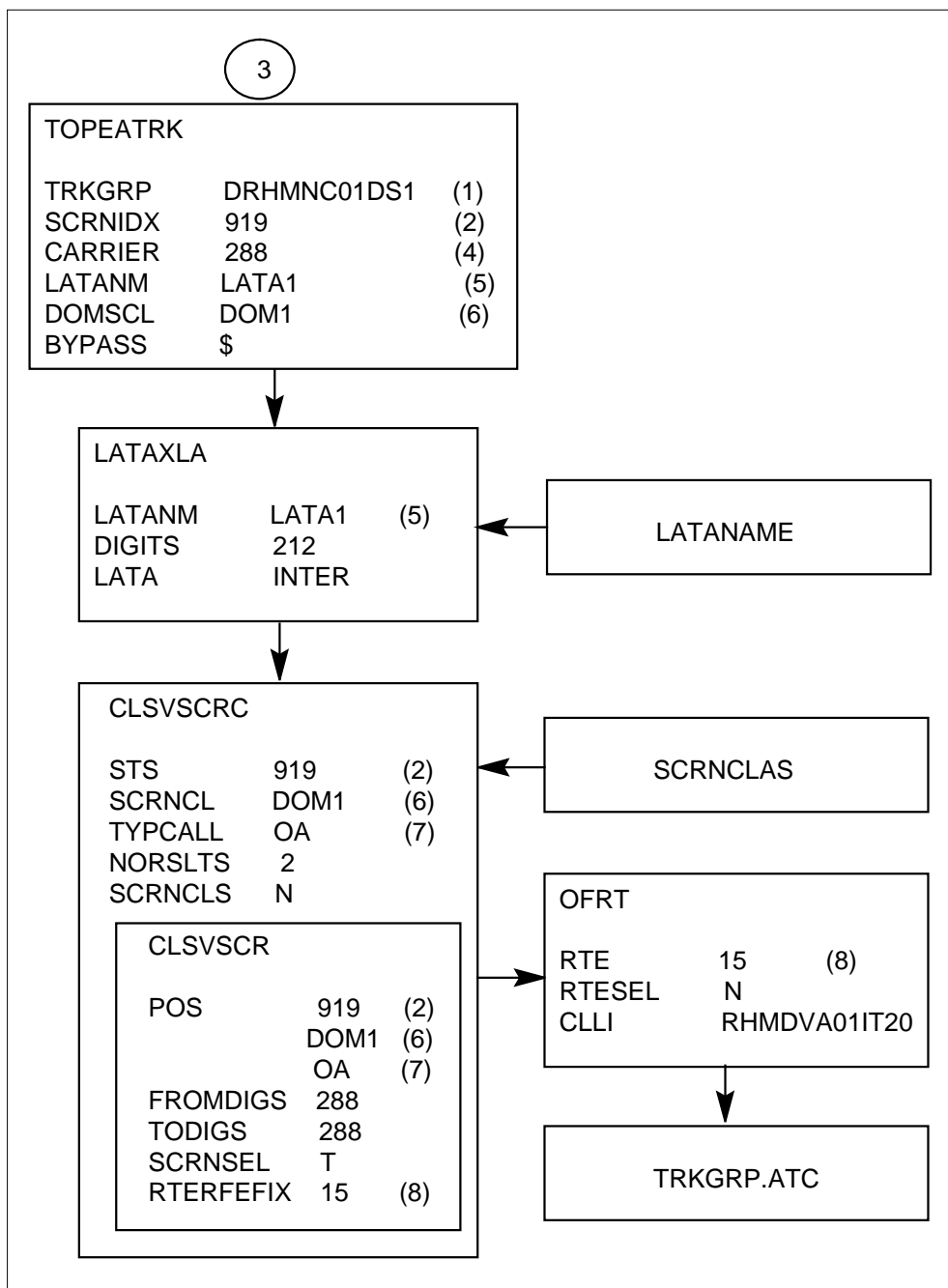
Reference: TOPS Call Descriptions (continued)

Basic interLATA call map (continued)



Reference: TOPS Call Descriptions (continued)

Basic interLATA call map (continued)



InterLATA: One-Plus InterLATA Coin Non-EAEO DP

The following section describes the call progression for a one-plus (1+) coin interLATA call. The call in this example is from a Non-Equal Access End

Reference: TOPS Call Descriptions (continued)

Office (Non-EAEO) using Dial Pulse (DP) outpulsing and Feature Group C (FGC) signaling. The call arrives in a DMS-200 TOPS office on a dedicated trunk group carrying coin traffic.

For the following call progression, the caller dials 1+212-992-5555. The calling party's number is (919) 927-1812. The end office absorbs the "1" and outpulses the called number as 2129925555. The called number is then followed by the ANI spill, which in this example is KP+0+9271812+ST.

Following is a list of the data tables used by a DMS-200 TOPS office when processing 1+ interLATA coin calls. The tables are not listed in datafill sequence and are not necessarily in the exact order in which the information in these tables is accessed. For the correct order, see TOPS Basic Call Progression.

- TRKGRP.TOP
- STDPRTCT.STDPRT
- HNPACONT.HNPACODE
- HNPACONT.RTEREF
- TOPSBC
- LCASCRCN
- LCASCRCN.LCASCRC
- PFXTRTAT
- CLSVSCRC
- CLSVSCRC.CLSVSCR
- TOPEATR
- LATA
- CLSVSCRC
- CLSVSCRC.CLSVSCR
- OFRT
- TRKGRP.ATC

Following is a description of the call progression for this 1+ interLATA call. This section only covers those tables that are specific to the call. For a complete discussion of the basic interLATA call progression, see

Reference: TOPS Call Descriptions (continued)

TOPS TRKGRP Table

For a call carried on a dedicated trunk group, a DMS-200 TOPS office uses the STATCLAS field of the TOPS TRKGRP Table to determine the station class of the call.

Following is an example tuple in the TRKGRP Table. In the example, the entry in field STATCLAS is set to COIN for dedicated coin groups.

MAP display example for table TRKGRP.TOPS with coin station class

```

GRPKEY          GRPTYP  TRAFSNO  PADGRP  NCCLS  DIR  SELSEQ  SNPA
PRTNM  LCANAME  SCRNL  OHNXXSCR  TRAFCLS  STATCLAS  TIMEOUT
NPANXXTQ  DISPLAY  CLGID  NOBILLCD  ANISEIZ  ANIPDIAL  TRTMTSUP
COINTYPE  PADSTAT0  PADSTA1
-----
DRHMNC01DS1 (1)  TOPS      0      ELO     NCRT    IC     MIDL    919 ( 2)
SPRT (3)  NLCA     NSCR     N       SP      COIN    Y
      N      0      BELL     6      10     10     N
      CDF    ENABLED  DISABLED
  
```

STDPRTCT.STDPRT Subtable

Following is an example tuple in the STDPRTCT.STDPRT Subtable.

MAP display example for table STDPRTCT

```

EXPRTNM
-----
SPRT (3)
  
```

MAP display example for subtable STDPRTCT.STDPRT

```

FROMDIGS  TODIGS  PRETSEL  TYPCALL  NOPREDIG  TRANSYS
-----
      2      9      N      NL      0      NA
  
```

HNPACONT.HNPACODE Subtable

Following is an example tuple in the HNPACONT.HNPACODE Subtable.

Reference: TOPS Call Descriptions (continued)

MAP display example for table HNPACONT

```

NPA
-----
919 (2)
    
```

MAP display example for subtable HNPACONT.HNPACODE

```

FROMDIGS  TODIGS   CD    RR
-----
    212      212   FRTE   5
    
```

HNPACONT.RTEREF Subtable

Following is an example tuple in the HNPACONT.RTEREF Subtable.

MAP display example for table HNPACONT

```

NPA
-----
919 (2)
    
```

MAP display example for subtable HNPACONT.RTEREF

```

RTE  RTESEL  CONNTYPE  CLLI      DELDIGS  PRFXDIGS
CANCNORC
-----
  5    N        D    GRBONC01ITO2  0        N
      N
    
```

TOPSBC Table

Following is an example tuple in the TOPSBC Table.

MAP display example for table TOPSBC

```

      CLLI      BILLCODE  LCANAME  SCRNL  ACTUALBC
      CHGCLSS
-----
DRHMNC01DS1 (1)  927      LCA1     EMER   919927
      TOPS
    
```

Reference: TOPS Call Descriptions (continued)

Note: In this call progression, a DMS-200 TOPS office accesses the LCASCRCN.LCASCRC, PFXTREAT, CLSVSCRC, and CLSVSCRC.CLSVSCR tables. These tables are not presented here, but are shown in the call map at the end of this call progression section. For a complete discussion of these tables, refer to the TOPS Basic InterLATA Call Progression section.

TOPEATRK Table

Following is an example tuple in the TOPEATRK Table.

MAP display example for table TOPEATRK for a non-EAEO

TRUNKGRP	ENDOFFCE	CARRIER	LATANM	DOMSCL
OVSSCL	SCRNIDX	BYPASS		

DRHMNC01DS1 (1)	NCONFORM	288 (4)	LATA1 (5)	DOM1 (6)
OVS1	919 (2)	\$		

LATAXLA Table

Following is an example tuple in the LATAXLA Table. In the example, the entry of 212 in field DIGITS represents the NPA of the called number (212-992-5555).

MAP display example for table LATAXLA

LATANM	DIGITS	LATA	STATE	EATYPE

LATA1 (5)	212	INTER	INTER	STD

CLSVSCRC Table

Following is an example tuple in the CLSVSCRC Table.

MAP display example for table CLSVSCRC

STS	SCRNCL	TYPCALL	NORSLTS	SCRNSEL	POSN

919 (2)	DOM1 (6)	DD (7)	2	N	NONE

Reference: TOPS Call Descriptions (continued)

In the previous example, the noted fields in the CLSVSCRC Table perform the following functions:

- Field STS, entry 919 (reference 2), contains the index from the TOPS TRKGRP Table.
- Field SCRNCCL, entry DOM1 (reference 6), contains the domestic screening class name defined in the TOPEATRK Table.
- Field TYPCALL, entry DD (reference 7), identifies the call type as direct-dialed. The call type is determined by reading the start signal (ST) in the calling number spill (KP+0+9271812+ST).

CLSVSCRC.CLSVSCR Subtable

Following is an example tuple in the CLSVSCRC.CLSVSCR Subtable.

MAP display example for table CLSVSCRC

STS	SCRNCCL	TYPCALL
919 (2)	DOM1 (6)	DD (7)

MAP display example for table CLSVSCRC.CLSVSCR

FROMDIGS	TODIGS	SCRNSEL	RTEREFIX
288 (4)	288	T	15 (8)

OFRT Table

Following is an example tuple in the OFRT Table.

MAP display example for table OFRT

RTE	RTESEL	CONNTYPE	CLLI	DELDIGS	PRFXDIGS
15 (8)	N	D	RHMDVA01IT20	0	N
CANCNORC	N \$				

(ATC) TRKGRP Table

Following is an example tuple in the (ATC) TRKGRP Table.

Reference: TOPS Call Descriptions (continued)

MAP display example for table TRKGRP.ATC

GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	TRAFCLS	SELSEQ
PRTNM	SCRNCL	SNPA	CARRNM	ANI	SIGTYPE	STNCLS	
RHMDVA01IT20	ATC	0	ELO	NCRT	2W	TC	MIDL
NPRT	NSCR	919 (2)	ABC	Y	BELLI	COMB	

In the previous example, the noted fields in the (ATC) TRKGRP Table perform the following functions:

- Field ANI, entry Y, indicates that Automatic Number Identification (ANI) information is required by the IC.
- Field STNCLS, entry COMB, defines signaling on the trunk group as combined.

A DMS-200 TOPS office outpulses this call to the IC as KP+2129925555+ST. The start signal is then followed by KP+0+9271812+ST.

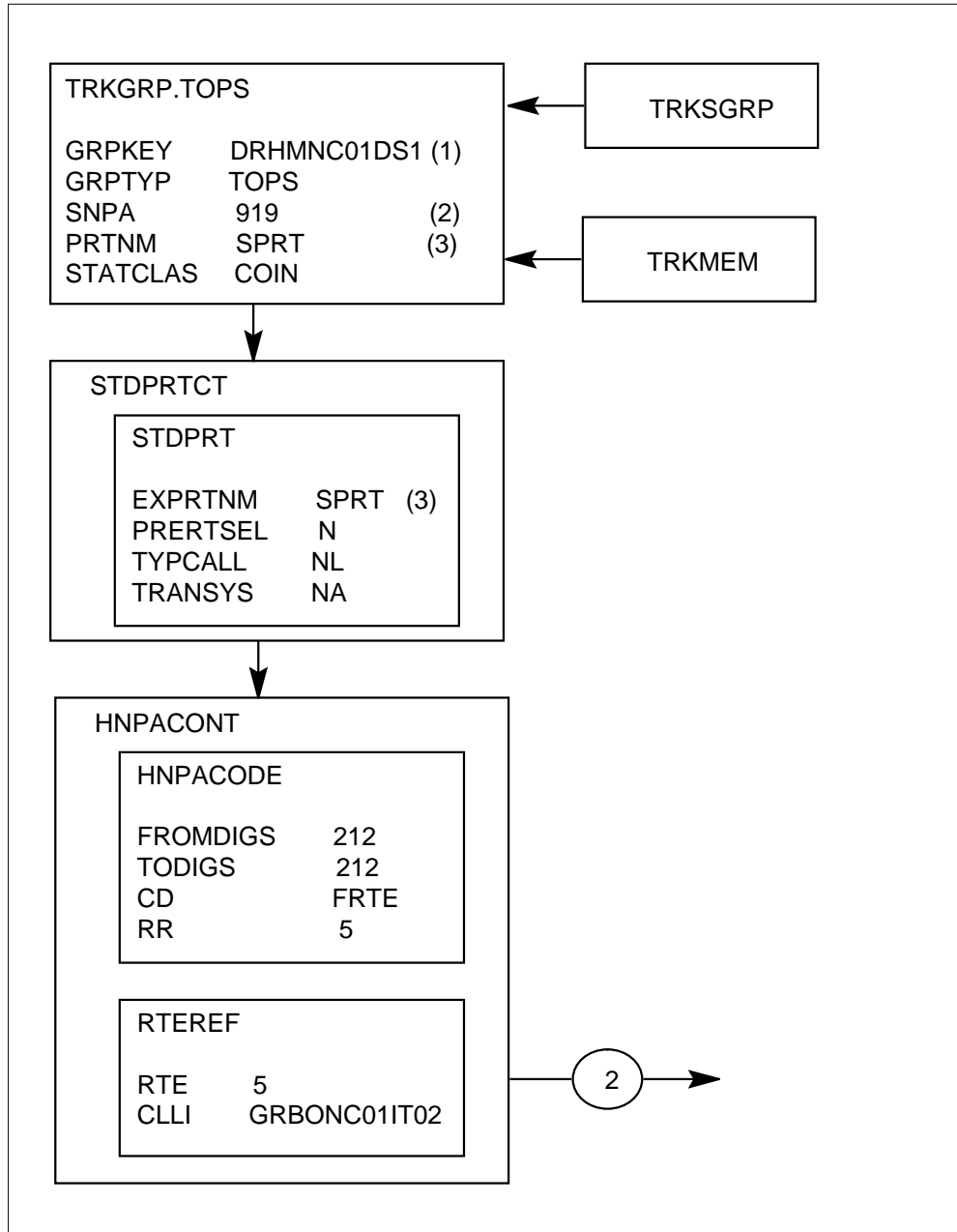
In order for InterLATA Carrier (IC) operators to collect coins from or return coins to this station, the coin control signals between the incoming trunk subgroup and the outgoing trunk subgroup must match. For example, if the incoming TOPS trunk subgroup has inband coin control signaling, then the outgoing ATC trunk subgroup must have inband coin control signaling. A different ATC trunk group and its associated trunk subgroup are needed for each type of coin control signaling.

One-Plus InterLATA Coin Call Map

The following figure is a call map illustrating the basic table flow for 1+ interLATA coin calls over a dedicated coin trunk group.

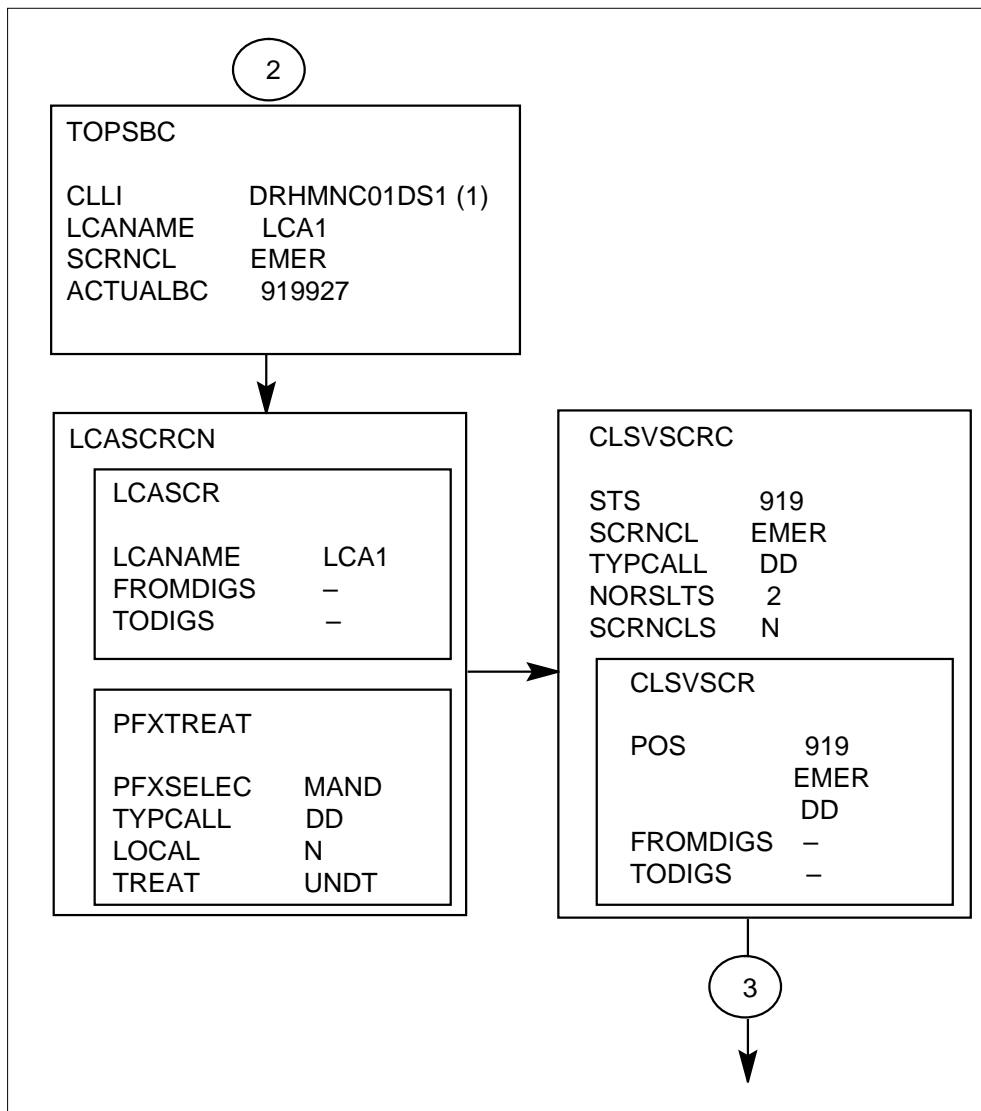
Reference: TOPS Call Descriptions (continued)

One-plus interLATA coin call map



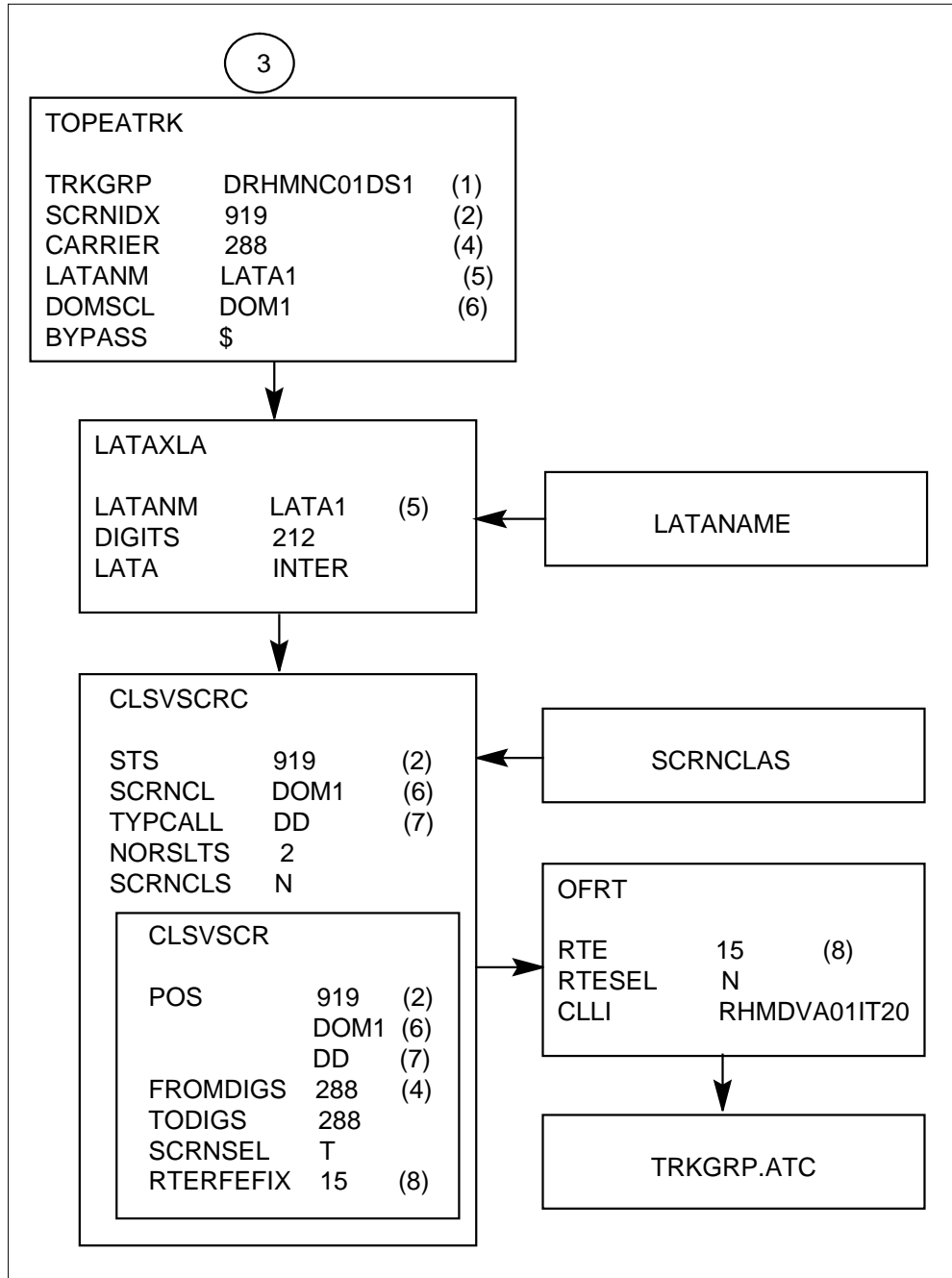
Reference: TOPS Call Descriptions (continued)

One-plus interLATA coin call map (continued)



Reference: TOPS Call Descriptions (continued)

One-plus interLATA coin call map (continued)



InterLATA: Zero-Minus InterLATA Combined EAEO MF Hotel

The following section describes the call progression for a zero-minus (0-) interLATA call from a hotel station. The call in this example is routed from an

Reference: TOPS Call Descriptions (continued)

Equal Access End Office (EAEO) over a combined trunk group. The end office uses Multifrequency (MF) outpulsing and Feature Group C (FGC) signaling.

For the following call progression, the caller dials 0. The calling party's number is (919) 927-1812. The end office outpulses a key pulse (KP) plus the appropriate start signal as: KP+ST3P. The start signal is then followed by the ANI spill, which in this example is KP+6+9271812+STP.

Following is a list of the data tables used by a DMS-200 TOPS office when processing 0- interLATA calls with field BYPASS set to HOTEL. The tables are not listed in datafill sequence and are not necessarily in the exact order in which the information in these tables is accessed. For the correct datafill order, refer to the TOPS Basic Call Progression section.

- TRKGRP.TOPS
- TOPSBC
- TOPEATRK
- CLSVSCRC
- CLSVSCRC.CLSVSCR
- OFRT
- TRKGRP.ATC

Following is a description of the call progression for this 0- interLATA call. This section only covers those tables that are specific to the call. For a complete discussion of the basic interLATA call progression, see the TOPS Basic InterLATA Call Progression section.

TOPS TRKGRP Table

The design of the TOPS trunk group software requires it to examine the incoming start signal in the ANI information to determine the call type. In this call example, the "ST3P" start signal in the called number spill (KP+ST3P) and the fact that no digits were received from the end office mean that the caller dialed only a "0" from a non-coin station, and that operator assistance is required. The ANI ID digit "6" indicates that the call originates from a hotel station.

Following is an example tuple in the TOPS TRKGRP Table. In the example, field STATCLAS has been marked COMBINED to indicate that the trunk group carries combined traffic.

Reference: TOPS Call Descriptions (continued)

MAP display example for table TRKGRP.TOPS with combined station class

GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	SELSEQ	SNPA
PRTNM	LCANAME	SCRNCL	OHNXXSCR	TRAFCLS	STATCLAS	TIMEOUT	
NPANXXTQ	DISPLAY	CLGID	NOBILLCD	ANISEIZ	ANIPDIAL	TRTMTSUP	
COINTYPE	PADSTAT0	PADSTA1					

DRHMNC01DS1 (1)	TOPS	0	ELO	NCRT	IC	MIDL	919 (2)
SPRT (3)	NLCA	NSCR	N	SP	COMBINED	N	
N	0	BELL	6	10	10	N	
CDF	ENABLED	DISABLED					

TOPSBC Table

Following is an example tuple in the TOPSBC Table.

MAP display example for table TOPSBC

CLLI	BILLCODE	LCANAME	SCRNCL	ACTUALBC
CHGCLSS				

DRHMNC01DS1 (1)	927	LCA1	EMER	919927
TOPS				

TOPEATRK Table

The ANI ID digit "6" in the calling number spill (KP+6+9271812+ST) identifies the call as originating from a hotel station. The routing of hotel traffic, like the routing of 0- traffic, is dependent upon the entry in the BYPASS field of the TOPEATRK Table as follows:

- A HOTEL entry routes all hotel calls, regardless of the LATA status (inter or intra) and call type (OA or DD), to an InterLATA Carrier (IC) operator position.
- A dollar sign (\$) in this field is interpreted as a nil (blank) value. A nil value means that all hotel and 0- traffic route to an Operating Telephone Company (OTC) operator position.

Following is an example of a tuple in the TOPEATRK Table. In the example, field BYPASS has been marked as HOTEL. All hotel-originated calls (regardless of the LATA status or call type) route to an IC using the class of service screening specified in the TOPEATRK Table.

Reference: TOPS Call Descriptions (continued)

MAP display example for table TOPEATRK with HOTEL Entry in Field BYPASS

TRUNKGRP	ENDOFFCE	CARRIER	LATANM	DOMSCL
OVSSCL	SCRNIDX	BYPASS		

DRHMNC01DS1 (1)	CONFORM	288 (4)	LATA1 (5)	DOM1 (6)
OVS1	919 (2)	HOTEL		

Because of the HOTEL entry in field BYPASS, the call routes to an IC, regardless of whether the call is interLATA or intraLATA. The call routes using the class of service screening defined in the TOPEATRK Table.

CLSVSCRC Table

Following is an example of a tuple in the CLSVSCRC Table. In the example, the noted fields in the CLSVSCRC Table perform the following functions:

- Field STS, entry 919 (reference 2), contains the index from the TOPS TRKGRP Table.
- Field SCRNCCL, entry DOM1 (reference 6), contains the domestic screening class name defined in the TOPEATRK Table.
- Field TYPCALL, entry OA (reference 7), identifies the call type as operator-assisted. The call type is determined by examination of the start signal (ST3P) in the calling number spill (KP+ST3P).

MAP display example for table CLSVSCRC

STS	SCRNCCL	TYPCALL	NORSLTS	SCRNSEL	POSN

919 (2)	DOM1 (6)	OA (7)	2	N	NONE

CLSVSCRC.CLSVSCR Subtable

Following is an example of a tuple in the CLSVSCRC.CLSVSCR Subtable.

MAP display example for table CLSVSCRC

STS	SCRNCCL	TYPCALL

919 (2)	DOM1 (6)	OA (7)

Reference: TOPS Call Descriptions (continued)

MAP display example for table CLSVSCRC.CLSVSCR

FROMDIGS	TODIGS	SCRNSEL	RTEREFIX
288 (4)	288	T	15 (8)

OFRT Table

Following is an example of a tuple in the OFRT Table.

MAP display example for table OFRT

RTE	RTESEL	CONNTYPE	CLLI	DELDIGS	PRFXDIGS
15 (8)	N	D	RHMDVA01IT20	0	N
CANCNORC					
N \$					

(ATC) TRKGRP Table

Following is an example of a tuple in the (ATC) TRKGRP Table. In the example, the noted fields in the (ATC) TRKGRP Table perform the following functions:

- Field ANI, entry Y, indicates that Automatic Number Identification (ANI) information is required by the IC.
- Field STNCLS, entry COMB, defines signaling on the trunk group as combined.

The DMS-200 TOPS outpulses this call to the IC as KP+ST3P. The start signal is then followed by KP+6+9271812+ST.

MAP display example for table TRKGRP.ATC

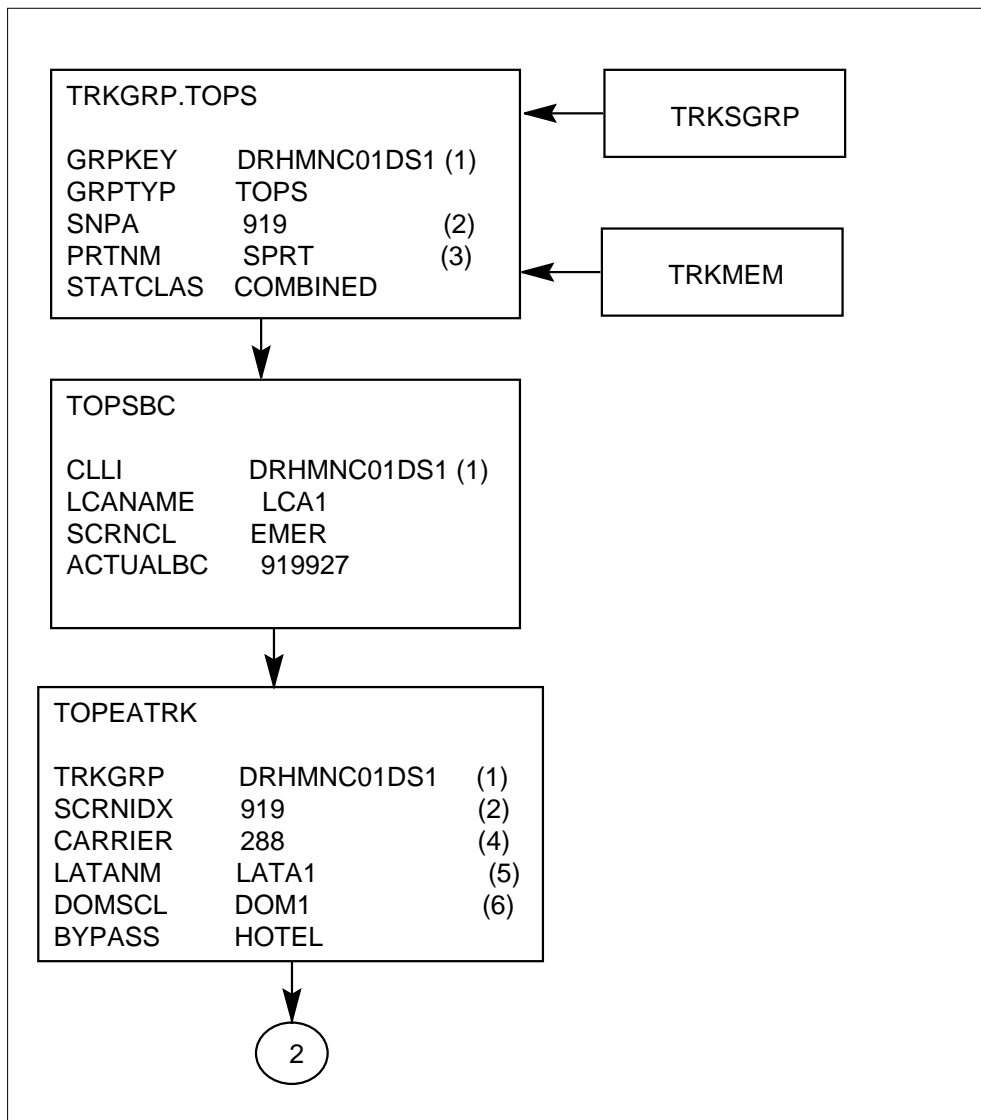
GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	TRAFCLS	SELSEQ
RHMDVA01IT20	ATC	0	ELO	NCRT	2W	TC	MIDL
NPRT	NSCR	919 (2)	ABC	Y	BELLI	COMB	
PRTNM SCRNCN SNPA CARRNM ANI SIGTYPE STNCLS							

Zero-Minus InterLATA Combined Call Map

Following is a call map illustrating the table flow for 0- interLATA hotel calls with field BYPASS set to HOTEL.

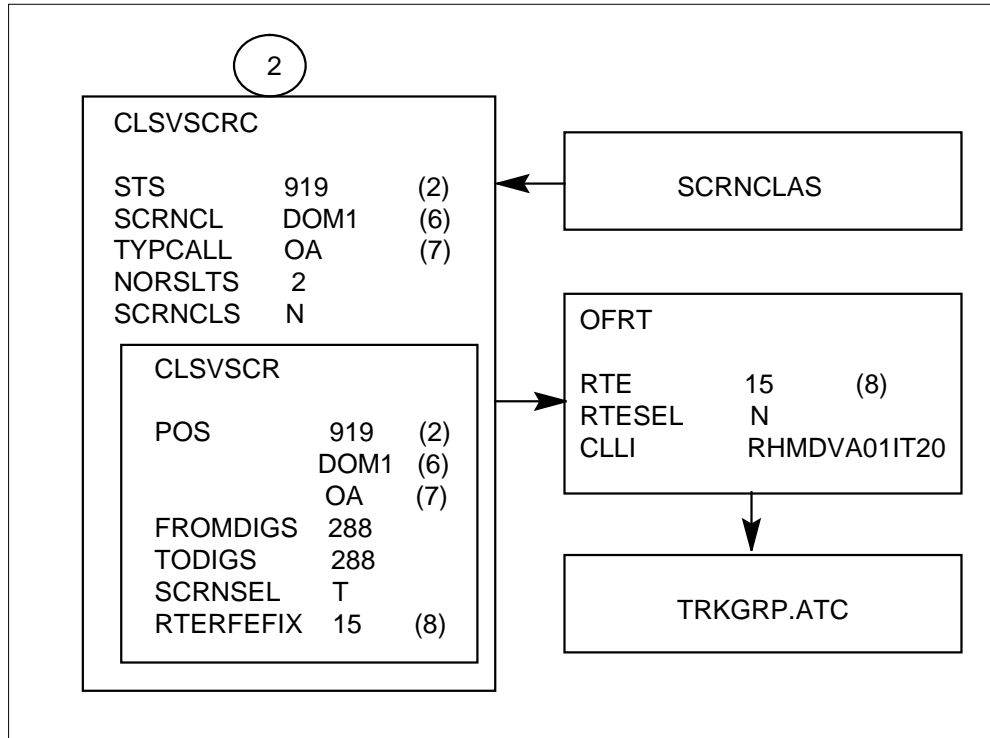
Reference: TOPS Call Descriptions (continued)

Zero-minus InterLATA combined call map



Reference: TOPS Call Descriptions (continued)

Zero-minus InterLATA combined call map (continued)



InterLATA: Zero-Minus InterLATA Combined EAEO MF Non-Coin

The following section describes the call progression for a zero-minus (0-) interLATA call from a non-coin station. The call in this example is routed from an Equal Access End Office (EAEO) over a combined trunk group. The end office uses Multifrequency (MF) outpulsing and Feature Group C (FGC) signaling.

For the following call progression, the caller dials 0. The calling party's number is (919) 927-1812. The end office seizes the trunk group and outpulses a key pulse (KP), plus the appropriate start signal as KP+ST3P. The start signal is then followed by the ANI spill, which in this example is KP+0+9271812+ST.

The following lists the data tables used by a DMS-200 TOPS office when processing 0- interLATA combined calls. The tables are not listed in datafill sequence and are not necessarily in the exact order in which the information in these tables is accessed. For the correct datafill order, see the TOPS Basic Call Progression section.

- TRKGRP.TOP
- TOPSBC

Reference: TOPS Call Descriptions (continued)

- TOPEATRK
- CLSVSCRC
- CLSVSCRC.CLSVSCR
- OFRT
- TRKGRP.ATC

Following is a description of the call progression for this 0- interLATA call. This section only covers those tables that are specific to the call. For a complete discussion of the basic interLATA call flow, see the TOPS Basic Call Progression section.

TOPS TRKGRP Table

The design of the TOPS trunk group software requires it to examine the incoming start signal in the ANI information to determine the call type. In this call example, the ST3P start signal in the called number spill (KP+ST3P) and the fact that no digits were received from the end office mean that the caller dialed only a 0 from a non-coin station and that operator assistance is required.

Following is an example tuple in the TOPS TRKGRP Table. In the example, field STATCLAS has been marked COMBINED to indicate that the trunk group carries combined traffic.

MAP display example for table TRKGRP.TOPS with combined station class

GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	SELSEQ	SNPA
PRTNM	LCANAME	SCRNCL	OHNXXSCR	TRAFCLS	STATCLAS	TIMEOUT	
NPANXXTQ	DISPLAY	CLGID	NOBILLCD	ANISEIZ	ANIPDIAL	TRTMTSUP	
COINTYPE	PADSTAT0	PADSTA1					

DRHMNC01DS1 (1)	TOPS	0	ELO	NCRT	IC	MIDL	919 (2)
SPRT (3)	NLCA	NSCR	N	SP	COMBINED		N
	N	0	BELL	6	10	10	N
	CDF	ENABLED	DISABLED				

TOPSBC Table

Following is an example tuple in the TOPSBC Table.

Reference: TOPS Call Descriptions (continued)

MAP display example for table TOPSBC

CLLI CHGCLSS	BILLCODE	LCANAME	SCRNCL	ACTUALBC
DRHMNC01DS1 (1) TOPS	927	LCA1	EMER	919927

TOPEATRK Table

The routing of 0- traffic is dependent upon the entry in the BYPASS field of the TOPEATRK Table as follows:

- A ZEROM entry routes all 0- traffic, regardless of the LATA status, to an IC operator position.
- A dollar sign (\$) in this field is interpreted as a nil (blank) value. A nil value means that all 0- traffic routes to an Operating Telephone Company (OTC) operator position.

Following is an example tuple in the TOPEATRK Table. In the example, field BYPASS contains a \$, which indicates that all 0- traffic routes to an OTC operator position.

MAP display example for table TOPEATRK with Nil Value in Field BYPASS

TRUNKGRP OVSSCL	SCRNIDX	ENDOFFCE BYPASS	CARRIER	LATANM	DOMSCL
DRHMNC01DS1 (1) OVS1	(1) 919 (2)	CONFORM \$	288 (4)	LATA1 (5)	DOM1 (6)

The call progression proceeds to the POSITION Table. For a description of the POSITION table and associated tables, refer the TOPS IntraLATA Basic Call Progression section. When the call reaches a TOPS operator position, an operator asks the caller for the called number, which in this example is 212-992-5555. Because the operator knows that the call is interLATA, the call is handed off to an IC.

If the operator does not know that a call is interLATA, the operator can key in the digits of the called number. Call progression would proceed as described in the TOPS Basic InterLATA Call Progression section.

Reference: TOPS Call Descriptions (continued)

CLSVSCRC Table

Following is an example of a tuple in the CLSVSCRC Table. In the example, the noted fields in the CLSVSCRC Table perform the following functions:

- Field STS, entry 919 (reference 2), contains the index from the TOPS TRKGRP Table.
- Field SCRNCCL, entry DOM1 (reference 6), contains the domestic screening class name defined in the TOPEATRK Table.
- Field TYPCALL, entry OA (reference 7), identifies the call type as operator-assisted. The call type is determined by examination of the start signal (ST3P) in the calling number spill (KP+ST3P).

MAP display example for table CLSVSCRC

STS	SCRNCCL	TYPCALL	NORSLTS	SCRNSEL	POSN
919 (2)	DOM1 (6)	OA (7)	2	N	NONE

CLSVSCRC.CLSVSCR Subtable

Following is an example of a tuple in the CLSVSCRC.CLSVSCR Subtable.

MAP display example for table CLSVSCRC

STS	SCRNCCL	TYPCALL
919 (2)	DOM1 (6)	OA (7)

MAP display example for table CLSVSCRC.CLSVSCR

FROMDIGS	TODIGS	SCRNSEL	RTEREFIX
288 (4)	288	T	15 (8)

OFRT Table

Following is an example of a tuple in the OFRT Table.

Reference: TOPS Call Descriptions (continued)

MAP display example for table OFRT

RTE	RTESEL	CONNTYPE	CLLI	DELDIGS	PRFXDIGS
CANCNORC					

15 (8)	N	D	RHMDVA01IT20	0	N
N \$					

(ATC) TRKGRP Table

Following is an example of a tuple in the (ATC) TRKGRP Table. In the example, the noted fields in the (ATC) TRKGRP Table perform the following functions:

- Field ANI, entry Y, indicates that Automatic Number Identification (ANI) information is required by the IC.
- Field STNCLS, entry COMB, defines signaling on the trunk group as combined.

A DMS-200 TOPS office outpulses this call to the IC as KP+ST3P. The start signal is then followed by KP+0+9271812+ST.

MAP display example for table TRKGRP.ATC

GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	TRAFCLS	SELSEQ
PRTNM	SCRNCL	SNPA	CARRNM	ANI	SIGTYPE	STNCLS	

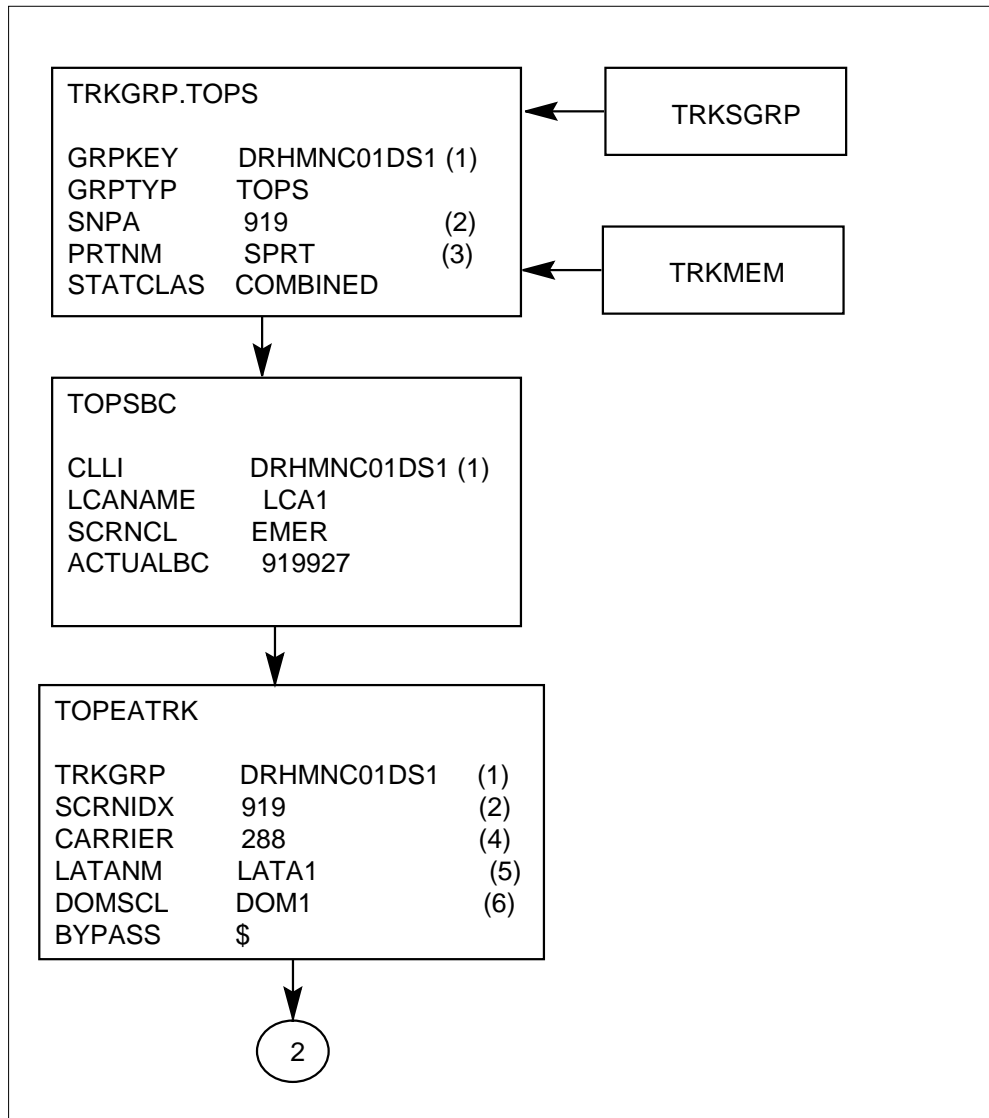
RHMDVA01IT20	ATC	0	ELO	NCRT	2W	TC	MIDL
NPRT	NSCR	919 (2)	ABC	Y	BELLI	COMB	

Zero-Minus InterLATA Combined Call Map

Following is a call map illustrating the table flow for 0- interLATA combined calls.

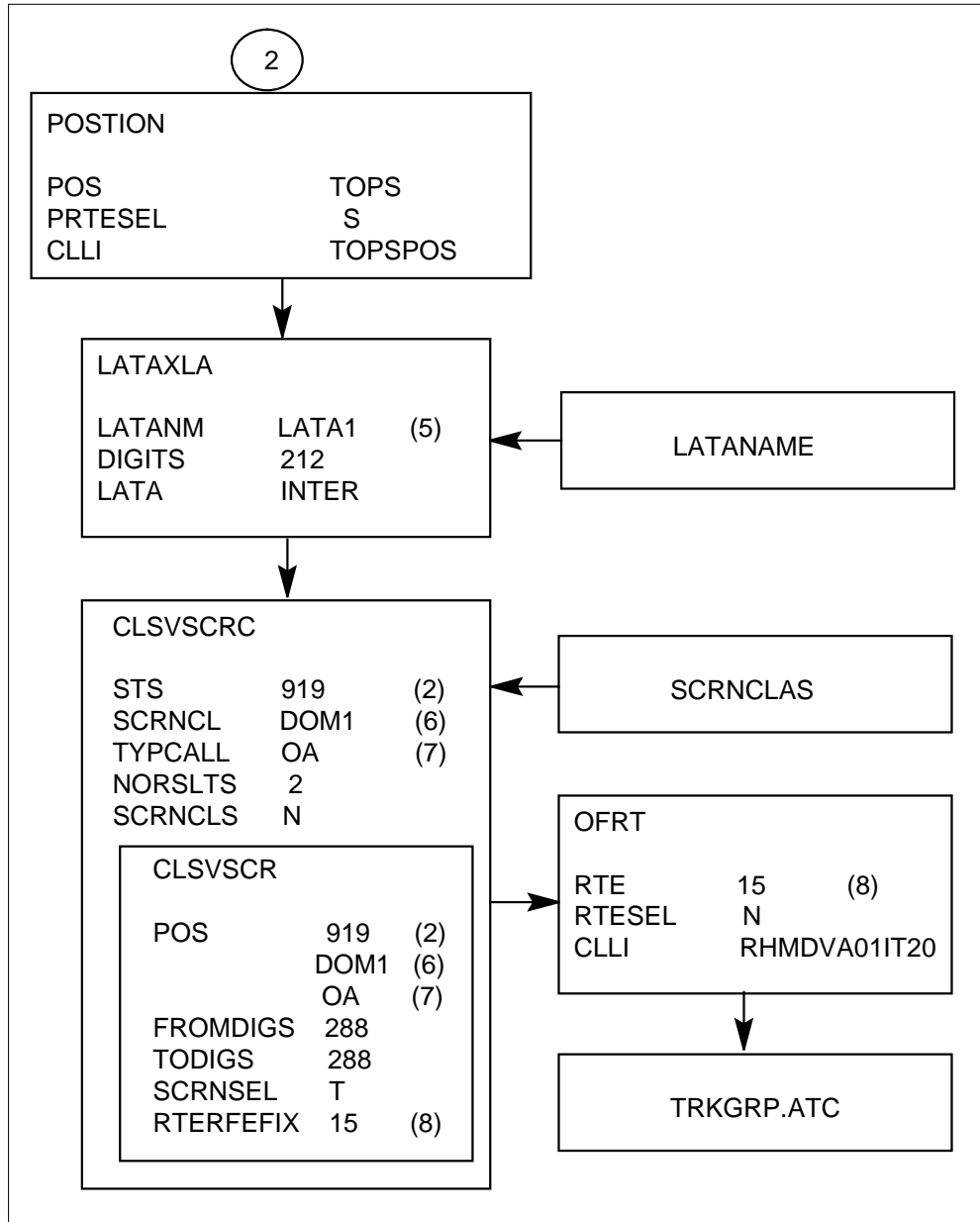
Reference: TOPS Call Descriptions (continued)

Zero-minus InterLATA combined call map



Reference: TOPS Call Descriptions (continued)

Zero-minus InterLATA combined call map (continued)



InterLATA: Zero-Minus InterLATA Dnlookup Non-EAEO DP

The following section describes the call progression for a zero-minus (0-) interLATA call from a non-coin station. The call in the example is routed from a Non-Equal Access End Office (Non-EAEO) over a dedicated trunk group. The end office uses Dial Pulse (DP) outpulsing and Feature Group C (FGC) signaling.

Reference: TOPS Call Descriptions (continued)

For the following call progression, the caller dials 0. The calling party's number is (919) 927-1812. The end office seizes the trunk group and outputs the ANI spill, which in this example is KP+0+9271812+STP.

Following is a list of the data tables used by a DMS-200 TOPS office when processing 0- interLATA calls with a station class of Dnlookup. The tables are not listed in datafill sequence and are not necessarily in the exact order in which the information in these tables is accessed. For the correct order, refer to the TOPS Basic Call Progression section.

- TRKGRP.TOPS
- TOPSBC
- SPLDNID
- TOPEATRK
- CLSVSCRC
- CLSVSCRC.CLSVSCR
- OFRT
- TRKGRP.ATC

Following is a description of the call progression for this 0- interLATA call. This section only covers those tables that are specific to the call. For a complete discussion of the basic interLATA call flow, see the TOPS Basic InterLATA Call Progression section.

TOPS TRKGRP Table

The TOPS trunk group software examines the incoming start signal in the ANI information to determine the call type. In this call example, the STP in the ANI spill (KP+0+9271812+STP) and the fact that no calling digits were received from the end office mean that only a 0 was dialed. However, because the call originated over a dedicated trunk group, it cannot be determined by the examination of the start signal whether the call originated from a non-coin or a coin station.

For a call carried on a dedicated trunk group, a DMS-200 TOPS office uses the STATCLAS field of the TOPS TRKGRP Table to determine the station class of that call.

Following is an example of a tuple in the TOPS TRKGRP Table. In the example, the entry in field STATCLAS is DNLOOKUP.

A DNLOOKUP entry means that an end office is not capable of sending all the start signals (only ST and STP for calls dialed as 0-, 0+, or 1+) and cannot

Reference: TOPS Call Descriptions (continued)

differentiate between coin and non-coin traffic. In addition, a DNLOOKUP entry means that an end office cannot send all ANI ID digits. (The ANI ID digit 6 would have identified this call as originating from a hotel station.) The DNLOOKUP entry forces a DMS-200 TOPS office to search the Special Directory Number Identification (SPLDNID) Table to determine the station class (coin, hotel, or restricted) of the calling number.

Calls originating on a DP trunk group require a timeout to detect 0- calls on the trunk group. In the following datafill example, field TIMEOUT has been set to "Y" to detect 0- calls. The timeout is controlled by field PSPDSEIZ in the Trunk Subgroup (TRKSGRP) Table. An appropriate time length must be set in field PSPDSEIZ. After the specified time expires, ANI is requested from the end office.

MAP display example for table TRKGRP.TOPS with Dnlookup Station Class

GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	SELSEQ	SNPA
PRTNM	LCANAME	SCRNCL	OHNXXSCR	TRAFCLS	STATCLAS	TIMEOUT	
NPANXXTQ	DISPLAY	CLGID	NOBILLCD	ANISEIZ	ANIPDIAL	TRTMTSUP	
COINTYPE	PADSTAT0	PADSTA1					
DRHMNC01DS1 (1)	TOPS	0	EL0	NCRT	IC	MIDL	919 (2)
SPRT (3)	NLCA	NSCR	N	SP	DNLOOKUP	Y	
N	0	BELL	6	10	10	N	
CDF	ENABLED	DISABLED					

TOPSBC Table

Following is an example of a tuple in the TOPSBC Table.

MAP display example for table TOPSBC

CLLI	BILLCODE	LCANAME	SCRNCL	ACTUALBC
CHGCLSS				
DRHMNC01DS1 (1)	927	LCA1	EMER	919927
TOPS				

SPLDNID Table

The Special Directory Number Identification Table lists the directory numbers for coin, hotel, and restricted stations. If the directory number of the originating station is listed in the SPLDNID Table, the call routes to the Restricted Billing (RESTBIL) Table for determining how the call is displayed at the TOPS operator position.

Reference: TOPS Call Descriptions (continued)

If the calling number were from a coin station, it must appear in the SPLDNID Table and be designated as coin. If the number does not appear in this table, a DMS-200 TOPS office assumes that the calling number is non-coin. In the call example, the calling number would not appear in the SPLDNID Table.

TOPEATRK Table

The routing of 0- traffic is dependent upon the entry in the BYPASS field of the TOPEATRK Table as follows:

- A ZEROM entry routes all 0- traffic, regardless of the LATA status, to an IC operator position.
- A dollar sign (\$) in this field is interpreted as a nil (blank) value. A nil value means that all 0- traffic routes to an Operating Telephone Company (OTC) operator position.

Following is an example of a tuple in the TOPEATRK Table. In the example, field BYPASS contains a \$, which indicates that all 0- traffic routes to an OTC operator position.

MAP display example for table TOPEATRK with Nil Value in Field BYPASS

TRUNKGRP	ENDOFFCE	CARRIER	LATANM	DOMSCL
OVSSCL	SCRNIDX	BYPASS		
DRHMNC01DS1	(1)	NCONFORM	288 (4)	.LATA1 (5) DOM1 (6)
OVS1	919 (2)	\$		

The call progression proceeds to the POSITION Table. For a description of the POSITION table and associated tables, refer to the TOPS IntraLATA Basic Call Progression section.

When the call reaches a TOPS operator position, an operator asks the caller for the called number, which in this example is 212-992-5555. Because the operator knows that the call is interLATA, the call is handed off to an IC.

If the operator does not know that a call is interLATA, the operator can key in the digits of the called number as described in (Operator) STDPRTCT.STDPRT Subtable in the TOPS IntraLATA Basic Call Progression section.

Reference: TOPS Call Descriptions (continued)

CLSVSCRC Table

Following is an example of a tuple in the CLSVSCRC Table. In the example, the noted fields in the CLSVSCRC Table perform the following functions:

- Field STS, entry 919 (reference 2), contains the index from the TOPS TRKGRP Table.
- Field SCRNCCL, entry DOM1 (reference 6), contains the domestic screening class name defined in the TOPEATRK Table.
- Field TYPCALL, entry OA (reference 7), identifies the call type as operator-assisted. The call type is determined by examination of the incoming start signal.

MAP display example for table CLSVSCRC

STS	SCRNCCL	TYPCALL	NORSLTS	SCRNSEL	POSN
919 (2)	DOM1 (6)	OA (7)	2	N	NONE

CLSVSCRC.CLSVSCR Subtable

Following is an example of a tuple in the CLSVSCRC.CLSVSCR Subtable.

MAP display example for table CLSVSCRC

STS	SCRNCCL	TYPCALL
919 (2)	DOM1 (6)	OA (7)

MAP display example for table CLSVSCRC.CLSVSCR

FROMDIGS	TODIGS	SCRNSEL	RTEREFIX
288 (4)	288	T	15 (8)

OFRT Table

Following is an example of a tuple in the OFRT Table.

Reference: TOPS Call Descriptions (continued)

MAP display example for table OFRT

RTE	RTESEL	CONNTYPE	CLLI	DELDIGS	PRFXDIGS
CANCNORC					

15 (8)	N	D	RHMDVA01IT20	0	N
N \$					

(ATC) TRKGRP Table

Following is an example of a tuple in the (ATC) TRKGRP Table. In the example, the noted fields in the (ATC) TRKGRP Table perform the following functions:

- Field ANI, entry Y, indicates that Automatic Number Identification (ANI) information is required by the IC.
- Field STNCLS, entry COMB, defines signaling on the trunk group as combined.

A DMS-200 TOPS office outpulses this call to the IC as KP+ST3P. The start signal is then followed by KP+0+9271812+ST.

MAP display example for table TRKGRP.ATC

GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	TRAFCLS	SELSEQ
PRTNM	SCRNCL	SNPA	CARRNM	ANI	SIGTYPE	STNCLS	

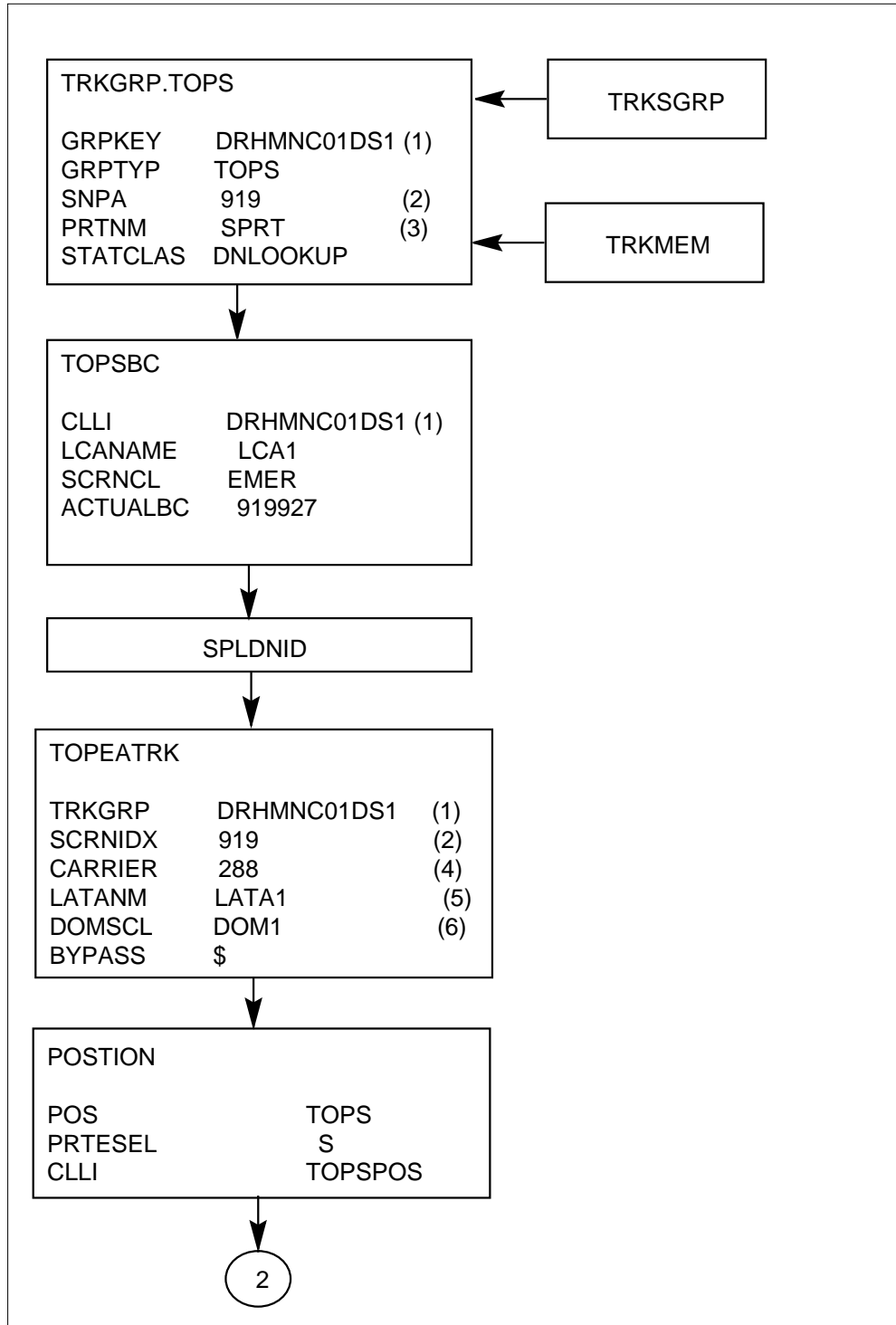
RHMDVA01IT20	ATC	0	ELO	NCRT	2W	TC	MIDL
NPRT	NSCR	919 (2)	ABC	Y	BELLI	COMB	

Zero-Minus InterLATA Dnlookup Call Map

Following is a call map illustrating the table flow for 0- interLATA non-coin calls over a dedicated trunk group with a station class of Dnlookup.

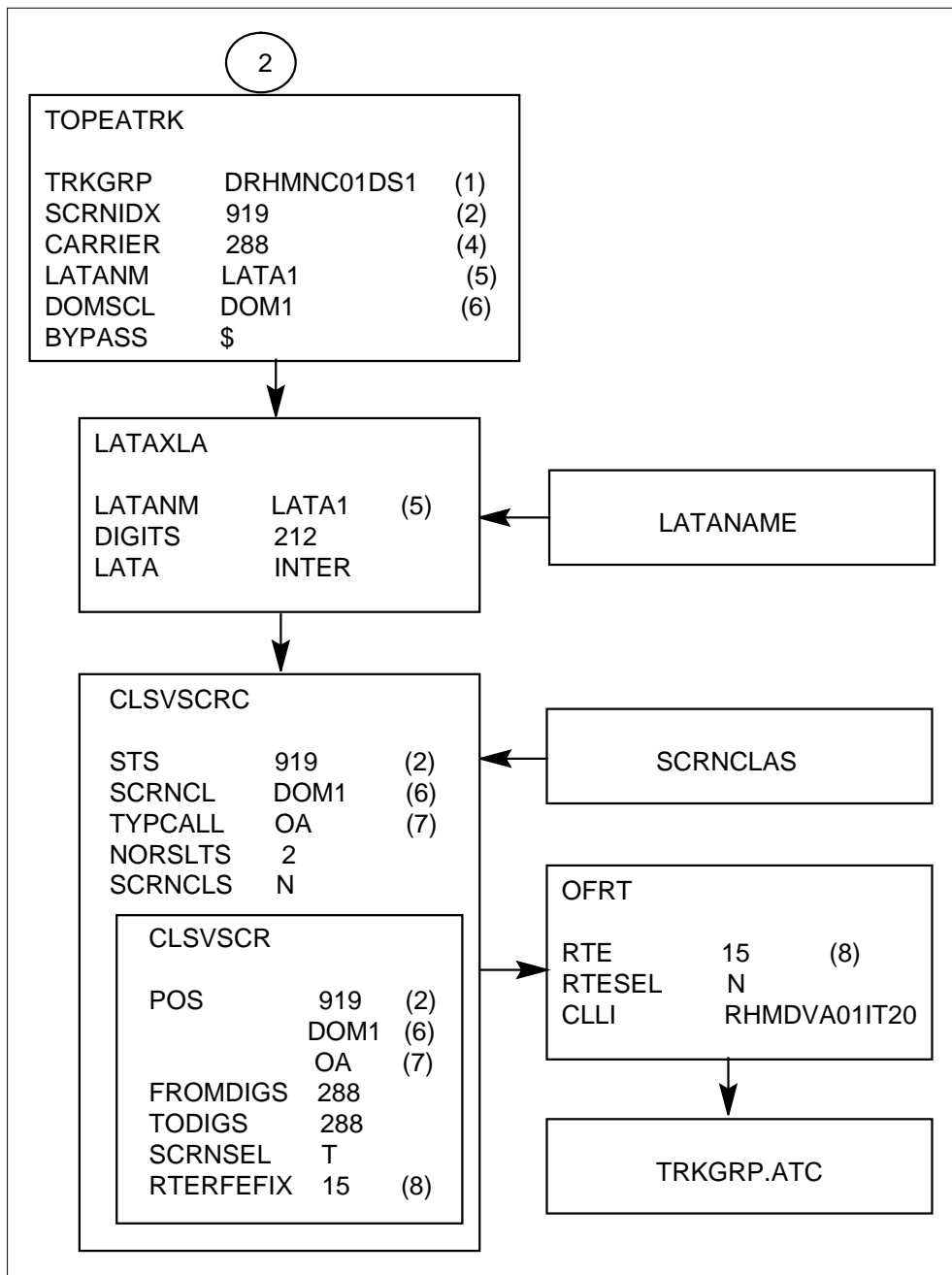
Reference: TOPS Call Descriptions (continued)

Zero-minus InterLATA Dnlookup call map



Reference: TOPS Call Descriptions (continued)

Zero-minus InterLATA Dnlookup call map (end)



InterLATA: Zero-Plus InterLATA Restbil Non-EAEO MF

The following section describes the call progression for a zero-plus (0+) interLATA call from a station with a restricted billing class. The call in this example is routed from a Non-Equal Access End Office (Non-EAEO) over a

Reference: TOPS Call Descriptions (continued)

combined trunk group. The end office uses Multifrequency (MF) outpulsing and Feature Group C (FGC) signaling.

For the following call progression, the caller dials 0+212-992-5555. The calling party's number is (919) 927-1812. The end office strips off the 0 and outpulses a key pulse (KP), plus the called number and the appropriate start signal as KP+2129925555+STP. The start signal is then followed by the ANI spill, which in this example is KP+0+9271812+ST.

Following is a list of the data tables used by a DMS-200 TOPS office when processing 0+ interLATA calls with a restricted billing class from a Non-EAEO. The tables are not listed in datafill sequence and are not necessarily in the exact order in which the information in these tables is accessed. For a list of the datafill order, refer to the TOPS Basic Call Progression section.

- TRKGRP.TOP
- STDPRTCT.STDPRT
- HNPACONT.HNPACODE
- HNPACONT.RTEREF
- TOPSBC
- LCASCRCN
- LCASCRCN.LCASCR
- PFXTREAT
- CLSVSCRC
- CLSVSCRC.CLSVSCR
- SPLDNID
- RESTBIL
- RESTAMA
- TOPEATRK
- LATAOLA
- CLSVSCRC
- CLSVSCRC.CLSVSCR
- OFRT
- TRKGRP.ATC

Reference: TOPS Call Descriptions (continued)

Following is a description of the table flow for this 0+ interLATA call. This section only covers those tables that are specific to the call. For a complete discussion of the basic interLATA call flow, see the TOPS Basic InterLATA Call Progression section.

TOPS TRKGRP Table

A RESTBIL entry in field STATCLAS means that there is a restriction on the station originating the call. In this call example, the RESTBIL entry means that the trunk group carries combined traffic and that the end office is unable to generate the ANI ID digit 7.

The RESTBIL entry forces a DMS-200 TOPS office into the Special Directory Number Identification (SPLDNID) Table in an attempt to match the calling number with one of the entries in the table.

MAP display example for table TRKGRP.TOPS with Restbil Station Class

```

GRPKEY          GRPTYP  TRAFSNO  PADGRP  NCCLS  DIR  SELSEQ  SNPA
PRTNM          LCANAME  SCRNLCL  OHNXXSCR  TRAFCLS  STATCLAS  TIMEOUT
NPANXXTQ       DISPLAY  CLGID   NOBILLCD  ANISEIZ  ANIPDIAL  TRTMTSUP
COINTYPE       PADSTAT0  PADSTAI
-----
DRHMNC01DS1 (1)  TOPS      0      ELO      NCRT     IC   MIDL    919 ( 2)
SPRT (3)  NLCA      NSCR      N      SP      RESTBIL  N
N          0      BELL      6      10     10     N
CDF        ENABLED  DISABLED
    
```

STDPRTCT.STDPRT Subtable

Following is an example of a tuple in the STDPRTCT.STDPRT Subtable.

MAP display example for table STDPRTCT

```

EXPRTNM
-----
SPRT (3)
    
```

MAP display example for subtable STDPRTCT.STDPRT

```

FROMDIGS  TODIGS  PRETSEL  TYPCALL  NOPREDIG  TRANSYS
-----
2          9          N          NL          0          NA
    
```

Reference: TOPS Call Descriptions (continued)

HNPACONT.HNPACODE Subtable

Following is an example of a tuple in the HNPACONT.HNPACODE Subtable.

MAP display example for table HNPACONT

NPA

919 (2)

MAP display example for subtable HNPACONT.HNPACODE

FROMDIGS	TODIGS	CD	RR
-----	-----	-----	-----
212	212	FRTE	5

HNPACONT.RTEREF Subtable

Following is an example of a tuple in the HNPACONT.RTEREF Subtable.

MAP display example for table HNPACONT

NPA

919 (2)

MAP display example for subtable HNPACONT.RTEREF

RTE	RTESEL	CONNTYPE	CLLI	DELDIGS	PRFXDIGS
CANCNORC					
-----	-----	-----	-----	-----	-----
5	N	D	GRBONC01ITO2	0	N
N					

TOPSBC Table

Following is an example of a tuple in the TOPSBC Table.

Reference: TOPS Call Descriptions (continued)

MAP display example for table TOPSBC

CLLI CHGCLSS	BILLCODE	LCANAME	SCRNCL	ACTUALBC
DRHMNC01DS1 (1) TOPS	927	LCA1	EMER	919927

Note: In this call progression, a DMS-200 TOPS office accesses the LCASCRCN.LCASCRC, PFXTREAT, CLSVSCRC, and CLSVSCRC.CLSVSCR tables. These tables are not presented here, but are shown in the call map at the end of this call progression section.

SPLDNID Table

The SPLDNID Table lists the directory numbers of coin, hotel, and restricted stations. If the directory number of the originating station is listed in the SPLDNID Table, the call routes to the Restricted Billing (RESTBIL) Table for determining how the call (if intraLATA) is displayed at a TOPS operator position.

Following is an example of a tuple for the SPLDNID Table. In the example, the fields noted in the SPLDNID Table perform the following functions:

- Field SPLDN, entry 9199271812, contains the directory number of the originating station.
- Field SEL, entry RSTRCTD, indicates that the directory number has a restricted billing class associated with it.
- Field RBILCLAS, entry 1 (reference 9), assigns the call to a restricted billing class. The entry of 1 is used as an index into the the RESTBIL Table (reference 9).

If the calling number is not found in the SPLDNID Table, the station class of the incoming trunk group is treated as COMBINED and the start signal is read to determine the call type (0-, 0+, or 1+ non-coin).

MAP display example for table SPLDNID

SPLDN	SEL	RBILCLAS
9199271812	RSTRCTD	1 (9)

Reference: TOPS Call Descriptions (continued)

RESTBIL Table

The Restricted Billing (RESTBIL) Table performs the following functions for each billing class defined in the SPLDNID Table:

- Defines the name that is displayed on the TOPS screen for each billing class for intraLATA calls.
- Lists the allowable billing types for each billing class.
- The call indexes this table by matching the billing class index assigned in the SPLDNID Table to the index values listed in the BILCLAS field. For additional information concerning the RESTBIL Table.

Following is an example of a tuple for the RESTBIL Table. In the example, the noted fields in the RESTBIL Table perform the following functions:

- Field BILCLAS, entry 1 (reference 9), contains the index from the SPLDNID Table.
- Field SCRNDISP, entry CALCARD, indicates the message that is displayed on a TOPS operation position terminal for an intraLATA call.
- Field BILTYPES, entry CC SPLCLG, indicates that the station is restricted to only Calling Credit Card (CC) and Special Calling (SPLCLG) calls.

MAP display example for table RESTBIL

BILCLAS	SCRNDISP	BILTYPES

1 (9)	CALCARD	CC SPLCLG \$

RESTAMA Table

The Restricted AMA (RESTAMA) Table allows the OTC to define the billing class (non-coin, coin, hotel) that is output on the AMA record. A DMS-200 TOPS office indexes the RESTAMA Table by matching the billing class index number assigned in the SPLDNID Table with the index number listed in field BILCLASS.

Following is an example of a tuple in the RESTAMA Table. In the example, the noted fields in the RESTAMA Table perform the following functions:

- Field BILCLASS, entry 1 (reference 9), contains the index assigned to the call in the SPLDNID Table.
- Field AMACCLASS, entry NONCOIN, defines the format for the AMA record.

Reference: TOPS Call Descriptions (continued)

MAP display example for table RESTAMA

BILCLAS	AMACCLASS

1 (9)	NONCOIN

TOPEATRK Table

Following is an example of a tuple in the TOPEATRK Table.

MAP display example for table TOPEATRK

TRUNKGRP	ENDOFFCE	CARRIER	LATANM	DOMSCL
OVSSCL	SCRNIDX	BYPASS		

DRHMNC01DS1 (1)	NCONFORM	288 (4)	LATA1 (5)	DOM1 (6)
OVS1	919 (2)	\$		

LATAXLA Table

Following is an example of a tuple in the LATAXLA Table.

MAP display example for table LATAXLA

LATANM	DIGITS	LATA	STATE	EATYPE

LATA1 (5)	212	INTER	INTER	STD

CLSVSCRC Table

Following is an example of a tuple in the CLSVSCRC Table. In the example, the noted fields in the CLSVSCRC Table perform the following functions:

- Field STS, entry 919 (reference 2), contains the index from the TOPS TRKGRP Table.
- Field SCRNCN, entry DOM1 (reference 6), contains the domestic screening class name defined in the TOPEATRK Table.
- Field TYPCALL, entry OA (reference 7), identifies the call type as operator-assisted. The call type is determined by examination of the start signal (ST3P) in the called number spill (KP+2129925555+ST3P).

Reference: TOPS Call Descriptions (continued)

MAP display example for table CLSVSCRC

STS	SCRNCL	TYPCALL	NORSLTS	SCRNSEL	POSN
<hr style="border-top: 1px dashed black;"/>					
919 (2)	DOM1 (6)	OA (7)	2	N	NONE

CLSVSCRC.CLSVSCR Subtable

Following is an example of a tuple in the CLSVSCRC.CLSVSCR Subtable.

MAP display example for table CLSVSCRC

STS	SCRNCL	TYPCALL
<hr style="border-top: 1px dashed black;"/>		
919 (2)	DOM1 (6)	OA (7)

MAP display example for table CLSVSCRC.CLSVSCR

FROMDIGS	TODIGS	SCRNSEL	RTEREFIX
<hr style="border-top: 1px dashed black;"/>			
288 (4)	288	T	15 (8)

OFRT Table

Following is an example of a tuple in the OFRT Table.

MAP display example for table OFRT

RTE	RTESEL	CONNTYPE	CLLI	DELDIGS	PRFXDIGS
<hr style="border-top: 1px dashed black;"/>					
15 (8)	N	D	RHMDVA01IT20	0	N
CANCNORC					
N \$					

(ATC) TRKGRP Table

Following is an example of a tuple in the (ATC) TRKGRP Table. In the example, the noted fields in the (ATC) TRKGRP Table perform the following functions:

- Field ANI, entry Y, indicates that Automatic Number Identification (ANI) information is required by the IC.
- Field STNCLS, entry COMB, defines signaling on the trunk group as combined.

Reference: TOPS Call Descriptions (continued)

MAP display example for table TRKGRP.ATC

GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	TRAFCLS	SELSEQ
PRTNM	SCRNCL	SNPA	CARRNM	ANI	SIGTYPE	STNCLS	
RHMDVA01IT20	ATC	0	ELO	NCRT	2W	TC	MIDL
NPRT	NSCR	919 (2)	ABC	Y	BELLI	COMB	

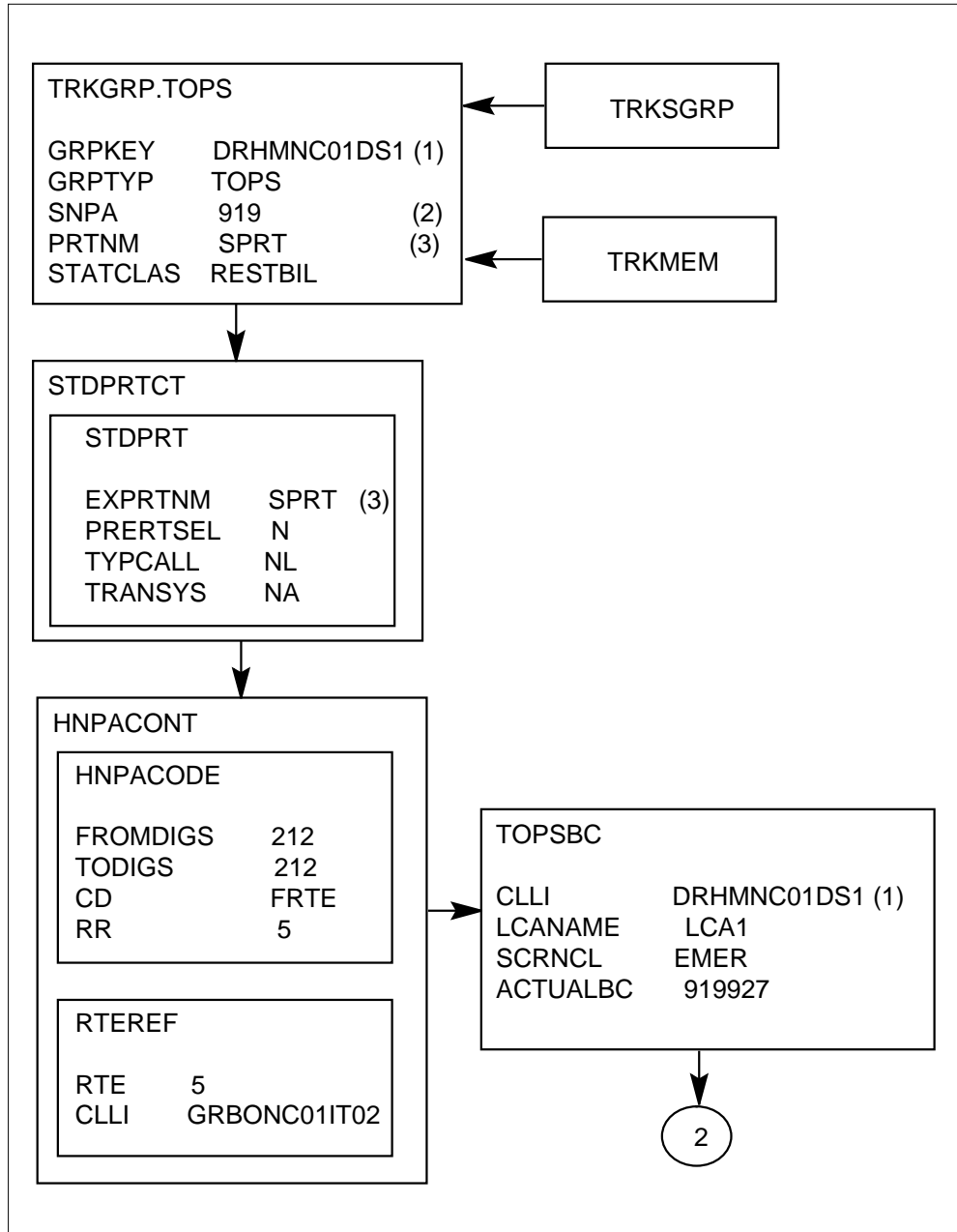
A DMS-200 TOPS office outpulses this call to the IC as KP+2129925555+ST3P. The start signal is then followed by KP+7+9271812+ST.

Zero-Plus InterLATA Restbil Call Map

Following is a call map illustrating the table flow for 0+ interlata calls over a combined trunk group with a station class of Restbil.

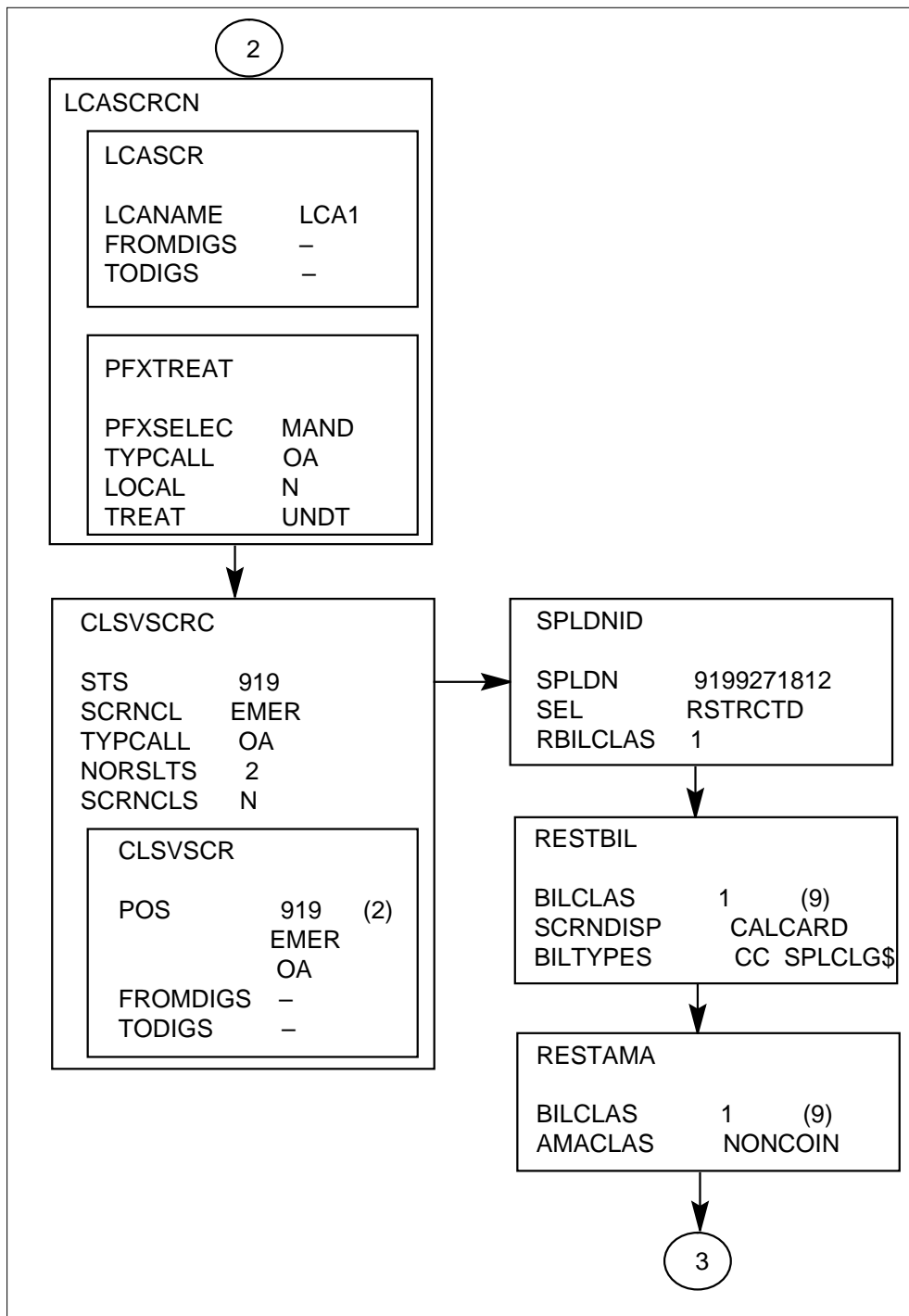
Reference: TOPS Call Descriptions (continued)

Zero-Plus InterLATA Restbil Call Map



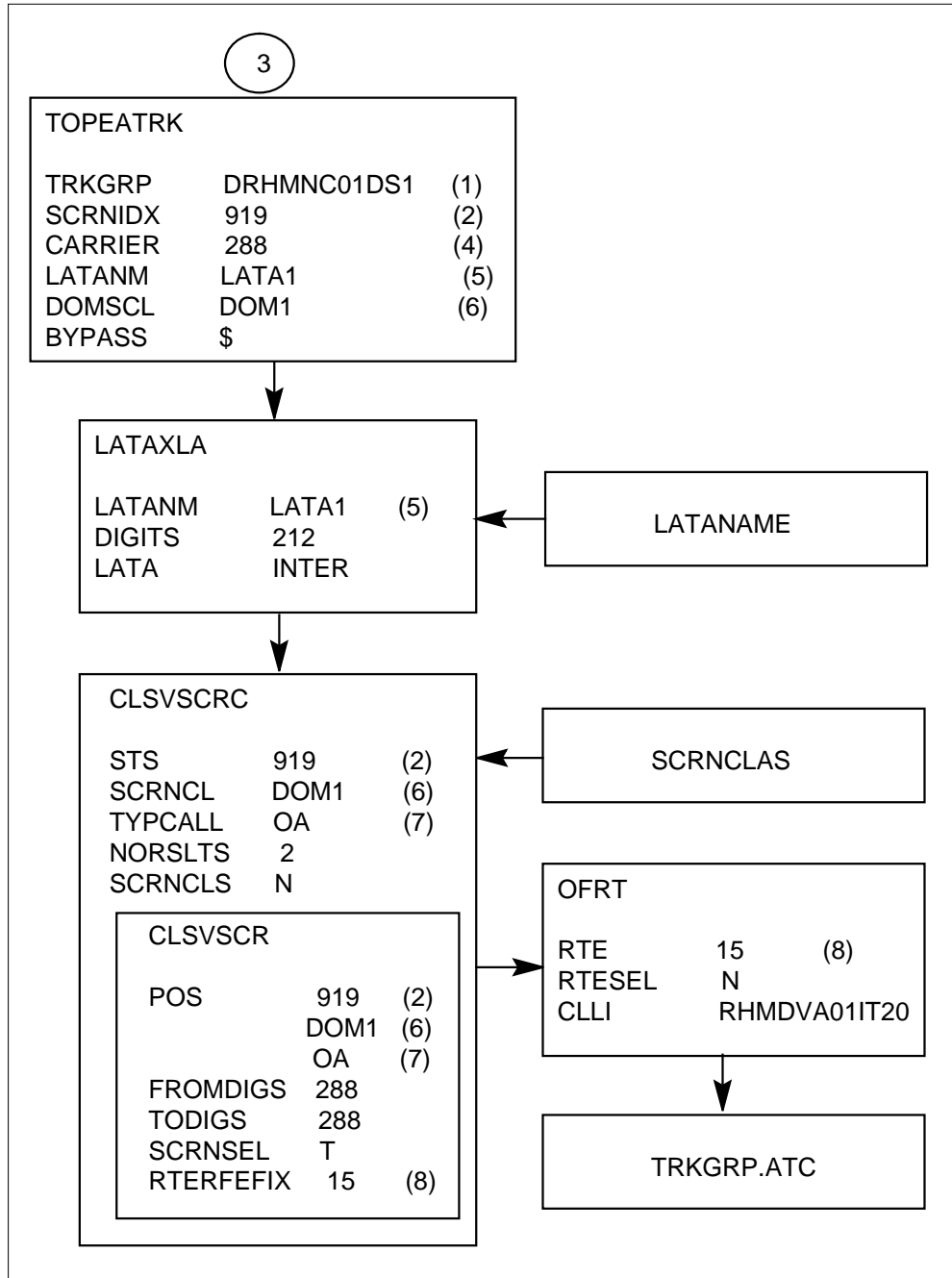
Reference: TOPS Call Descriptions (continued)

Zero-Plus InterLATA Restbil Call Map (continued)



Reference: TOPS Call Descriptions (continued)

Zero-Plus InterLATA Restbil Call Map (continued)



InterLATA: Zero-Zero-Minus Feature Group C Call Processing

The following section describes the call progression for a zero-zero-minus (00-) interLATA call from a non-coin station. The call in this example is

Reference: TOPS Call Descriptions (continued)

routed from a Non-Equal Access End Office (Non-EAEO) over a dedicated non-coin trunk group. The end office uses Dial Pulse (DP) outpulsing and Feature Group C (FGC) signaling.

For the following call progression, the caller dials 00. The calling party's number is (919) 927-1812. The end office absorbs a "0", and outpulses a "0" as the called number. The called number is then followed by the ANI spill, which in this example is KP+9271812+ST.

Following is a list of the tables used by a DMS-200 TOPS office when processing 00- interLATA calls from a Non-EAEO. The tables are not listed in datafill sequence and are not necessarily in the exact order in which the information in these tables is accessed. For a list of the correct order, refer to the TOPS Basic Call Progression section.

- TRKGRP.TOPS
- TOPSBC
- STDPRTCT.STDPRT
- OFRT
- TRKGRP.ATC

Following is a description of the table flow for this 00- interLATA call. This section only covers those tables that are specific to the call. For a complete discussion of the basic interLATA call progression, see

TOPS TRKGRP Table

The 00- dialing sequence allows a caller to have direct access to an operator position for a carrier that handles interLATA traffic for the trunk group. Zero-zero-minus calls can originate from Equal Access and Non-Equal Access end offices over combined and dedicated trunk groups.

If FGC signaling is used, all 00- calls route to an InterLATA Carrier (IC) operator position. In addition, all 00- calls that originate from end offices using FGC signaling are processed in the same manner by a DMS-200 TOPS office.

In the call example, the 00- call arrives in a DMS-200 TOPS office over a dedicated non-coin trunk group.

Following is an example of a tuple for the TRKGRP Table. In the example, the entry in field STATCLAS is set to NONCOIN to indicate that the trunk group does not carry coin traffic.

Reference: TOPS Call Descriptions (continued)

MAP display example for table TRKGRP.TOPS with Non-Coin Station Class

GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	SELSEQ	SNPA
PRTNM	LCANAME	SCRNCL	OHNXXSCR	TRAFCLS	STATCLAS	TIMEOUT	
NPANXXTQ	DISPLAY	CLGID	NOBILLCD	ANISEIZ	ANIPDIAL	TRTMTSUP	
COINTYPE	PADSTAT0	PADSTA1					

DRHMNC01DS1 (1)	TOPS	0	ELO	NCRT	IC	MIDL	919 (2)
SPRT (3)	NLCA	NSCR	N	SP	NONCOIN	Y	
N	0	BELL	6	10	10	N	
CDF	ENABLED	DISABLED					

TOPSBC Table

Following is an example of a tuple in the TOPSBC Table.

MAP display example for table TOPSBC

CLLI	BILLCODE	LCANAME	SCRNCL	ACTUALBC
CHGCLSS				

DRHMNC01DS1 (1)	927	LCA1	EMER	919927
TOPS				

STDPRTCT.STDPRT Subtable

When the subscriber dials 00-, a "0" is absorbed from the signaling information that is outpulsed by the end office. The remaining "0" must be translated by a DMS-200 TOPS office.

Following is an example of a tuple in the STDPRTCT.STDPRT Subtable. In the example, the noted fields in the STDPRTCT.STDPRT Subtable perform the following functions:

- Fields FROMDIGS and TODIGS, entry 0, represent the range within which the incoming digits fall.
- Field PRERTSEL, entry T, indicates that the call is to route to the Office Route (OFRT) Table.
- Field TYPCALL, entry OA, defines the call type as operator-assisted.
- Field NOPREDIG, entry 1, indicates the no digits are prefixed in outpulsing to the IC. If the prefix digit were not deleted in this table, the routing of 0- traffic would require separate entries in the OFRT Table.
- Field TABID, entry OFRT, indicates that translation is to route to the Office Route Table.

Reference: TOPS Call Descriptions (continued)

- Field KEY, entry 15 (reference 8), contains the index into the OFRT Table (reference 8).
- Field MINDIGSR, entry 1, indicates the minimum number of digits to be collected before routing the call.
- Field MAXDIGSR, entry 1, indicates the maximum number of digits to be collected before routing the call.
- Field POS, entry NONE, contains a necessary entry to satisfy the table editor.

MAP display example for table STDPRTCT

```

EXPRTNM
-----
SPRT (3)
    
```

MAP display example for subtable STDPRTCT.STDPRT

```

FROMDIGS  TODIGS  PRETSEL  TYPCALL  NOPREDIG  TABID
KEY      MINDIGSR  MAXDIGSR  POS
-----
      0      0      T      OA      1      OFRT
15 (8)   1      1      NONE
    
```

OFRT Table

Following is an example of a tuple in the OFRT Table. In the example, the noted fields in the OFRT Table perform the following functions:

- Field RTE, entry 15 (reference 8), is the route number of the outgoing trunk group that the call takes. The entry of 15 is defined in the STDPRTCT.STDPRT Subtable (reference 8).
- Field RTESEL, entry N, indicates that standard digit manipulation is automatically canceled and the required digit deletion and prefixing must be specified.
- Field CLLI contains the name of the outgoing trunk group that routes the call to an operator position for the IC.
- Field DELDIGS, entry 0, indicates that no digits are deleted. The 0 digit sent by the end office was deleted in the STDPRTCT.STDPRT Subtable.
- Field PRFXDIGS, entry N, indicates that no digits are prefixed.
- Field CANCNORC, entry N, indicates that the OTC's normal procedure of either charging or not charging for the call is continued.

Reference: TOPS Call Descriptions (continued)

MAP display example for table OFRT

RTE	RTESEL	CONNTYPE	CLLI	DELDIGS	PRFXDIGS
CANCNORC					

15 (8)	N	D	RHMDVA01IT20	0	N
N \$					

(ATC) TRKGRP Table

Following is an example of a tuple in the (ATC) TRKGRP Table. In the example, the noted fields in the (ATC) TRKGRP Table perform the following functions:

- Field ANI, entry N, indicates that Automatic Number Identification (ANI) information is not required by the IC.
- Field STNCLS, entry COMB, defines signaling on the trunk group as combined.

A DMS-200 TOPS office outpulses this call to the IC as KP+ST3P.

MAP display example for table TRKGRP.ATC

GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	TRAFCLS	SELSEQ
PRTNM	SCRNCL	SNPA	CARRNM	ANI	SIGTYPE	STNCLS	

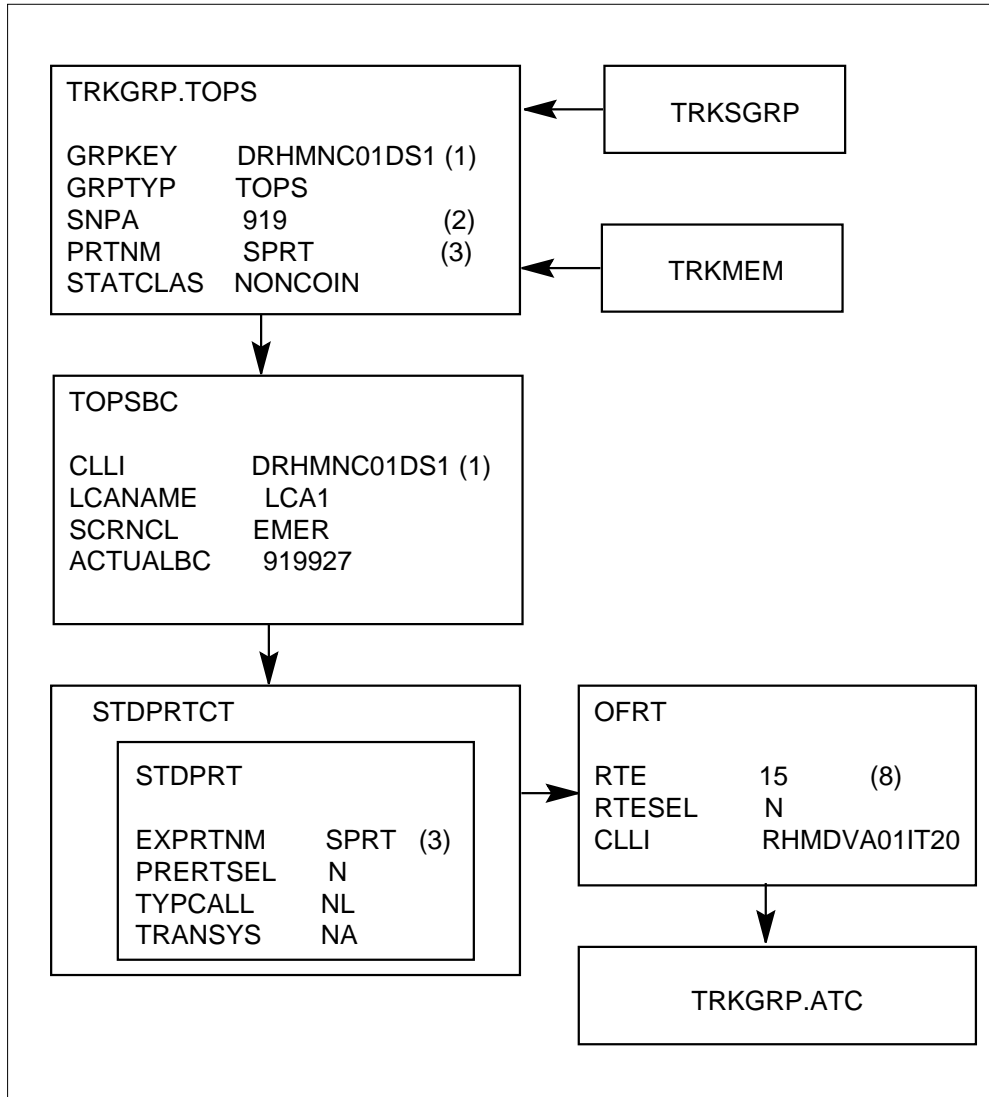
RHMDVA01IT20	ATC	0	ELO	NCRT	2W	TC	MIDL
NPRT	NSCR	919 (2)	ABC	N	BELLI	COMB	

Zero-Zero-Minus FGC Call Map

Following is a call map illustrating the table flow for 00- interLATA calls.

Reference: TOPS Call Descriptions (continued)

Zero-Zero-Minus FGC call map



InterLATA: Feature Group B Call Processing

The following section describes the call progression for a Feature Group B (FGB) interLATA call. The call in this example is from a coin station and is routed over a dedicated coin trunk group. The end office is a Non-Equal Access End Office (Non-EAEO) and uses Dial Pulse (DP) outputting.

For the following call progression, the caller dials a seven-digit number to access an InterLATA Carrier (IC). The number dialed is: 950-1022. The calling party's number is (919) 927-1812. The end office output pulses a key pulse (KP), plus the called number and the appropriate start signal as

Reference: TOPS Call Descriptions (continued)

KP+9501022+ST. The called number is then followed by the ANI spill, which in this example is KP+9271812+ST.

Note: The "950" that the caller dialed is the dialing pattern for an FGB call. The last three digits of the called number "022" are the carrier access digits for the IC.

Following is a list of the data tables used by a DMS-200 TOPS office when processing an FGB interLATA call. The tables are not listed in datafill sequence and are not necessarily in the exact order in which the information in these tables is accessed. For the proper datafill sequence, refer to the TOPS Basic Call Progression section.

- TRKGRP.TOPS
- STDPRTCT.STDPRT
- HNPACONT.HNPACODE
- HNPACONT.RTEREF
- TOPSBC
- LCASCRCN
- LCASCRCN.LCASCR
- PFXTREAT
- CLSVSCRC
- CLSVSCRC.CLSVSCR
- TOPEATRK
- LATAXLA
- CLSVSCRC
- CLSVSCRC.CLSVSCR
- OFRT
- TRKGRP.ATC

Following is a description of the call progression for this FGB call. This section only covers those tables that are specific to the call. For a complete discussion of the basic interLATA call flow, see the TOPS Basic InterLATA Call Progression section.

TOPS TRKGRP Table

The FGB call arrives in a DMS-200 TOPS office over a dedicated coin trunk group.

Reference: TOPS Call Descriptions (continued)

Following is an example of a tuple in the TRKGRP Table. In the example, the entry in field STATCLAS is set to COIN for dedicated coin groups.

MAP display example for table TRKGRP.TOPs with Coin Station Class

```

GRPKEY          GRPTYP  TRAFSNO  PADGRP  NCCLS  DIR  SELSEQ  SNPA
PRTNM  LCANAME  SCRNL  OHNXXSCR  TRAFCLS  STATCLAS  TIMEOUT
NPANXXTQ  DISPLAY  CLGID  NOBILLCD  ANISEIZ  ANIPDIAL  TRTMTSUP
COINTYPE  PADSTAT0  PADSTAI
-----
DRHMNC01DS1 (1)  TOPS      0      ELO    NCRT   IC   MIDL   919 ( 2)
SPRT (3)  NLCA    NSCR    N      SP     COIN   Y
N         0      BELL    6      10    10    N
CDF      ENABLED  DISABLED
    
```

STDPRTCT.STDPRT Subtable

Following is an example of a tuple in the STDPRTCT.STDPRT Subtable.

MAP display example for table STDPRTCT

```

EXPRTNM
-----
SPRT (3)
    
```

MAP display example for subtable STDPRTCT.STDPRT

```

FROMDIGS  TODIGS  PRETSEL  TYPALL  NOPREDIG  TRANSYS
-----
2         9         N         NL      0         NA
    
```

HNPACONT.HNPACODE Subtable

Following is an example of a tuple in the HNPACONT.HNPACODE Subtable. In the example, the noted fields in the HNPACONT.HNPACODE Subtable perform the following functions:

- Field NPA, entry 919 (reference 2), identifies the SNPA for the trunk group. The entry of 919 is the index from the TOPS TRKGRP Table.
- Fields FROMDIGS and TODIGS, entry 950, represent the range of the NXX of the calling number.

Reference: TOPS Call Descriptions (continued)

- Field CD, entry HRTE, indicates that the calling number is within the Home NPA.
- Field RR, entry 5, identifies the index into the HNPACONT.RTEREF Subtable.

MAP display example for table HNPACONT

NPA

919 (2)

MAP display example for subtable HNPACONT.HNPACODE

FROMDIGS	TODIGS	CD	RR
-----	-----	-----	-----
950	950	HRTE	5

HNPACONT.RTEREF Subtable

Following is an example of a tuple in the HNPACONT.RTEREF Subtable. In the example, field RTE, entry 5, is the route number of the outgoing trunk group. The entry of 5 is the route reference index assigned in the HNPACONT.HNPACODE Subtable.

However, FGB calls do not take this route. FGB calls are classified as interLATA. InterLATA calls route using the class of service screening defined in the TOPEATRK Table (reference 6).

MAP display example for table HNPACONT

NPA

919 (2)

MAP display example for subtable HNPACONT.RTEREF

RTE	RTESEL	CONNTYPE	CLLI	DELDIGS	PRFXDIGS
CANCNORC					
-----	-----	-----	-----	-----	-----
5	N	D	ATCTRKGP1	7	N
	N				

Reference: TOPS Call Descriptions (continued)

TOPSBC Table

Following is an example of a tuple in the TOPSBC Table.

MAP display example for table TOPSBC

CLLI CHGCLSS	BILLCODE	LCANAME	SCRNCL	ACTUALBC
DRHMNC01DS1 (1) TOPS	927	LCA1	EMER	919927

Note: In this call progression, a DMS-200 TOPS office accesses the LCASCRCN.LCASCRC, PFXTREAT, CLSVSCRC, and CLSVSCRC.CLSVSCR tables. These tables are not presented here, but are shown in the call map at the end of this call progression section.

TOPEATRK Table

Following is an example of a tuple in the TOPEATRK Table. In the example, the noted fields in the TOPEATRK Table perform the following functions:

- Field ENDOFFCE, entry NCONFORM, identifies the end office as a Non-Equal Access End Office (sometimes referred to as non-conforming).
- Field CARRIER, entry 288 (reference 4), defines the default carrier for the trunk group. This default carrier cannot be used in completing this call because another carrier has been specified.

MAP display example for table TOPEATRK for a Non-EAEO

TRUNKGRP OVSSCL	ENDOFFCE SCRNIDX	CARRIER BYPASS	LATANM	DOMSCL
DRHMNC01DS1 (1) OVS1	NCONFORM 919 (2)	288 (4) \$	LATA1 (5)	DOM1 (6)

LATA XLA Table

The call progression for most interLATA calls requires that a call access the LATA XLA Table to determine the LATA status (inter or intra) of the call. After the LATA status check, the call is routed to the appropriate tables.

Feature Group B calls do not access the LATA XLA Table. Instead, a software patch has been written that marks all "950" calls on a TOPS trunk group as interLATA. (Reference Patch DON00A20 for a description of this software change.) Call progression of this FGB call proceeds as described in the

Reference: TOPS Call Descriptions (continued)

following pages and as outlined in call map at the end of this call progression section.

CLSVSCRC Table

Following is an example of a tuple in the CLSVSCRC Table. In the example, the noted fields in the CLSVSCRC Table perform the following functions:

- Field STS, entry 919 (reference 2), contains the index from the TOPS TRKGRP Table.
- Field SCRNCCL, entry DOM1 (reference 6), contains the domestic screening class name defined in the TOPEATRK Table.
- Field TYPCALL, entry DD (reference 7), identifies the call type as direct-dialed. The call type is determined by examination of the start signal ("ST") in the called number spill (KP+9501022+ST).

MAP display example for table CLSVSCRC

STS	SCRNCCL	TYPCALL	NORSLTS	SCRNSEL	POSN
919 (2)	DOM1 (6)	DD (7)	2	N	NONE

CLSVSCRC.CLSVSCR Subtable

Normally, interLATA calls use the carrier access code in field CARRIER in the TOPEATRK Table (reference 4) as an index into the CLSVSCRC.CLSVSCR Subtable. This is the access code for the default carrier that serves the trunk group.

However, in FGB call processing, the caller can specify a carrier other than the default carrier. The last three digits of the called number (950-1022) are the access digits for the specified carrier. The 022 carrier access code provides the index into the CLSVSCRC.CLSVSCR Subtable, where a route is assigned to the IC specified by the caller.

Following is an example of a tuple in the CLSVSCRC.CLSVSCR Subtable. In the example, the noted fields in the CLSVSCRC.CLSVSCR Subtable perform the following functions:

- Fields FROMDIGS and TODIGS, entry 022, represent the carrier access code, which is the last three digits of the called number (950-1022).
- Field SCRNSEL, entry T, points the call to the Office Route (OFRT) Table.
- Field RTEREFIX, entry 15 (reference 8), is the index into the OFRT Table. In the OFRT Table, a DMS-200 TOPS office reads the tuple with a Route Reference Index of 15.

Reference: TOPS Call Descriptions (continued)

MAP display example for table CLSVSCRC

STS	SCRNCL	TYPCALL
919 (2)	DOM1 (6)	DD (7)

MAP display example for table CLSVSCRC.CLSVSCR

FROMDIGS	TODIGS	SCRNSEL	RTEREFIX
0022	022	T	15 (8)

OFRT Table

Following is an example of a tuple in the OFRT Table. In the example, the noted fields in the OFRT Table perform the following functions:

- Field RTE, entry 15 (reference 8), is the route number of the outgoing trunk group that routes the call to the IC. The entry of 15 is defined in the CLSVSCRC.CLSVSCR Subtable (reference 8).
- Field RTESEL, entry S, indicates that standard digit manipulation is performed.
- Field CLLI, entry TOPSCOINENABLE, is the name of the pseudo CLLI that enables the key pad of the coin station.

In certain cases, the key pad is disabled after the call leaves the end office. Consequently, the subscriber is unable to input digits after the call has been connected to the IC. Datafilling the OFRT Table with TOPSCOINENABLE allows a DMS-200 TOPS office to send a coin signal that enables the key pad for all coin calls that use this route list. This CLLI name can only be used for calls that originate on TOPS trunk groups and that are not completed by a TOPS operator position.

- Field RTESEL, entry N, indicates that standard digit manipulation is automatically canceled and the required digit deletion and prefixing must be specified.
- Field CLLI contains the name of the outgoing trunk group that routes the call to the IC carrier.
- Field DELDIGS, entry 7, indicates that no digits are outpulsed to the IC.
- Field PRFXDIGS, entry N, indicates that no digits are prefixed in the outpulsing to the IC.
- Field CANCNORC, entry N, indicates that the OTC's normal procedure of either charging or not charging for the call is continued.

Reference: TOPS Call Descriptions (continued)

MAP display example for table OFRT

RTE CLLI	RTESEL DELDIGS	CONNTYPE PRFXDIGS	CLLI CANCNORC	RTESEL	CONNTYPE
15 (8) OGEACAR	S 7	D N	TOPSCOINENABLE N \$	N	D

(ATC) TRKGRP Table

FBC calls route to the IC on ATC trunk groups. ATC trunk groups are used to carry Equal Access traffic between the a DMS-200 TOPS office and the IC. One or more dedicated ATC trunk groups must be reserved for each carrier that is served by the office.

Following is an example of a tuple in the (ATC) TRKGRP Table. In the example, the noted fields in the (ATC) TRKGRP Table perform the following functions:

- Field CLLI defines the outgoing trunk group name as OGEACAR. This CLLI name is referenced in the OFRT Table.
- Field GRPTYP, entry ATC, defines the trunk group type as ATC.
- Field DIR, entry 2W, defines the direction of traffic on the trunk group as two-way.
- Field PRTNM, entry NPRT, indicates that pretranslation is not required on the trunk group.
- Field SCRNCCL, entry NSCR, indicates that calls on the trunk group do not require class of service screening.
- Field SNPA, entry 919, defines the trunk group's Serving NPA code. This is the same SNPA defined in the TOPS Trunk Group Table (reference 2).
- Field CARRNM, entry ABC, contains the name of the IC that the trunk group serves.
- Field ANI, entry N, indicates that Automatic Number Identification (ANI) information is not required by the IC.
- Field SIGTYPE, entry FGB, defines the ANI signaling format on the trunk group as Feature Group B. This signaling is equivalent to BELLI for outpulsing. The FGB entry in this field allows incoming traffic from a carrier to produce a terminating FGB AMA record.
- Field STNCLS, entry COMB, defines signaling on the ATC trunk group as combined.

A DMS-200 TOPS office outpulses this call to the IC as KP+ST.

Reference: TOPS Call Descriptions (continued)

MAP display example for table TRKGRP.ATC

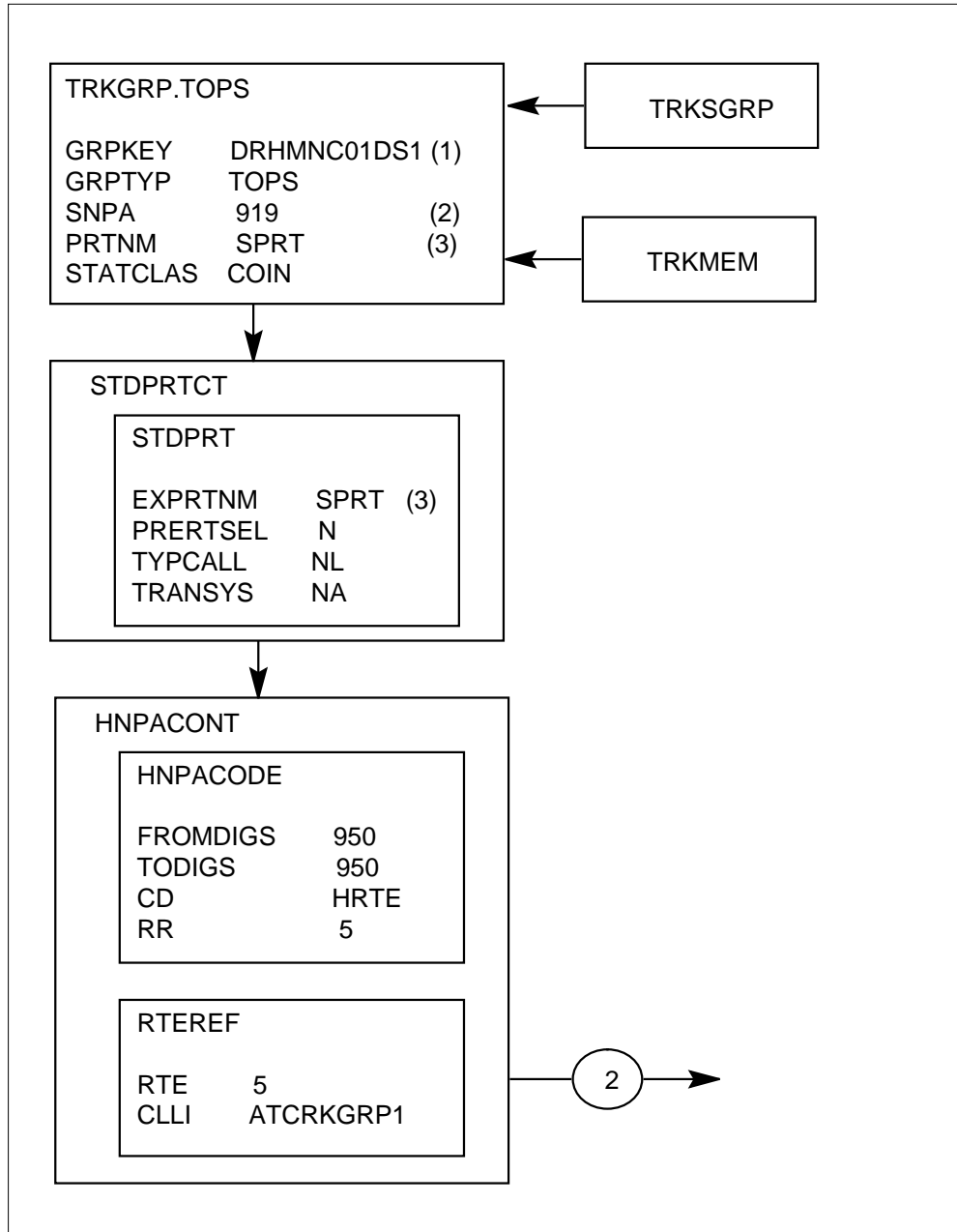
GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	TRAFCLS	SELSEQ	
PRTNM	SCRNCL	SNPA	CARRNM	ANI	SIGTYPE	STNCLS		
OGEACAR		ATC	0	ELO	NCRT	2W	TC	MIDL
NPRT	NSCR	919 (2)	ABC	N	FGB	COMB		

Feature Group B Call Map

Following is a call map illustrating the table flow for FGB calls.

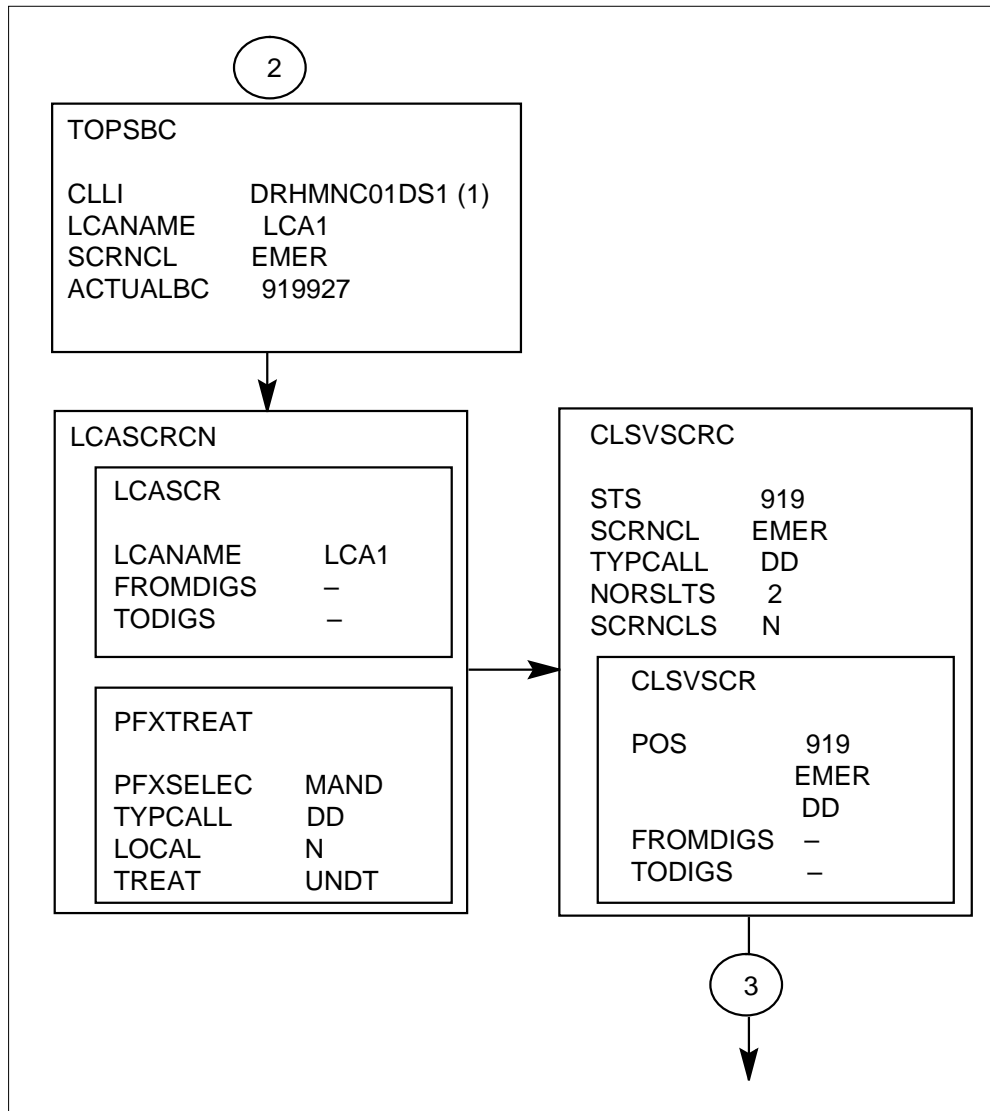
Reference: TOPS Call Descriptions (continued)

Feature Group B Call Map



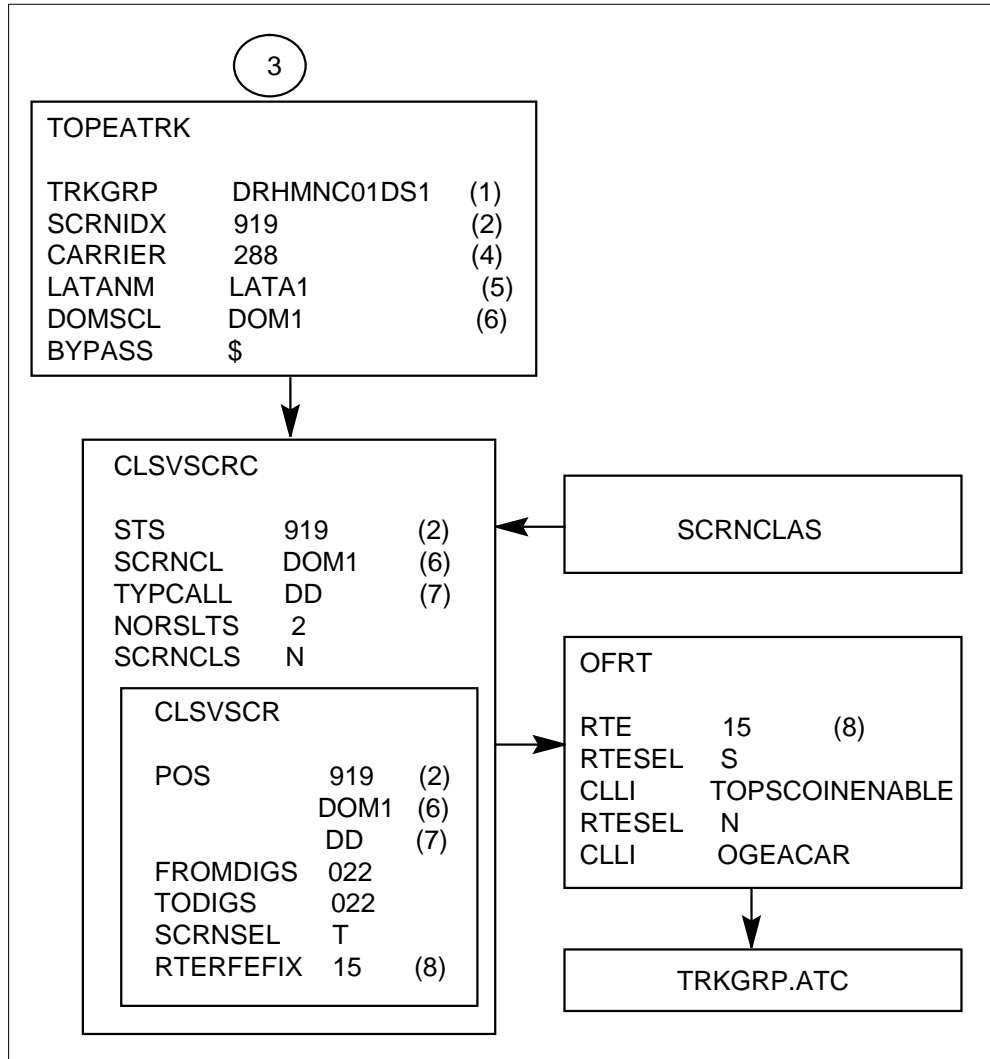
Reference: TOPS Call Descriptions (continued)

Feature Group B Call Map (continued)



Reference: TOPS Call Descriptions (continued)

Feature Group B Call Map (continued)



TOPS intraLATA call type descriptions

The following sections of this document contain examples of intraLATA call types that can be presented to a DMS-200 TOPS office. Each call type example tells how the call is dialed (0-, 0+, or 1+), the type of station originating the call, the station class of the incoming trunk group, and the type of signaling used (DP or MF).

TOPS Basic IntraLATA Call Progression describes the tables that are used by a DMS-200 TOPS office in the processing of a zero-plus intraLATA call. The call originates from a non-coin station and is carried over a combined trunk group from an Equal Access End Office (EAE0).

Reference: TOPS Call Descriptions (continued)

Many of the tables discussed in the Basic IntraLATA Call Progression are common for other intraLATA calls. Therefore, when the intraLATA call type examples are described, only the tables that are different or that require entries that are different from the basic call progression tables are presented.

TOPS Basic IntraLATA Call Progression

This section describes the call progression for a zero-plus (0+), non-coin, intraLATA call. For this example, the call is routed from an Equal Access End Office (EAEO) over a combined trunk group. The end office uses Multifrequency (MF) outpulsing and Feature Group C (FGC) signaling.

For the following call progression, the caller dials 0+992-5555. The calling number is 927-1812. The end office strips off the 0 and outpulses a key pulse (KP), plus the called number and the appropriate start signal as KP+9925555+ST3P. The start signal is followed by the ANI spill, which in this example is KP+0+9271812+ST.

Following is a list of the data tables used by a DMS-200 TOPS office when processing 0+ intraLATA calls from a Equal Access End Office (EAEO). The data tables are not listed in datafill sequence and are not necessarily in the exact order in which the information in these tables accessed. See TOPS Basic Call Progression for the datafill sequence.

- TRKGRP.TOP
- STDPRTCT.STDPRT
- HNPACONT.HNPACODE
- HNPACONT.RTEFEF
- TOPSBC
- LCASCRCN
- LCASCRCN.LCASCR
- PFXTREAT
- CLSVSCRC
- CLSVSCRC.CLSVSCR
- TOPEATRK
- LATAXLA
- POSITION
- TOPS
- TOPSPOS

Reference: TOPS Call Descriptions (continued)

- OPRTRANS
- STDPRTCT.STDPRT

Following is a description of the table flow for a basic intraLATA call. The tables listed are not in datafill sequence and are not necessarily in the exact order in which a DMS-200 TOPS office accesses the information contained in these tables when processing a call.

TOPS TRKGRP TABLE

The Trunk Group (TRKGRP) Table defines the translation scheme for the incoming digits. The TRKGRP Table is accessed when the call arrives at a DMS-200 TOPS office. The trunk is a TOPS trunk group type, which is the group type used to carry digits from an originating end office to a DMS-200 TOPS office.

The TRKGRP Table can also be used for assigning class of service screening and local calling area screening in place of the TOPS Billing Code (TOPSBC) Table.

Note: These applications are suggested only when routing is not based on the called number's NXX and the originating station. For example, calls dialed as "911" may be routed to different terminating stations depending upon the location of the originating station. It is recommended that class of service screening and local calling area screening be assigned in the TOPSBC Table.

Associated with the TRKGRP Table are the following tables:

- The Common Language Location Identifier (CLLI) Table which provides information about the CLLI name of the TOPS trunk group type.
- The Trunk Subgroup (TRKSGRP) Table which provides information about the signaling characteristics of the trunk group.
- The Trunk Member (TRKMEM) Table which provides information about the hardware location of the individual trunk group members.
- The TOPS Equal Access Trunk Group Data (TOPEATRK) Table which supports the TOPS trunk group in the Equal Access environment. In intraLATA call progression, the TOPEATRK Table is primarily accessed for 0- and hotel calls.
- The TOPS ANI ID Digits Mapping (BELLCAT) Table which defines the format of the ANI spill for calls on the trunk group as Bell standard signaling.

Reference: TOPS Call Descriptions (continued)

Following is an example of a tuple in the TRKGRP Table. In the example, the noted fields in the TRKGRP Table are used as follows:

- Field GRPKEY defines the trunk group name as DRHMNC01DS1 (reference 1). This field entry also provides an index into the TOPSBC and TOPEATRK Tables.
- Field GRPTYP, entry TOPS, defines the trunk group type as TOPS.
- Field DIR, entry IC, defines the direction of traffic on the trunk group as incoming.
- Field SNPA, entry 919 (reference 2), defines the trunk group's Serving NPA code. The SNPA provides an index into the Home Numbering Plan Area Code (HNPACONT.HNPACODE) Subtable associated with "919" for digit screening.
- Field PRTNM, entry SPRT (reference 3), assigns the pretranslator name for the trunk group. This name in this field is used as an index into the Standard Pretranslator Subtable where pretranslation digit analysis is performed.
- Field LCANAME, entry NLCA, indicates that local calling area screening is not assigned. The local calling area screening name can be defined in either the TRKGRP Table or the TOPSBC Table, however, it cannot be defined in both. It is recommended that the local calling area screening name be assigned in the TOPSBC Table.
- Field SCRNCL, entry NSCR, indicates that class of service screening is not assigned. A class of service screening name must be assigned in the TOPEATRK Table and another class of service screening name can be assigned in either the TRKGRP Table or the TOPSBC Table. However, class of service screening cannot be defined in both the TRKGRP and the TOPSBC Table. It is recommended that the class of service screening be assigned in the TOPSBC Table.
- Field OHNXXSCR, entry N, indicates that NXX screening for operator-handled calls is not required.
- Field STATCLAS, entry COMBINED, tells a DMS-200 TOPS office that the trunk group carries combined traffic (0+, 0-, 1+, coin, non-coin, etc.) and sends the full range of start pulses: ST, STP, ST2P, and ST3P.
- Field TIMEOUT, entry N, indicates that a time-out is not required because the outpulsing on the trunk group is MF.
- Field CLGID, entry BELL, indicates that the trunk group carries ANI traffic (and possibly ONI traffic) using Bell standard signaling format.

Feature Group C (FGC) signaling is another term for Bell or Traditional signaling.

Reference: TOPS Call Descriptions (continued)

- Field NOBILLCD, entry 6, represents the number of billing codes that are allocated for use in the TOPSBC Table for this trunk group. This field must be sized adequately to accommodate all NXXs (and the "000" entry, if used, for ONI and ANIFAIL calls) served by the TOPS trunk group and all special billing codes. In addition, it must be sized large enough to allow for the growth of the trunk group.

If allowances for growth of the trunk group are not made, updating field NOBILLCD would require deleting all existing data associated with the trunk group, adding the new information, and datafilling the deleted data again.

- Field ANISEIZ, entry 10, indicates that the trunk group waits 10 seconds for reception of the first digits of the ANI spill. If the first digits are not received within 10 seconds, then the trunk group times-out. The entry in this field can be lower or higher depending upon the capabilities of the end office serving the trunk group.
- Field ANIPDIAL, entry 10, indicates that the trunk group waits 10 seconds for reception of each ANI signal or digit after the first digit is received. The entry in this field can be lower or higher depending upon the capabilities of the end office serving the trunk group.
- Field TRTMTSUP, entry N, indicates that an off-hook signal is not sent to the end office if a call is routed to a treatment. Setting this field to "Y" can result in an AMA record being generated and the customer charged for a call that routes to an announcement or that receives circuit busy tone.
- Field COINTYPE, entry CDF, indicates that the kind of coin phone serviced by the trunk group is dial tone first coin service.
- Field PADSTAT0, entry ENABLED, indicates that the state of the digitone key pad for a 0- or 0+ coin call that routes to a TOPS operator position is enabled. (This information is supplied by the end office.) A "pad enable" coin signal is not sent by a DMS-200 TOPS office to enable the key pad.
- Field PADSTAT1, entry DISABLED, indicates that the state of the digitone key pad for a 1+ coin call that routes to a TOPS operator position is disabled. (This information is supplied by the end office.) A "pad enable" coin signal is sent by a DMS-200 TOPS office to enable the key pad.

Reference: TOPS Call Descriptions (continued)**MAP display example for table TRKGRP.TOPS**

GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	SELSEQ	SNPA
PRTNM	LCANAME	SCRNCL	OHNXXSCR	TRAFCLS	STATCLAS	TIMEOUT	
NPANXXTQ	DISPLAY	CLGID	NOBILLCD	ANISEIZ	ANIPDIAL	TRTMTSUP	
COINTYPE	PADSTAT0	PADSTAI					
DRHMNC01DS1 (1)	TOPS	0	ELO	NCRT	IC	MIDL	919 (2)
SPRT (3)	NLCA	NSCR	N	SP	COMBINED	N	
N	0	BELL	6	10	10	N	
CDF	ENABLED	DISABLED					

STDPRTCT.STDPRT Subtable

The Standard Pretranslator (STDPRTCT.STDPRT) Subtable analyzes the incoming digits of the called number. A DMS-200 TOPS office is pointed to the STDPRTCT.STDPRT Subtable by the name listed in field PRTNM in the TRKGRP Table (reference 3).

The Standard Pretranslator Control (STDPRTCT) Table lists the names assigned by an Operating Telephone Company (OTC) for each standard pretranslator subtable.

Following is an example of a tuple in the STDPRTCT.STDPRT Subtable. In the example, the noted fields in the STDPRTCT.STDPRT Subtable perform the following functions:

- Field EXPRTNM, entry SPRT (reference 3), contains the index from the TOPS TRKGRP Table.
- Fields FROMDIGS and TODIGS represent the range within which the incoming digits fall.
- Field PRERTSEL, entry N, defines a selector that indicates further digit analysis is required.
- Field TYPCALL, entry NL, indicates that the start signal is to be read to determine the call type.

The call type is actually determined by the TOPS trunk group software. The software determines the call type by reading the start signal in the ANI information. The DMS stores this call type in memory and uses it later during the call progression. The "NL" entry in field TYPCALL allows the OTC to combine 0+ and 1+ traffic on the same trunk group by not defining the call type as operator-assisted (OA) or direct-dialed (DD).

Reference: TOPS Call Descriptions (continued)

- Field NOPREDIG, entry 0, tells a DMS-200 TOPS office not to interpret any of the incoming digits as prefix digits.
- Field TRANSYS, entry NA, indicates that the call proceeds to the Home Numbering Plan Area Control (HNPACONT) Table as a domestic call.

MAP display example for table STDPRTCT

```

EXPRTNM
-----
SPRT (3)
```

MAP display example for subtable STDPRTCT.STDPRT

```

FROMDIGS  TODIGS  PRETSEL  TYPCALL  NOPREDIG  TRANSYS
-----
      2      9      N      NL      0      NA
```

HNPACONT.HNPACODE Subtable

The Home Numbering Plan Area Code (HNPACONT.HNPACODE) Subtable checks to ensure that the incoming digits are valid for the SNPA associated with the trunk group. This table also assigns a code type to a call, which is used for routing the call to another table or to a treatment.

Associated with the HNPACONT.HNPACODE Subtable is the Home Numbering Plan Area Control (HNPACONT) Table. The HNPACONT Table lists all of the valid NPAs that are served by a DMS-200 TOPS office. The NPAs listed in this table are used as an index into the HNPACODE Subtable.

Following is an example of a tuple in the HNPACONT.HNPACODE Subtable. In the example, the noted fields in the HNPACONT.HNPACODE Subtable perform the following functions:

- Field NPA, entry 919 (reference 2), identifies the SNPA of the trunk group. The entry of "919" is the index from the TOPS TRKGRP Table.
- Fields FROMDIGS and TODIGS, entry 992, represent the range of the NXX of the called number.
- Field CD, entry HRTE, indicates that the called number is within the Home NPA.
- Field RR, entry 5 (reference 4), defines the index into the HNPACONT.RTEREF Subtable.

Reference: TOPS Call Descriptions (continued)

MAP display example for table HNPACONT

NPA

919 (2)

MAP display example for subtable HNPACONT.HNPACODE

FROMDIGS	TODIGS	CD	RR
-----	-----	-----	-----
992	992	HRTE	5 (4)

HNPACONT.RTEREF Subtable

The Home Numbering Plan Area Route Reference (HNPACONT.RTEREF) Subtable defines the route number and trunk group CLLI name for calls routing out of a DMS-200 TOPS office. IntraLATA calls do not take this route until after the calls have left the TOPS operator position.

Following is an example of a tuple in the HNPACONT.RTEREF Subtable. In the example, the noted fields in the HNPACONT.RTEREF Subtable perform the following functions:

- Field RTE, entry 5 (reference 4), identifies the route assigned for the outgoing call. This is the route the call uses unless this route is overwritten by class of service screening in either the TRKGRP or TOPSBC tables.
- Field RTESEL, entry N, indicates that standard digit manipulation is automatically canceled and the required digit deletion and prefixing must be specified.
- Field CLLI contains the name of the trunk group associated with the route number.
- Field DELDIGS, entry 0, indicates that no digits are deleted from the called number when it is outpulsed.
- Field PRFXDIGS, entry N, indicates that no digits are prefixed to the called number when it is outpulsed.
- Field CANCNORC, entry N, indicates that the OTC's normal procedure of either charging or not charging for the call is continued.

Reference: TOPS Call Descriptions (continued)

MAP display example for table HNPACONT

NPA

919 (2)

MAP display example for subtable HNPACONT.RTEREF

RTE	RTESEL	CONNTYPE	CLLI	DELDIGS	PRFXDIGS
CANCNORC					

5 (4)	N	D	GRBONC01ITO2	0	N
N					

TOPSBC Table

The TOPS Billing Code (TOPSBC) Table performs the following functions:

- Checks the incoming ANI information to verify that the NXX is valid for the trunk group. This is used for ANIFAIL and ONI calls.
- Determines whether class of service screening is used for the call.
- Determines whether local calling area screening is required.

The TOPSBC Table can be used to assign local calling area screening to a call by defining a screening name in field LCANAME. The TRKGRP Table also contains the LCANAME field, which can be used in the same manner as field LCANAME in the TOPSBC Table. However, it is recommended that the local calling area name be defined in the TOPSBC Table.

Assigning local calling area screening in the TRKGRP Table limits all traffic arriving on the TOPS trunk group to local calling area screening. Assigning local calling area screening in the TOPSBC Table allows for screening by individual NXX.

A call requiring local calling area screening proceeds to the LCASCRCN.LCASCRCR Subtable. The LCASCRCN.LCASCRCR Subtable determines whether the status of the call is local or non-local.

The TOPSBC Table can be used to assign class of service screening to a call by defining a class of service screening name in field SCRNL. The TRKGRP Table also contains the SCRNL field, which can be used in the same manner as the SCRNL field in the TOPSBC Table. However, it is recommended that the class of service screening name be defined in the TOPSBC Table.

Reference: TOPS Call Descriptions (continued)

Assigning class of service screening in the TRKGRP Table restricts all traffic arriving on the TOPS trunk group to the same routing. For instance, all emergency services calls ("911"), regardless of the location (town) of the calling station, would route to the same terminating station.

A call requiring class of service screening proceeds to the CLSVSCRC Table and CLSVSCRC.CLSVSCR Subtable. The CLSVSCRC.CLSVSCR Subtable can overwrite the route specified in the HNPACONT.RTEREF Table and direct the call to another route.

Following is an example of a tuple in the TOPSBC Table. In the example, the noted fields in the TOPSBC Table perform the following functions:

- Field CLLI contains the CLLI name (reference 1) from the TRKGRP Table.
- Field BILLCODE, entry 927, represents the NXX served by the trunk group.
- Field LCANAME, entry LCA1, identifies the subtable where local calling area screening is performed. (For this intraLATA call, the dialed digits are not found in the LCASCRCN.LCASCRC Subtable.)
- Field SCRNL, entry EMER, identifies the subtable where class of service screening is performed. (For this intraLATA call, this class of service screening does not result in rerouting of the call.)
- Field ACTUALBC, entry 919927, contains the actual six-digit billing code (NPA + NXX) that is entered in the AMA record.
- Field CHGCLSS, entry TOPS, identifies the charge class to which the billcode is assigned.

MAP display example for table TOPSBC

CLLI CHGCLSS	BILLCODE	LCANAME	SCRNL	ACTUALBC
DRHMNC01DS1 (1) TOPS	927	LCA1	EMER	919927

LCASCRCN Table

The Local Calling Area Screening Control (LCASCRCN) Table lists each local calling area screening subtable name and the SNPA to which each subtable name belongs. The SNPA defined in the TRKGRP Table and the LCA name listed in the TOPSBC Table form a key into the LCASCRCN Table. The subtable name defined in this table is used to index into the LCASCRCN.LCASCRC Subtable.

Reference: TOPS Call Descriptions (continued)

Following is an example of a tuple in the LCASCRCN Table. In the example, the noted fields in the LCASCRCN Table perform the following functions:

- Field STS, entry 919 (reference 2), contains the index from the TRKGRP Table. The entry of “919” represents the SNPA of the incoming TOPS trunk group.
- Field LCA NAME, entry LCA1, contains the index from the TOPSBC Table.
- Field PFXSELEC, entry MAND, indicates that dialing of the prefix digit “1” is mandatory.
- Field PFXFOR10, entry N, indicates that all calls do not have to be dialed as a prefix digit (“0” or “1”) plus 10 digits.

The second tuple in the following figure represents a tuple entry for a cross boundary NPA code. The entry of “704” (reference 2A) must be listed in the LCASCRCN Table with the same LCA name as the SNPA, which in this example is “919”.

A LCASCRCN.LCASCRCR Subtable must be built for the “704” NPA code. In the “704” LCASCRCN.LCASCRCR Subtable, the codes that are considered local must appear (reference 2A). When a DMS-200 TOPS office encounters the “704” NPA in the called number, it indexes the “704” tuple (reference 2A) in the “919” LCASCRCN.LCASCRCR Subtable. The switch is then pointed to the LCASCRCN.LCASCRCR Subtable for the “704” NPA.

MAP display example for table LCASCRCN

STS	LCA NAME	PFXSELEC	PFXFOR10
919 (2)	LCA1	MAND	N
704 (2A)	LCA1	MAND	N

LCASCRCN.LCASCRCR Subtable

The Local Calling Area Screening Code (LCASCRCN.LCASCRCR) Subtable determines whether a call is local or non-local based on the digits dialed. If the incoming digits are listed in this subtable, the call is considered local. If the digits are not listed in this subtable, the call is considered non-local.

A DMS-200 TOPS office indexes the LCASCRCN.LCASCRCR Subtable by reading the tuple with the SNPA and LCA name defined in the LCASCRCN Table.

Reference: TOPS Call Descriptions (continued)

Following is an example of a tuple in the LCASCRCN.LCASCRCR Subtable. In the example, the noted fields in the LCASCRCN.LCASCRCR Subtable perform the following functions:

- Field STS, entry 919 (reference 2), contains the index from the TRKGRP Table. The entry of 919 is the SNPA of the trunk group.
- Field LCANAME, entry LCA1, contains the index from the TOPSBC Table.
- Field FROMDIGS and TODIGS, entry 704 (reference 2A), identifies the cross boundary NPA code.
- Field FROMDIGS, entry 705, identifies the first NXX code in the block of codes.
- Field TODIGS, entry 799, identifies the last NXX code in the block of codes.
- Field FROMDIGS, entry 801, identifies the first NXX code in the block of codes.
- Field TODIGS, entry 910, identifies the last NXX code in the block of codes.
- Field FROMDIGS, entry 912, identifies the first NXX code in the block of codes.
- Field TODIGS, entry 991, identifies the last NXX code in the block of codes.
- Field FROMDIGS, entry 993, identifies the first NXX code in the block of codes.
- Field TODIGS, entry 999, identifies the last NXX code in the block of codes.

MAP display example for table LCASCRCN

STS	LCANAME
919 (2)	LCA1

Reference: TOPS Call Descriptions (continued)

MAP display example for table LCASCRCN.LCASCRCN

FROMDIGS	TODIGS
704 (2A)	704
705	705
801	910
912	991
993	999

MAP display example for table LCASCRCN

STS	LCANAME
704 (2A)	LCA1

MAP display example for table LCASCRCN.LCASCRCN

FROMDIGS	TODIGS
221 (2A)	299
400	499

PFXTREAT Subtable

The Prefix Treatment (PFXTREAT) Subtable screens for misdialed calls and determines the treatment calls receive. This determination is based on the prefix selector assigned to the call in the LCASCRCN Table, the type of call determined by examination of the start signal, and the local calling area status in the LCASCRCN.LCASCRCN Subtable (found or not found).

Following is an example of a tuple in the PFXTREAT Table. In the example, the noted fields in the PFXTREAT Table perform the following functions:

- Field PFXSELEC, entry MAND, represents the prefix selector defined in field PFXSELEC in the LCASCRCN Table.
- Field TYPCALL, entry OA, identifies the call type as operator-assisted. The call type is determined by reading the start signal ("ST3P") of the called number spill (KP+9925555+ST3P).
- Field LOCAL, entry N, indicates that the NXX digits (992) of the called number (992-5555) were not found in the LCASCRCN.LCASCRCN Subtable. Consequently, the called number is non-local.

Reference: TOPS Call Descriptions (continued)

- Field UPDTYCA, entry OA, indicates that the call is not updated.
- Field TREAT, entry UNDT, indicates that the call does not route to a treatment, but is allowed to route out of a DMS-200 TOPS office without being blocked.

MAP display example for table PFXTREAT

PFXSELEC	TYPCALL	LOCAL	UPDTYPCA	TREAT	ITEM
MAND	OA	N	OA	UNDT	E

CLSVSCRC Table

The Class of Service Screening Control (CLSVSCRC) Table lists the screening class referenced in field SCRNCCL in the TOPSBC Table. The CLSVSCRC Table allows a DMS-200 TOPS office to screen by type of call (OA or DD) and the digits dialed.

Following is an example of a tuple in the CLSVSCRC Table. In the example, the noted fields in the CLSVSCRC Table perform the following functions:

- Field STS, entry 919 (reference 2), contains the index from the TOPS TRKGRP Table.
- Field SCRNCCL, entry EMER, contains the screening class name defined in the TOPSBC Table.
- Field TYPCALL, entry OA, identifies the call type as operator-assisted. The call type is determined by reading the start signal (ST3P) in the called number spill (KP+9925555+ST3P). The TOPS trunk group software is hard-coded to examine the incoming start signal.
- Field NORSLTS, entry 2, indicates the number of routes required. This field should always be set to 2. An entry of 2 allows calls to be screened on a digit basis as well as on a call type basis, OA or DD. (For example, calls can be routed to different outgoing trunk groups according to the digits dialed.) To perform this routing, the DMS-200 TOPS office proceeds to the CLSVSCRC.CLSVSCR Subtable.
- Field SCRNCSEL, entry N, indicates the translation is to proceed to the CLSVSCRC.CLSVSCR Subtable for routing of the call.

Reference: TOPS Call Descriptions (continued)

MAP display example for table CLSVSCRC

STS	SCRNCL	TYPCALL	NORSLTS	SCRNSEL	POSN
919 (2)	EMER	OA	2	N	NONE

CLSVSCRC.CLSVSCR Subtable

The Class of Service Screening (CLSVSCRC.CLSVSCR) Subtable allows the OTC to overwrite the route specified in the HNPACONT.RTEREF Subtable. The datafill for this table is based upon the screening requirements of the OTC.

Following is an example of a tuple in the CLSVSCRC.CLSVSCR Subtable. In the example, the dashes (-) indicate that the NXX (992) is not found.

MAP display example for table CLSVSCRC

STS	SCRNCL	TYPCALL
919 (2)	EMER	OA

MAP display example for table CLSVSCRC.CLSVSCR

FROMDIGS	TODIGS	SCRNSEL	RTEREFIX
-	-		

TOPEATRK Table

The TOPS Equal Access Trunk Group Data (TOPEATRK) Table is automatically datafilled with default values whenever a TOPS trunk group type is assigned in the TRKGRP Table. The TOPEATRK Table supports the TOPS trunk group in the Equal Access environment. It is required for:

- Assigning the LATA name the call uses to index into the LATA Translation (LATA XLA) Table for a LATA status check on the call.
- Determining whether the originating end office is an Equal Access End Office (EAEO) or a Non-Equal Access End Office (Non-EAEO). The entry (CONFORM, NCONFORM, or NONE) in the ENDOFFICE field determines whether or not a carrier is present on 0- calls. For a Non-EAEO (sometimes referred to as a non-conforming end office), the operator does not have to enter the carrier access code. However, the operator must enter the carrier access code for an EAEO (sometimes referred to as a conforming end office).

Reference: TOPS Call Descriptions (continued)

- Naming the domestic and/or overseas class of service screening subtable where screening is performed for routing interLATA calls.
- Identifying the default carrier that handles interLATA traffic for the trunk group.

Following is an example of a tuple in the TOPEATRK Table. In the example, the noted fields in the TOPEATRK Table perform the following functions:

- Field TRUNKGRP contains the CLLI name (reference 1) from the TRKGRP Table.
- Field ENDOFFCE, entry CONFORM, identifies the originating end office as an Equal Access End Office.
- Field LATANM, entry LATA1 (reference 5), defines the LATA served by a DMS-200 TOPS office. This name is pointed to in the LATAOLA Table.
- Field SCRNDX, entry 919 (reference 2), is the SNPA defined in the TRKGRP Table.
- Field BYPASS, entry \$, indicates that all zero-minus (0-) and hotel-originated calls are routed to an OTC operator position and not bypassed to an InterLATA Carrier (IC) for operator services. The dollar sign (\$) in this field is a default value that is interpreted as a nil (blank) entry.
- A HOTEL entry routes all hotel calls, regardless of the LATA status (inter or intra) and call type (OA or DD), to an IC operator position.
- A ZEROM entry routes all 0- traffic, regardless of the LATA status, to an IC operator position.

MAP display example for table TOPEATRK

TRUNKGRP	ENDOFFCE	CARRIER	LATANM	DOMSCL
OVSSCL	SCRNDX	BYPASS		

DRHMNC01DS1 (1)	CONFORM	288	LATA1 (5)	DOM1
OVS1	919 (2)	\$		

LATAOLA TABLE

The LATA Translation (LATAOLA) Table determines whether a call is intraLATA or interLATA. After the LATA status is checked, intraLATA and interLATA calls are translated differently.

Associated with the LATAOLA Table is the LATA Name (LATANAME) Table. The LATANAME Table defines the names of each LATA served by a DMS-200 TOPS office.

Reference: TOPS Call Descriptions (continued)

Following is an example of a tuple in the LATAXLA Table. In the example, the noted fields in the LATAXLA Table perform the following functions:

- Field LATANM, entry LATA1 (reference 5), identifies the LATA served by a DMS-200 TOPS office. The LATA1 entry is found in the LATANM field in the TOPEATRK Table.
- Field DIGITS, entry 919992, identifies the code associated with the LATA name.
- Field LATA, entry INTRA, determines that the call is intraLATA.

A DMS-200 TOPS office does not accept an entry of INTRA in both the LATA and STATE fields. If an NPANXX code is not found in the LATAXLA Table, a DMS-200 TOPS office assumes that the call is intraLATA and intrastate.

- Field EATYPE, entry STD, satisfies the table editor. The TOPS trunk group software does not use this field.

MAP display example for table LATAXLA

LATANM	DIGITS	LATA	STATE	EATYPE
LATA1 (5)	919992	INTRA	INTER	STD

POSITION Table

The Position (POSITION) Table lists the types of positions and the associated routes that are used by a DMS-200 TOPS office. This table also lists the CLLI name that is associated with the TOPS operator position.

Associated with the POSITION Table is the Position Name (POSNAME) Table. The POSNAME Table lists the position names that are associated with a DMS-200 TOPS office.

Following is an example of a tuple for the POSITION Table. In the example, the noted fields in the POSITION Table perform the following functions:

- Field POS, entry TOPS, indicates that the call routes to a TOPS operator position.
- Field PRTESEL, entry S, identifies the route selector the call uses to reach a TOPS operator position.
- Field CLLI, entry TOPSPOS, lists the name of the CLLI the call uses to route to a TOPS operator position.

Reference: TOPS Call Descriptions (continued)

MAP display example for table POSITION

POS	PRTESEL	CLLI
TOPS	S	TOPSPOS

TOPS Table

The Digit Translation Routing to TOPS (TOPS) Table assigns call types to one of three operator queues (GEN, XFR1, and XFR2). The TOPS Table also controls the screen display for incoming calls to TOPS operator positions. This table is a default table that is automatically datafilled during the baseload build. Existing entries can be changed by the OTC, however, no new entries can be added to the TOPS Table.

Calls index the TOPS Table by searching the CO field for either the call type or the digits dialed. For example, a directory assistance call dialed as 411 indexes the tuple with a 411 entry in field CO.

Following is an example of tuple in the TOPS Table. In the example, the noted fields in the TOPS Table perform the following functions:

- Field CO, entry OA (reference 6), indicates that the call is operator-assisted). The OA call type is determined by examining the incoming start signal.
- Field SEL, entry S, indicates that the standard display is required at the TOPS operator position.
- Field HEADER, entry none (blank), satisfies the table editor for an "S" entry in field SEL.
- Field NOAMA, entry N, indicates that an AMA tape entry for the call is made.
- Field POSTYPE, entry GEN (reference 7), indicates that the call routes to a general TOPS operator position queue.

MAP display example for table TOPS

CO	SEL	HEADER	NOAMA	POSTYPE
OA (6)	S		N	GEN (7)

Reference: TOPS Call Descriptions (continued)

TOPSPOS Table

The TOPS Position (TOPSPOS) Table performs the following functions:

- Identifies the data and voice trunk circuit locations for the TOPS operator positions.
- Lists the traffic office to which the position belongs.

Following is an example of a tuple in the TOPSPOS Table. In the example, the noted fields in the TOPSPOS Table perform the following functions:

- Field POSNO, entry 100, identifies the number assigned to the TOPS operator position.
- Field POS, entry OPR, indicates that the TOPS operator position type is a regular operator position.
- Field TEAM, entry 1, identifies the operator team to which the position belongs.
- Field XFERSET, entry GEN (reference 7), identifies the operator position queue as general. The entry of GEN is defined in the TOPS Table.

MAP display example for table TOPSPOS

POSNO	PMTYPE	TMNO	TMCKTNO	VCPDGRP	PMTYPE	TMNO
TMCKTNO	DTPDGRP	CARDCODE	POS	TEAM	XFERSET	
100	TM8	5	10	NPDGP	TM8	5
10		NPDGP	2X72AA	OPR	1	GEN (7)

OPRTRANS Table

The Operator Translation Table directs the call to the appropriate tables that are required for translating the digits dialed by the TOPS operator position. The information listed in this table includes the following:

- The serving NPA associated with the TOPS operator position.
- The class of service screening subtable name (where required) assigned to the TOPS operator position.
- The standard pretranslator subtable name (where required) assigned to the TOPS operator position.
- The local calling area screening subtable name (where required, but not generally used) assigned to the TOPS operator position.

Reference: TOPS Call Descriptions (continued)

The tuples listed in the OPRTRANS Table are associated with keys on the TOPS operator position in the following manner (the TOPSLINE tuple is not associated with a key at this time):

- The KP FWD key is associated with the OPERATOR tuple listed in this table.
- The KP VER key is associated with the VERIFY tuple listed in this table.
- The KP BACK key is associated with the DELAY tuple listed in this table.
- The KP OVERSEAS key is associated with the OVERSEAS tuple (this tuple is not used in the TOPS environment).

When the operator presses the KP FWD key, a DMS-200 TOPS office searches for the OPERATOR tuple.

Following is an example of a tuple in the OPRTRANS Table. In the example, the noted field in the OPRTRANS Table perform the following functions:

- Field KEY, entry OPERATOR, identifies the tuple the call indexes after the operator has released the call. The entry of OPERATOR also provides an index in the STDPRTCT.STDPRT Subtable for TOPS operator positions.
- Field SNPA, entry 919 (reference 2), defines the Serving NPA associated with the TOPS operator position.
- Field SCRCTL, entry NSCR, indicates that no class of service screening is required.
- Field PRTNM, entry OPER (reference 8) identifies the pretranslator name used to index into the (Operator) STDPRTCT.STDPRT Subtable.
- Field LCANAME, entry NLCA, indicates that no local calling area screening is required.

MAP display example for table OPRTRANS

KEY	SNPA	SCRCTL	PRTNM	LCANAME
OPERATOR	919 (2)	NSCR	OPER (8)	NLCA

(Operator) STDPRTCT.STDPRT Subtable

The call returns to the (Operator) STDPRTCT.STDPRT Subtable to analyze the digits sent by the TOPS operator position. The call indexes the tuple with the standard pretranslator name defined in field PRTNM in the OPRTRANS Table.

Reference: TOPS Call Descriptions (continued)

Unless the call is assigned a new route in the (Operator) STDPRTCT.STDPRT Subtable, the call takes the route specified in the HNPACONT.RTEREF Subtable. All codes must be treated in the operator STDPRTCT.STDPRT Subtable whether or not a new route is specified.

Following is an example of a tuple in the (Operator) STDPRTCT.STDPRT Subtable. In the example, the noted fields in the STDPRTCT.STDPRT Subtable perform the following functions:

- Field EXPRTNM, entry OPER (reference 8), represents the index from the OPRTRANS Table.
- Fields FROMDIGS and TODIGS represent the range within which the digits (if any) keyed in by the operator fall.
- Field PRETSEL, entry N, defines a selector that indicates further digit analysis is required.
- Field TYPCALL, entry OA (reference 6), defines the call as operator-assisted.

In the STDPRTCT.STDPRT Subtable, the entry in this field is set to NL. The entry of NL allows the OTC to combine 0+ and 1+ traffic on the same trunk group by not specifying a call type (OA or DD). However, in the (Operator) STDPRTCT.STDPRT Subtable, the call type has already been determined, thus, the "OA" entry in field TYPCALL.

Field NOPREDIG, entry 0, tells a DMS-200 TOPS office not to interpret any of the incoming digits (if any) as prefix digits.

Field TRANSYS, entry NA, indicates that the call is to proceed to the Home Numbering Plan Area Control (HNPACONT) Table as a domestic call.

MAP display example for table STDPRTCT

```

EXPRTNM
-----
OPER (8)
```

MAP display example for subtable STDPRTCT.STDPRT

```

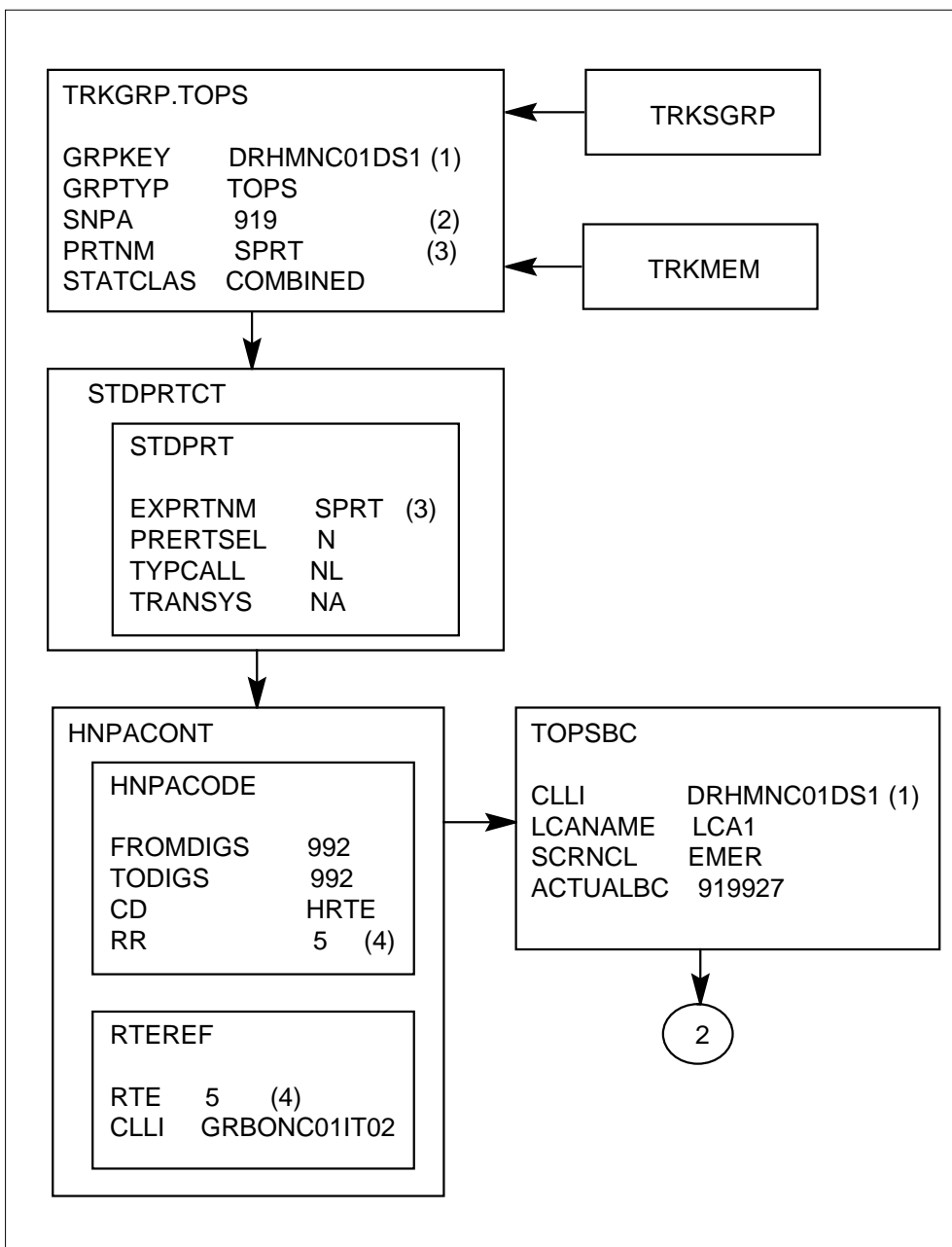
FROMDIGS  TODIGS  PRETSEL  TYPCALL  NOPREDIG  TRANSYS
-----
      2      9      N      OA (6)      0      NA
```

Reference: TOPS Call Descriptions (continued)

Basic IntraLATA Call Call Map

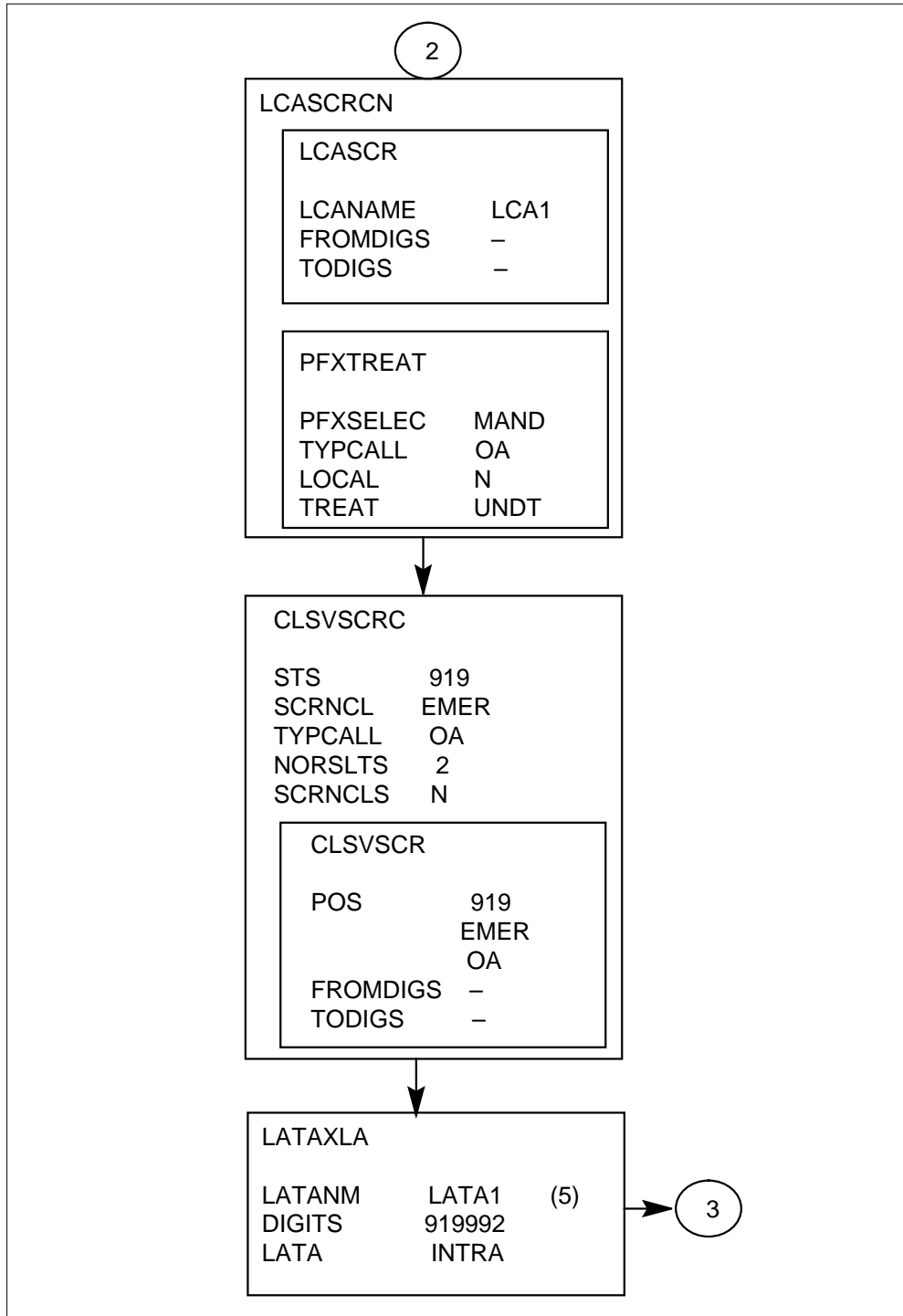
Following is a call map illustrating the table flow for a zero-plus intraLATA call with a combined station class.

Basic intraLATA call map



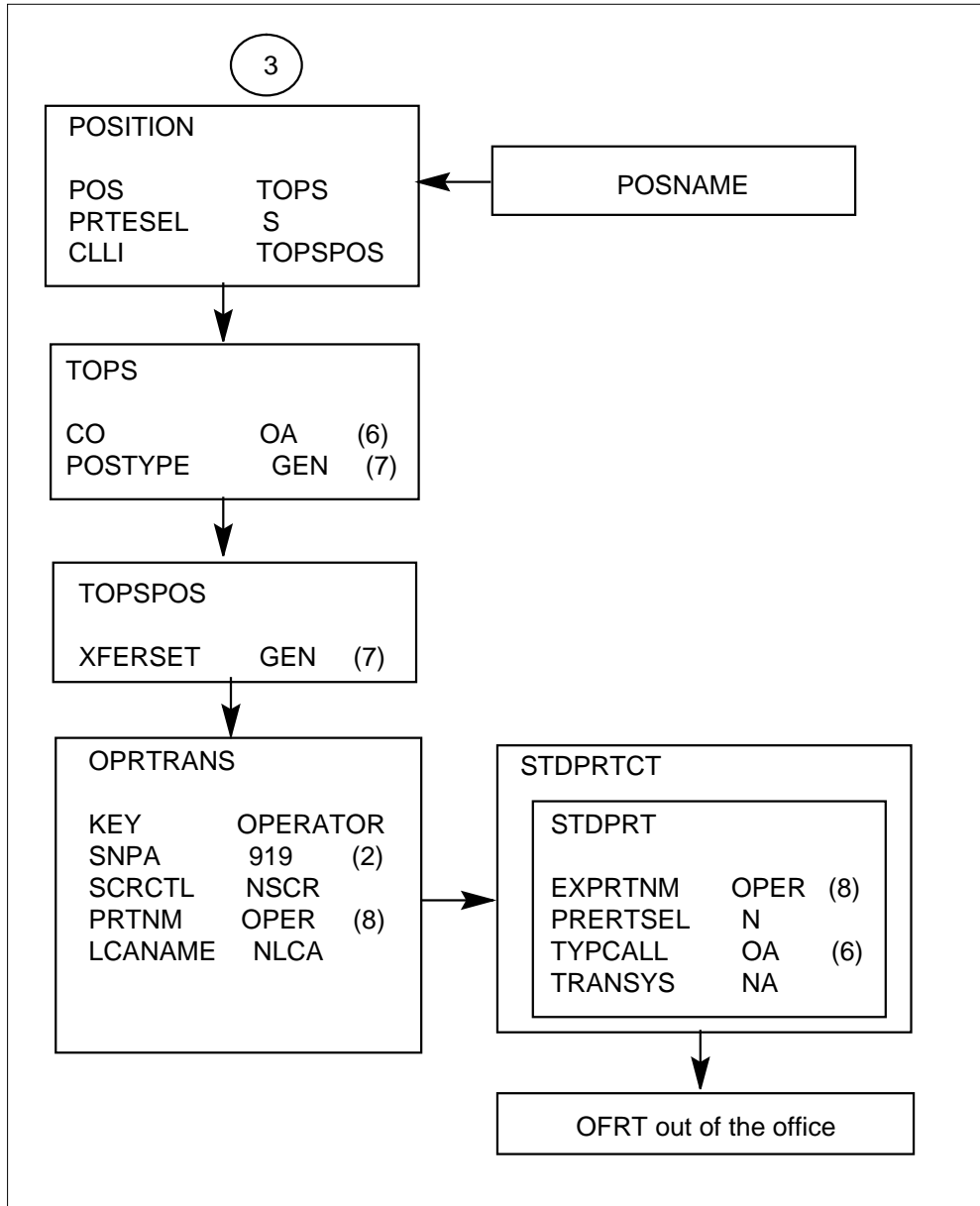
Reference: TOPS Call Descriptions (continued)

Basic intraLATA call map (continued)



Reference: TOPS Call Descriptions (continued)

Basic intraLATA call map (end)



IntraLATA: One-Plus Hotel IntraLATA Dnlookup Non-EAEO DP

The following section describes the call progression for a one-plus (1+) intraLATA call from a hotel station. The call in the example is routed from a Non-Equal Access End Office (Non-EAEO) over a dedicated trunk group. The end office uses Dial Pulse (DP) outpulsing and Feature Group C (FGC) signaling.

Reference: TOPS Call Descriptions (continued)

For the following call progression, the caller dials 1+992-5555. The hotel directory number is (919) 927-1812. The end office absorbs the "1" and outputs the called number as 992-5555. The called number is then followed by the ANI spill, which in this example is KP+0+9271812+ST.

Following is a list of the data tables used by a DMS-200 TOPS office when processing 1+ intraLATA calls with a station class of Dnlookup. The data tables are not listed in datafill sequence and are not necessarily in the exact order in which the information in these tables accessed. For the correct sequence, refer to TOPS Basic Call Progression.

- TRKGRP.TOPS
- STDPRTCT.STDPRT
- HNPACONT.HNPACODE
- HNPACONT.RTEREF
- TOPSBC
- LCASCRCN
- LCASCRCN.LCASCRC
- PFXTREAT
- CLSVSCRC
- CLSVSCRC.CLSVSCRC
- SPLDNID
- TOPEATRK
- LATAXLA
- POSITION
- TOPS
- TOPSPOS
- OPRTRANS
- STDPRTCT.STDPRT

Following is a description of the call progression for this 1+ intraLATA call. This section only covers those tables that are specific to the call. For a complete discussion of the basic intraLATA call flow, see TOPS Basic IntraLATA Call Progression.

Reference: TOPS Call Descriptions (continued)

TOPS TRKGRP Table

For a call carried on a dedicated trunk group, a DMS-200 TOPS office uses the STATCLAS field of the TOPS TRKGRP Table to determine the station class of that call.

Following is an example of a tuple in the TOPS TRKGRP Table. In the example, the entry in field STATCLAS is DNLOOKUP.

A DNLOOKUP entry means that an end office is not capable of sending all the start signals (only ST and STP for calls dialed as 0-, 0+, and 1+) and cannot differentiate between coin and non-coin traffic. In addition, a DNLOOKUP entry means that an end office cannot send all ANI ID digits. (The ANI ID digit 6 would have identified this call as originating from a hotel station.) The DNLOOKUP entry forces a DMS-200 TOPS office to search the Special Directory Number Identification (SPLDNID) Table to determine the station class (coin, hotel, or restricted) of the calling number.

MAP display example for table TRKGRP.TOPs with DNLOOKUP station class

GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	SELSEQ	SNPA
PRTNM	LCANAME	SCRNCL	OHNXXSCR	TRAFCLS	STATCLAS	TIMEOUT	
NPANXXTQ	DISPLAY	CLGID	NOBILLCD	ANISEIZ	ANIPDIAL	TRTMTSUP	
COINTYPE	PADSTAT0	PADSTAL					

DRHMNC01DS1 (1)	TOPS	0	ELO	NCRT	IC	MIDL	919 (2)
SPRT (3)	NLCA	NSCR	N	SP	DNLOOKUP	Y	
N	0	BELL	6	10	10		N
CDF	ENABLED	DISABLED					

STDPRTCT.STDPRT Subtable

Following is an example of a tuple in the STDPRTCT.STDPRT Subtable.

MAP display example for table STDPRTCT

EXPRTNM

SPRT (3)

MAP display example for subtable STDPRTCT.STDPRT

FROMDIGS	TODIGS	PRETSEL	TYPCALL	NOPREDIG	TRANSYS
2	9	N	NL	0	NA

Reference: TOPS Call Descriptions (continued)

HNPACONT.HNPACODE Subtable

Following is an example of a tuple in the HNPACONT.HNPACODE Subtable.

MAP display example for table HNPACONT

NPA

919 (2)

MAP display example for subtable HNPACONT.HNPACODE

FROMDIGS	TODIGS	CD	RR
-----	-----	-----	-----
992	992	HRTE	5 (4)

HNPACONT.RTEREF Subtable

Following is an example of a tuple in the HNPACONT.RTEREF Subtable.

MAP display example for table HNPACONT

NPA

919 (2)

MAP display example for subtable HNPACONT.RTEREF

RTE	RTESEL	CONNTYPE	CLLI	DELDIGS	PRFXDIGS
CANCNORC					
-----	-----	-----	-----	-----	-----
5 (4)	N	D	GRBONC01ITO2	0	N
N					

TOPSBC Table

Following is an example of a tuple in the TOPSBC Table.

Reference: TOPS Call Descriptions (continued)

MAP display example for table TOPSBC

CLLI CHGCLSS	BILLCODE	LCANAME	SCRNCL	ACTUALBC
DRHMNC01DS1 (1) TOPS	927	LCA1	EMER	919927

Note: In this call progression, a DMS-200 TOPS office accesses the LCASCRCN.LCASCRC, PFXTREAT, CLSVSCRC, and CLSVSCRC.CLSVSCR tables. These tables are not presented here, but are shown in the call map at the end of this call progression section and discussed in TOPS Basic IntraLATA Call Progression.

SPLDNID Table

The Special Directory Number Identification (SPLDNID) Table lists the directory numbers for coin, hotel, and restricted stations. In this call example, the directory number for the originating hotel station must be listed and designated as hotel with either an Autoquote or Voicequote device system.

If the calling number does not appear in the SPLDNID Table, a DMS-200 TOPS office assumes that the calling number is non-coin. The call then proceeds through translations as a non-coin, DD, intraLATA call.

Following is an example of a tuple for the SPLDNID Table. In the example, the fields noted in the SPLDNID Table perform the following functions:

- Field SPLDN, entry 9199271812, contains the directory number of the calling station.
- Field SEL, entry AQHTL, designates the originating station as hotel with an Autoquote teletype system.
- Field NC, entry Y, indicates that all calls (chargeable and non-chargeable) are recorded on the hotel's teletype system.

MAP display example for table SPLDNID

SPLDN	SEL	AQ_NUM	NC
9199271812	AQHTL	0013	Y

Reference: TOPS Call Descriptions (continued)

TOPEATRK Table

The routing of hotel traffic is dependent upon the entry in the BYPASS field of the TOPEATRK Table as follows:

- A HOTEL entry routes all hotel calls, regardless of the LATA status (inter or intra) and call type (OA or DD), to an InterLATA Carrier (IC) operator position.
- A dollar sign (\$) in this field is interpreted as a nil (blank) value. A nil value means that all hotel and 0- traffic route to an Operating Telephone Company (OTC) operator position.

Following is an example of a tuple in the TOPEATRK Table. In the example, field BYPASS contains a \$, which indicates that all hotel-originated traffic routes to an OTC operator position.

MAP display example for table TOPEATRK for a non-EAEO

TRUNKGRP	ENDOFFCE	CARRIER	LATANM	DOMSCL
OVSSCL	SCRNIDX	BYPASS		
DRHMNC01DS1 (1)	NCONFORM	288	LATA1 (5)	DOM1
OVS1	919 (2)	\$		

LATAXLA TABLE

Following is an example of a tuple in the LATAXLA Table.

MAP display example for table LATAXLA

LATANM	DIGITS	LATA	STATE	EATYPE
LATA1 (5)	919992	INTRA	INTER	STD

POSITION Table

Following is an example of a tuple in the POSITION Table.

MAP display example for table POSITION

POS	PRTESEL	CLLI
TOPS	S	TOPSPOS

Reference: TOPS Call Descriptions (continued)

TOPS Table

Following is an example of a tuple in the TOPS Table.

MAP display example for table TOPS

CO	SEL	HEADER	NOAMA	POSTYPE
DD (6)	S		N	GEN (7)

TOPSPOS Table

Following is an example of a tuple in the TOPSPOS Table.

MAP display example for table TOPSPOS

POSNO	PMTYPE	TMNO	TMCKTNO	VCPDGRP	PMTYPE	TMNO
TMCKTNO	DTPDGRP	CARDCODE	POS	TEAM	XFERSET	
100	TM8	5	10	NPDGP	TM8	5
10		NPDGP	2X72AA	OPR	1	GEN (7)

OPRTRANS Table

Following is an example of a tuple in the OPRTRANS Table.

MAP display example for table OPRTRANS

KEY	SNPA	SCRCTL	PRTNM	LCANAME
OPERATOR	919 (2)	NSCR	OPER (8)	NLCA

(Operator) STDPRTCT.STDPRT Subtable

Following is an example of a tuple in the (Operator) STDPRTCT.STDPRT Subtable.

MAP display example for table STDPRTCT

EXPRTNM
OPER (8)

Reference: TOPS Call Descriptions (continued)

MAP display example for subtable STDPRTCT.STDPRT

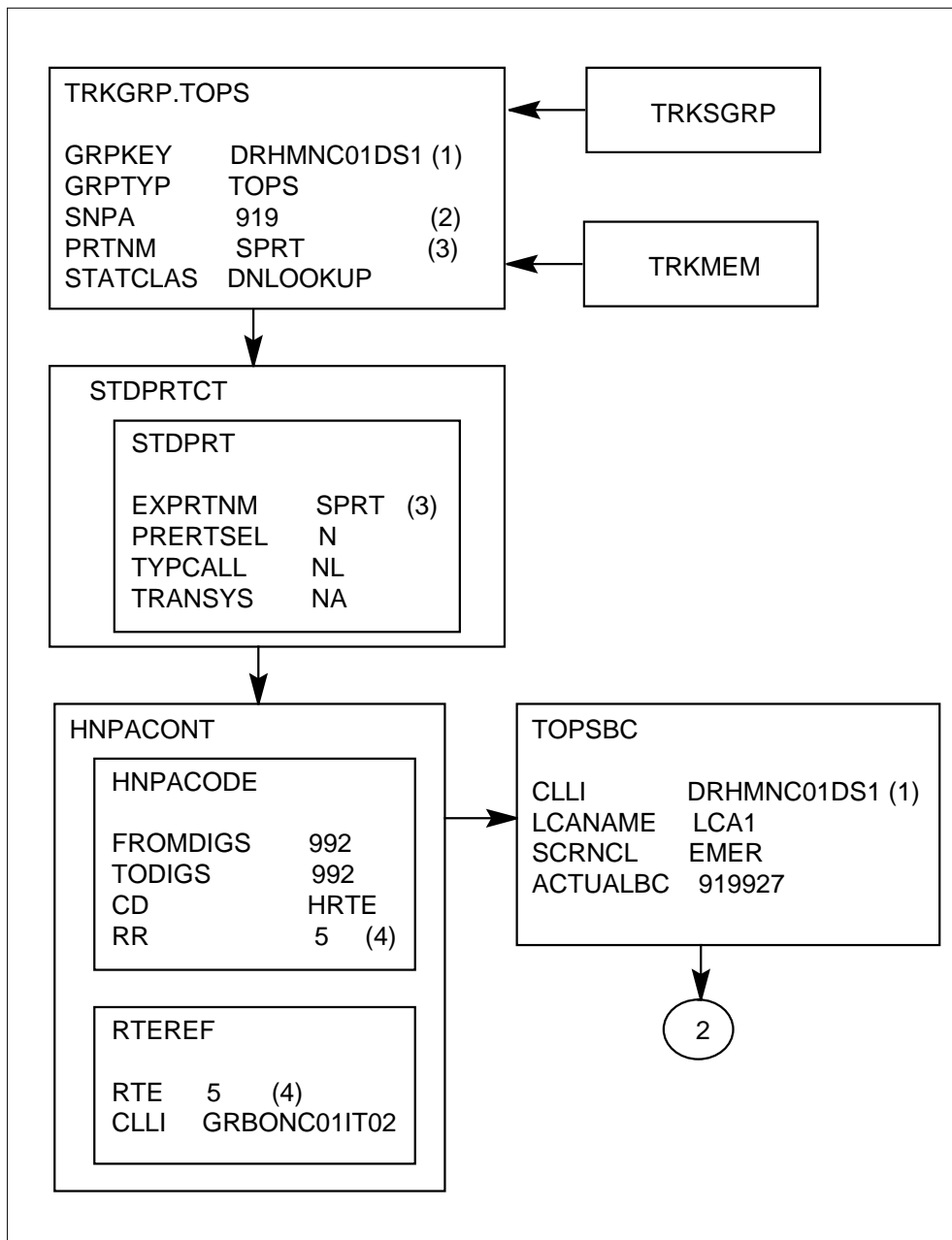
FROMDIGS	TODIGS	PRETSEL	TYPCALL	NOPREDIG	TRANSYS
2	9	N	DD (6)	0	NA

One-Plus IntraLATA DNLOOKUP Call Map

Following is a call map illustrating the basic table flow for 1+ intraLATA hotel calls with a station class of DNLOOKUP.

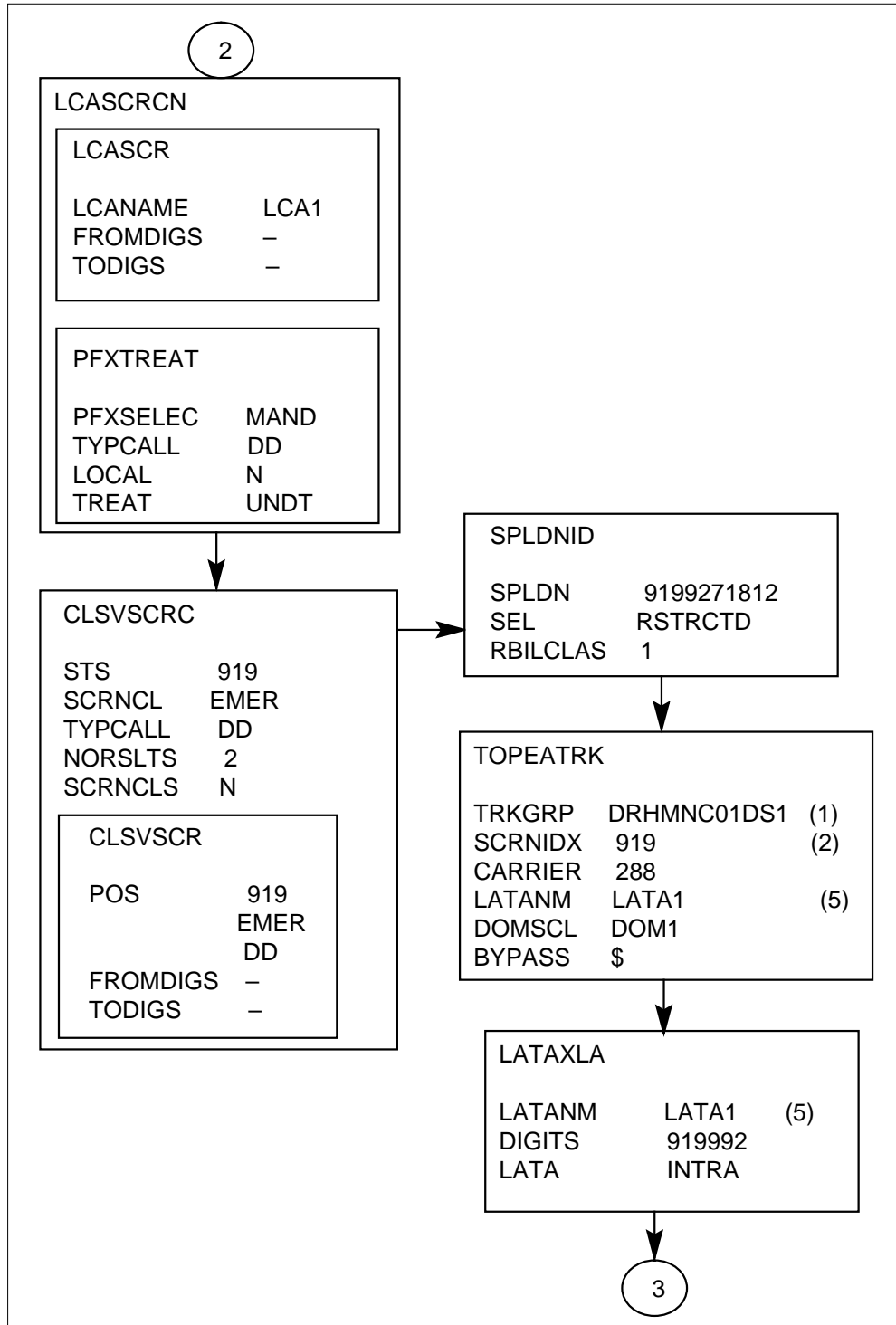
Reference: TOPS Call Descriptions (continued)

One-Plus Intra Dnlookup Call Map



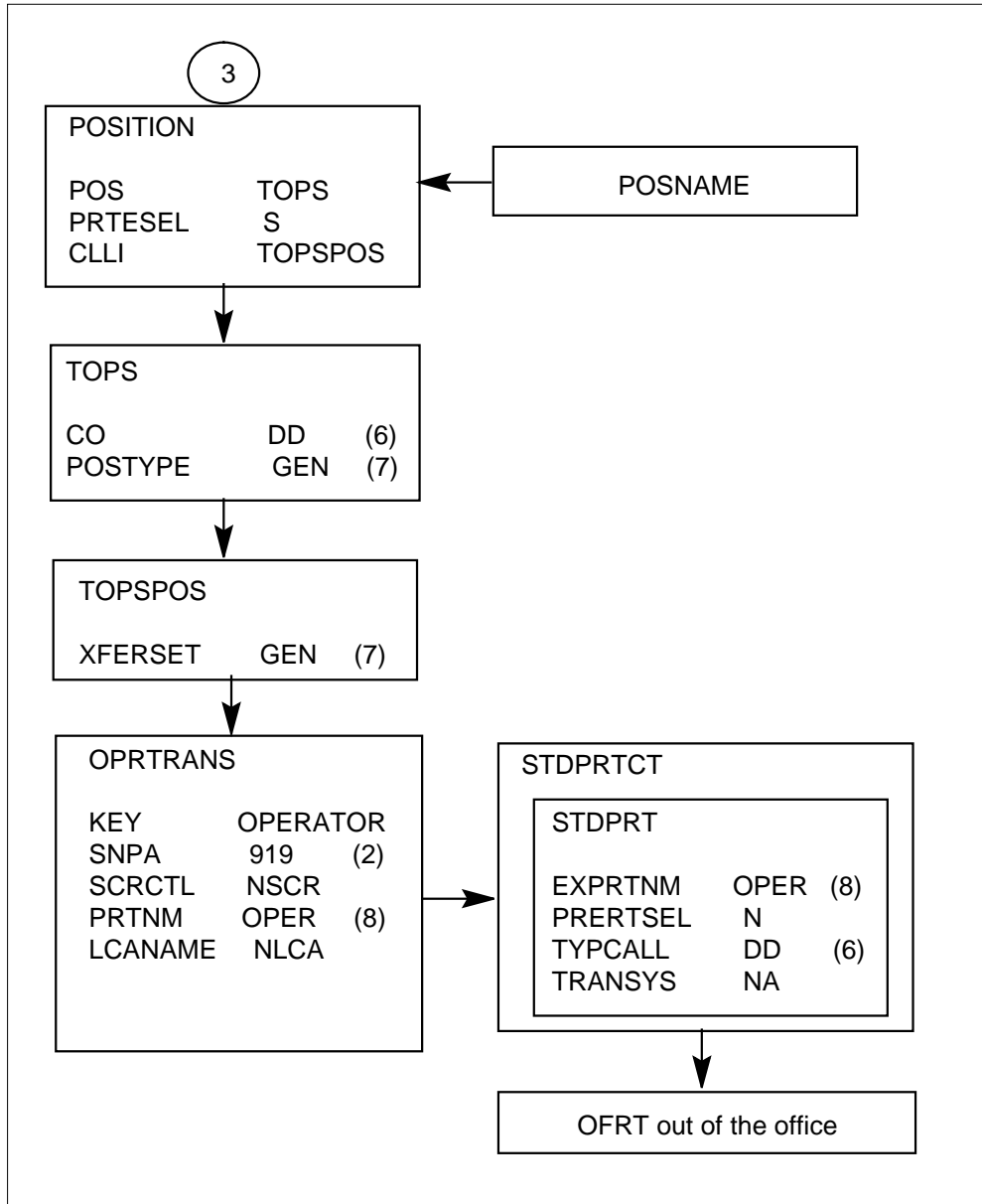
Reference: TOPS Call Descriptions (continued)

One-Plus Intra Dnlookup Call Map (continued)



Reference: TOPS Call Descriptions (continued)

One-Plus Intra Dnlookup Call Map (end)



IntraLATA: Zero-Minus IntraLATA Coin EAE0 MF

The following section describes the call progression for a zero-minus (0-) intraLATA call from a coin station. The call in this example is routed from an Equal Access End Office (EAE0) over a dedicated coin trunk group. The end office uses Multifrequency (MF) outpulsing and Feature Group C (FGC) signaling.

Reference: TOPS Call Descriptions (continued)

For the following call progression, the caller dials 0. The calling party's number is (919) 927-1812. The end office seizes the trunk group and outputs a key pulse (KP) plus the appropriate start signal as KP+STP. The start signal is then followed by the ANI spill, which in this example is KP+0+9271812+ST.

Following is a list of the data tables used by a DMS-200 TOPS office when processing 0- intraLATA calls from a coin station. The data tables are not listed in datafill sequence and are not necessarily in the exact order in which the information in these tables accessed. For the correct order, refer to the TOPS Basic Call Progression section.

- TRKGRP.TOPS
- TOPSBC
- TOPEATRK
- POSITION
- TOPS
- TOPSPOS
- OPRTRANS
- STDPRTCT.STDPRT

TOPS TRKGRP Table

The design of the TOPS trunk group software requires it to examine the incoming start signal in the ANI information to determine the call type. In this call example, the "STP" start signal in the called number spill (KP+STP) and the fact that no digits were received from the end office mean that the caller dialed only a 0 and that operator assistance is required.

However it cannot be determined by the examination of the start signal alone whether the call originated from a coin or non-coin station. For a call carried on a dedicated trunk group, a DMS-200 TOPS office uses the STATCLAS field of the TOPS TRKGRP Table to determine the station class of that call.

Following is an example of a tuple in the TOPS TRKGRP Table. In the example, field STATCLAS has been marked as COIN to indicate that the trunk group carries only coin traffic.

Reference: TOPS Call Descriptions (continued)

MAP display example for table TRKGRP.TOPS with Coin Station Class

GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	SELSEQ	SNPA
PRTNM	LCANAME	SCRNCL	OHNXXSCR	TRAFCLS	STATCLAS	TIMEOUT	
NPANXXTQ	DISPLAY	CLGID	NOBILLCD	ANISEIZ	ANIPDIAL	TRTMTSUP	
COINTYPE	PADSTAT0	PADSTA1					

DRHMNC01DS1 (1)	TOPS	0	ELO	NCRT	IC	MIDL	919 (2)
SPRT (3)	NLCA	NSCR	N	SP	COIN	Y	
N	0	BELL	6	10	10	N	
CDF	ENABLED	DISABLED					

TOPSBC Table

Following is an example of a tuple in the TOPSBC Table.

MAP display example for table TOPSBC

CLLI	BILLCODE	LCANAME	SCRNCL	ACTUALBC
CHGCLSS				

DRHMNC01DS1 (1)	927	LCA1	EMER	919927
TOPS				

TOPEATRK Table

The routing of 0- traffic is dependent upon the entry in the BYPASS field of the TOPEATRK Table as follows:

- A ZEROM entry routes all 0- traffic, regardless of the LATA status, to an IC operator position.
- A dollar sign (\$) in this field is interpreted as a nil (blank) value. A nil value means that all 0- traffic routes to an Operating Telephone Company (OTC) operator position.

Following is an example of a tuple in the TOPEATRK Table. In the example, field BYPASS contains a \$, which indicates that all 0- traffic routes to an OTC operator position.

MAP display example for table TOPEATRK with Nil Value in Field BYPASS

TRUNKGRP	ENDOFFCE	CARRIER	LATANM	DOMSCL
OVSSCL	SCRNIDX	BYPASS		

DRHMNC01DS1 (1)	CONFORM	288	LATA1 (5)	DOM1
OVS1	919 (2)	\$		

Reference: TOPS Call Descriptions (continued)

POSITION Table

Following is an example of a tuple in the POSITION Table.

MAP display example for table POSITION

POS	PRTESEL	CLLI
TOPS	S	TOPSPOS

TOPS Table

Following is an example of a tuple in the TOPS Table.

MAP display example for table TOPS

CO	SEL	HEADER	NOAMA	POSTYPE
OA (6)	S		N	GEN (7)

TOPSPOS Table

Following is an example of a tuple in the TOPSPOS Table.

MAP display example for table TOPSPOS

POSNO	PMTYPE	TMNO	TMCKTNO	VCPDGRP	PMTYPE	TMNO
TMCKTNO	DTPDGRP	CARDCODE	POS	TEAM	XFERSET	
100	TM8	5	10	NPDGP	TM8	5
10		NPDGP	2X72AA	OPR	1	GEN (7)

OPRTRANS Table

Following is an example of a tuple in the OPRTRANS Table.

MAP display example for table OPRTRANS

KEY	SNPA	SCRCTL	PRTNM	LCANAME
OPERATOR	919 (2)	NSCR	OPER (8)	NLCA

(Operator) STDPRTCT.STDPRT Subtable

Following is an example of a tuple in the (Operator) STDPRTCT.STDPRT Subtable.

Reference: TOPS Call Descriptions (continued)

MAP display example for table STDPRTCT

EXPRTNM

OPER (8)

MAP display example for subtable STDPRTCT.STDPRT

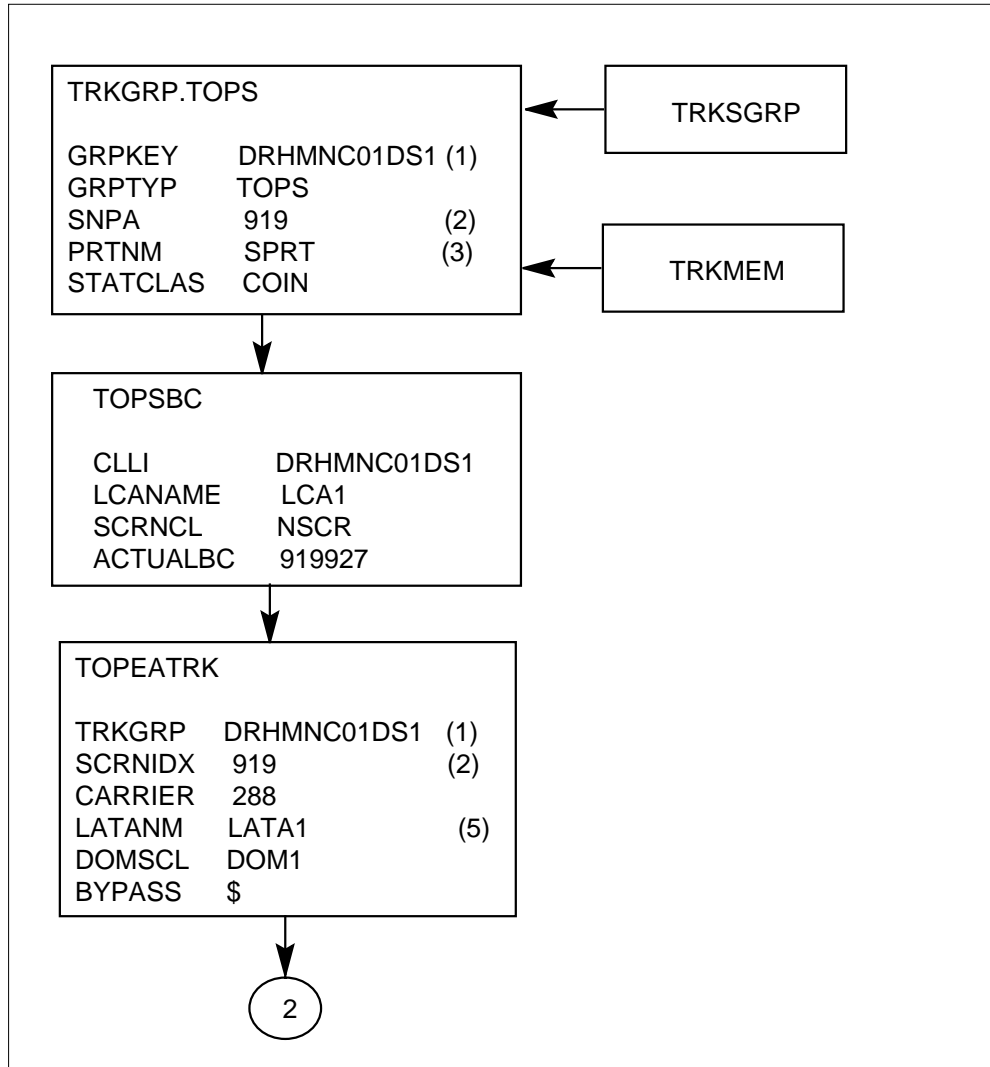
FROMDIGS	TODIGS	PRETSEL	TYPCELL	NOPREDIG	TRANSYS
-----	-----	-----	-----	-----	-----
2	9	N	OA (6)	0	NA

Zero-Minus IntraLATA Coin Call Map

Following is a call map illustrating the table flow for a zero-minus intraLATA coin call.

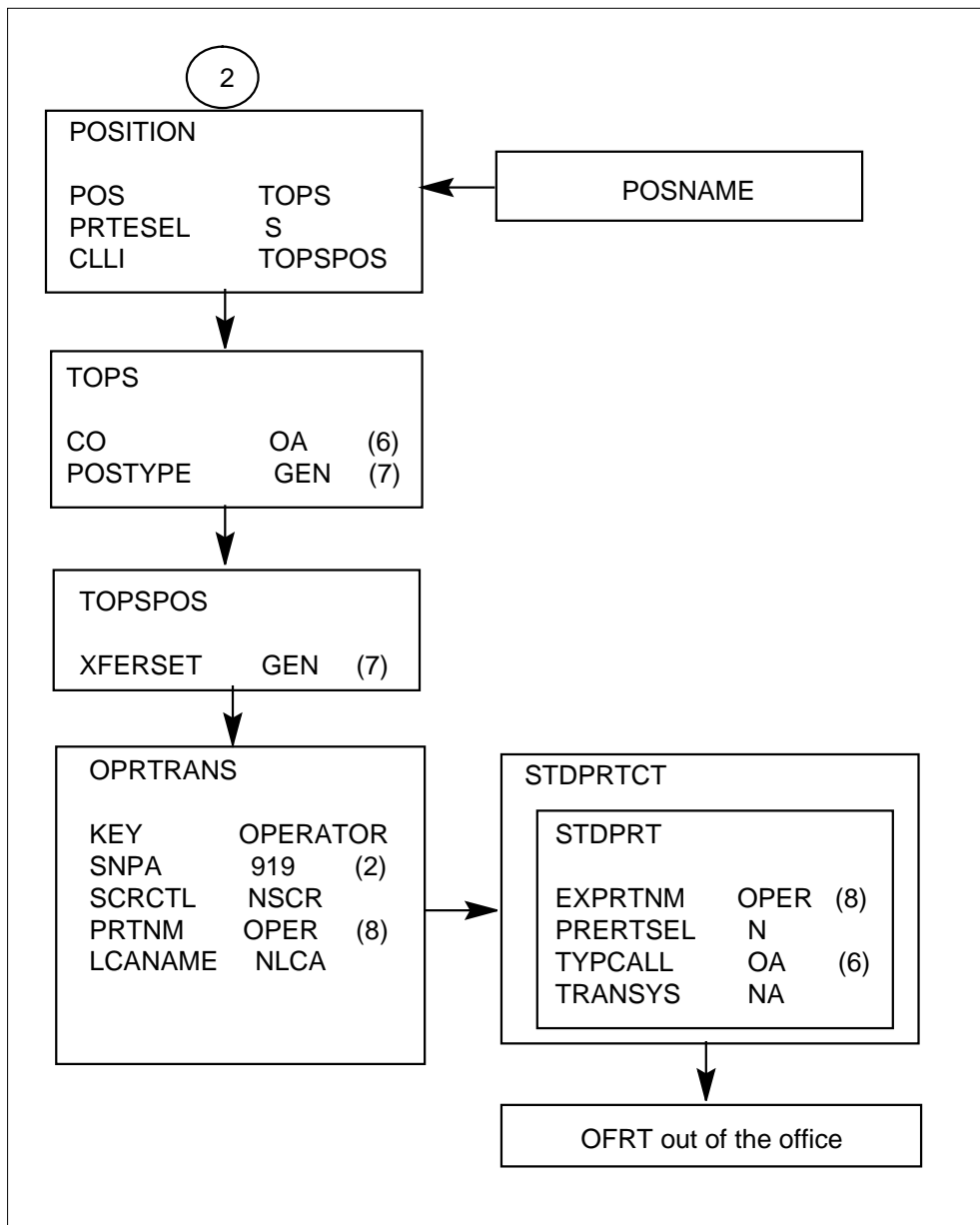
Reference: TOPS Call Descriptions (continued)

Zero-Minus Intra Coin Call Map



Reference: TOPS Call Descriptions (continued)

Zero-Minus Intra Coin Call Map (continued)



IntraLATA: Zero-Plus IntraLATA Combined EAEO MF Hotel

The following section describes the call progression for a zero-plus (0+) intraLATA call from a hotel station. The call in this example is routed from an Equal Access End Office (EAEO) over a combined trunk group. The end office uses Multifrequency (MF) outpulsing and Feature Group C (FGC) signaling.

Reference: TOPS Call Descriptions (continued)

For the following call progression, the caller dials 0+992-5555. The calling party's number is (919) 927-1812. The end office outpulses a key pulse (KP), plus the called number and the appropriate start signal as KP+9925555+ST3P. The start signal is then followed by the ANI spill, which in this example is KP+6+9271812+STP.

Following is a list of the data tables used by a DMS-200 TOPS office when processing 0+ intraLATA calls over combined trunk groups. The data tables are not listed in datafill sequence and are not necessarily in the exact order in which the information in these tables accessed. For the correct order, refer to the TOPS Basic Call Progression section.

- TRKGRP.TOP
- STDPRTCT.STDPRT
- HNPACONT.HNPACODE
- HNPACONT.RTEREF
- TOPSBC
- LCASCRCN
- LCASCRCN.LCASCRC
- PFXTREAT
- CLSVSCRC
- CLSVSCRC.CLSVSCRC
- SPLDNID
- TOPEATR
- LATA
- POSITION
- TOPS
- TOPSPOS
- OPRTRANS
- STDPRTCT.STDPRT

Following is a description of the call progression for this 0+ intraLATA call. This section only covers those tables that are specific to the call. For a complete discussion, refer to the TOPS Basic IntraLATA Call Progression section.

Reference: TOPS Call Descriptions (continued)

TOPS TRKGRP Table

In this call example the originating end office is able to send the full range of start signals and ANI ID digits. Since the calling station is a hotel station, the ANI ID digit sent with the ANI spill is 6. The 6 directs a DMS-200 TOPS office to the SPLDNID Table for additional information the hotel station.

Following is an example of a tuple in the TOPS TRKGRP Table.

MAP display example for table TRKGRP.TOPs with Combined Station Class

GRPKEY	GRPTYP	TRAFSNO	PADGRP	NCCLS	DIR	SELSEQ	SNPA
PRTNM	LCANAME	SCRNCL	OHXXSCR	TRAFCLS	STATCLAS	TIMEOUT	
NPANXQTQ	DISPLAY	CLGID	NOBILLCD	ANISEIZ	ANIPDIAL	TRTMTSUP	
COINTYPE	PADSTAT0	PADSTA1					
DRHMNC01DS1 (1)	TOPS	0	ELO	NCRT	IC	MIDL	919 (2)
SPRT (3)	NLCA	NSCR	N	SP	COMBINED		Y
	N	0	BELL	6	10	10	N
	CDF	ENABLED	DISABLED				

STDPRTCT.STDPRT Subtable

Following is an example of a tuple in the STDPRTCT.STDPRT Subtable.

MAP display example for table STDPRTCT

EXPRTNM

SPRT (3)

MAP display example for subtable STDPRTCT.STDPRT

FROMDIGS	TODIGS	PRETSEL	TYPSCALL	NOPREDIG	TRANSYS
-----	-----	-----	-----	-----	-----
2	9	N	NL	0	NA

HNPACONT.HNPACODE Subtable

Following is an example of a tuple in the HNPACONT.HNPACODE Subtable.

Reference: TOPS Call Descriptions (continued)

MAP display example for table HNPACONT

NPA
919 (2)

MAP display example for subtable HNPACONT.HNPACODE

FROMDIGS	TODIGS	CD	RR
992	992	HRTE	5 (4)

HNPACONT.RTEREF Subtable

Following is an example of a tuple in the HNPACONT.RTERE Subtable.

ATCTRKGP1 MAP display example for table HNPACONT

NPA
919 (2)

MAP display example for subtable HNPACONT.RTEREF

RTE	RTESEL	CONNTYPE	CLLI	DELDIGS	PRFXDIGS
5 (4)	N	D	GRBONC01ITO2	0	N
CANCNORC					
N					

TOPSBC Table

Following is an example of a tuple in the TOPSBC Table.

MAP display example for table TOPSBC

CLLI	BILLCODE	LCANAME	SCRNCL	ACTUALBC
DRHMNC01DS1 (1)	927	LCA1	EMER	919927
CHGCLSS				
TOPS				

Reference: TOPS Call Descriptions (continued)

Note: In this call progression, a DMS-200 TOPS office accesses the LCASCRCN.LCASCRC, PFXTREAT, CLSVSCRC, and CLSVSCRC.CLSVSCR tables. These tables are not presented here, but are shown in the call map at the end of this call progression section. For a complete discussion of these tables, refer to the TOPS Basic IntraLATA Call Progression section.

SPLDNID Table

The SPLDNID Table lists the directory numbers of coin, hotel, and restricted stations. A DMS-200 TOPS office is pointed to the SPLDNID Table by the ANI ID digit 6 in the ANI spill. In the SPLDNID Table, the directory number of the calling hotel station must be listed and designated as hotel with either an Autoquote or Voicequote device. If the calling number is not found in the SPLDNID Table, the DMS-200 TOPS office treats the call as an ANIFAIL call.

Following is an example of a tuple for the SPLDNID Table. In the example, the fields noted in the SPLDNID Table perform the following functions:

- Field SPLDN, entry 9199271812, contains the directory number of the originating hotel station.
- Field SEL, entry AQHTL, designates the originating station as hotel with an Autoquote teletype system.
- Field NC, entry Y, indicates that all calls (chargeable and non-chargeable) are recorded on the hotel's teletype system.

MAP display example for table SPLDNID

SPLDN	SEL	AQ_NUM	NC
9199271812	AQHTL	0013	Y

TOPEATRK Table

The routing of hotel traffic is dependent upon the entry in the BYPASS field of the TOPEATRK Table.

- A HOTEL entry routes all hotel calls, regardless of the LATA status (inter or intra) and call type (OA or DD), to an InterLATA Carrier (IC) operator position.
- A dollar sign (\$) in this field is interpreted as a nil (blank) value. A nil value means that all hotel and 0- traffic routes to an Operating Telephone Company (OTC) operator position.

Reference: TOPS Call Descriptions (continued)

Following is an example of a tuple in the TOPEATRK Table. In the example, field BYPASS contains a \$, which indicates that all hotel traffic routes to an OTC operator position.

MAP display example for table TOPEATRK with Nil Value in Field BYPASS

TRUNKGRP	ENDOFFCE	CARRIER	LATANM	DOMSCL
OVSSCL	SCRNIDX	BYPASS		

DRHMNC01DS1 (1)	NCONFORM	288	LATA1 (5)	DOM1
OVS1	919 (2)	\$		

LATA XLA TABLE

Following is an example of a tuple in the LATA XLA Table.

MAP display example for table LATA XLA

LATANM	DIGITS	LATA	STATE	EATYPE

LATA1 (5)	919992	INTRA	INTER	STD

POSITION Table

Following is an example of a tuple in the POSITION Table.

MAP display example for table POSITION

POS	PRTESEL	CLLI

TOPS	S	TOPSPOS

TOPS Table

Following is an example of a tuple in the TOPS Table.

MAP display example for table TOPS

CO	SEL	HEADER	NOAMA	POSTYPE

DD (6)	S		N	GEN (7)

TOPSPOS Table

Following is an example of a tuple in the TOPSPOS Table.

Reference: TOPS Call Descriptions (continued)

MAP display example for table TOPSPOS

POSNO	PMTYPE	TMNO	TMCKTNO	VCPDGRP	PMTYPE	TMNO
TMCKTNO	DTPDGRP	CARDCODE	POS	TEAM	XFERSET	
100	TM8	5	10	NPDGP	TM8	5
10	NPDGP	2X72AA	OPR	1	GEN	(7)

OPRTRANS Table

Following is an example of a tuple in the OPRTRANS Table.

MAP display example for table OPRTRANS

KEY	SNPA	SCRCTL	PRTNM	LCANAME
OPERATOR	919 (2)	NSCR	OPER (8)	NLCA

(Operator) STDPRTCT.STDPRT Subtable

Following is an example of a tuple in the (Operator) STDPRTCT.STDPRT Subtable.

MAP display example for table STDPRTCT

EXPRTNM
OPER (8)

MAP display example for subtable STDPRTCT.STDPRT

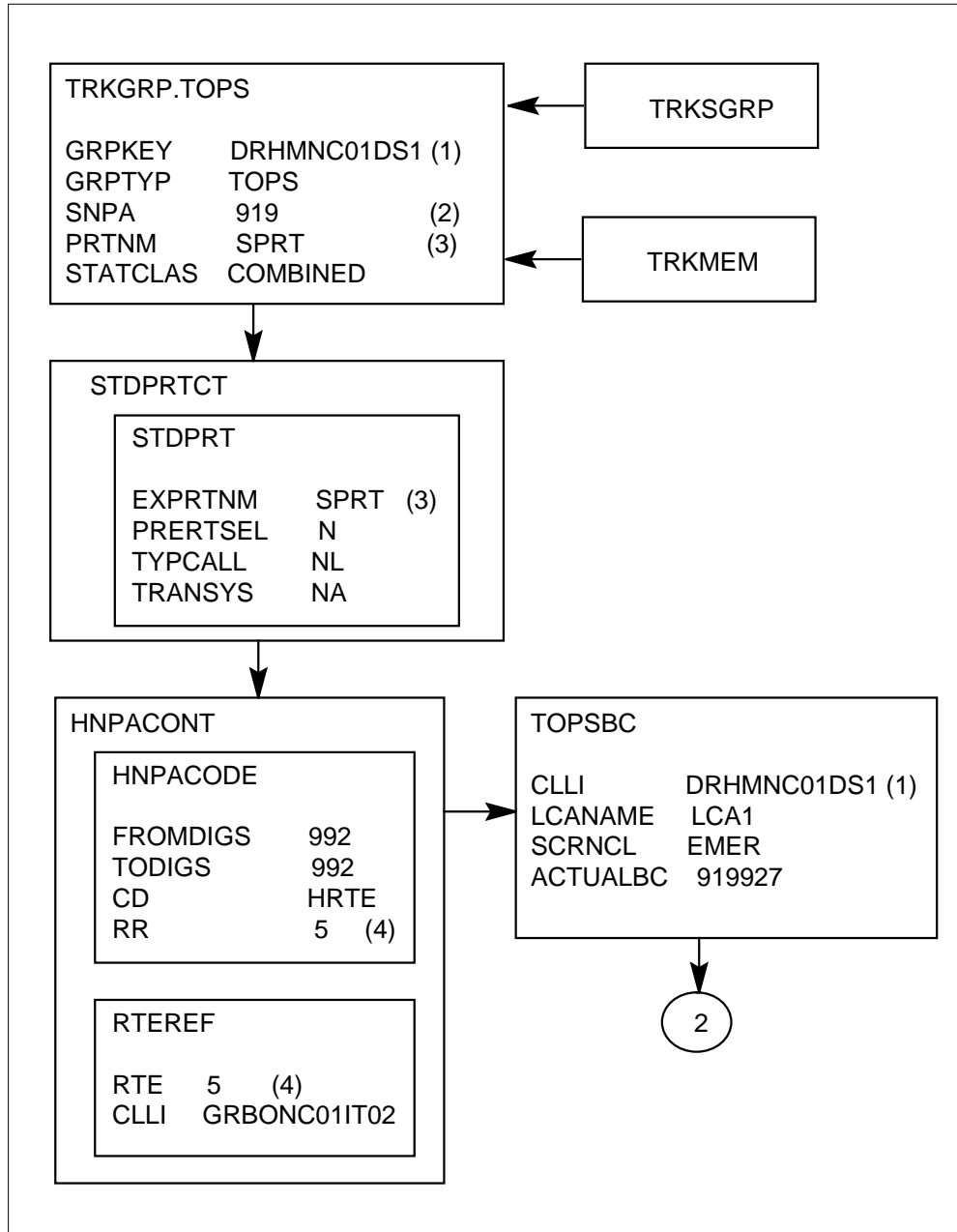
FROMDIGS	TODIGS	PRETSEL	TYPCALL	NOPREDIG	TRANSYS
2	9	N	OA (6)	0	NA

Zero-Plus IntraLATA Combined Call Map

Following is a call map illustrating the basic table flow for 0+ intraLATA hotel calls with a combined station class.

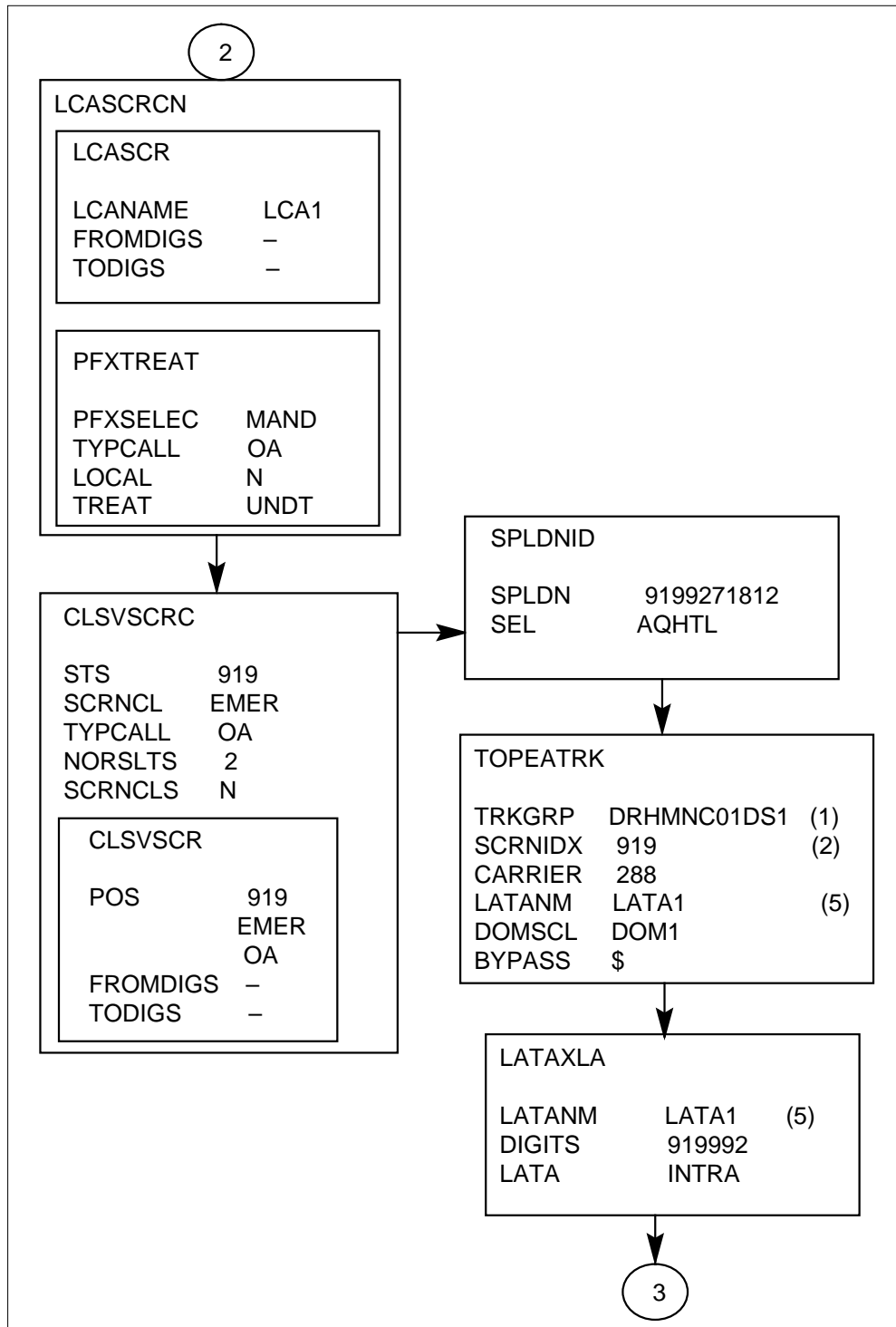
Reference: TOPS Call Descriptions (continued)

Zero-Plus Intra Combined Call Map



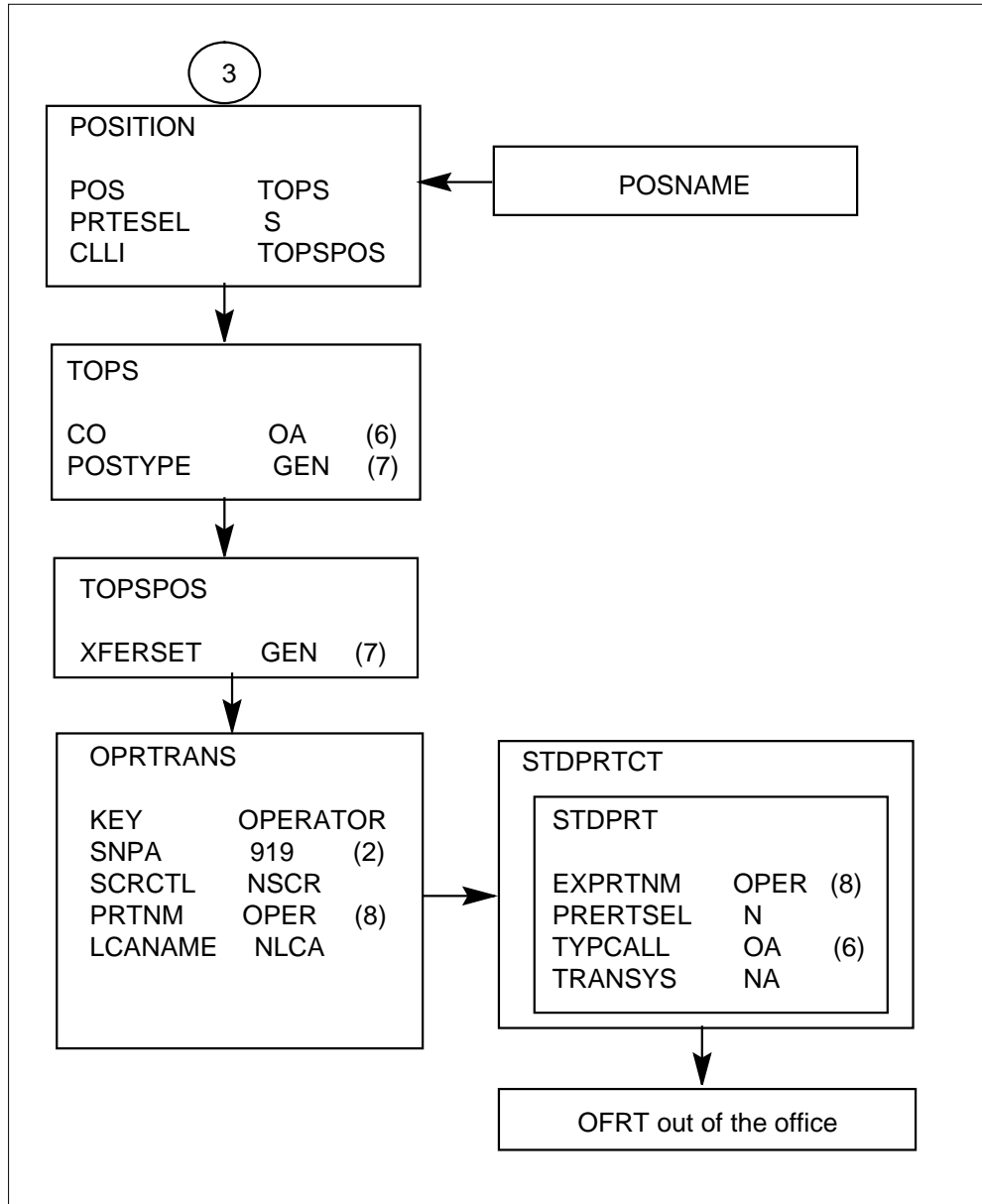
Reference: TOPS Call Descriptions (continued)

Zero-Plus Intra Combined Call Map (continued)



Reference: TOPS Call Descriptions (continued)

Zero-Plus Intra Combined Call Map (end)



IntraLATA: Zero-Plus IntraLATA Restbil Non-EAEO MF

The following section describes the call progression for a zero-plus (0+) intraLATA call from a station with a restricted billing. The call in the example is routed from a Non-Equal Access End Office (Non-EAEO) over a dedicated coin trunk group. The end office uses Multifrequency (MF) outpulsing and Feature Group C (FGC) signaling.

Reference: TOPS Call Descriptions (continued)

For the following call progression, the caller dials 0+992-5555. The calling party's number is (919) 927-1812. The end office strips off the "0" and outpulses a key pulse (KP) plus the called number and the appropriate start signal as KP+9925555+STP. The start signal is then followed by the ANI spill, which in this example is KP+0+9271812+ST.

Following is a list of the data tables used by a DMS-200 TOPS office when processing 0+ intraLATA calls with restricted billing. The data tables are not listed in datafill sequence and are not necessarily in the exact order in which the information in these tables accessed. For the correct order, refer to the TOPS Basic Call Progression section.

- TRKGRP.TOPS
- STDPRTCT.STDPRT
- HNPACONT.HNPACODE
- HNPACONT.RTEREF
- TOPSBC
- LCASCRCN
- LCASCRCN.LCASCRC
- PFXTREAT
- CLSVSCRC
- CLSVSCRC.CLSVSCRC
- SPLDNID
- RESTBIL
- RESTAMA
- TOPEATRK
- LATAXLA
- POSITION
- TOPS
- TOPSPOS
- OPRTRANS
- STDPRTCT.STDPRT

Following is a description of the call progression for this 1+ intraLATA call. This section only covers those tables that are specific to the call. For a complete description, see the TOPS Basic IntraLATA Call Progression section

Reference: TOPS Call Descriptions (continued)

TOPS TRKGRP Table

A RESTBIL entry in field STATCLAS means that there is a restriction on the station originating the call. In this call example, the RESTBIL entry means that the trunk group carries combined traffic and that the end office is unable to generate the ANI ID digit 7.

The RESTBIL entry forces a DMS-200 TOPS office into the Special Directory Number Identification (SPLDNID) Table in an attempt to match the calling number with one of the entries in the table.

MAP display example for table TRKGRP.TOPs with Restbil Station Class

```

GRPKEY          GRPTYP  TRAFSNO  PADGRP  NCCLS  DIR  SELSEQ  SNPA
PRTNM  LCANAME  SCRNL  OHNXXSCR  TRAFCLS  STATCLAS  TIMEOUT
NPANXXTQ  DISPLAY  CLGID  NOBILLCD  ANISEIZ  ANIPDIAL  TRTMTSUP
COINTYPE  PADSTAT0  PADSTA1
-----
DRHMNC01DS1 (1)  TOPS      0      ELO      NCRT      IC  MIDL  919 ( 2)
SPRT (3)  NLCA      NSCR      N      SP      RESTBIL      Y
N          0      BELL      6      10      10      N
CDF      ENABLED  DISABLED
    
```

STDPRTCT.STDPRT Subtable

Following is an example of a tuple in the STDPRTCT.STDPRT Subtable.

MAP display example for table STDPRTCT

```

EXPRTNM
-----
SPRT (3)
    
```

MAP display example for subtable STDPRTCT.STDPRT

```

FROMDIGS  TODIGS  PRETSEL  TYPCALL  NOPREDIG  TRANSYS
-----
2          9          N          NL          0          NA
    
```

HNPACONT.HNPACODE Subtable

Following is an example of a tuple in the HNPACONT.HNPACODE Subtable.

Reference: TOPS Call Descriptions (continued)

MAP display example for table HNPACONT

```

NPA
-----
919 (2)
    
```

MAP display example for subtable HNPACONT.HNPACODE

```

FROMDIGS  TODIGS   CD    RR
-----
  992      992    HRTE   5 (4)
    
```

HNPACONT.RTEREF Subtable

Following is an example of a tuple in the HNPACONT.RTEREF Subtable.

MAP display example for table HNPACONT

```

NPA
-----
919 (2)
    
```

MAP display example for subtable HNPACONT.RTEREF

```

RTE      RTESEL  CONNTYPE  CLLI      DELDIGS  PRFXDIGS
CANCNORC
-----
 5 (4)   N         D         GRBONC01ITO2  0        N
      N
    
```

TOPSBC Table

Following is an example of a tuple in the TOPSBC Table.

MAP display example for table TOPSBC

```

      CLLI      BILLCODE  LCANAME  SCRNL  ACTUALBC
      CHGCLSS
-----
DRHMNC01DS1 (1)  927      LCA1     EMER   919927
      TOPS
    
```

Reference: TOPS Call Descriptions (continued)

Note: In this call progression, a DMS-200 TOPS office accesses the LCASCRCN.LCASCRC, PFXTREAT, CLSVSCRC, and CLSVSCRC.CLSVSCR tables. These tables are not presented here, but are shown in the call map at the end of this call progression.

SPLDNID Table

The SPLDNID Table lists the directory numbers of coin, hotel, and restricted stations. If the directory number is listed in the SPLDNID Table, the call routes to the Restricted Billing (RESTBIL) Table for determining how the call is displayed at a TOPS operator position.

Following is an example of a tuple for the SPLDNID Table. In the example, the fields noted in the SPLDNID Table perform the following functions:

- Field SPLDN, entry 9199271812, contains the directory number of the originating station.
- Field SEL, entry COIN, indicates that the directory number is a restricted coin line.
- Field RBILCLAS, entry 1 (reference 9), assigns the call to a restricted billing class. The entry of 1 is used as an index into the the RESTBIL Table (reference 9).

If a call has a RESTBIL station class or comes in on a combined trunk group with the ANI ID digit 7, a DMS-200 TOPS office should find an entry in the SPLDNID Table. Otherwise, the call is considered ANIFAIL.

MAP display example for table SPLDNID

SPLDN	SEL	LC_TYPE	ACTS_COMPATIBLE	RESCOIN	RBILCLAS
9199271812	COIN	0013	ACTS	Y	1 (9)

RESTBIL Table

The Restricted Billing (RESTBIL) Table performs the following functions for each billing class defined in the SPLDNID Table:

- Defines the name that is displayed on the TOPS screen for each billing class for intraLATA calls.
- Lists the allowable billing types for each billing class.

The call indexes this table by matching the billing class index assigned in the SPLDNID Table to the index values listed in the BILCLAS field.

Reference: TOPS Call Descriptions (continued)

Following is an example of a tuple for the RESTBIL Table. In the example, the noted fields in the RESTBIL Table perform the following functions:

- Field BILCLAS, entry 1 (reference 9), contains the index from the SPLDNID Table.
- Field SCRNDISP, entry RESTCN, indicates the message that is displayed on a TOPS operation position terminal for an intraLATA call.
- Field BILYPES, entry CC 3RD, indicates that the station is restricted to only Calling Credit Card (CC) and Third Party Billing (3RD) calls.

MAP display example for table RBILCLAS

BILCLAS	SCRNDISP	BILYPES
1 (9)	RESTCN	CC 3RD \$

RESTAMA Table

The Restricted AMA (RESTAMA) Table allows the OTC to define the billing class (non-coin, coin, hotel) that is output on the AMA record. A DMS-200 TOPS office indexes the RESTAMA Table by matching the billing class index number assigned in the SPLDNID Table with the index number listed in field BILCLASS.

Following is an example of a tuple in the RESTAMA Table. In the example, the noted fields in the RESTAMA Table perform the following functions:

- Field BILCLASS, entry 1 (reference 9), contains the index assigned to the call in the SPLDNID Table.
- Field AMACLASS, entry COIN, defines the format for the AMA record.

MAP display example for table RESTAMA

BILCLAS	AMACLASS
1 (9)	COIN

TOPEATRK Table

Following is an example of a tuple in the TOPEATRK Table.

Reference: TOPS Call Descriptions (continued)

MAP display example for table TOPEATRK for a non-EAEO

TRUNKGRP	ENDOFFCE	CARRIER	LATANM	DOMSCL
OVSSCL	SCRNIDX	BYPASS		

DRHMNC01DS1 (1)	NCONFORM	288	LATA1 (5)	DOM1
OVS1	919 (2)	\$		

LATAXLA Table

Following is an example of a tuple in the LATAXLA Table.

MAP display example for table LATAXLA

LATANM	DIGITS	LATA	STATE	EATYPE

LATA1 (5)	919992	INTRA	INTER	STD

POSITION Table

Following is an example of a tuple in the POSITION Table.

MAP display example for table POSITION

POS	PRTESEL	CLLI

TOPS	S	TOPSPOS

TOPS Table

Following is an example of a tuple in the TOPS Table.

MAP display example for table TOPS

CO	SEL	HEADER	NOAMA	POSTYPE

OA (6)	S		N	GEN (7)

TOPSPOS Table

Following is an example of a tuple in the TOPSPOS Table.

Reference: TOPS Call Descriptions (continued)

MAP display example for table TOPSPOS

POSNO	PMTYPE	TMNO	TMCKTNO	VCPDGRP	PMTYPE	TMNO
TMCKTNO	DTPDGRP	CARDCODE	POS	TEAM	XFERSET	
100	TM8	5	10	NPDGP	TM8	5
10	NPDGP	2X72AA	OPR	1	GEN	(7)

OPRTRANS Table

Following is an example of a tuple in the OPRTRANS Table.

MAP display example for table OPRTRANS

KEY	SNPA	SCRCTL	PRTNM	LCANAME
OPERATOR	919 (2)	NSCR	OPER (8)	NLCA

(Operator) STDPRTCT.STDPRT Subtable

Following is an example of a tuple in the (Operator) STDPRTCT.STDPRT Subtable.

MAP display example for table STDPRTCT

EXPRTNM
OPER (8)

MAP display example for subtable STDPRTCT.STDPRT

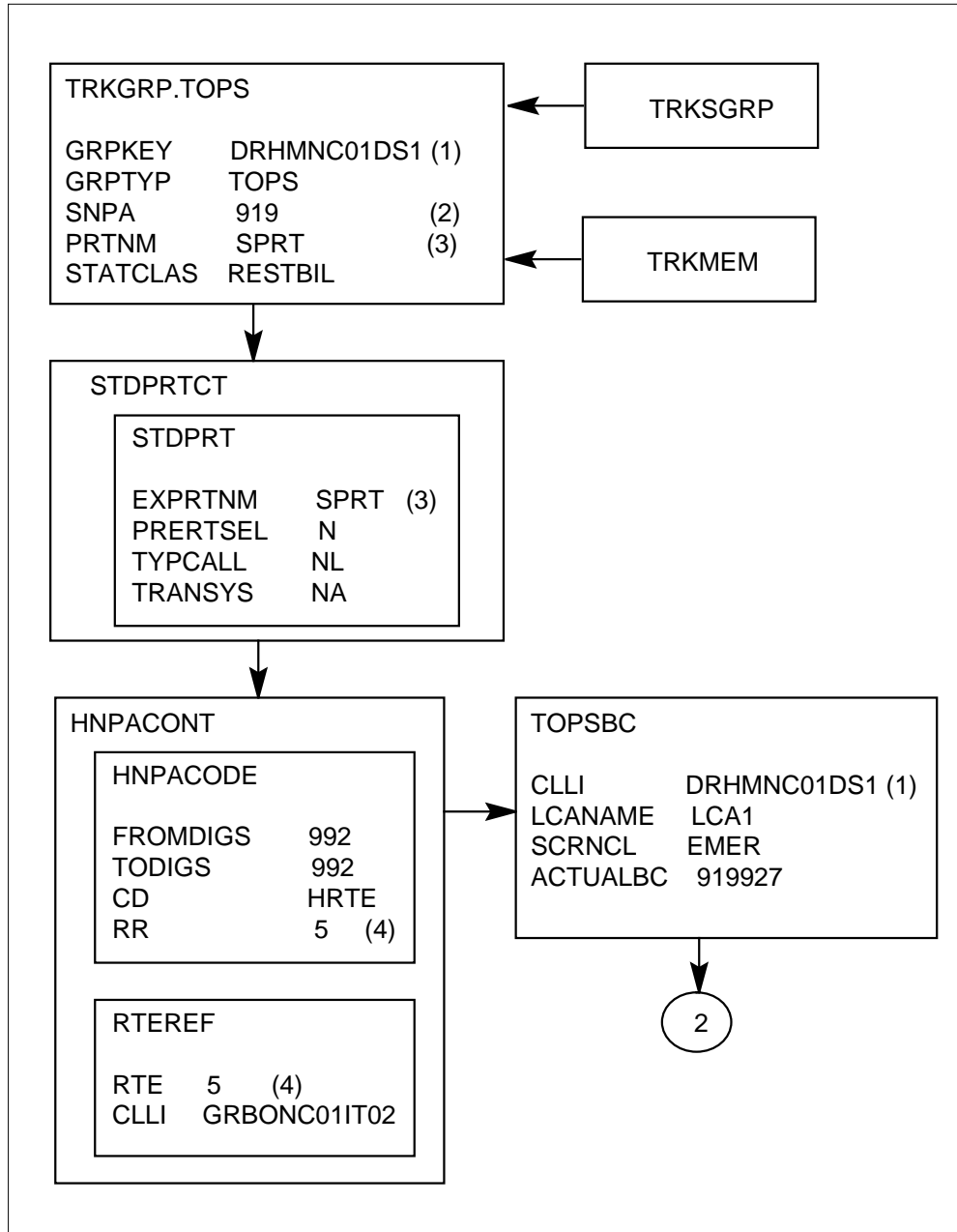
FROMDIGS	TODIGS	PRETSEL	TYPCALL	NOPREDIG	TRANSYS
2	9	N	OA (6)	0	NA

Zero-Plus IntraLATA RESTBIL Call Map

Following is a call map illustrating the basic table flow for a zero-plus intraLATA call with restricted billing.

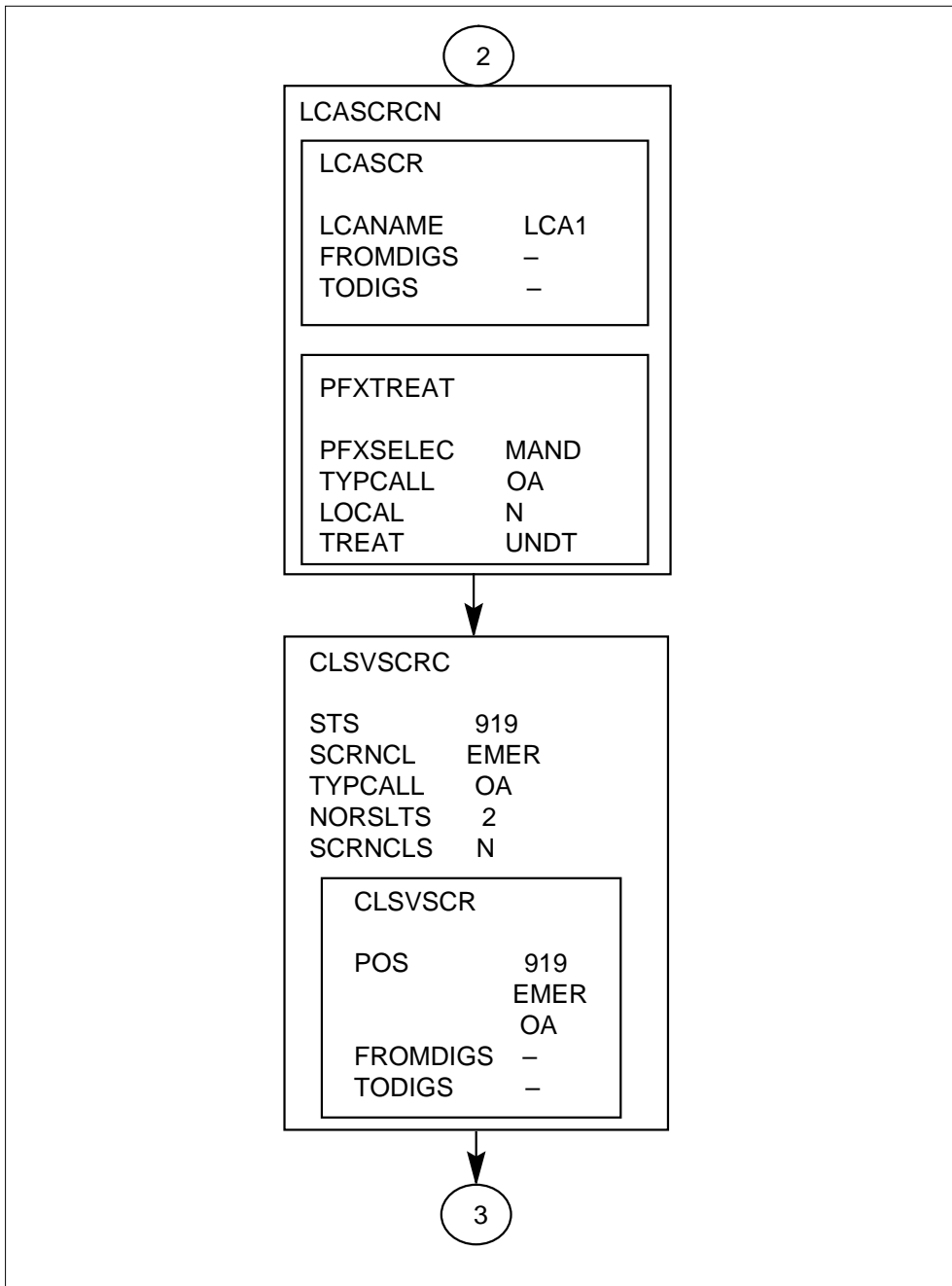
Reference: TOPS Call Descriptions (continued)

Zero-Plus Intra Restbil Call Map



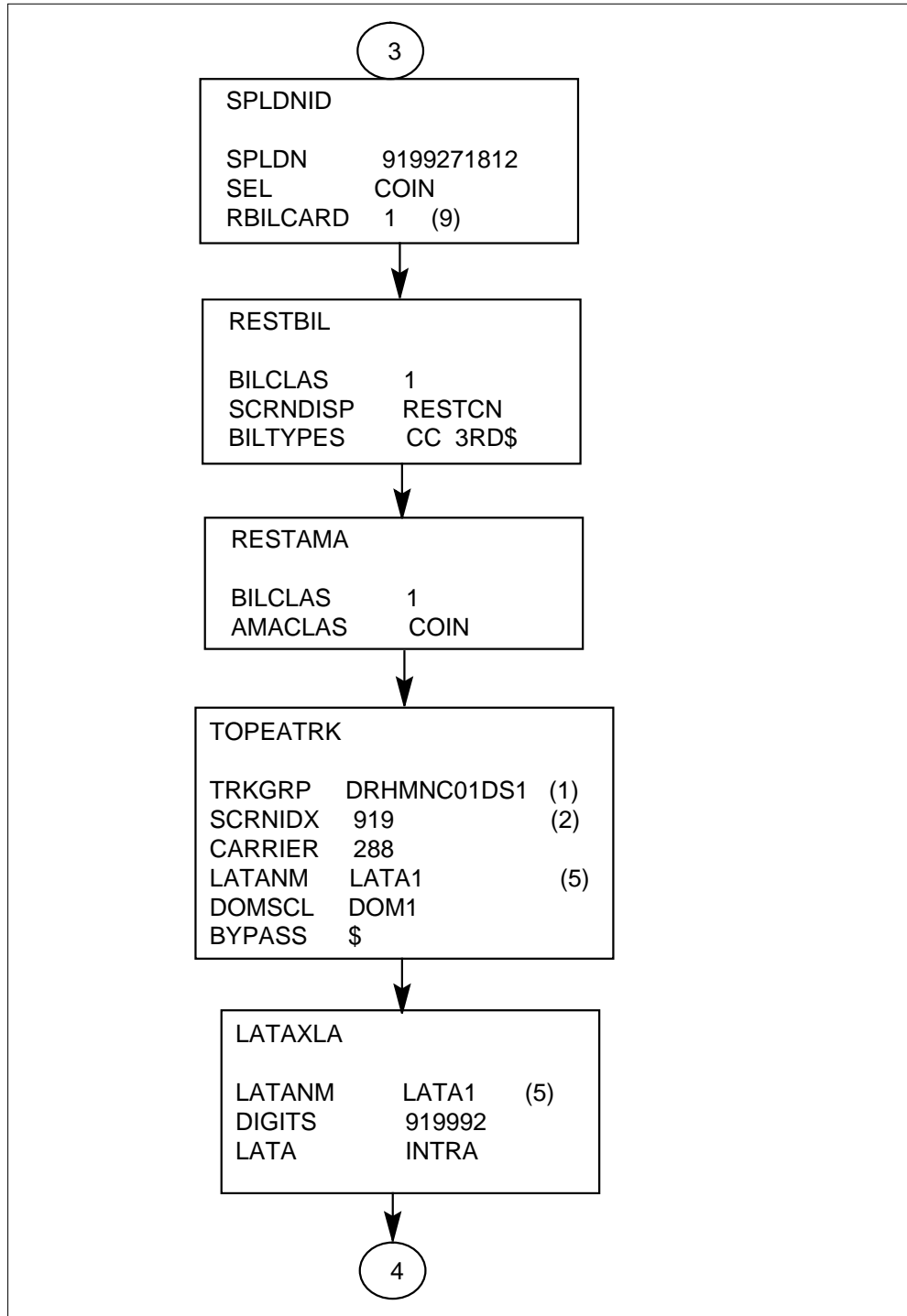
Reference: TOPS Call Descriptions (continued)

Zero-Plus Intra Restbil Call Map (continued)



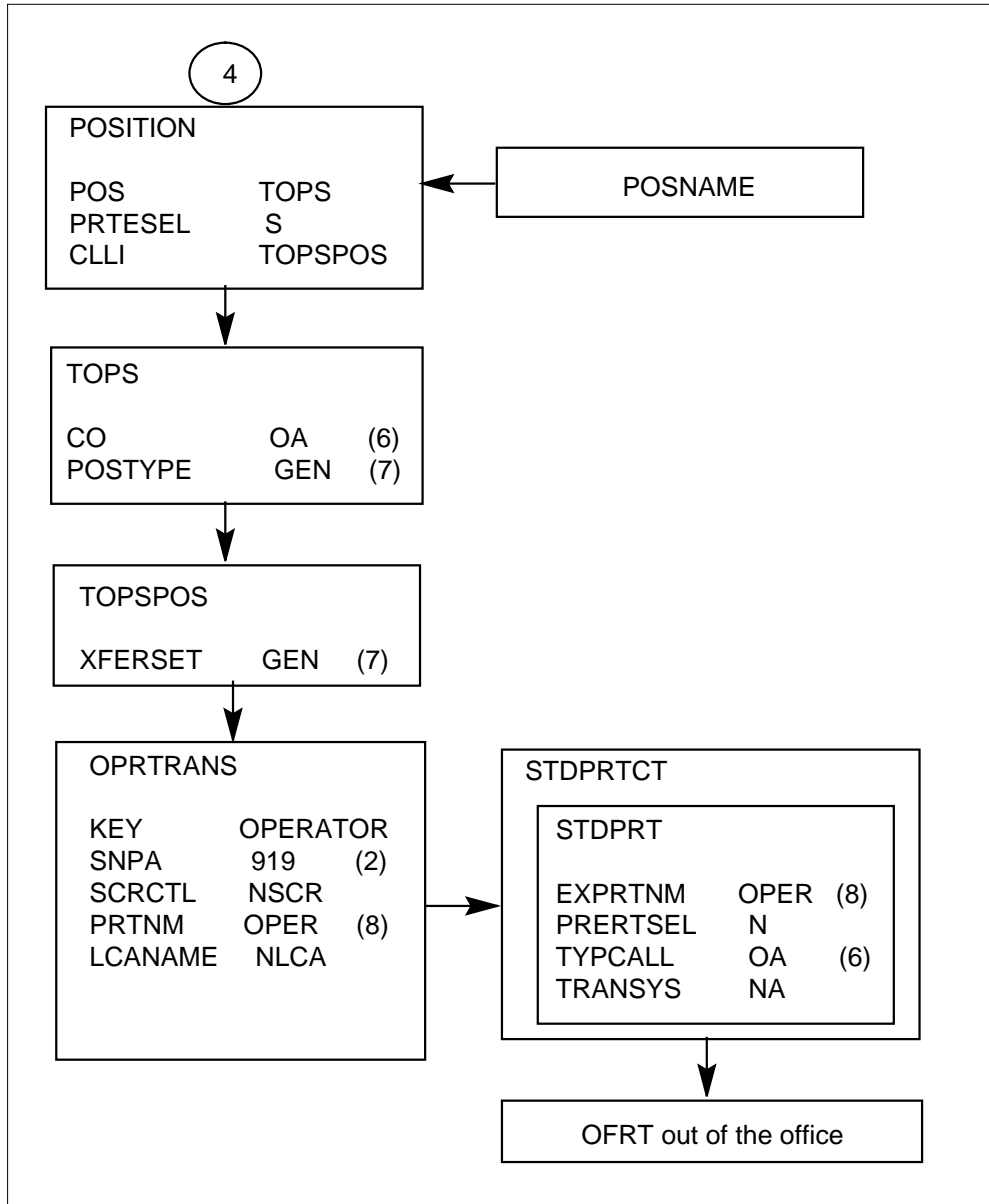
Reference: TOPS Call Descriptions (continued)

Zero-Plus Intra Restbil Call Map (continued)



Reference: TOPS Call Descriptions (continued)

Zero-Plus Intra Restbil Call Map (end)



IntraLATA: Zero-Plus IntraLATA Special EAEO MF Non-Coin

The following section describes the call progression for a one-plus (0+) intraLATA call from a restricted non-coin station. The call in the example is routed from an Equal Access End Office (EAEO) over a combined trunk group. The end office uses Multifrequency (MF) outpulsing and Feature Group C (FGC) signaling.

Reference: TOPS Call Descriptions (continued)

For the following call progression, the caller dials 0+992-5555. The calling party's number is (919) 927-1812. The end office strips off the "0" and outputs a key pulse (KP), plus the called number and the appropriate start signal as KP+9925555+ST3P. The start signal is then followed by the ANI spill, which in this example is KP+7+9271812+ST.

Following is a list of the data tables used by a DMS-200 TOPS office when processing 0+ intraLATA calls from special or restricted stations. The data tables are not listed in datafill sequence and are not necessarily in the exact order in which the information in these tables is accessed. For the correct order, refer to the TOPS Basic Call Progression section.

- TRKGRP.TOP
- STDPRTCT.STDPRT
- HNPACONT.HNPACODE
- HNPACONT.RTEREF
- TOPSBC
- LCASCRCN
- LCASCRCN.LCASCRC
- PFXTREAT
- CLSVSCRC
- CLSVSCRC.CLSVSCRC
- SPLDNID
- RESTBIL
- RESTAMA
- TOPEATRK
- LATAOLA
- POSITION
- TOPS
- TOPSPOS
- OPRTRANS
- STDPRTCT.STDPRT

Following is a description of the call progression for this 0+ intraLATA call. This section covers only those tables that are specific to the call. For a complete discussion, refer to the Basic Intralata Call Progression section

Reference: TOPS Call Descriptions (continued)

TOPS TRKGRP Table

Following is an example of a tuple in the TOPS TRKGRP Table.

MAP display example for table TRKGRP.TOPs with Combined station class

```

GRPKEY          GRPTYP  TRAFSNO  PADGRP  NCCLS  DIR  SELSEQ  SNPA
PRTNM          LCANAME  SCRNLCL  OHNXXSCR  TRAFCLS  STATCLAS  TIMEOUT
NPANXXTQ      DISPLAY  CLGID   NOBILLCD  ANISEIZ  ANIPDIAL  TRTMTSUP
COINTYPE      PADSTAT0  PADSTAI
-----
DRHMNC01DS1 (1)  TOPS          0        ELO      NCRT     IC   MIDL    919 ( 2)
SPRT (3)  NLCA      NSCR       N         SP       COMBINED  Y
  N        0        BELL        6        10      10      N
  CDF      ENABLED  DISABLED

```

STDPRTCT.STDPRT Subtable

Following is an example of a tuple in the STDPRTCT.STDPRT Subtable.

MAP display example for table STDPRTCT

```

EXPRTNM
-----
SPRT (3)

```

MAP display example for subtable STDPRTCT.STDPRT

```

FROMDIGS  TODIGS  PRETSEL  TYPCALL  NOPREDIG  TRANSYS
-----
  2        9        N        NL        0        NA

```

HNPACONT.HNPACODE Subtable

Following is an example of a tuple in the HNPACONT.HNPACODE Subtable.

MAP display example for table HNPACONT

```

NPA
-----
919 (2)

```

Reference: TOPS Call Descriptions (continued)

MAP display example for subtable HNPACONT.HNPACODE

FROMDIGS	TODIGS	CD	RR
992	992	HRTE	5 (4)

HNPACONT.RTEREF Subtable

Following is an example of a tuple in the HNPACONT.RTEREF Subtable.

MAP display example for table HNPACONT

NPA
919 (2)

MAP display example for subtable HNPACONT.RTEREF

RTE	RTESEL	CONNTYPE	CLLI	DELDIGS	PRFXDIGS
5 (4)	N	D	GRBONC01ITO2	0	N
CANCNORC					
N					

TOPSBC Table

Following is an example of a tuple in the TOPSBC Table.

MAP display example for table TOPSBC

CLLI	BILLCODE	LCANAME	SCRNCL	ACTUALBC
DRHMNC01DS1 (1)	927	LCA1	EMER	919927
CHGCLSS				
TOPS				

Note: In this call progression, a DMS-200 TOPS office accesses the LCASCRCN.LCASCRC, PFXTREAT, CLSVSCRC, and CLSVSCRC.CLSVSCR tables. These tables are not presented here, but are shown in the call map at the end of this call progression section.

Reference: TOPS Call Descriptions (continued)

SPLDNID Table

The ID digit 7 in the ANI spill (KP+7+9271812+ST) directs the DMS-200 TOPS office to the Special Directory Number Identification (SPLDNID) Table to determine the restriction on the calling station.

The SPLDNID Table lists the directory numbers of coin, hotel, and restricted stations. If the directory number is listed in the SPLDNID Table, the call routes to the Restricted Billing (RESTBIL) Table for determining how the call is displayed at a TOPS operator position.

Following is an example of a tuple for the SPLDNID Table. In the example, the fields noted in the SPLDNID Table perform the following functions:

- Field SPLDN, entry 9199271812, contains the directory number of the originating station.
- Field SEL, entry RSTRCTD, indicates that the directory number has a restricted billing class associated with it.
- Field RBILCLAS, entry 1 (reference 9), assigns the call to a restricted billing class. The entry of 1 is used as an index into the the RESTBIL Table (reference 9).

If the calling number were not found in the SPLDNID Table, the call would be treated as an ANIFAIL.

MAP display example for table SPLDNID

SPLDN	SEL	RBILCLAS
9199271812	RSTRCTD	1 (9)

RESTBIL Table

The Restricted Billing (RESTBIL) Table performs the following functions for each billing class defined in the SPLDNID Table:

- Defines the name that is displayed on the TOPS screen for each billing class for intraLATA calls.
- Lists the allowable billing types for each billing class.

The call indexes this table by matching the billing class index assigned in the SPLDNID Table to the index values listed in the BILCLAS field.

Reference: TOPS Call Descriptions (continued)

Following is an example of a tuple for the RESTBIL Table. In the example, the noted fields in the RESTBIL Table perform the following functions:

- Field BILCLAS, entry 1 (reference 9), contains the index from the SPLDNID Table.
- Field SCRNDISP, entry CALCARD, indicates the message that is displayed on a TOPS operation position terminal for an intraLATA call.
- Field BILYPES, entry CC 3RD, indicates that the station is restricted to only Calling Credit Card (CC) and Third Number Billing (3RD) calls.

MAP display example for table RBILCLAS

BILCLAS	SCRNDISP	BILYPES
1 (9)	CALCARD	CC 3RD \$

RESTAMA Table

The Restricted AMA (RESTAMA) Table allows the OTC to define the billing class (non-coin, coin, hotel) that is output on the AMA record. A DMS-200 TOPS office indexes the RESTAMA Table by matching the billing class index number assigned in the SPLDNID Table with the index number listed in field BILCLASS.

Following is an example of a tuple in the RESTAMA Table. In the example, the noted fields in the RESTAMA Table perform the following functions:

- Field BILCLASS, entry 1 (reference 9), contains the index assigned to the call in the SPLDNID Table.
- Field AMACCLASS, entry NONCOIN, defines the format for the AMA record.

MAP display example for table RESTAMA

BILCLAS	AMACCLASS
1 (9)	COIN

TOPEATRK Table

Following is an example of a tuple in the TOPEATRK Table.

Reference: TOPS Call Descriptions (continued)

MAP display example for table TOPEATRK for a non-EAEO

TRUNKGRP	ENDOFFCE	CARRIER	LATANM	DOMSCL
OVSSCL	SCRNIDX	BYPASS		

DRHMNC01DS1 (1)	NCONFORM	288	LATA1 (5)	DOM1
OVS1	919 (2)	\$		

LATAXLA TABLE

Following is an example of a tuple in the LATAXLA Table.

MAP display example for table LATAXLA

LATANM	DIGITS	LATA	STATE	EATYPE

LATA1 (5)	919992	INTRA	INTER	STD

POSITION Table

Following is an example of a tuple in the POSITION Table.

MAP display example for table POSITION

POS	PRTESEL	CLLI

TOPS	S	TOPSPOS

TOPS Table

Following is an example of a tuple in the TOPS Table.

MAP display example for table TOPS

CO	SEL	HEADER	NOAMA	POSTYPE

OA (6)	S		N	GEN (7)

TOPSPOS Table

Following is an example of a tuple in the TOPSPOS Table.

Reference: TOPS Call Descriptions (continued)

MAP display example for table TOPSPOS

POSNO	PMTYPE	TMNO	TMCKTNO	VCPDGRP	PMTYPE	TMNO
TMCKTNO	DTPDGRP	CARDCODE	POS	TEAM	XFERSET	
100	TM8	5	10	NPDGP	TM8	5
10	NPDGP	2X72AA	OPR	1	GEN	(7)

OPRTRANS Table

Following is an example of a tuple in the OPRTRANS Table.

MAP display example for table OPRTRANS

KEY	SNPA	SCRCTL	PRTNM	LCANAME
OPERATOR	919 (2)	NSCR	OPER (8)	NLCA

(Operator) STDPRTCT.STDPRT Subtable

Following is an example of a tuple in the (Operator) STDPRTCT.STDPRT Subtable.

MAP display example for table STDPRTCT

EXPRTNM
OPER (8)

MAP display example for subtable (operator) STDPRTCT.STDPRT

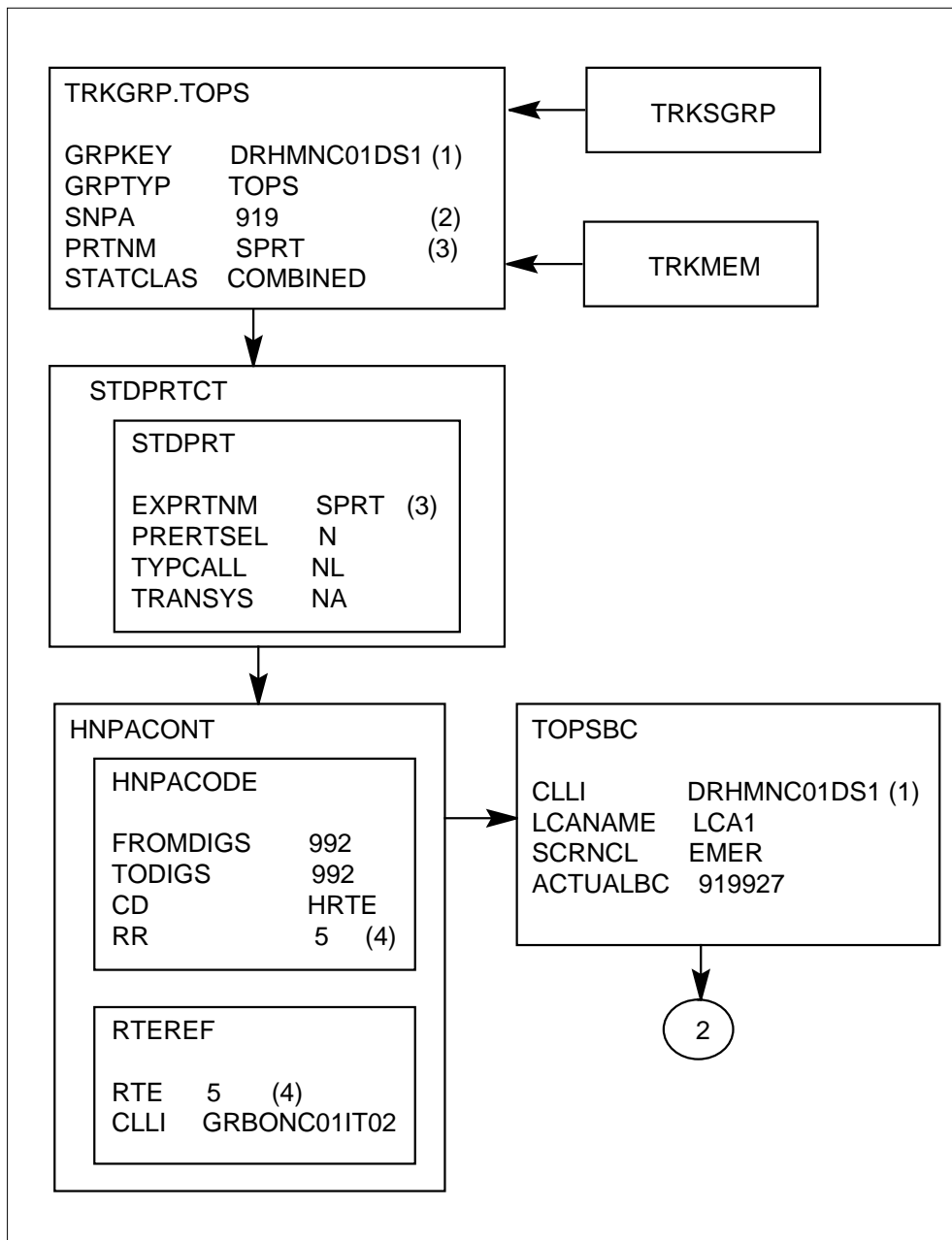
FROMDIGS	TODIGS	PRETSEL	TYPCALL	NOPREDIG	TRANSYS
2	9	N	OA (6)	0	NA

Zero-Plus IntraLATA Special Call Map

Following is a call map illustrating the basic table flow for a zero-plus intraLATA special non-coin call.

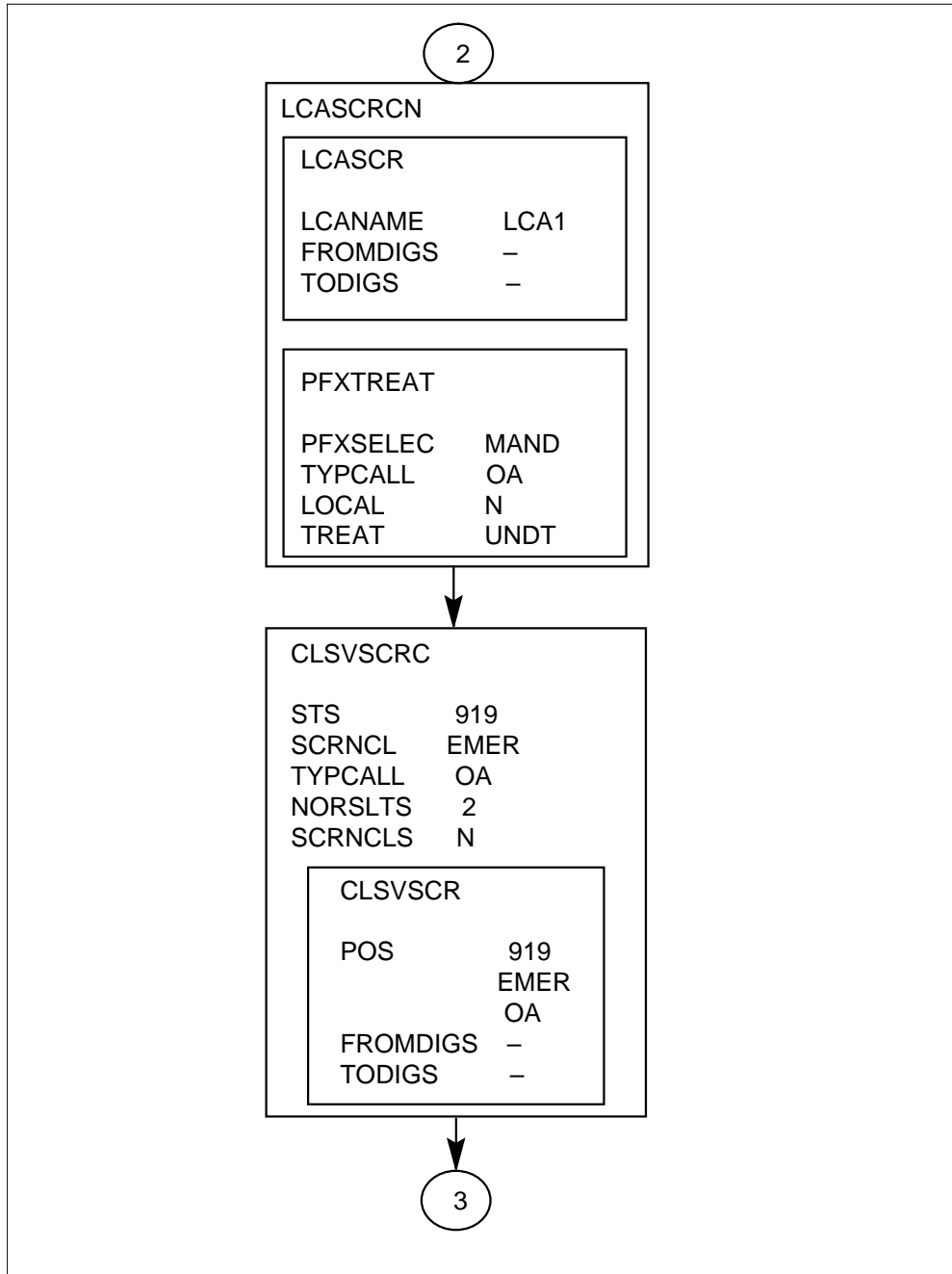
Reference: TOPS Call Descriptions (continued)

Zero-Plus Intra Special Call Map



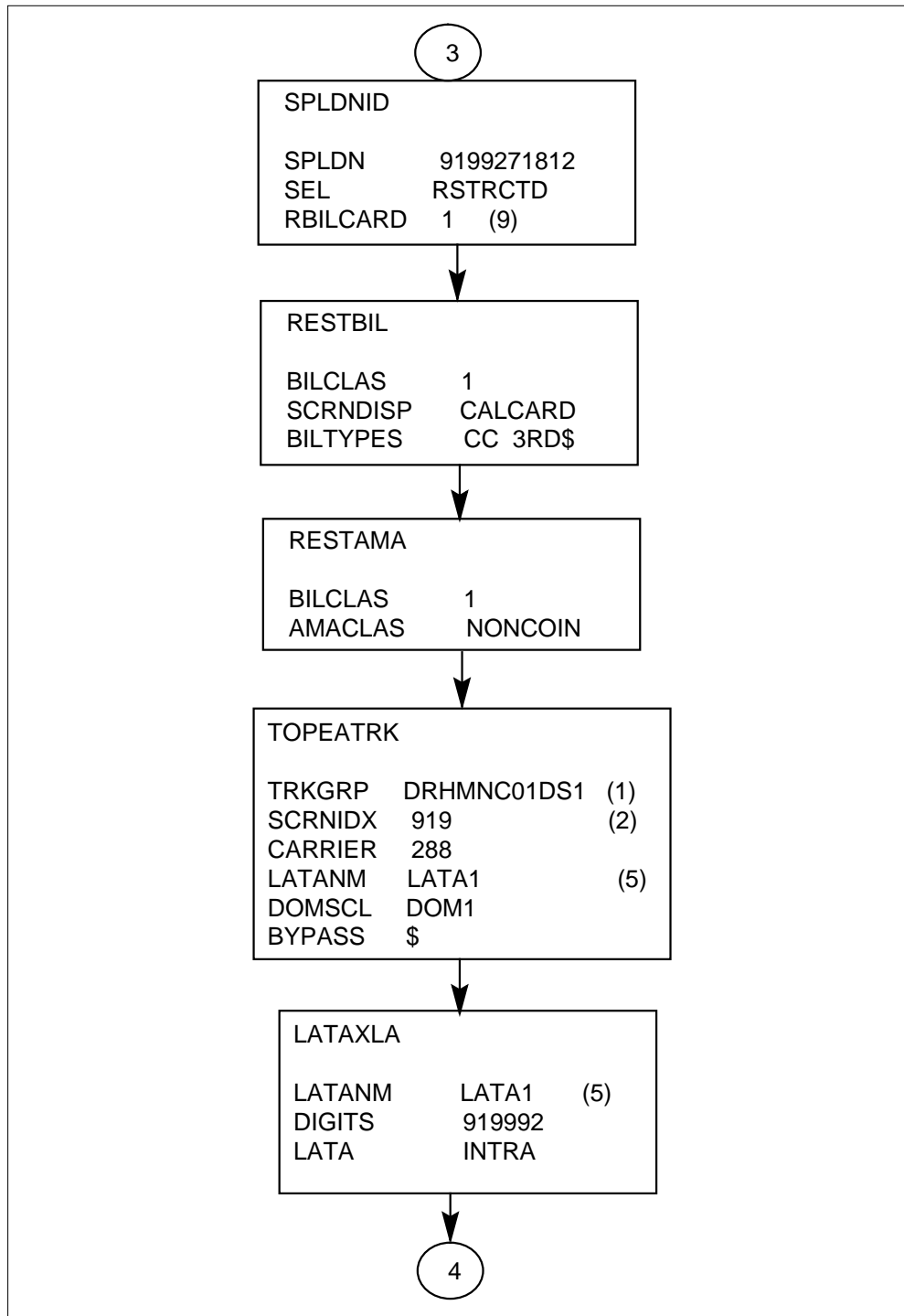
Reference: TOPS Call Descriptions (continued)

Zero-Plus Intra Special Call Map (continued)



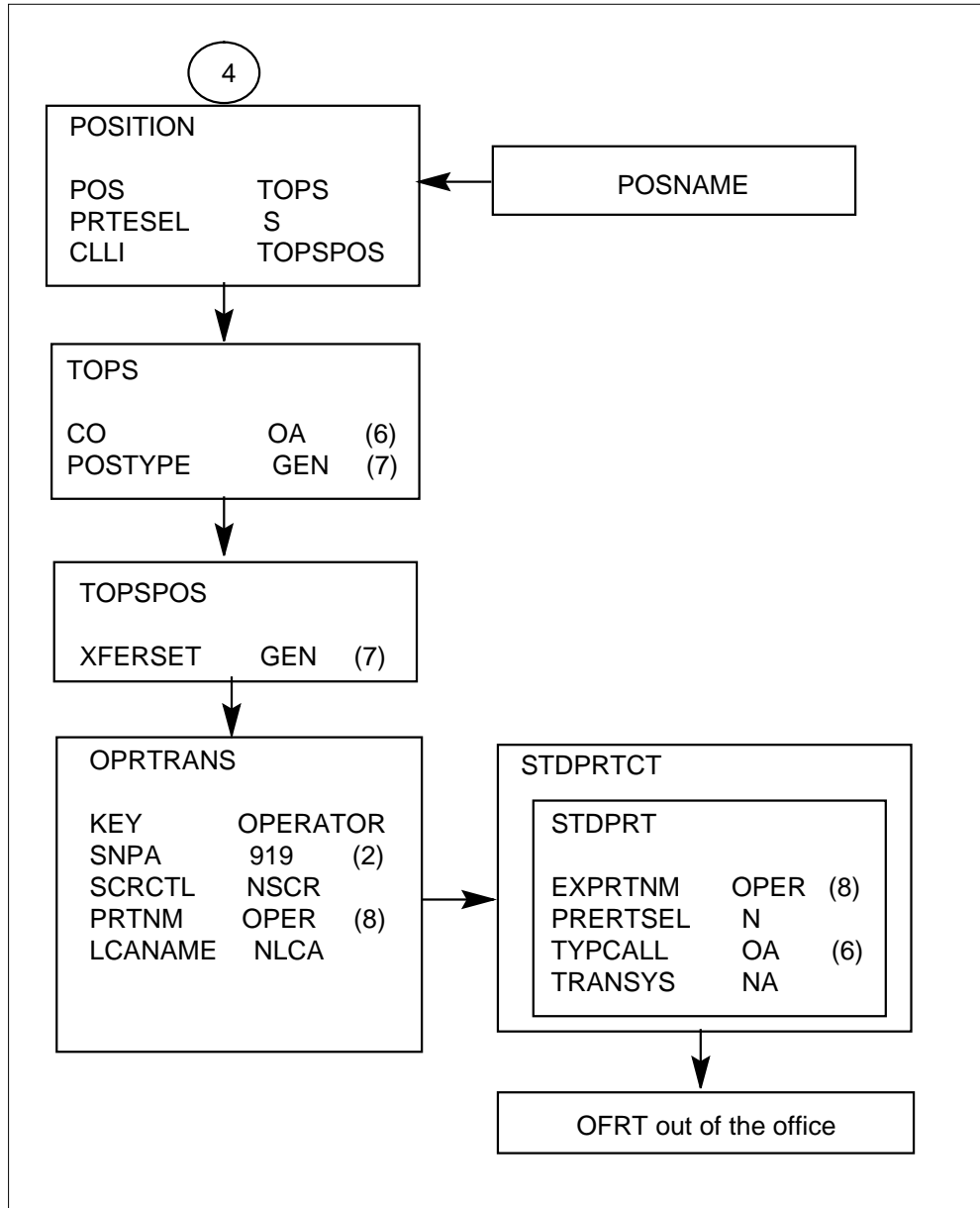
Reference: TOPS Call Descriptions (continued)

Zero-Plus Intra Special Call Map (continued)



Reference: TOPS Call Descriptions (continued)

Zero-Plus Intra Special Call Map (end)



TOPS Office Parameters

This section lists the office parameters that are necessary when performing translations in an office that handles TOPS traffic.

The information listed in this appendix provides a brief description of each TOPS office parameter. For a complete explanation of each, refer to The Office Parameters Reference Manual.

Reference: TOPS Call Descriptions (continued)

All parameters listed in this appendix are not necessarily needed in each individual office. Consult The Office Parameters Reference Manual for activation, maximum, minimum and default values, and for the feature or unit affected by the parameter.

Table OFCOPT parameters

The TOPS table OFCOPT office parameters are:

- *AMA_EQUIPPED*: This option must be set to Y (yes), if the switching unit has TOPS Call Processing, Local Automatic Message Accounting (LAMA), or Central Automatic Message Accounting (CAMA), and specifies if the switching unit is equipped with the AMA feature.
- *BLOCK_0_INF_INW_CALLS*: This parameter specifies whether or not 0+ Directory Assistance (0+ DA) or 0+ 800 (0+ INWATS) calls are blocked or routed through normal translations.
- *TOPS_EQUAL_ACCESS_OFFICE*: This parameter specifies whether or not the switching unit is an Equal Access (EA) Tandem TOPS switching unit.
- *TOPS_MCCS_BNS*: This parameter should be set to Y (yes), if the switching unit has the software for the Billed Number Screening feature, otherwise leave as the default of N (no).
- *TOPS_MCCS_CCV*: This parameter specifies whether or not the Mechanized Calling Card Service (MCCS) feature is applicable to TOPS operator handled calling card billing.

Table OFCENG parameters

The TOPS table OFCENG office parameters are:

- *TOPS_ACTS*: This parameter specifies whether or not the TOPS ACTS feature is active within an office (N - no; Y - yes).
- *TOPS_ASST_POS*: The value of this parameter is equal to the number of TOPS assistance and in-charge positions. The recommended value is three times the office parameter TOPS_NUM_TRAFFIC_OFFICES.
- *TOPS_DM_HIT_TIME*: This parameter specifies the length of time in 10 minute intervals, that carriers can be lost to a TOPS position without going down.
- *TOPS_EA_INTERLATA_NONOPR_AMA*: This parameter specifies whether or not AMA records are to be produced for interLATA calls that are processed by a TOPS operator.
- *TOPS_LAB_ENVIRONMENT*: This parameter only appears in captive office loads that have Test Office software and IPL initialization module ZTESTIPL.

Reference: TOPS Call Descriptions (continued)

- *TOPS_MAX_OPERATOR_NUM*: This parameter is required for all switching units that are equipped with TOPS switching units equipped with DSA. Parameter is in table OFCENG.
- *TOPS_MAX_ORIG_RATE_CENTER*: This parameter specifies the maximum number of originating rate centers required for point to point rate step methods. Parameter is in table OFCENG.
- *TOPS_MAX_TERM_RATE_CENTER*: This parameter specifies the maximum number of terminating rate centers required for point to point rate step method.
- *TOPS_MFADS_PERIOD*: This parameter allows the Mechanized Force Administration Data System (MFADS) to extract the Traffic Operator Position System Force Management (TOPSFM) statistics at intervals of 15 to 30 minute intervals.
- *TOPS_NUM_CAMA_RU*: This parameter specifies the quantity of CAMA/TOPS recording units required.
- *TOPS_NUM_RU*: This parameter specifies the quantity of TOPS recording units required for a switching unit.
- *TOPS_NUM_STUDY_REG*: Study registers are used during training to check if an operator is handling all call types equally well.
- *TOPS_NUM_TRAFFIC_OFFICES*: This parameter is equal to the number of teams when teams are numbered sequentially.
- *TOPS_NUM_TRANSFER_TYPES*: This parameter specifies the number of transfer types permitted for the switching unit. The values of this parameter defines how many transfer keys can be assigned on a TOPS operator position keyboard.
- *TOPS_OC_ENVIRONMENT*: This parameter is required for switching units that are configured for operator centralization. It specifies whether or not the switching unit is a HOST or REMOTE.
- *TOPS_OC_REMOTE_BVC*: This parameter if set to Y (yes), indicates that MCCA queries to the Billing Validation Center (BVC) in a TOPS Operator Centralization (OC) remote switching unit are to be implemented through the OC data link.
- *TOPS_PASSWORD_ON*: This parameter specifies whether or not the TOPS TAD TTY is to bypass checking for an administrator's password when the password system is entered.
- *TOPS_THRESHOLD*: The value of this parameter is the percentage of the Three-Way Conference trunks to be allocated for TOPS operation.
- *TOPS_OPLUS_LOCAL*: This parameter specifies the set of calling service classes (coin, hotel, station, or restricted) that are allowed to make 0+ calls.

Reference: TOPS Call Descriptions (continued)

Table OFCVAR parameters

The TOPS table OFCVAR office parameters are:

- *EA_TEST_CALL_SPILL*: This parameter is required in switching units with EA traffic between the access tandem and the carrier, trunk group type ATC. It specifies the number (max 15) of digits that spills on a test call.
- *MCCS_SEQ_CALL_LIM*: This parameter allows the OTC to limit the number of sequence calls permitted from a single BVC query.
- *TOPS_CROSS_TEAM_ROUTING*: This parameter specifies whether assistance calls can go to idle assistance positions in different teams from operator initiating assistance request.
- *TOPS_DISPLAY_MON*: This parameter specifies whether MON is displayed on the operator screen when the operator is monitored.
- *TOPS_HOLD_LOCAL*: This parameter specifies whether the operator key KP FWD + Number + START causes a local call is to be held or routed forward immediately.
- *TOPS_START_OF_DAY*: This parameter specifies the time of day (hour and minute) the printing of the FM statistics on TOPS is to start.
- *TOPS_TAC_RECALL*: This parameter gives the OTC the ability to activate or deactivate time and charge recalls to TOPS operators.
- *TOPS_VERIFICATION_BARGE_IN*: This parameter specifies which one of the verification methods is to be used when the operator verifies a number.

Station classes

The following table provides:

- A variation of station classes
- Assistance in determining the trunking type (Dedicated Coin/Non-Coin or Combined)
- Assistance in determining the ANI digits (6 or 7) outputted by the End Office (EO)

Reference: TOPS Call Descriptions (continued)

- Assistance in determining if the EO has Hotel/Motel (H/M), or screening capabilities
- Basic trunking and station class compatibility.

TOPS Office Station classes

DEDNCN	CN-NCN	EO OUTPUTSES ANI6	EO OUTPUTSES ANI7	H/M	SCRN	STATCLASS
X						Non-Coin
X				X		Dnlookup
X				X	X	Dnlookup
X		X		X		Non-Coin
X		X		X	X	(see note)
X		X	X	X		Non-Coin
X		X	X	X	X	Non-Coin
X					X	Dnlookup
	NC					Dnlookup
	NC			X		Dnlookup
	NC				X	Dnlookup
	NC			X	X	Dnlookup
	NC	X		X		(see note)
	NC	X			X	(see note)
	NC	X		X	X	(see note)
	NC	X	X	X		(see note)
	NC	X	X		X	(see note)
	NC	X	X	X	X	(see note)
	CN					Combined
	CN			X		?

Note: This combination of traffic and ANI identification digits is not compatible.

Reference: TOPS Call Descriptions (end)

TOPS Office Station classes

DEDNCN	CN-NCN	EO OUTPUTSES ANI6	EO OUTPUTSES ANI7	H/M	SCRN	STATCLASS
	CN				X	Restbil
	CN			X	X	?
	CN	X		X		Combined
	CN	X			X	Restbil
	CN	X		X	X	Restbil
	CN	X	X	X		Combined
	CN	X	X		X	Combined
	CN	X	X	X	X	Combined

Note: This combination of traffic and ANI identification digits is not compatible.

TOPS MPX Guide

This section lists specific datafill requirements for offices with MPX positions in BCS30. General datafill information on DA and TMS are contained in the following sections:

- DA Guide: TOPS MP Directory Assistance
- NTXA83AA: TOPS Message Switch

Documentation

IBM

The following is a list of IBM documentation.

- SC28-8168 - IBM Directory Assistance System PS/2 Programmable Operator
- GH36-0015 - IBM Directory Assistance System Introduction (July 87)
- GC28-8167 - IBM PS/2 POS Licensed Program Spec
- S68X2341 - IBM PS/2 & Personal Computer BIOS Tech. Ref. (May 88)
- 5876-AAA - IBM DOS 5.0
- SC28-8168 - IBM Users Guide 1.2
- SC23-4014-00 - IBM Documentation (July 90)
- SC23-4041-00 - PS/2 POS User Guide 2.0
- SC23-4018-00 - TOPS MPX User Guide Program supplement to IBM DAS PS/2 (Feb. 92)
- SC23-4042 -Licensed Program Spec IBM DAS PS/2, POS rel. 2.0
- SC28-8168 - IBM Directory Assistance System PS/2 Programmable Operator Subsystem (POS) User Guide

These IBM documents are distributed with the NTPs for a particular office (ordered via CI) or can be obtained through the Merchandise Order process (1-800-422-6373 outside NC; 1-800-443-6373 in NC).

Northern Telecom

The following is a list of design documents for MPX.

- AF1266 - IBM DA Protocol and Simulator (NTXE05AA)
- AF2395 - Dedicated DA Subtending TMS (NTXJ67AA)
- AF2018 - Two Terminal Directory Assistance / Intercept (NTXE70AA)
- AF2372 - SA Login (NTX030CC)

Reference: TOPS MPX Guide (continued)

General Notes on MPX

The TOPS MPX system for directory assistance service includes:

- DMS-200 with TOPS Message Switch (TMS)
- IBM Directory Assistance System (DAS)
- MPX Operator Positions

MPX operator positions are based on PS/2 personal computers with customized software, keyboards, and interface plug-in cards. MPXs are connected in a token ring LAN arrangement.

V.O. and Controlled Introduction of the TOPS MPX system are with BCS30.

New software packages to support MPX:

- NTXJ67AA - TOPS MPX - DA
- NTXE05AA - TOPS MP DA/INTERCEPT Messaging - Open
- NTXE70AA - TOPS Two Terminal Directory Assistance/Intercept

MPX position types:

- Type 1 position: Voice + DA database access. Link entered in Table TOPSPOS.

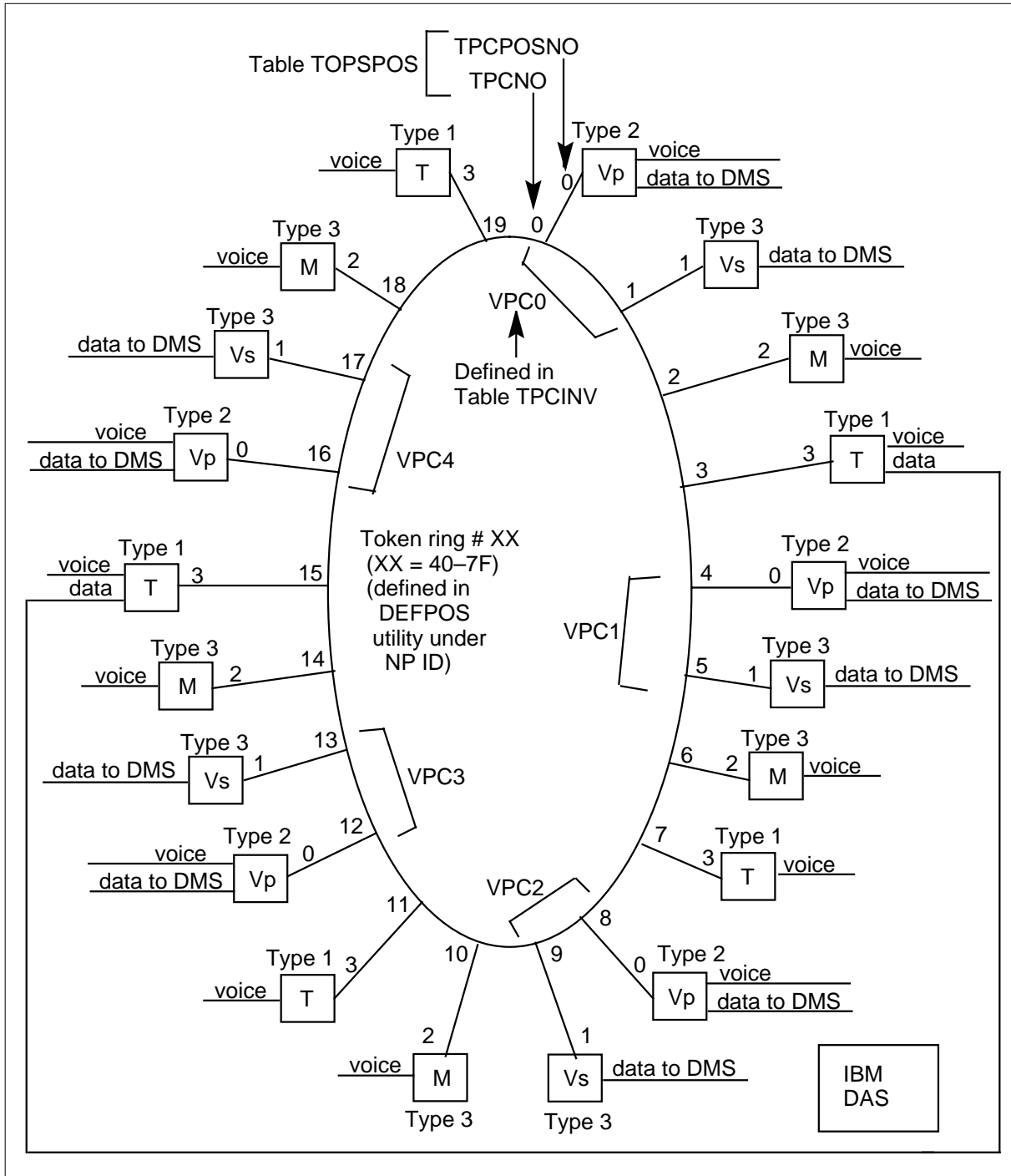
The two Type 1 positions (with DA search links) per token ring should be assigned to different quads (groups of 4 positions) so that they use different VPCs.

- Type 2 position: Voice + data link to DMS-200. "Virtual TPC". Links entered in Table TOPSPOS and TPCINV.
- Type 3 position: Voice only. Link entered in Table TOPSPOS.
- MPX positions interface to DMS-200 via TMS.
- MPX positions must be used with IBM DAS in BCS30.
- MPX position cannot be used as FMCRT. Must use TOPS IV or TOPS MP.
- MPX does not support connection to ORDB in BCS30.

The following figure shows a token ring with the maximum of 20 positions.

Reference: TOPS MPX Guide (continued)

Token Ring with maximum of 20 positions



Reference: TOPS MPX Guide (continued)

TDMS-200 Datafill

The following section provides information on increasing the number of TOPS positions and operator login IDS in an inservice office.

- Increasing the number of TOPS positions in an inservice office:
 - When TOPS positions (TOPS MP, MPX, or TOPS IV) are being added to an inservice switch, the Regional Software Systems Engineer must contact the operating company and instruct them as follows:
 - In the live BCS N switch, increase the value of field TRKGRSIZ of both pseudo-CLLIs (TOPSPOS and TOPSPOSDATA) in table CLLI (they must be the same size) to the new value. There is no effect on the live switch. These values are only referred to when the first tuple is added to table TOPSPOS, to allocate the proper amount of datastore.
 - Then when the BCS upgrade from the BCS N switch to the BCS N switch is performed, the increased CLLI sizes are present when the first tuple is added to table TOPSPOS in the BCS N switch, and an increased amount of data store is allocated so that the larger number of positions may be filled.
- Increasing the number of operator login IDS in an inservice office:
 - Most offices that are adding TOPS positions also require an increase of office parameter TOPS_MAX_OPERATOR_NUM in Table OFCENG.
 - Table OPRCMLX is new in BCS30, and maps a DMS-200 operator login ID to IBM DAS complex and unit numbers, and optionally to a DAS operator ID. When BCS30 offices are upgraded to a BCS31 or higher software load, TOPS_MAX_OPERATOR_NUM also controls the range of operator login IDs assigned in Table OPRCMLX.

Specific datafill requirements for MPX and IBM DAS

The following section provides specific datafill requirements for MPX and IBM DAS.

- Table OFCENG:
 - TOPS_PASSWORD_ENABLE: This parameter can be set to Y in an office with MPX positions; however, MPX positions do not support an operator password. In an office with TOPS MP or TOPS 04 for TA and MPX for DA, TOPS_PASSWORD_ENABLE can be set to Y. And, operators are required to enter a password at login, but the DA operators do not.
 - Other office parameters are impacted by adding TOPS positions and DA traffic to an inservice switch. Therefore, all office parameters

Reference: TOPS MPX Guide (continued)

should be evaluated in light of software and hardware being added on an extension. See *CEP 293: DMS-100F Extension Software Load Engineering Procedure*.

- Table DATASIZE:
 - For SPECCONN, Field SIZE = 132 * (# of TMSs) to support MPX positions. Cold restart required to make change effective. Should be set during BCS upgrade process. See *TAB 900203 - TMS Configuration and Datafill*. This is also in *TOPS DA Subtending TMS, EWSS0003*.
 - NOTE: For CSP02 and up, tuple SPECCONN is no longer required in table DATASIZE and a restart is no longer required to increase the table size. Prior to CSP02, to extend the length of table SPECCONN, increase the size in table DATASIZE and do a restart.

Table DATASIZE example

DATSKEY	SIZE

SPECCONN	132

- Table CLLI:
 - In general, when adding MPX positions to handle DA or intercept traffic, the size (field TRKGRSIZ) of TOPSPOS and TOPSPOSDATA in table CLLI must be increased. A cold restart is required to activate the change. Should be set during the BCS upgrade process. These fixed CLLIs control the size of Table TOPSPOS.

Table CLLI example

CLLI	ADDNUM	TRKGRSIZ	ADMININF

TOPSPOS	38	30	MI
TOPSPOSDATA	51	78	MI

- Table TOPSPOS:
 - DATAPATH = TMS, POSTYPE = BP for MPX positions. MPX must have SVCSET = DASERV (or INTCSEV if two vendors).
 - Between Field SVCSET in Table TOPSPOS and the operator profile defined in Force Management and stored in Table OPRDAT, MPX positions must be restricted from receiving TASERV calls. Therefore,

Reference: TOPS MPX Guide (continued)

in tables TOPSPOS and OPRDAT, do not datafill value TASERV in field SVCSET.

- There are 2 data links per VPC. The primary data link is assigned a TPCNO which is a multiple of 4 (0, 4, 8, etc.) via DEFPOS (see last section in this TAB - IBM Controlled Data in the MPX) in the MPX. The secondary data link is assigned the next sequential number (1, 5, 9, etc.).
- The 2 MPX positions in each group of 4 that have data links must be assigned TPC position numbers 0 and 1 in Field TPCPOSNO. The primary data link is assigned TPCPOSNO 0 and the secondary data link is assigned TPCPOSNO 1.

Table TOPSPOS example

POSNO	VCCKT	VCPDGRP	CARDCODE			
	DATAPATH	POSTYPE	PROTOCOL	TPCNO	TPCPSNO	
	POS	TEAM	SVCSET			

400	TMS 0 2 1	NPDGP	DS1SIG			
	TMS	BP	ASCII	2	0	
	IC	4	DASERV	INTCSERV	\$	
401	TMS 0 2 3	NPDGP	DS1SIG			
	TMS	BP	ASCII	2	3	
	OPR	4	DASERV	\$ GEN XFR1	\$	

- Table SERVICES:
 - Datalink protocol defined. Entries required for each service type:
 - INTCSERV (in field SERVICES) is only required when DA and intercept service is provided by separate vendors.

Table SERVICES example

INDEX	SERVICES	PROTOCOL	DATALINK	LSDBID

1	TASERV			
2	DASERV	IBM	MPC1	0000

Reference: TOPS MPX Guide (continued)

- Table ARUIBMRT:
 - New table to convert destination ID supplied by the DAS to an office route in the DMS to group of ARUs. Destination ID is sent by the DAS in an IMMEDIATE TRANSFER, TRANSFER, or REFERRAL message, and represents a group of announcements. The office route specified in field OFRTIDX routes to a TOPSARU type trunk group.
 - DESTID = 1 pegs the primary OMs. Any destination ID other than 1 pegs a secondary OM (TOPSARU OM group).

Table ARUIBMRT example

DESTID	OFRTIDX

1	200

- Table ARUMEMBR:
 - No specific requirements for MPX/IBM DAS. The DASTRKID corresponds to datafill in the IBM DAS.

Table ARUMEMBR example

CLLI	MEMNAME	DASTRKID

DAARU1	0	30
DAARU1	1	100
DAARU1	2	101
DAARU1	3	102
DAARU2	0	103

- Table OPRCMLPX:
 - Ties operator numbers (stored in Table OPRDAT) to an operator complex/unit number sent to the IBM DAS at operator login. Field

Reference: TOPS MPX Guide (continued)

DASOPRID maps the DMS operator ID to the IBM-DAS operator ID used by IBM's Statistics Processor.

- Two fields appear in Table OPRCMLPX that are not listed in the Data Schema NTP:

Datafilling table OPRCMLPX

Field	Subfield or refinement	Entry	Explanation and action
MAPRQD		Y/N	Indicates whether DASOPRID must be mapped to DMS-200 OPRNUM (1st field in Table OPRCMLPX).
DASOPRID		0-9999	Operator number assigned in DAS. Only appears if MAPRQD = Y.

Table OPRCMLPX example

OPRNUM	CPLXNUM	UNITNUM	MAPRQD	DASOPRID
300	2	7	Y	1000
301	2	6	Y	1001

- **Table OPRDAT:**
 - This table should be datafilled with default values listed in the data schema. It should be modified via Force Management.
 - Between Field SERV Typ in Table TOPSPOS and the operator profile defined in Force Management and stored in Table OPRDAT, MPX positions must be restricted from receiving TASERV calls.

Table OPRDAT example

OPRNUM	OPRVAR
100	IC
101	OPR
111	OPR
112	ASST
200	IC
201	OPR
211	OPR
212	ASST

Reference: TOPS MPX Guide (continued)

- Table TOPS:
 - Call originations with `SERVTYPE = TASERV` are not eligible for handling at MPX positions.

Table TOPS example

CO	SEL	HEADER	NOAMA	POSTYPE	SERVTYPE
131	S		Y	GEN	DASERV
411	S		Y	XFR1	DASERV
555	S		Y	DA	DASERV

- Table MPCFASTA:
 - Only `TOPSVR1` tuple is needed, since both `DASERV` and `INTCSERV` are served by IBM.

Table MPCFASTA example

INDEX	AUDITFRQ	UNITS	RECOVERY	MLCLIST
TOPSVR1	1	MINUTES	REGULAR	1 2 1

Reference: TOPS MPX Guide (continued)

- Table MPCLINK: Provides protocol support and link information for each MPC card datafilled in Table MPC. MPCLINK stores the name of the MPC download file. Only links 2 and 3 can be used for DA.
 - TOPSVR1 is the index for the DA application. TOPSVR2 is not required unless DA and intercept are served by two different vendors.
 - Parameter values/datafill required for IBM DAS:

Datafilling table MPCLINK

Field	Subfield or refinement	Entry	Explanation and action
PROTOCOL		ASYNCR, X2580, X2584 or X25ORIG	Link protocol data. X25ORIG must be entered for IBM DAS. When the PROTOCOL is X25ORIG, refinements CONVNABL, PARMSEL and EXTRAINF must also be datafilled.
LINKNABL		0-32767	Link enable. Enter the time-out, in minutes, before a link that has failed to fully enable is system busied (SBSY) and returned to service (RTS). This value must be a multiple of 5. Enter 0 (zero) to disable the function. 55 is the recommended value for IBM DAS.
	CONVNABL	0-32767	Conversation enable. Enter the number of minutes a conversation is not in progress before corrective action is taken. This value must be a multiple of 5. An entry of 0 (zero) indicates an indefinite period of time. 55 is the recommended value for IBM DAS.

Reference: TOPS MPX Guide (continued)Datafilling table **MPCLINK**

Field	Subfield or refinement	Entry	Explanation and action
	PARMSEL	CLKSRCE, ENVIRON, NODETYPE, & NUMPVCS	<p>PARMSEL is a refinement of subfield PARMs which must be datafilled when the field PROTOCOL is set to X25ORIG. The following specified entries are required for IBM DAS:</p> <p>Enter CLKSRCE (clock source) to specify the source for the MPC system clock and datafill refinement SOURCE.</p> <p>Enter ENVIRON (environment) to specify the protocol environment for establishing communications and datafill refinement MPCENVRN.</p> <p>Enter NODETYPE (node type or address) to specify the node type or address of the MPC and datafill refinement NODE.</p> <p>Enter NUMPVCS (number of permanent virtual circuits [PVC]) to specify the number of PVCs on the link and datafill refinement NUMVCS.</p>

Reference: TOPS MPX Guide (continued)

Datafilling table MPCLINK

Field	Subfield or refinement	Entry	Explanation and action
	SOURCE	EXTERNAL or INTERNAL	<p>Clock source. The default value is EXTERNAL. Enter INTERNAL for MPC card or EXTERNAL for a modem device. Links 2 and 3 must have the same clock source (internal or external). If a different clock source is datafilled for links 2 and 3, an error message is generated.</p> <p>EXTERNAL is the required value for IBM DAS.</p>
	MPCENVRN	DCETODTE or DTETODXE	<p>Environment. The default value is DTETODXE. This refinement specifies the protocol environment for establishing communications. If the entry in refinement NODE is DCE, enter DCETODTE. If the entry in refinement NODE is DTC, enter DTETODXE.</p> <p>DCETODTE is the required value for IBM DAS.</p>

Reference: TOPS MPX Guide (continued)Datafilling table **MPCLINK**

Field	Subfield or refinement	Entry	Explanation and action
	NODE	DCE or DTE	Node type or address. The default value is DTE. Enter the node type or address of the MPC. Enter DCE for digital carrier equipment or DTE for data terminal equipment. This indicates to the MPC that frame addressing is DCE or DTE. DCE is the required value for IBM DAS.
	NUMVCS	0-255	Number of virtual circuits. The required value is 1 for IBM DAS. Reference the data schema for additional information.
	EXTRINF	See subfields	Extra information. Subfields EXINFSEL and DIGITS or NETWORK must be datafilled.
	EXINFSEL	SVCDNA or SVCTYPE	Extra information selector. Enter SVCDNA for a data network address and datafill refinement DIGITS or enter SVCTYPE for a switched virtual circuit (SVC) network and datafill refinement NETWORK. Reference the data schema for additional information.

Reference: TOPS MPX Guide (continued)

Datafilling table MPCLINK

Field	Subfield or refinement	Entry	Explanation and action
	DIGITS	0-9, (vector of up to 15 digits)	Digits. If the entry in subfield EXINFSEL is SVCDNA, datafill this refinement. Enter the digits defining the network address.
	NETWORK	DATAPAC or NTELPAC	Network. If the entry in subfield EXINFSEL is SVCTYPE, datafill this refinement. Enter the network name.

Table MPCLINK example

MPCNO	LINKNO	PROTOCOL	LINKNABL	CONVNABL	PARMSEL	EXTRAINF
52	X25ORIG		55	55		
						(ENVIRON DCTODTE) (NODETYPE DCE) (NUMPVCS 1) (CLKSRCE EXTERNAL) \$ \$

- **Table TPCINV:**
 - Fields FRTYPE, FRNO, SHPOS, FLOOR, ROW, and FRPOS are not cross-checked for duplicates against any other tables or within TPCINV. Therefore, any dummy values within the field ranges can be used.
 - Only one data link per virtual TPC is datafilled in Table TPCINV in BCS30.

Table TPCINV example

TPCNAME	FRTYPE	FRNO	SHPOS	FLOOR	ROW	FRPOS	LOAD	TMSNO
	TMSCKTNO	TMSCKTTS						
DA 2	PCE	5	10	3	AA	6	0	2
	14	(23)(24)	\$					

Reference: TOPS MPX Guide (continued)

- Table TMSPSEV:
 - This table is NOT required for MPX positions with IBM DAS, since access to the DAS is via the token ring.
- Table XANNINFO:
 - NOT used for IBM DA/MPX. The IBM gateway controls whether or not a call can be connected to an operator following an announcement.
- Table DATRKOPT:
 - Field MULTREQ specifies how many multiple requests are allowed for a DA call. The MPX operator must hit the GEN AMA key following each multiple DA request to produce a separate billing record. This field controls how many times the GEN AMA function can be used on a single DA call.
 - Table DATRKOPT must be datafilled even if all of the options are turned off.
 - If BILLRQD = N, a no charge AMA record (CC 035) is generated.

Table DATRKOPT example

GRPKEY	MULTREQ	DACC	BILLRQD	CLGNRQD	REQNRQD	LANGUAGE
COMSRVTRK	1	AUTO	Y	Y	Y	PRIMARY

Reference: TOPS MPX Guide (continued)

- Table VROPT:
 - All parameters in Table VROPT are used with MPX positions and IBM DAS EXCEPT:
 - LOGINOUT_TIMEOUT - The DMS-200 doesn't wait for a response back from the MPX after login or logout.
 - POST_ANN_TIMEOUT - IBM sends the post announcement timeout value in the DELAY TRANSFER message. Therefore the value in this table is not used.
 - Recommended settings for the parameters that are used with the IBM DAS:

Datafilling table VROPT

Field	Subfield or refinement	Entry	Explanation and action
SWITCH_ID		0-15	<p>This parameter identifies the switch to the DAS. Datafill this parameter value with a number for switch identification.</p> <p>Each ID must be unique for each switch using the same DAS.</p> <p>The default value is 0.</p>
BCS_ID		0-255	<p>This parameter identifies the BCS release to the DAS.</p> <p>Set to the current BCS level (30).</p>

- Default values may be used for the remaining parameters.
- VROPT initially appears as an empty table. Options must be added to be made visible. Default values are not automatically shown.

Reference: TOPS MPX Guide (continued)

Table VROPT example

PARAM	VALUE
-----	-----
SWITCH_ID	15
BCS_ID	30

- Table TOPSBC:
 - Must be datafilled for all DA and intercept trunk groups.

Table TOPSBC example

CLLI	BILLCODE	LCANAME	SCRNCL	ACTUALBC	CHGCLSS
-----	-----	-----	-----	-----	-----
OTWAON24XAX1	562	NLCA	NSCR	562613	TOPS

IBM Controlled Data in the MPX

This section highlights some MPX data that the operating company may need to modify. It does not contain a complete list of MPX data options - these can be found in the IBM DAS PS/2 POS User Guide.

The MPX utilities used to modify the default data associated with each individual MPX position are outlined below. See referenced documentation at the beginning of this TAB for details on these utilities or the default settings.

NTI Installation uses DEFPOS utility to define a token ring number and position number for each MPX position. It is the operating company's responsibility to use DEFOPT and DEFKEY utilities to alter any of the other default settings if required. Data can be customized in one MPX terminal and copied to a file on disk to be loaded into other MPX positions. The operating company contact their IBM Account Systems Engineer for assistance with MPX data.

DEFKEY Utility

DEFKEY defines the following types of keys:

- Alphanumerics and Specials
- Common Finding Name (CFN)
- Frequently Referenced Localities (FRL)
- NPAs
- Position Controls

Reference: TOPS MPX Guide (continued)

- Searches
- MPX keys

MPX keys are unique to MPX positions. They are described in the TOPS-MPX User's Guide, and their functionality is described in DDOC AF2018. All other types of keys are described in the POS User's Guide.

The RESET command in DEFKEY can be used to restrict MPX operators from accessing certain key functions. For example, the outgoing trunk key (OGT) is already defined when the MPX initial software is loaded. If the operating company wants to prevent its MPX operators from accessing the OGT key function, they must choose RESET A KEY on the KEYBOARD DEFINITION UTILITY screen and press the OGT key as the screen indicates.

DEFPOS Utility

DEFPOS defines a unique Token Ring # + Position # combination to each MPX position on a given switch.

DEFPOS assigns a POSITION # that uniquely defines each position within the token ring. Positions with primary VPC data links must be assigned POSITION #s that are multiples of 4 (0, 4, 8, etc.). Positions with secondary VPC data links are assigned the next sequential position number (1, 5, 9, etc.).

MPX position numbers are assigned in DEFPOS as follows:

LOGICAL NET ID (0-255):	Always set to 0 for MPX
NP ID (40-7F)	: Token Ring Number
POSITION # (0-31)	: Uniquely defines each position within the Token Ring.
	IMPORTANT: VPCs must be assigned position numbers that are multiples of 4 (0, 4, 8, etc.). Also, DMS-200 table TOPSPOS, subfield TPCPOSNO = 0 for all VPCs.

DEFOPT Utility

DEFOPT updates the options defined for an operator position. All options are initialized with default values. COMMENTS indicate if any other data must

Reference: TOPS MPX Guide (continued)

be coordinated with the option, or other important information about the option.

DEFOPT utility options

Option	Range	Default	Comments
OPT001: How many Complex/Units at this installation?	1-8	1	Defines total # of complex/units
OPT002: Enter the Complex value.	0-3	0	Logs into the DAS. Matches data in Table OPRCMLPX.
OPT003: Enter the Unit value.	1-7	0	Logs into the DAS. Matches data in Table OPRCMLPX.
OPT004: Enter the value for Operator ID base 1.	1-9744	1	Logs into the DAS. Matches DASOPRID in Table OPRCMLPX if MAPR = Y.
OPT020: Enter default NPA key scan code.	1-255	0	Assign prior to NPA and FRL keys in DEKEY.
OPT080: Default FRL/NPA at Position Release.	Y/N	N	N - book and locality remain unchanged at POS RLS.
OPT120: Automatic period in Street Name field.	Y/N	N	Operator does not have to enter (.)
OPT200: Do you have audio response capability.	Y/N	N	Don't set to Y until audio response is available.
OPT201: Allow audio release of reconnects	Y/N	N	Set to N, operator must verbally quote reconnects. RCL operator display.
OPT205: Enter maximum reconnect count.	0-7	0	How many times can a subscriber timeout and reconnect to an operator.
OPT206: Automatic audio release with line selection char?	Y/N	N	Y eliminates AUDIO RELEASE keystroke.
OPT230: Non-Pub access available at this station?	Y/N	N	Access must be given by this option and the SP.
OPT240: Define MISC Book Key 0?	Y/N	N	Set up MSCO key to invoke a search using predefined NPA and FRL (OPT 241-244).

Reference: TOPS MPX Guide (end)

DEFOPT utility options

Option	Range	Default	Comments
OPT250: Define MISC Book Key 1?	Y/N	N	See OPT 240
OPT260: Enter default operator access level.	0-3	1	Level of access to non-pub numbers when SP is offline (SP controls non-pub access).

Reference: TOPS Related Office Parameters

TOPS related office parameters

This section provides the TOPS regular office parameters. Datafill only those parameters which require a value other than the default value and only if the referenced software package is present in your office. For a description of office parameters, refer to *Office Parameters Reference Manual*. Also, refer to section 2 of the C.I. (8600) Document.

This section provides the TOPS regular office parameters. Datafill only those parameters which require a value other than the default value and only if the referenced software package is present in your office. For a description of office parameters, refer to

The office parameter tables are in the following sections of *Office Parameters Reference Manual*:

- OFCSTD - 013
- OFCOPT - 016
- OFCENG - 030
- OFCVAR - 037

TOPS related office parameters

Parameter	Parameter Table	Package	Values	Default
ACCS_MAX_QUERIES	ofceng	NTX825AA - Exchange Alternate Billing Service) NTXE72AA - Calling Card SS7 Validation) parameter deleted (BCS31)	0-255	2
ACCS_QUERY_TIME_OUT	ofceng	NTX825AA - Exchange Alternate Billing Service NTX825AB - TOPS EABS) : parameter renamed SDB_QUERY_TIMEOUT in BCS34 by NC0342	1-5000	150
ACCSDB_RESPONSE_DELAY		NTX552AB - Custom Charge Calling NTX825AA - Exchange Alternate Billing Service	0-255	1

Reference: TOPS Related Office Parameters (continued)

TOPS related office parameters

Parameter	Parameter Table	Package	Values	Default
AMA_EQUIPPED	ofcopt	NTX030CC - TOPS Billing Types	Y or N	N
AMA_FAILURE_FREE_CALL	ofceng	NTX030CC - Calls Connected to TOPS Position NTX030CC - TOPS Administration NTX030CC - TOPS Billing Types	Y or N	Y
AMA_FAILURE_ROUTE_POSITION	ofcvar	NTX030CC - TOPS Administration NTX030CC - TOPS Billing Types	position in table POSITION	AMAFAIL
AOSS_DM_HIT_TIME	ofceng	CB94582 - DMODEM's Fail Test) parameter deleted - BCS31	0-256	20
CAMA_SUSP_CALL_ALLOWED	ofcvar	NTX030CC - TOPS Billing Types	CS_CAMA, CS_COIN, CS_HOTEL or NONE	NONE
COINDISPOSAL	ofceng	NTX030CC - Calls Connected to TOPS Position NTX901AA - Local Features I	BLIND_COLL ECT, BLIND_RET URN or IGNORE_CO IN	IGNORE_COIN

Reference: TOPS Related Office Parameters (continued)**TOPS related office parameters**

Parameter	Parameter Table	Package	Values	Default
CRS_SUBRU_POOL1_SIZE	ofceng	GOS Enhancements (AN1085) Auto Country Direct (ENSV0010) (TOPS05) - recalculated OSSAIN, ENSV0014 (TOPS06) - recalculated Estimated Call Charges, ENSV0018 (TOPS07) - uses	0-4294967295	100
CRS_SUBRU_POOL2_SIZE	ofceng	GOS Enhancements (AN1085) OSSAIN, ENSV0014 (TOPS06) - recalculated TOPS LNP, OSEA0008 (TOPS07) - recalculated	0-4294967295	100
CRS_SUBRU_POOL3_SIZE	ofceng	NTXH38AA - Global TOPS Basic GOS Enhancements (AN1085)	0-4294967295	100
CRS_SUBRU_POOL4_SIZE	ofceng	OSSAIN, ENSV0014 (TOPS06) - recalculated	0-4294967295	100
CRS_SUBRU_POOL5_SIZE	ofceng	TOPS OLNS Interface, ABS00012 (TOPS06) - new	0-4294967295	100
DB_MAX_SIZE	ofceng	NTXR58CC - GOS Booked Call Data Base	1280- 5120	1280
DEF_AMR5_CAT_CODE	ofceng	NTX030CC - Calls Connected to TOPS Position	000-999	000

Reference: TOPS Related Office Parameters (continued)

TOPS related office parameters

Parameter	Parameter Table	Package	Values	Default
DNPIC_MAX_NUM_DN_T UPLES	ofceng	NTX714AA - TOPS InterLATA Carrier Service NTX829AA - IntraLATA PIC for LEAS	0-100	5
DEFAULT_CARRIER_OR _TREAT	ofceng	NTX186AA - Equal Access End Office	C CARR, T TREAT, or T DACD	T DACD
DM_HIT_TIME	ofceng	Unknown	1-255	40
EA_OCS_AND_DP_ OVLP_NEEDED	ofceng	NTX186AA - Equal Access End Office	Y or N	Y
EA_OCS_DIGCOL_ METHOD	ofceng	NTX186AA - Equal Access End Office	NOAMBI, PFXALL, PFXAMB or TIMING	NOAMBI
EA_OVERLAP_ CARRIER_SELECTION	ofceng	NTX186AA - Equal Access End Office	Y or N	N
EA_REC_MAX_WK_ TIME	ofcstd	NTX187AA - TOPS Equal Access NTX714AA - TOPS InterLATA Carrier Service NTX891AA - EAOSS	1-255	150
EA_REC_SUB_PRE_WK_ TIME	ofcstd	NTX187AA - TOPS Equal Access NTX714AA - TOPS InterLATA Carrier Service NTX891AA - EAOSS	1-255	100

Reference: TOPS Related Office Parameters (continued)

TOPS related office parameters

Parameter	Parameter Table	Package	Values	Default
EA_REC_1ST_PRE_WK_TIME	ofcstd	NTX187AA - TOPS Equal Access NTX714AA - TOPS InterLATA Carrier Service NTX891AA - EAOSS	1-255	50
EA_TEST_CALL_SPILL	ofcvar	NTX187AA - TOPS Equal Access NTX714AA - TOPS InterLATA Carrier Service NTX891AA - EAOSS	2 info digits + calling NPA + calling number	950005551212
EXPANDED_INBAND_PERMITTED	ofcopt	NTX030CC - TOPS Coin Features	Y or N	N
GOS_NUM_RU	ofceng	NTXR58CC - GOS Booked Call Data Base	0 -32767	0
INWATS_ON_AMA	ofceng	NTX030CC - Calls Connected to TOPS Position	Y or N	N
MAX_NO_OF_TRANS_ID	ofceng	External RTRS Interface (ENSV0009) - calculation is modified TOPS OLNS Interface, ABS00012 (TOPS06) - calculation is modified	0-32000	4096
MAX_ROUTE_QUEUED_PER_TRKGRP	ofceng	NTXR58AA - GOS Booked Call Data Base	0-100	0
MCCS_SEQ_CALL_LIM	ofcvar	NTXE72AA - TOPS CCITT Calling Card SS7 Validation NTXH38AA - Global TOPS - Basic	0-127	127

Reference: TOPS Related Office Parameters (continued)**TOPS related office parameters**

Parameter	Parameter Table	Package	Values	Default
MCCS_SEQ_QUERY	ofcvar	NTXE72AA - TOPS CCITT Calling Card SS7 Validation NTX825AB - TOPS EABS NTXA62AA - TOPS MP DA Audio Response Call Handling NTX171AA - MCCS Call Processing	Y or N	N
MINIMUM_CHARGE_DURATION	ofceng	OSSAIN, ENSV0014 (TOPS06) - used	16-4080	208
MSN_SERVICE_CLASS	ofceng	NTX676AA - TOPS Automated Billing	COIN, HOTEL, FLATRATE or ALL	ALL
MSN_XFR_TYPE	ofceng	NTX676AA - TOPS Automated Billing	XFR1, XFR2, or NONE	NONE
NO_OF_TRANSACTION_IDS	ofceng	NTX825AA - TOPS EABS	see OFCENG	see OFCENG
NUM_OF_BC_AMA_UNITS	ofceng	NTXE20AA - TOPS Expanded Bellcore AMA	1-32767	100
OFFICE_ID_ON_AMA_TAPE	ofceng	NTXJ96AA - Enhanced MFADS	000000- 999999	0000500
OOC_DM_HIT_TIME	ofceng	CB94582 - DMODEM's Fail Test parameter deleted - BCS31	0-256	20
OOC_NUM_RU	ofceng	NTXE20AA - TOPS Expanded Bellcore AMA	100-no. OOC trk. grp members	100
OOC_PASSWORD_ENABLE	ofcvar	NTXE00AA - TOPS Operator Password	Y or N	N

Reference: TOPS Related Office Parameters (continued)

TOPS related office parameters

Parameter	Parameter Table	Package	Values	Default
OSAC_NUM_RU	ofceng	OSSAIN Enhancements, ENSV0020 (TOPS07) - new	0-32767	0
OSSAIN_NUM_RU	ofceng	OSSAIN, ENSV0014 (TOPS06) - new	0-32767	100
PLUS48V_OVERTIME_COIN_TEST	ofceng	NTX030CC - Calls Connected to TOPS Position NTX090AA - Coin Services	Y or N	N
PPMBUFFS	ofceng	NTX030CC.4 - TOPS Administration	40-244	80
PRE_ROUTE_ABANDON_TRK116_LOG	ofceng	BR21099 - Create office parm to control NIL_KP/NIL-ST TRK116 logs	Y or N	N
QMSFM_NUM_QUEUES	ofceng	NTXP41AA - TOPS Host QMS QMS Customer Service Enhancement, ADVQ00006 (TOPS06) - recalculate	0-256	0
QMSFM_NUM_SERVICES	ofceng	NTXP41AA - TOPS Host QMS	1-16	3
QMSFM_NUM_STUDY_REG	ofceng	NTXP41AA - TOPS Host QMS	1-450	100
RATING_SMALLEST_COIN	ofcvar	NTXR51AA - GOS Rating System	1-10000	1
RECORD_CLG_NPA_NXX	ofcvar	NTX188AA - TOPS BCR EA AMA Format	TOPS_AND_CAMA_REC, TOPS_REC, CAMA_REC orDEFAULT_REC	DEFAULT_REC

Reference: TOPS Related Office Parameters (continued)**TOPS related office parameters**

Parameter	Parameter Table	Package	Values	Default
SDB_QUERY_TIMEOUT	ofceng	NTX825AB - TOPS EABS: parameter is a rename from ACCS_QUERY_TIMEO UT in BCS34 by NC0342.	Y or N	Y
SUPPRESS_ANI_TO_CLID_DISPLAY	ofceng	NTXP86AA - ANI to ISUP Conversion	Y or N	Y
TEST_CALL_II_SPILL	ofcvar	NTX187AA - TOPS Equal Access	15 digit test call billing number	none
TFAN_IN_MAX_NUMBER	ofceng	NTX030CC - TOPS Call Processing NTX187AA - TOPS Equal Access NTX714AA - TOPS InterLATA Carrier Service NTX891AA - EAOSS	SIZE_15, SIZE_31 SIZE_63 or SIZE_127	SIZE_15
TFAN_OUT_MAX_NUMBER	ofceng	NTX030CC - TOPS Call Processing NTX187AA - TOPS Equal Access NTX714AA - TOPS InterLATA Carrier Service NTX891AA - EAOSS	SIZE_15, SIZE_31 SIZE_63 or SIZE_127	SIZE_15
TOPS_ACCS_ACG	ofceng	NTX825AA - TOPS EABS NTX552AC - TOPS Terminating Code Screening	Y or N	Y

Reference: TOPS Related Office Parameters (continued)**TOPS related office parameters**

Parameter	Parameter Table	Package	Values	Default
TOPS_ACCS_ACG_SIZE	ofceng	NTX825AA - TOPS EABS NTX552AC - TOPS Terminating Code Screening TOPS Robustness (OSB00001) - parameter is deleted in TOPS04	PRIME1, PRIME2 or PRIME3	PRIME1
TOPS_ACCS_BNS_BLK	ofceng	NTX825AA - TOPS EABS NTX825AB - TOPS EABS: parameter is deleted in BCS34 by NC0342	Y or N	N
TOPS_ACCS_BNS_VFY	ofceng	NTX825AA - TOPS EABS NTX825AB - TOPS EABS: parameter is deleted in BCS34 by NC0342	Y or N	N
TOPS_ACCS_CCV_QUERY_BLK	ofceng	NTXA17AA - AABS NTX825AA - TOPS EABS NTX825AB - TOPS EABS: parameter is renamed TOPS_SDB_CCV_QUERY_BLK in BCS34 by NC0342.	Y or N	Y
TOPS_ACCS_MANUAL_VALIDATION	ofceng	NTX825AA - TOPS EABS	ALL or PUBLIC	ALL
TOPS_ACTS	ofceng	NTX030CC - TOPS Coin Features	Y or N	N

Reference: TOPS Related Office Parameters (continued)**TOPS related office parameters**

Parameter	Parameter Table	Package	Values	Default
TOPS_AGS	ofcvar	NTX030BA - TOPS ACD Features NTX030CC - Calls Connected to TOPS Position	10-80	10
TOPS_ASST_POS	ofceng	NTX030BA - TOPS ACD Features TOPS Robustness (OSB00001) - parameter is deleted in TOPS04	0-126	0
TOPS_BRAND_DISPLAY	ofceng	NTXE71CC - DA/Toll Branding OSSAIN, ENSV0014 (TOPS06) - used Branding via SPID, ENSV0017 (TOPS07) - used	DISPLAY_ WHEN_ BRANDED or DISPLAY_ WHEN_NO_ BRANDED	DISPLAY_ WHEN_ BRANDED
TOPS_BRAND_INWARDS	ofceng	NTXE71CC - DA/Toll Branding	Y or N	N
TOPS_BRAND_OFFICE	ofceng	NTXE71CC - DA/Toll Branding	OPERATOR, MCCS, ACTS AABS, ALL or NONE	NONE
TOPS_CALLS_WAITING_Q_SIZE	ofceng	NTX030BA - TOPS ACD Features TOPS Robustness (OSB00001) - restart requirement is removed when increasing (TOPS04)	0-32767	0
TOPS_CALLS_WAITING_SEARCH_DEPTH	ofcvar	NTX030BA - TOPS ACD Features	0-value in TOPS_CALLS_WAITING_Q_SIZE	10

Reference: TOPS Related Office Parameters (continued)**TOPS related office parameters**

Parameter	Parameter Table	Package	Values	Default
TOPS_CLD_TIME_AND_CHG_NO_ACTS	ofcvar	NTX208AA - ACTS	Y or N	N
TOPS_COIN_PAY_SEQUENCE	ofcvar	NTX208AA - ACTS	PREPAY or POSTPAY	PREPAY or POSTPAY
TOPS_CROSS_TEAM_ROUTING	ofcvar	Unknown	Y or N	N
TOPS_DISPLAY_AWT	ofcvar	NTX030BA - TOPS ACD Features	Y or N	N
TOPS_DISPLAY_MON	ofcvar	NTX030BA - TOPS ACD Features	Y or N	N
TOPS_DISPLAY_ST	ofcvar	NTX030BA - TOPS ACD Features	Y or N	N
TOPS_DM_HIT_TIME	ofceng	NTX030BA - TOPS ACD Features CB94582 - DMODEM's Fail Test parameter deleted - BCS31	0-256	20
TOPS_DUMP_STUDY_REG	ofcvar	NTX030BA - TOPS ACD Features	Y or N	N
TOPS_EA_DNPC_LOG_GENERATION	ofcvar	NTX714AA - TOPS InterLATA Carrier Service	ALL or TOPS_LEAS_ONLY	ALL
TOPS_EA_INTERLATA_NONOPR_AMA	ofceng	NTX187AA - TOPS Equal Access NTX030CC - TOPS Call Processing Features NTXA26AA - TOPS Incoming FGD Signalling	Y or N	N

Reference: TOPS Related Office Parameters (continued)**TOPS related office parameters**

Parameter	Parameter Table	Package	Values	Default
TOPS_EA_PROCESS_SEL	ofcvar	NTX187AA - TOPS Equal Access NTXP78AA - FGB Carrier Code Expansion	Y or N	N
TOPS_EQUAL_ACCESS_OFFICE	ofcopt	NTX187AA - TOPS Equal Access TOPS Robustness (OSB00001) - restart requirement is removed (TOPS04)	Y or N	N
TOPS_EXPANDED_OPRNUM	ofceng	NTX030CC - TOPS Administration	Y or N	N
TOPS_FGB_CC134	ofcvar	NTX187AA - TOPS Equal Access NTXP78AA - FGB Carrier Code Expansion	Y or N	N
TOPS_FIXED_DURATION_APS	ofceng	ITOPS	Y or N	N
TOPS_GEN_AMA_SET	ofceng	NTXA28AA - TOPS AWT Enhancements	NONE, COIN, HOTEL STATION or RESTRICT	NONE
TOPS_HOLD_LOCAL	ofcvar	NTXE04AA - Screened Service Routing	Y or N	N
TOPS_INTRUSION_TONE	ofcopt	ITOPS	Y or N	N
TOPS_LAB_ENVIRONMENT	ofceng	Unknown	TOPS or OOC	TOPS

Reference: TOPS Related Office Parameters (continued)**TOPS related office parameters**

Parameter	Parameter Table	Package	Values	Default
TOPS_MAX_OPERATOR_NUM	ofceng	NTX030BA - TOPS ACD Features NTX030CC - Calls Connected to TOPS Position NTX030CC - TOPS Administration NTXA62AA - TOPS MP DA Audio Response Call Handling NTXA91AA - CCI Interface TPC NTXE05AA - TOPS DA/Intercept Messaging Open TOPS Robustness (OSB00001) - parameter is deleted in TOPS04	0-9997	0
TOPS_MAX_ORIG_RATE_CENTER	ofceng	NTX030CC - TOPS Administration NTX030CC - Calls Connected to TOPS Position	0-255	0
TOPS_MAX_TERM_RATE_CENTER	ofceng	NTX030CC - TOPS Administration NTX030CC - Calls Connected to TOPS Position	0-255	0
TOPS_MCCS_BNS	ofcopt	NTX172AA - MCCS Billed Number Screening NTX286AA - MCCS Query via OC Data Link NTX825AA - TOPS EABS	Y or N	N

Reference: TOPS Related Office Parameters (continued)

TOPS related office parameters

Parameter	Parameter Table	Package	Values	Default
TOPS_MCCS_CCV	ofcopt	NTX030CC - Call Processing NTX030BA - TOPS ACD Features NTXA91AA - CCI Interface TPC	Y or N	N
TOPS_MFADS_OUTPUT_XFR_NUMBER	ofcvar	NTX030BA - TOPS ACD Features NTX030CC - TOPS Call Processing NTXA91AA - CCI Interface TPC NTXJ96AA - Enhanced MFADS	Y or N	N
TOPS_MFADS_PERIOD	ofceng	NTX030BA - TOPS ACD Features NTXJ96AA - Enhanced MFADS	MFADS_15_MIN or MFADS_30_MIN	MFADS_30_MIN
TOPS_MFADS_POLLING_ID	ofcvar	NTX030BA - TOPS ACD Features NTXJ96AA - Enhanced MFADS	see OFCVAR	blank
TOPS_NIGHT_ALARM_ON_POS_BUSY	ofceng	Unknown	Y or N	N
TOPS_NUM_CAMA_RU	ofceng	NTX030CC - Calls Connected to TOPS Position NTXE20AA - TOPS Extended Bellcore AMA NTXN49AA - Automated Intercept Call Completion	100 - number of TOPS trk group members	100

Reference: TOPS Related Office Parameters (continued)**TOPS related office parameters**

Parameter	Parameter Table	Package	Values	Default
TOPS_NUM_RU	ofceng	NTX030BA - TOPS Administration NTX030CC - Calls Connected to TOPS Position NTXE20AA - TOPS Extended Bellcore AMA NTXN49AA - Automated Intercept Call Completion	100 - number of TOPS trk group members	100
TOPS_NUM_STUDY_REG	ofceng	NTX030BA - TOPS Administration NTX030CC - Calls Connected to TOPS Position TOPS Robustness (OSB00001) - parameter is deleted in TOPS04	0-900	0
TOPS_NUM_TRAFFIC_OFFICES	ofceng	NTX030BA - TOPS ACD Features NTX030CC - Calls Connected to TOPS Position NTXE96AA - Extended MFADS NTX030CC.5 - Call Processing TOPS Robustness (OSB00001) - restart requirement is removed (TOPS04)	0-32767	0
TOPS_NUMBER_OF_MEMO_PADS	ofceng	Unknown	1-900	1

Reference: TOPS Related Office Parameters (continued)

TOPS related office parameters

Parameter	Parameter Table	Package	Values	Default
TOPS_OCCUPANCY_CALC_METHOD	ofceng	PRS CH02884	REAL_TIME_PEG or TEN_SECOND-SCAN	REAL_TIME_PEG
TOPS_OC_ENVIRONMENT	ofceng	NTX039AA - Host OC Data Link Handler NTX134AA - Remote OC Data Link Handling NTXA60AA - TOPS Closedown NTXN54AA - Host Remote Networking Type	HOST or REMOTE	HOST
TOPS_OC_REMOTE_BVC	ofceng	NTXA60AA - TOPS Closedown NTX286AA - MCCC Query via OC Data Link NTX289AC - TOPS Remote OC NTXN54AA - Host Remote Networking Type QMS Customer Service Enhancement, ADVQ00006 (TOPS06) - deleted	Y or N	N
TOPS_OFFICE_TYPE (this parameter is no longer available)	ofceng	NTX030CC - Calls Connected to TOPS Position NTX030CC - TOPS Billing Types	(deleted)	(deleted)

Reference: TOPS Related Office Parameters (continued)**TOPS related office parameters**

Parameter	Parameter Table	Package	Values	Default
TOPS_OTC_CARRIER_NUMBER	ofcvar	NTXE35AA - Alternate Carrier Selection NTXE36AA - Automated Call Completion NTX714AA - TOPS InterLATA Carrier Service OSEA0001 - Equal Access Carrier Code Expansion (AN0883)	0000-9999, NNNN	NNNN
TOPS_PARS_ENABLE	ofcopt	NTXA62AA - TOPS MP DA Audio Response Call Handling	Y or N	N
TOPS_PARS_TONE_LENGTH	ofcopt	NTXA62AA - TOPS MP DA Audio Response Call Handling	0-255 in increments of 5	5
TOPS_PASSWORD_ENABLE	ofcvar	NTX030CC - TOPS Administration NTXA90AA - TOPS MP Terminal High Speed NTXA91AA - CCI Interface TPC NTX731AA - TPC Version I NTXE00AA - TOPS Operator Password	Y or N	N
TOPS_PEG_MODE	ofceng	NTXJ96AA - Enhanced MFADS	IPS or PS	IPS
TOPS_PO_PB_CHARS	ofcopt	Unknown	Y or N	N
TOPS_POPB_TEST	ofceng	QMS Customer Service Enhancement, ADVQ00006 (TOPS06) - deleted		

Reference: TOPS Related Office Parameters (continued)**TOPS related office parameters**

Parameter	Parameter Table	Package	Values	Default
TOPS_QMS_MAX_ACTIVE_CALL_QUEUEUES	ofceng	NTXP41AA and NTXP42AA - TOPS Host and Remote QMS QMS Customer Service Enhancement, ADVQ00006 (TOPS06) - recalculate	0-255	
TOPS_SDB_CCV_QUERY_BLK	ofceng	NTX825AB - TOPS EABS: parameter is a rename from TOPS_ACCS_CCV_QUERY_BLK in BCS34 by NC0342	Y or N	Y
TOPS_SEL_XFR_OPR_TRK	ofcopt	NTX030CC - TOPS Administration NTX030CC - TOPS Call Processing NTX030BA - TOPS ACD Features	Y or N	N
TOPS_START_OF_DAY	ofcvar	NTX030BA - TOPS ACD Features TOPS Robustness (OSB00001) - restart requirement is removed (TOPS04)	0-2359	0
TOPS_STATSPAC_PERIOD	ofcvar	NTXE73AA - Improved STATPAC Force Management	15 or 30	15
TOPS_STATSPAC_POLLING_ID	ofcvar	NTXE73AA - Improved STATPAC Force Management	2 characters	00
TOPS_SUPPRESS_CW	ofcopt	Unknown	Y or N	N
TOPS_TAC_RECALL	ofcvar	Unknown	Y or N	N
TOPS_TANDEMED_411_CC009	ofcvar	NTX188AA - TOPS BCR EA AMA Format	Y or N	N

Reference: TOPS Related Office Parameters (continued)**TOPS related office parameters**

Parameter	Parameter Table	Package	Values	Default
TOPS_THRESHOLD	ofceng	NTX030CC - Call Connected to TOPS Position	0-100	0
TOPS_TRANSFER_TYPES	ofceng	NTX030CC - TOPS Administration NTX030CC - TOPS Call Processing Features NTXA62AA - TOPS MP DA Audio Response Call Handling NTX724AA - TOPS MP Interface NTXE96AA - Enhanced MFADS NTXN54AA - Host Remote Networking Type	DA, XFR1, XFR2 or NONE	NONE
TOPS_VERIFICATION_BARG_IN	ofcvar	NTX030CC - TOPS Administration NTX030CC - TOPS Call Processing Features	BARGE_IN, MONITOR or SCRAMBLE	MONITOR
TOPS_ZERO_FB_REG	ofcvar	NTX030BA - TOPS ACD Features	Y or N	N
TOPS_0PLUS_LOCAL	ofceng	NTX030CC - Call Connected to TOPS Position	NONE, COIN, HOTEL STATION or RESTRICT	NONE
TOPS_411_RECORD_NPA_IN_AMA	ofcvar	NTX188AA - TOPS BCR EA AMA Format	Y or N	N
TOTAL_ROUTE_QUEUED_CALLS	ofceng	NTXR58AA - GOS Booked Call Data Base TOPS Robustness (OSB00001) - restart requirement is removed (TOPS04)	0- 5120	0

Reference: TOPS Related Office Parameters (end)

TOPS related office parameters

Parameter	Parameter Table	Package	Values	Default
TQMS_MIS_MPC_BUFFS	ofceng	NTXR50AA - QMS External MIS Interface	2-16	2
TQMS_MIS_TEST_LOGS	ofceng	NTXR50AA - QMS External MIS Interface	INFO, POS, QUE, ALL, and NONE	
TRUNK_NETWORK_NUMBER_NEEDED (this parameter is no longer available)	ofceng	NTX187AA - TOPS Equal Access NTX842AA - TOPS Deferred AMA Formatting - Bellcore	(deleted)	(deleted)
TRK_OOS_CHK_ON	ofcvar	NTX030CC - TOPS Call Processing	Y or N	N
VALIDATE_CCITT_LUHN_DIGIT	ofceng	QMS Customer Service Enhancement, ADVQ00006 (TOPS06) - deleted		
ZERO_MINUS_TO_CARRIER	ofceng	NTX829AA - IntraLATA PIC with LEAS	Y or N	N

Reference: TOPS Trunk Selection

TOPS Trunk selection

This section provides information on selection and datafill of trunks in a TOPS office.

Characteristics of TOPS incoming trunk groups.

TOPS incoming trunk groups carry traffic requiring operator intervention and billing from End Offices. These incoming calls can be from coin, non-coin, or hotel stations and can be of the 0-, 0+, 01, 011, or 1 call type.

An incoming trunk group may carry a mix of call types and station types or it may be dedicated to a particular type of station or call.

When a call arrives at the TOPS office, the station and call type must be identified, in order to facilitate the correct handling of the call by the TOPS operator. Identification is accomplished using some or all of the following:

- Fields of table TRKGRP:
 - STATCLAS: station class
 - TIMEOUT: timing after trunk seizure
 - CLGINFO: selector or field - ANI, ONI, or direct ANI
 - PRTNM: pretranslator table used to identify call type
 - SIGFMT: signaling format, for example, Bell Std. or NE AMRS
- Field — PULSTYP (MF, DP, or NP) of Table TRKSGRP.
- The Start signal associated with the calling or called number.
- The Information Digits (ID) associated with any calling number.
- The Category Code (NE AMRS).

Following is a brief description of the above sequence:

- The station class (STATCLAS) identifies the calling station type as being either a mixture or dedicated. For example, COMBINED indicates that the trunk group carries traffic from hotel and coin stations, as well as non-coin stations, whereas HOTEL indicates that only hotel traffic is carried on the trunk group.
- The TIMEOUT field is set to Y (yes) if trunk group carries 0+, 1+, and 0 traffic, the 0 traffic is identified by a seizure and a timeout. Trunk groups that carry only 0 traffic N (no timeout) is entered in this field and NP is entered in IPULSTYP field of TRKSGRP table.
- The system enters the standard pretranslator table and uses the digits received to determine the call type.

Reference: TOPS Trunk Selection (continued)

- The calling information field of the trunk group is examined; this indicates whether the End Office is ANI equipped. If so, the signaling format field indicates how the ANI and called number information may be used. With the Bell System Standard signaling format, the station type and call type can be identified using the start signal (ST*) and the ID digits in the ANI spill. With the North Electric AMR 5 signaling format, the Category Code (CC) identifies the station type, and the prefix digit or 2T signal identifies the call type.
- If the End Office is MF ONI, the system determines the call type from the ST signal at the end of the called number. If the End Office is DP ONI, a pretranslator must be used to determine the call type.
- If the station type cannot be identified by the system, the TOPS operator must rely on coin ZIPTone generated by the End Office or a verbal comment from the originating hotel PBX operator.
- With an ANI fail condition, the system may or may not be able to identify the station or call type. It then gives the operator as much information as possible to identify the call. For example, on a hotel call with an ANI fail condition, the station class (hotel) is only recognized after the operator has keyed in the calling number.

Trunk group types

The following are the trunk group types most frequently connected between an End Office or carrier and a TOPS DMS-200 or DMS-100/200:

- ATC — Trunk group ATC is used for TOPS EA trunking to/from FGC or FGD carriers. At least one ATC trunk group is connected to each FGC or FGD carrier. Optionally, trunk group ATC may also be used for FGB carriers.
- IT — The IT trunk group is two-way, incoming, or outgoing in a DMS toll or End Office and interfaces with a toll or End Office. The trunk carries toll connecting traffic, including toll access, toll completing, and toll tandem. The IT trunk group does not carry ANI, so it cannot be used for EA traffic with FGC signaling.
- OC — The OC group type is a toll or End Office outgoing or 2W CAMA trunk. The outgoing OC trunk provides a connection to a toll office and does ANI spill based upon KP+7digits+ST format. It does not provide any coin signaling or operator hold functions. The far end of an OC trunk can be an SC or OC trunk group type. OC type trunks cannot directly connect to a TOPS position. Calls which require operator intervention may be routed to a TOPS position via an OP/TOPS loopback trunk.
- OP — The OP group type is an End Office outgoing or 2W operator trunk. It is also used as a toll to toll office trunk. It provides ANI to the Toll Office

Reference: TOPS Trunk Selection (continued)

based upon the KP+7digits+STX format. STX is either ST, STP, ST2P, or ST3P and identifies the call as coin or non-coin, direct dial (DD) or operator assistance (OA). It provides coin control signaling and operator hold functions. It typically connects to a trunk group type of TOPS or SC at the trunk's far end.

- **TOPS** — A TOPS trunk is typically the far end of an OP type trunk. The TOPS trunk is similar to an OP type trunk with the added distinction of being one of the few trunk types which can connect directly to a TOPS position. The TOPS trunk is used for EA incoming traffic with FGB, FGC, and FGD signaling. TOPS EA software can handle incoming FGC and FGD signaling on the same TOPS trunk group.
- **RONI** — Trunk group RONI is used to collect the calling number and outpulse back to a LAMA/CAMA office. When a call is received in a LAMA/CAMA office that is ONI or ANIFAIL, the call is linked to an operator over a RONI trunk to collect the ANI. Then the call is returned to the LAMA/CAMA office for call completion.
- **TOPSVL** — TOPSVL is a voice link to VSN for Automated Alternate Billing Service.

The following are the trunk configurations most frequently used in the TOPS environment:

- **Basic EAEO or non-EAEO.** Refer to figure "DMS-200 or DMS-100/200 TOPS local and toll service".
- **Looparound.** Refer to figure "DMS-100/200 TOPS looparound trunk configuration".
 - DMS-100/200 TOPS only.
 - All traffic from the DMS-100 side of the 100/200 TOPS switch must route to TOPS via looparound trunks. All calls completing from TOPS to the DMS-100 side must route via looparound trunks.
- **FGB**

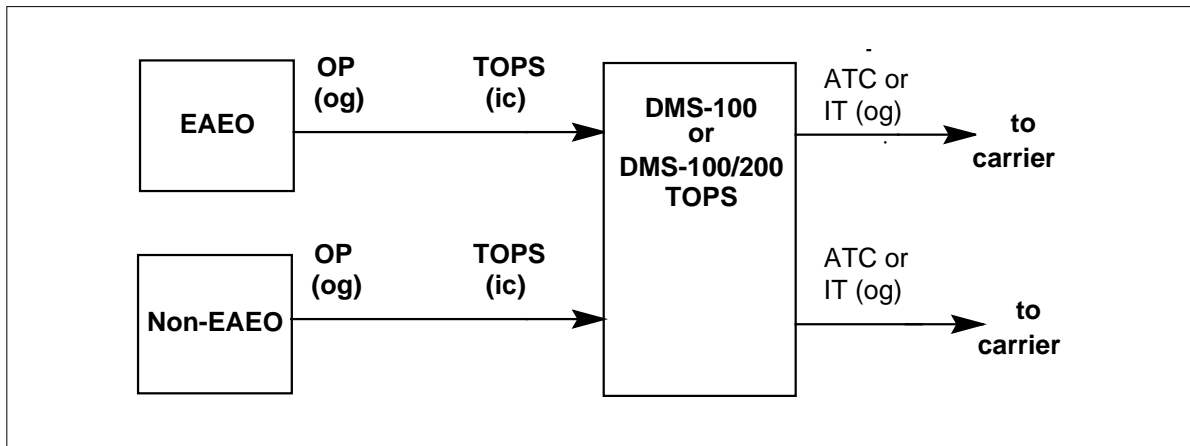
Refer to package NTX187AA (TOPS Equal Access), section TOPS EA guidelines, subsection FGB on TOPS trunks, for more details on FGB trunk selection in a TOPS environment.
- **Equal Access**

Incoming TOPS trunk groups must be dedicated to individual carriers for 0+ and 1+ traffic. However, if the TOPS switch is providing LEAS or TICS for a nonconforming End Office, the 0+ and 1+ traffic need not be dedicated. Calls incoming on the same TOPS trunk group can be routed to different carriers based on the PIC datafilled in the TOPS switch.

Reference: TOPS Trunk Selection (continued)

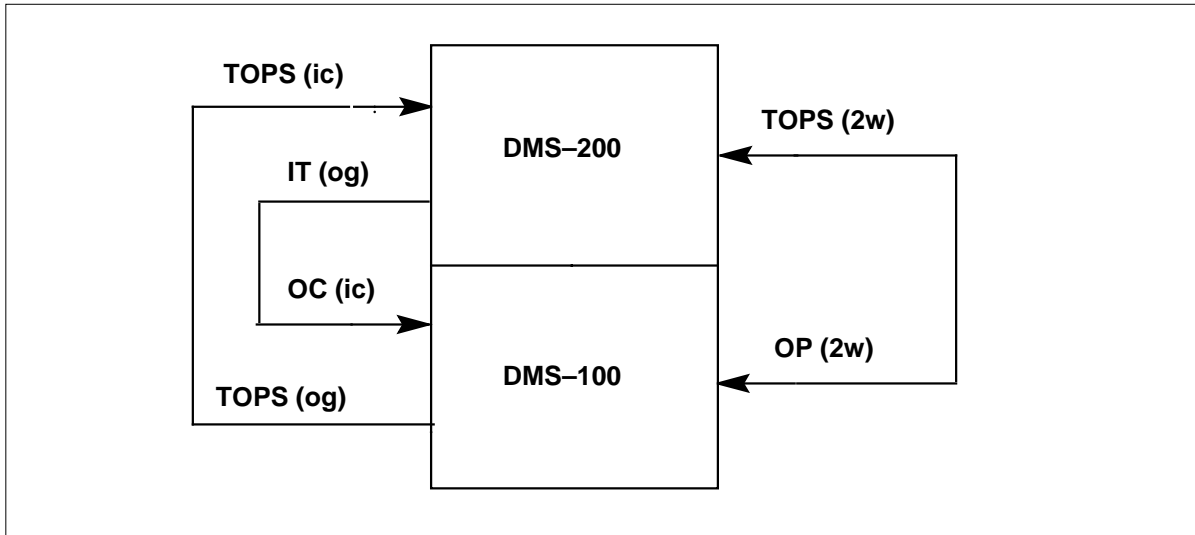
- Verification
Dedicated IT trunk groups to End Offices.
- Verification with scrambler
Dedicated IT trunk groups — OG to scrambler and IC from scrambler (2X88AAs).
- CCIS VFLs (voice frequency links)
TL trunk group for normal application of host OC or standalone TOPS.
- OC voice links
Outgoing IT in host and incoming IT in remote.
- SOC (supplemental OC trunks)
IT between host and remote for verification and delay calls.
- Operator centralization
The following diagram shows an operator centralization trunking configuration. The OC data links are datafilled in table TOPSHDLC.

DMS-200 or DMS-100/200 TOPS local and toll service



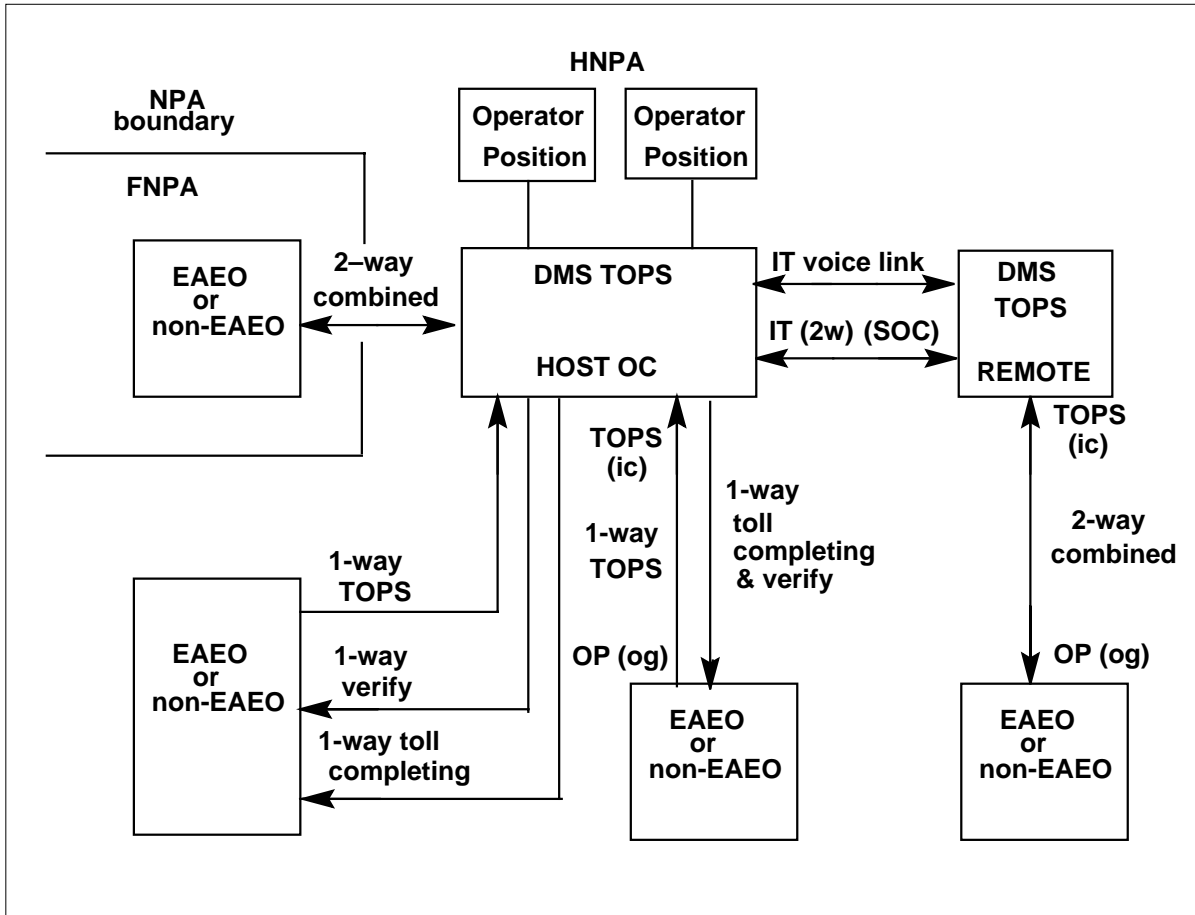
Reference: TOPS Trunk Selection (continued)

DMS-100/200 TOPS looparound trunk configuration



Reference: TOPS Trunk Selection (continued)

OC trunking configuration



The following diagrams give guidelines in selecting trunks for a DMS switch as an EAEO, AT, or an EAEO/AT when the AT has TOPS. These diagrams were presented in the previous section for ATs without TOPS. After these diagrams, other DMS configurations with TOPS are given.

Reference: TOPS Trunk Selection (continued)

Trunk selection - EAEO to/from an FGB carrier

How will the traffic be routed?							
DIRECT CONNECTION EAEO \longleftrightarrow CARRIER				INDIRECT CONNECTION EAEO \longleftrightarrow AT \longleftrightarrow CARRIER			
ORIGINATING TRAFFIC		TERMINATING TRAFFIC		ORIGINATING TRAFFIC		TERMINATING TRAFFIC	
IC from PHONE	OG to CARRIER	IC from CARRIER	OG to PHONE	IC from PHONE	OG to AT	IC from AT	OG to PHONE
LINE	OC Note 1	OC Note 1	LINE	LINE	TOPS operator traffic	TOPS operator traffic	LINE
	ATC Note 3	ATC Note 3			IT non-operator traffic Note 2	IT non-operator traffic Note 2	

Note 1: For the two-way OC trunk group, set FGBTR AFC=Y in the TRKGRP table to generate a terminating billing record (call code 135).

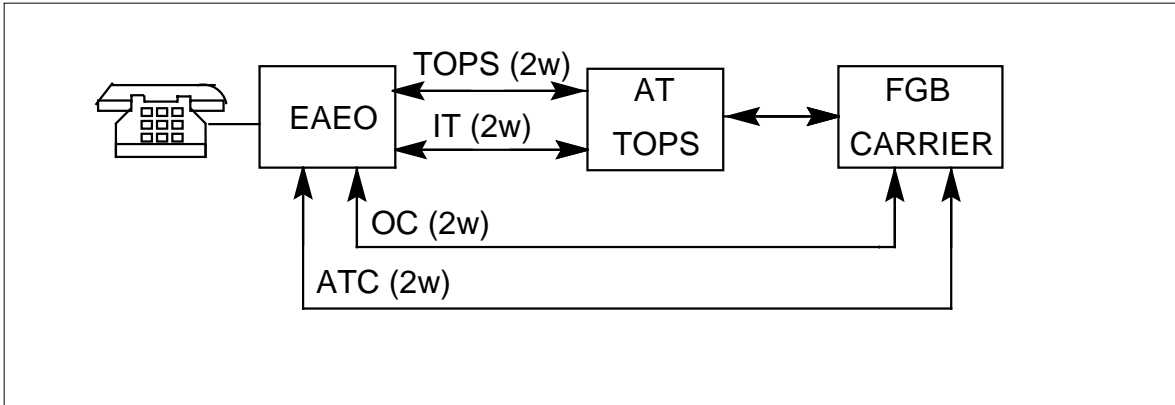
Note 2: IT trunk groups cannot carry FGC signaling ANI. Use a two-way OC trunk group with FGBTR AFC=Y if the carrier requires ANI (CAMA billing results). In most cases, FGB carriers do not require ANI spill.

Note 3: For the two-way ATC trunk group, set SIGTYPE=FGB in the TRKGRP table to generate a terminating billing record (call code 135).

Using the above diagram results in the following recommended trunking arrangement at the EAEO:

Reference: TOPS Trunk Selection (continued)

Recommended trunking arrangement at the EAEO (FGB carrier)



Trunk selection - EAEO to/from an FGC carrier

How will the traffic be routed?							
DIRECT CONNECTION EAEO <-----> CARRIER				INDIRECT CONNECTION EAEO <-----> AT <-----> CARRIER			
ORIGINATING TRAFFIC		TERMINATING TRAFFIC		ORIGINATING TRAFFIC		TERMINATING TRAFFIC	
IC from PHONE	OG to CARRIER	IC from CARRIER	OG to PHONE	IC from PHONE	OG to AT	IC from AT	OG to PHONE
LINE	OP operator traffic	ATC Note 1	LINE	LINE	TOPS operator traffic	TOPS operator traffic	LINE
	ATC non-operator traffic				IT non-operator traffic	IT non-operator traffic	

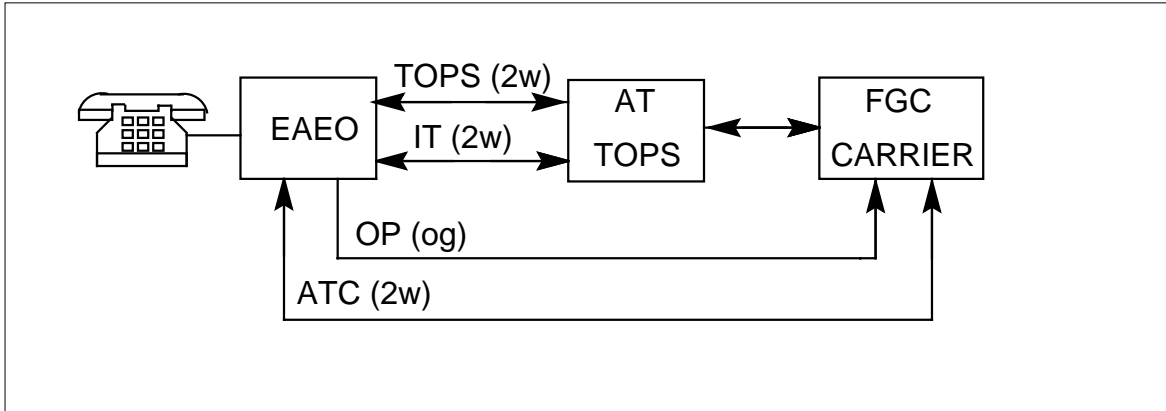
Note 1: A two-way ATC trunk group must be used to generate a terminating access record (call code 119). In the EAEO, SIGTYPE=EAPLAN.

Note 2: Overlap Carrier Selection (OCS) must be turned off in table STDPRTCT.STDPRT for this type of call.

Reference: TOPS Trunk Selection (continued)

Using the above diagram results in the following recommended trunking arrangement at the EAEO:

Recommended trunking arrangement at the EAEO (FGC carrier)



Trunk selection - EAEO to/from an FGD carrier

How will the traffic be routed?							
DIRECT CONNECTION EAEO <-----> CARRIER				INDIRECT CONNECTION EAEO <-----> AT <-----> CARRIER			
ORIGINATING TRAFFIC		TERMINATING TRAFFIC		ORIGINATING TRAFFIC		TERMINATING TRAFFIC	
IC from PHONE	OG to CARRIER	IC from CARRIER	OG to PHONE	IC from PHONE	OG to AT	IC from AT	OG to PHONE
LINE	OP Note 1	OP Note 1	LINE	LINE	IT	IT	LINE
	ATC	ATC			TOPS	TOPS	
	ATC	Note 2					

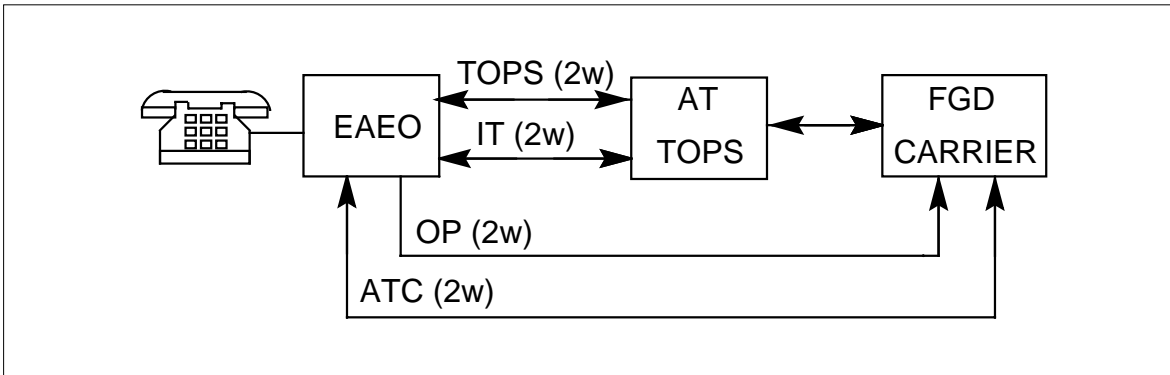
Note 1: A two-way OP trunk group is required for all calls using EAOSS signaling.

Reference: TOPS Trunk Selection (continued)

Note 2: A two-way ATC trunk group must be used to generate a terminating access record (call code 119). In the EAEO, SIGTYPE=EAPLAN.

Using the above diagram results in the following recommended trunking arrangement at the EAEO:

Recommended trunking arrangement at the EAEO (FGD carrier)



Trunk selection - access tandem to/from an FGB carrier

How will the traffic be routed?							
DIRECT CONNECTION EAEO <-----> CARRIER				INDIRECT CONNECTION EAEO <-----> AT <-----> CARRIER			
ORIGINATING TRAFFIC		TERMINATING TRAFFIC		ORIGINATING TRAFFIC		TERMINATING TRAFFIC	
IC from PHONE	OG to CARRIER	IC from CARRIER	OG to PHONE	IC from PHONE	OG to AT	IC from AT	OG to PHONE
IT Note 1	OC Note 1	OC Note 2	IT	SC	OC	OC Note 2	IT
TOPS Note 1	ATC Note 3	ATC Note 3					

Note 1: Use an IT trunk group from an EO with LAMA if the carrier does not require ANI spill and billing occurs in the End Office. Use a TOPS trunk group if the carrier requires ANI spill (CAMA billing results), if the AT is providing the EO with LEAS service, or if billing occurs in the AT.

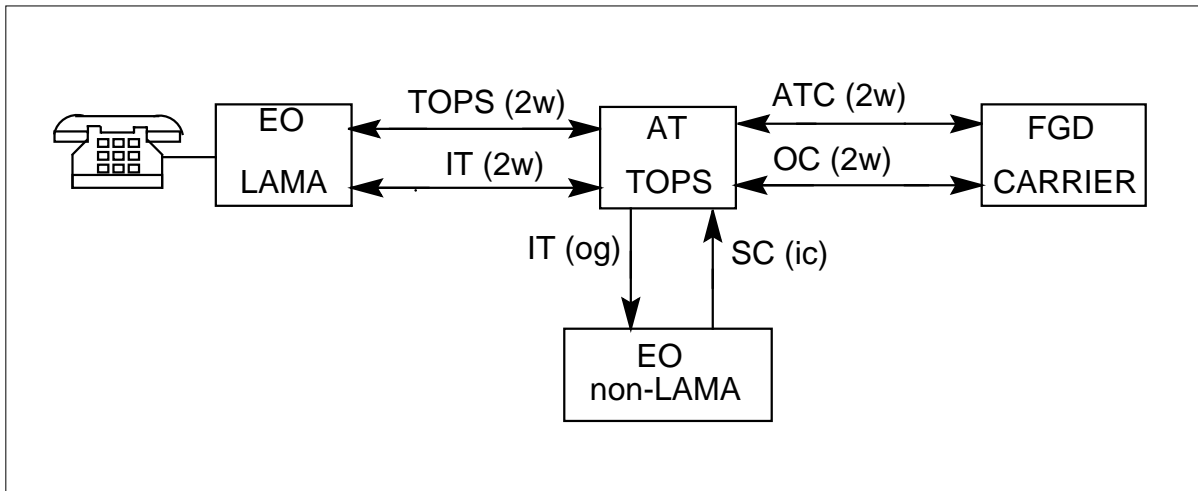
Reference: TOPS Trunk Selection (continued)

Note 2: For the two-way OC trunk group, set FGBTR AFC=Y in the TRKGRP table to generate a terminating billing record (call code 135).

Note 3: For the two-way ATC trunk group, set SIGTYPE=FGB in the TRKGRP table to generate a terminating billing record (call code 135).

Using the above diagram results in the following recommended trunking arrangement at the AT:

Recommended trunking arrangement at the AT (FGB carrier)



Reference: TOPS Trunk Selection (continued)

Trunk selection - access tandem to/from an FGC carrier

How will the traffic be routed?							
DIRECT CONNECTION EAEO \longleftrightarrow CARRIER				INDIRECT CONNECTION EAEO \longleftrightarrow AT \longleftrightarrow CARRIER			
ORIGINATING TRAFFIC		TERMINATING TRAFFIC		ORIGINATING TRAFFIC		TERMINATING TRAFFIC	
IC from PHONE	OG to CARRIER	IC from CARRIER	OG to PHONE	IC from PHONE	OG to AT	IC from AT	OG to PHONE
TOPS operator traffic	OP operator traffic Note 1	ATC Note 2	IT	TOPS from EO without LAMA	OP operator traffic	ATC Note 2	IT
IT non-operator traffic	ATC operator traffic			IT from EO with LAMA Note 3	ATC non-operator traffic		

Note 1: Operator traffic can be split (IntraLATA/InterLATA) with the TOPS EA package. Therefore, InterLATA traffic can be routed directly from the EAEO to the FGC carrier, and not through the AT.

Note 2: An ATC trunk group must be used to generate a terminating access record (call code 119).

Note 3: Use a TOPS trunk group (instead of IT) if the AT is providing the EO with LEAS service or if the End Office is sending ANI.

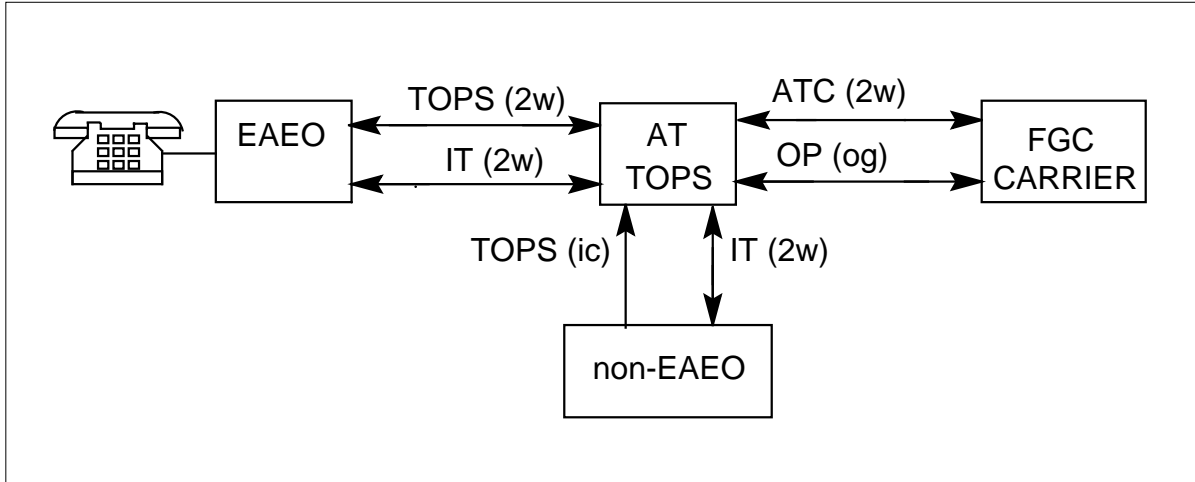
Note 4: Use an IT trunk group for FGC traffic which has been billed in the End Office.

Note 5: Trunk group IT does not carry FGC signaling ANI.

Using the following figure results in the following recommended trunking arrangement at the AT:

Reference: TOPS Trunk Selection (continued)

Recommended trunking arrangement at the AT (FGC carrier)



Trunk selection - access tandem to/from an FGD carrier

How will the traffic be routed?							
DIRECT CONNECTION EAEO <-----> CARRIER				INDIRECT CONNECTION EAEO <-----> AT <-----> CARRIER			
ORIGINATING TRAFFIC		TERMINATING TRAFFIC		ORIGINATING TRAFFIC		TERMINATING TRAFFIC	
IC from PHONE	OG to CARRIER	IC from CARRIER	OG to PHONE	IC from PHONE	OG to AT	IC from AT	OG to PHONE
IT non-operator	ATC	ATC Note 1	IT	TOPS Note 2	ATC	ATC Note 1	IT

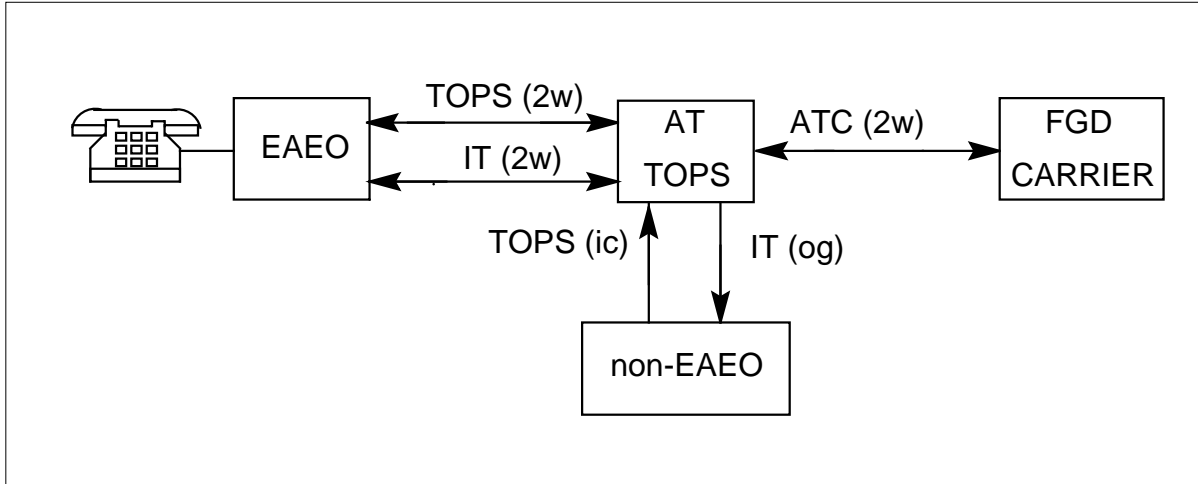
Note 1: An incoming or two-way ATC trunk group must be used to generate a terminating access record (call code 119).

Note 2: Since a non-EAEO cannot generate Feature Group D outpulsing, an incoming TOPS trunk group is required only if the AT is providing the non-EAEO subscribers with LEAS service.

Using the above diagram results in the following recommended trunking arrangement at the AT:

Reference: TOPS Trunk Selection (end)

Recommended trunking arrangement at the AT (FGD carrier)



3 Datafilling TOPS Position Controller

This chapter contains the TOPS position controller functionalities. These functionalities are resident in the operator position rather than in the DMS. However, these functionalities are included since they require DMS datafill support.

TOPS MP Terminal Support

Ordering codes

Functional group ordering code: TPC00001

Functionality ordering code: TPC00002

Release applicability

BCS33 and up

Prerequisites

The following is a list of prerequisites.

To operate, TOPS MP Terminal Support has the following prerequisites:

- BAS Generic, BAS00003
- Enhanced Workstation Services, EWSS0001
- Operator Services Basic, OSB00001

Description

This functionality is provided by the following features:

Feature number	Feature name
AF0540	DA Application
AF0970	TPC DA Application - CCI
AF2642	Forward Number Capability for TOPS-MP DA Application
BC2157	TPC System Support
BC2158	TPC Administration
BC2141	TPC Diagnostics
BC2139	Terminal Handling S/W for TOPS MP
BC2145	TPC Computer Based Training (CBT) I/F
BC2142	TPC Drivers
AF0732	Enhanced Maintenance for TPC Rackmount
AF1509	Remote SONALERT for TOPS MP
AF1463	Operator Logon Password for TOPS MP

TOPS MP Terminal Support (continued)

Feature number	Feature name
AF0721	TPC HSDA Software
AF0533	TPC HSDA ROM
AF0534	TPC HSDA Downloader
AF0535	TPC HSDA Driver
AF0536	TPC HSDA Maintenance Server
AF1318	TPC HSDA Man Machine Interface
AF0547	TPC Service Interworking
AF1317	TPC TAMI Restructure
AF0746	TPC Messaging
AF1319	TPC Messaging Handler
AF1723	HSDA Diagnostics
AN0070 and AF4168	TPC Enhancement for Globalization
AF1426	TPC HSLI Software Enhancements
AF1909	TPC TAMI Enhancements
59006865	EOL Notification & EOL of TOPS ACD (TOPS12)

This functionality implements the application layer protocol for DA data base access, and implements the man-machine interface for TOPS MP Operator Position for call presentation and operator handling of DA and intercept calls, data base searches for both types of calls, data base interactions, and DA billing.

The following features are described in this document; however, they are not part of this functionality. but are part of the TOPS Call Processing Features (OSB00001).

- AF0476 - TOPS MP DA/INT Queueing
This feature extends the current queueing facilities to include Directory Assistance (DA).
- AF0477 - TOPS MP Force Management Controls and FADS

TOPS MP Terminal Support (continued)

This feature extends the TOPS Force Management capabilities to include the DA queue.

- AF0478 - TOPS MP Trunking

This feature provides the ability for DA calls to be handled and delivered to TOPS positions.

- AF0479 - TOPS MP Expanded OGT and XFR Key Capability

This feature provides the ability for an operator to transfer calls requiring DA to another operator capable of handling that request.

- AF0482 - TOPS MP Key Functions and Screen Updates

This feature enhances the key functions and screens of the TOPS Multi-Purpose (MP) to reflect the addition of DA.

AF0540: DA Application

AF0540 implements the man-machine interface for the TOPS MP Operator Position for call presentation and operator handling of DA and Intercept calls, DA and Intercept data base searches, data base interactions, and DA billing. This feature interacts with the MP terminal, the DMS Central Control, and the CCI gateway to provide DA capability at the TOPS MP.

AF0970: TPC DA Application - CCI

AF0970 provides the framework for communication between the TOPS Position Controller (TPC) application software and the TPC High Speed Data Access Message Handler software. In addition, it implements the application layer protocol that was initially developed with CCI's DA data base.

AF2642: Forward Number Capability for TOPS-MP DA Application

This feature provides the capabilities in TOPS-MP Directory Assistance (DA) environment to enter the forward number (FWD NUM) and to record the requested number (REQ NUM) in a manner common to both IBM-DA and the standard DA environment first introduced with CCI.

Before this feature, when the operator was in the DA environment and it was necessary to outpulse an arbitrary number, the operator switched to the Toll and Assist (TA) service to complete the call. In emergency situations, however, it is useful to be able to outpulse the number directly from the DA environment because of the time saved by not having to switch to the TA service. This feature adds the capability to enter an arbitrary Forward Number to connect the caller to a number in an emergency number database.

The requested number is used by the operator to record the number requested by the caller in the DA environment. This function is useful during operator

TOPS MP Terminal Support (continued)

handled billing or to enter the requested number with the intention of switching to TA service to complete the call.

Only one number is applicable at a time, either the Forward Number or the Requested Number, whichever is entered last. For example, if a Requested Number is entered, the Requested Number is displayed and included in the AMA record; if a Forward Number is then entered, the Forward Number is then displayed, replacing the Requested Number in the CLD field and in the AMA record.

The reverse situation is even more important. Should the Forward Number be entered first followed by the Requested Number, only the Requested Number is known. If at this time the operator releases the position, the entire call is taken down and all parties are dropped. This situation also affects the AMA record that is generated if TOPS Extended BellCORE AMA Format (EBAF) Phase 2 is in use. This is determined in Table TOPAMAOP, by field OPTINFO.

If the RECORD_REQUESTED_NUMBER_FOR_DA option in DMS Table TOPAMAOP is not turned on, the Requested Number is not recorded at all (and of course, neither is the Forward Number since the Requested Number replaced it).

BC2157: TPC System Support

Provides the necessary software to boot and initialize the TPC and TOPS MP Operator Positions.

BC2158: TPC Administration

Provides the capability to perform administrative and maintenance functions such as defining position types, hardkeys and outrunks lists at the TPC through menu selections from the TOPS Administration and Maintenance Interface (TAMI) terminal.

BC2141: TPC Diagnostics

Provides the software to test the TOPS MP Operator Position, High Speed Line Interface (HSLI) cards, the floppy disk drive, and the Winchester Disk from the TAMI.

BC2139: Terminal Handling S/W for TOPS MP

Allows communication between the DMS Central Control (CC) and the TOPS MP Operator Positions and between the operator interface (O/I) and the application software within the TPC.

TOPS MP Terminal Support (continued)

BC2145: TPC Computer Based Training (CBT) I/F

Integrates the CBT system with TOPS MP. BC2145 allows the TPC to have one or more positions processing calls while others are in the training mode.

BC2142: TPC Drivers

Transmits data from a call processing application to the appropriate hardware device.

AF0732: Enhanced Maintenance for TPC Rackmount

Provides enhanced maintenance for the TPCs housed in the Position Controller Equipment (PCE) cabinet by providing a new operator position state.

AF1509: Remote SONALERT for TOPS MP

Provides the software to control the operation of the local and remote SONALERTs from the TPC during call processing. It also provides the capability to perform maintenance functions on both the Local and the Remote SONALERTs from the TAMI through the addition of the SONALERT menu screen.

AF1463: Operator Logon Password for TOPS MP

Provides the software to support password access to the TOPS MP Operator Positions. In addition, it provides several teletypewriter (TTY) commands to allow password administration. With this feature, an operator must enter a valid password in addition to an operator number before being able to log onto a TOPS MP Operator Position. Team and Force Administrators also are required to enter a valid password before being allowed to execute the commands provided by this feature at the TTY.

AF0721: TPC HSDA Software

Provides the low-level software using BX.25 protocol for the HSDA.

AF0533: TPC HSDA ROM

Provides software, which is programmed into the HSDA firmware, that provides the following capabilities to the HSDA card.

- Initialization
- ROM maintenance message handling
- ROM Monitor
- Diagnostics (does not include initialization)

TOPS MP Terminal Support (continued)

AF0534: TPC HSDA Downloader

The HSDA downloader is the software that interfaces with the HSDA driver to download the communication protocol software to the HSDA card.

AF0535: TPC HSDA Driver

The HSDA driver receives information from and transmits information to the HSDA card.

AF0536: TPC HSDA Maintenance Server

Provides initialization, TAMI maintenance, and error reporting and recovery for the HSDA card.

AF1318: TPC HSDA Man Machine Interface

Provides the TAMI screens that allows the Operating Company to define the protocol parameters for the HSDA card, change the card statuses, specify the values of the application audit tasks, and specify the language used for the Automatic Recording Units (ARU).

AF0547: TPC Service Interworking

Provides the software to support services other than Toll and Assist (TA). This involves modifications to TA and Assigned Activities screens, the introduction of the Billing and Service Screens, and the necessary software to support interactions between these screens.

AF1317: TPC TAMI Restructure

Provides enhancements to the TAMI interface to support revenue-generating services, such as the expansion of the OGT menu to support 100 outgoing trunk keys.

AF0746: TPC Messaging

Provides the messaging system for the SBC. Also provides the data buffer management queueing facilities for the TPC.

AF1319: TPC Messaging Handler

Provides the software that handles and routes messages between the different applications and the HSDA card.

AF1723: HSDA Diagnostics

Provides the diagnostics for the HSDA card.

AN0070 and AF4168: TPC Enhancement for Globalization

These feature allow TOPS TPC to support Global Operator Services (GOS) capabilities: GOS rating, booked call database, and Spanish language interface. There is no datafill for these features.

TOPS MP Terminal Support (continued)

AF1426 - TPC HSLI Software Enhancements

Provides software enhancements to the HSLI software for the TPC.

AF1909 - TPC TAMI Enhancements

Provides user interface enhancements from the TAMI. These enhancements are covered in the Operation section of this document.

User Perspective

This feature package integrates Toll and Assistance and Directory Assistance functions from one terminal. With this feature package, an operator can handle regular Toll and Assist (TA) traffic as well as DA and Intercept traffic.

There is no change to operation from the point of view of the user.

Operation

Overview

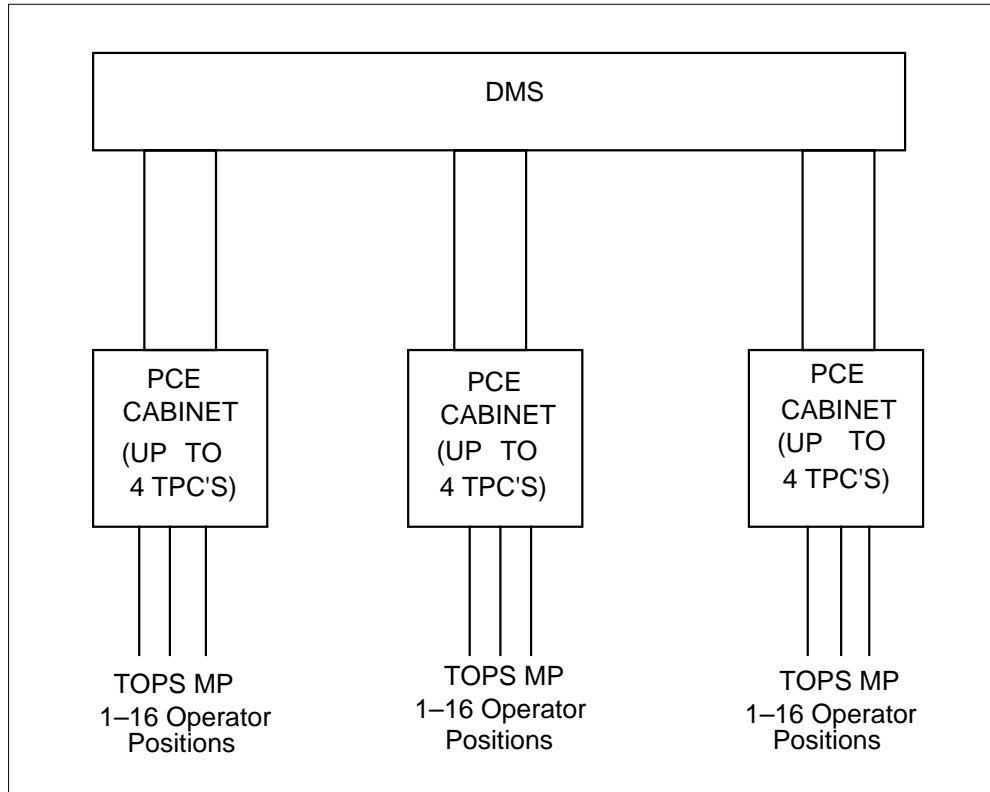
TOPS Multipurpose (MP) is a call processing system that automates operator assistance functions by providing the traffic operator with the resources of the toll switching system.

The TOPS MP System includes the following:

- TOPS MP Operator Positions. Integrated voice and data terminals providing the operator with the call processing ability.
- TOPS Position Controller (TPC). An intelligent controller supporting up to four TOPS MP Operator Positions, handles the distribution of voice and data from the DMS Central Controller (CC), and manages the screen display for each MP position.
- Position Controller Equipment (PCE) cabinet. Houses up to four TPCs controlling up to 16 operator positions, frame supervisory panel, cooling unit, backplane, and internal cabling.

TOPS MP Terminal Support (continued)

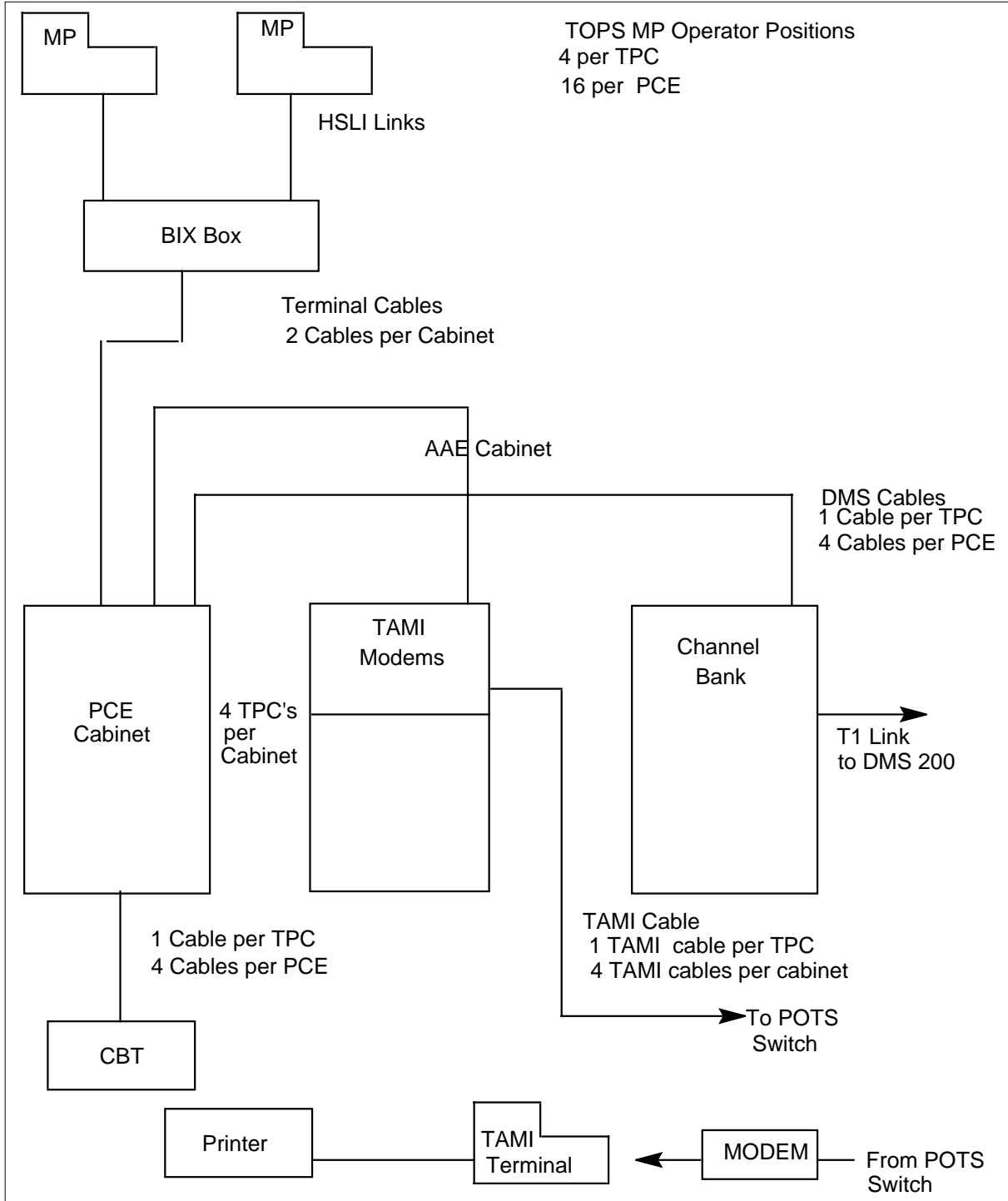
TOPS MP System Office Functional Configuration



Refer to the following Figure for an illustration of the TOPS MP System. Refer to this document for further details on TOPS MP.

TOPS MP Terminal Support (continued)

Example TOPS MP Office Configuration



TOPS MP Terminal Support (continued)

In addition to the DMS and MP positions, each TPC in the PCE cabinet interfaces to the following:

- TOPS Administration and Maintenance Interface (TAMI) terminal. The TAMI terminal is a VT220 compatible terminal accessed by Operating Company Personnel when administrative or maintenance functions are performed. Each TPC is linked to the public switching center by a standard phone line directly connected to the switching network or by a 212 modem located in the Auxiliary Access Equipment (AAE) cabinet. By using a 1200-baud auto-answer modem from the TAMI terminal, Operating Company personnel can access any TPC at 1200 Baud to perform administration and maintenance functions by dialing the special directory number assigned to the TPC.
- Printer. Each TPC can also interface to a printer attached directly to the TAMI allowing a craftsman to print logs from the TAMI terminal.
- Computer Based Training (CBT) System. The CBT system simulates live traffic at the TOPS MP Operator Position. Up to four TPCs can also interface to CBT by way of a specially designed interconnect system to provide automated training to up to 16 operator positions. The CBT System allows operators to train directly on the operator position without being connected to the DMS.
- Auxiliary Access Equipment (AAE) cabinet. The AAE houses shelves for 212 modems allowing access to the TOPS Administration and Maintenance functions through a public switching network.

AF1463 - Operator Logon Password for TOPS MP

AF1463 provides the following capabilities:

- password access to TOPS MP Operator Positions
- capability for operators to change their password
- teletypewriter (TTY) commands for password administration.

Password access to TOPS MP operator positions

In the past operators logged onto a TOPS MP Operator Position by entering an operator number using the following keying sequence:

```
operator number+ START
```

After entering this keying sequence, the operator accepted calls. However, the problem was that anyone could log onto a TOPS MP Operator Position using any valid operator number not currently in use. Associate statistics for any given operator were difficult to collect and track for possible fraud.

TOPS MP Terminal Support (continued)

With AF1463, an operator is able to define a password associated with the operator number. This password is known only to the operator; no one else can log on using that operator number without the password.

The password feature is activated or deactivated through the TOPS_PASSWORD_ENABLE parameter. Setting the parameter to Y means operators must enter a valid password when logging on and TTY commands for password administration are available. Setting the parameter to N eliminates the password requirement for logging on and TTY commands are not available.

NT Standard Interface - TPC

DA service allows subscribers to ask an operator to look up information from a telephone listing data base. Subscribers use DA service when a directory number is not available, is out of date, or when a handicap prevents the subscriber from looking up the number. Most subscribers can access DA service by dialing 411, 1-555-1212 in the Home (or Serving) Numbering Plan Area (HNPA), or 1-NPA-555-1212 from a Foreign NPA (FNPA).

DA service also includes handling Intercept calls, which occur when a subscriber dials an out-of-service number or a number that has recently been changed. The operator informs the subscriber of the problem and may provide the new number.

Presently an operator uses a separate terminal connected to a DA data base to provide DA service to a subscriber. With this feature package, the operator is able to provide DA service as well as Toll and Assistance (TA) service from the TOPS MP Operator Position. To make this possible, additions/modifications have been made to the TOPS MP screens and keyboard.

Call Types

The following call types are introduced by this feature package.

DA Call Types

The following DA call types are added:

- 411 (local DA request)
- 555-Hom (calls from within the home (or serving) NPA)
- 555-For (calls from outside the serving NPA)
- 555 (undifferentiated)

TOPS MP Terminal Support (continued)

- 131 (calls from another operator - inward)
- DA-Rcl (recalls)

For example, a DA call is processed and released to audio. The recording is played to the subscriber, but the subscriber does not hang up after the recording is complete and remains off-hook for a predefined amount of time. The subscriber is reconnected to an operator and the call is marked as a DA recall. On DA recalls, the search criteria and the selected listing are displayed to the operator when the DA recall is brought to the position.

Intercept Call Types

The following Intercept call types are added:

- Int-ONI
- Int-ANIF
- Int-Cut
- Int-Rcl
- Int-Spl

Most Intercept calls are handled automatically without operator intervention. The end office identifies the called number and delivers the call to TOPS. The new number is retrieved from the data base and quoted by an automatic announcement system. Intercept calls are routed to an operator only if the above process fails or the called number is not suitable for automatic quoting.

The following paragraphs describe the Intercept call types:

- Int-ONI and Int-ANIF Intercept—ONI calls occur when the end office is not equipped to automatically identify the called number. Intercept ANIF calls occur when the end office is equipped to automatically identify the called number but fails to do so. The operator must determine and enter the called number in the operator input area. If the called number is an Enterprise number, the operator keys the four digits followed by an E. The operator then should press the Int hardkey to release the call from the position and route to an automatic announcement.
- Int-Cut—If on a normal auto-intercept call the subscriber stays off-hook beyond the specified post-announcement timeout, the system routes the call to an operator. The operator determines what additional information the caller requires, retrieves the information from the data base, if necessary, and either verbally quotes this information to the subscriber or releases the call to an audio announcement.

TOPS MP Terminal Support (continued)

- Int-Rcl—These calls are similar to Int-Cut calls except that the subscriber has been previously connected to an operator. Int-Rcl calls are handled the same way as Int-Cut calls.
- Int-Spl—These calls occur when the results of the data base search are not suitable for automatic quoting. This can happen when a disconnected telephone has more than one new listing. On call presentation, the operator is presented with the multiple listing and the operator must ask the subscriber which number is desired and either quote it verbally or release it to audio announcement by entering the listing selector associated with the required listing and pressing the audio hardkey or the Control A keying combination.

TOPS MP DA/INT Queueing

The ability to queue DA calls and ensure these call types are assigned to operators with the DA capability is provided by AF0476. TOPS provides this ability by extending call transfer mechanisms. Since DA call types are considered a special type of transfer call, they must be handled independently of the transfer services.

Call Classifications

Calls requiring DA operator services must be classified as DA for proper routing of calls. These calls must be routed to operators who have the ability to process the call and have the necessary equipment.

Calls can be assigned service types in the following ways:

- Based on call type as indicated in table TOPS
- By operator transfer.

The following paragraphs give a description of how calls can be assigned a service type utilizing these three mechanisms.

During translations, calls are assigned a call type that indexes Table TOPS. Table TOPS determines what service is to be provided. DA is a valid option for the POSTYPE field in Table TOPS, thereby providing DA capability via this table.

Position and Operator Classification

TOPS operators may be assigned one or more call types. In conjunction with operator ability to process assigned call types, the necessary tools must be available. Two tables define the TOPS positions and the operators to the DMS.

Table TOPSPOS enables the Operating Company the ability to specify services an operator position is capable of providing. Operator positions

TOPS MP Terminal Support (continued)

equipped with XMS controllers may be classified as DA in field XFERSET of Table TOPSPOS.

TOPS operators are defined in Table OPRDAT.

Calls Waiting Queue

If all operators are busy, calls requiring operator assistance are placed in the Calls Waiting (CW) queue until an operator becomes available. The CW queue is divided into two priority levels: RECALL and NON-RECALL. The RECALL priority level indicates a call has previously been connected to an operator and now requires further operator assistance. The NON-RECALL priority level indicates a newly originated call that has received no operator service. Of these two priority levels, RECALL is higher.

Call Waiting priority levels are partitioned into service types. This reduces the amount of time required to search for an available operator position whose abilities match those of the calls in queue.

Call waiting queue priority levels are as follows:

- Non-transfer
- Transfer 1
- Transfer 2
- CAMA (Non-recall only)
- DA.

Call Queue Processing

Calls that have already received operator service and are requesting operator service again are placed in the RECALL queue according to the service type of the call. New calls are placed in the NON-RECALL queue. Calls in the queue are processed on a first-in-first-out basis.

If a position that can provide all types of service becomes free, it checks the first call of all RECALL queues. The call with the oldest queue is processed first. If there are no calls in the RECALL queue, all of the NON-RECALL queues are searched and, again, the call in queue longest is processed first.

Note: The Assigned Grade of Service feature causes CAMA calls to age at a faster rate than other calls thus increasing the priority of CAMA calls.

Calls Waiting Dynamic Thresholding

Calls are placed in queue when there is no operator available to process the call. As the queue becomes larger, the amount of time before the call can be

TOPS MP Terminal Support (continued)

processed increases. Queue thresholding provides a mechanism for Operating Companies to limit the time in queue to a minimum. This threshold is based on the number of operators available to handle the calls in queue and the Average Work Time (AWT) required to handle a call.

To determine the queue threshold, an estimate must be made of how long a call remains in queue before being attached to an operator. The time a call spends in queue is based upon the capacity of the operator work force to service calls, that is the number of operators available and the rate at which they are servicing calls and the number of calls that are already in queue. The following figure illustrates an operator capacity calculation. From this example, it can be seen that call capacity is inversely proportional to AWT (the higher the average work time, the lower the operator capacity). Call capacity is also directly proportional to the number of positions occupied (the higher the number of positions occupied the higher the operator capacity).

Operator Capacity Calculator

$\frac{1 \text{ call}}{\text{position}} \times 10 \text{ positions} \times \frac{1 \text{ call}}{0.5 \text{ min (AWT)}} = 20 \frac{\text{calls}}{\text{minute}}$
--

TOPS MP Trunking

The TOPS MP Trunking feature implements call processing changes that are necessary for routing DA calls to TOPS MP positions. To implement this capability, two new station classes of TOPS trunks are added.

Trunks that handle TOPS traffic are specified as such in Table TRKGRP. The call traffic arriving over these trunks is dedicated or non-dedicated, as specified in field STATCLAS. Dedicated trunks carry only one type of traffic. Non-dedicated may carry a combination of traffic.

Table TRKSGRP lists supplemental information for each subgroup assigned to trunk groups in Table TRKGRP. This table provides information such as the card code for the trunk card, signaling information, incoming or outgoing trunk, incoming type of pulsing, and incoming start dial signal.

Routing Using Translations

The objective of the trunking feature is to accept an incoming DA call, determine the call type, and route that call to an operator with the capability and hardware necessary for processing the call. These calls may be routed using pretranslator tables.

TOPS MP Terminal Support (continued)

The following paragraphs discuss the routing of calls to an operator with and without the use of the pretranslator tables.

- **Pretranslator**—TOPS trunks are assigned a pretranslator in Table TRKGRP, as identified by field PRTNM. The pretranslator is defined in Table STDPRTCT as a standard pretranslator or an AMA pretranslator. Sub-table STDPRT specifies processing using Table TOPS. Table TOPS routes the call to an operator with the necessary capabilities for handling the call.
- **Non-Pretranslator**—Calls may be routed without the use of a pretranslator using Table HNPACONT. Field PRTNM in Table TRKGRP must be specified as no pretranslator (NPRT). Table HNPACONT is indexed using the NPA of the calling number. Sub-table HNPACODE routes the call to Table TOPS for further processing.

Table TOPS routes a call to an operator with the capability for handling customer service requests. These calls index Table TOPS based on call origination type. Operators are specified as having one or more of the following capabilities: GEN, XFR1, XFR2, or DA. Calls are assigned to operators based on the operator capabilities and operator availability.

Call origination type 555-HOM indicates 555 calls from within the serving NPA. Call origination type 555-FOR indicates 555 calls from a foreign NPA.

TOPS Combined Trunks

DA traffic can arrive over combined trunks indicated in Table TRKGRP, field STATCLASS, as COMBINED. Up to two sets of digits are sent over these trunks. The first set of digits is designated as the called number. The second optional set of digits is identified as the Automatic Number Identification (ANI) spill digits. Table TRKGRP, field CLGID indicates if ANI digits are to be received. Any valid entry such as BELL, EAOSS, OSS in this field, other than ONI, indicates ANI spill digits are expected. The value of ONI in this field indicates no ANI spill digits are expected. An example of the initial digit string is as follows:

KP + called digits + Coded Start Pulse

The format for ANI spill digits is as follows:

KP + ID digit(s) + calling digits + Coded Start Pulse

The entry for CLGID in Table TRKGRP determines the format of the ID digits. Refer to the data schema section of this document for a complete description of Table TRKGRP and valid entries for the CLGID field.

TOPS MP Terminal Support (continued)

Intercept calls can be sent over combined trunks. Intercept calls are identified using the ANI ID. It must be noted that the end office may not be capable of sending this ID, which differentiates various types of intercept calls.

Intercept TOPS Trunks

Intercept traffic can arrive over dedicated TOPS trunks that have a STATCLAS type of INTCPT in table TRKGRP. These trunks utilize Automate Intercept Signaling (AIS). Only one set of digits may be received with this type of signaling. The format of this digit string is as follows:

KP + ID digit(s) + digits dialed + Coded Start Pulse

Field CLGID in Table TRKGRP must contain the value AIS. The value AIS is identified as an Automated Intercept Signaling Category in Table AISCAT.

With AIS signaling, the field IPULSTYP in Table TRKSGRP must be set to NP. This value indicates that no initial digit string is expected. Field ISTARTSG must be set to WK which indicates a wink signal initiates the ANI spill digits.

Directory Assistance and Office Identification Code Trunks

The trunking feature adds trunk types DA and Office Identification Code (OIC). These trunks are specified in field STATCLAS in Table TRKGRP.

The following paragraphs describe these trunk types:

- Directory Assistance Trunk Groups—This classification of trunk groups carries only local 411 calls for the local NPA. Calls arriving on these trunks are considered as station traffic. As previously mentioned, these trunks are specified as DA in field STATCLAS of Table TRKGRP. Since no called digits are required with 411 calls, only a seizure is expected. Table TRKGRP, field CLGID indicates if ANI digits are to be received. Any valid entry, such as BELL, EAOSS, OSS, in this field, other than ONI indicates that ANI spill digits are expected. The value of ONI in this field indicates that no ANI spill digits are expected. The format for ANI spill digits is as follows:

KP + ID digit(s) + calling digits + Coded Start Pulse

The entry for CLGID in Table TRKGRP determines the format of the ID digits. Refer to the data schema section of this document for a complete description of Table TRKGRP and valid entries for the CLGID field.

If field CLGID is set to ONI, the end office expects to receive answer supervision when the call is presented to the operator. Since DA trunk groups are always treated as station traffic, field TONEREPT in Table TRKGRP must be set to NA. For coin traffic, this field indicates that

TOPS MP Terminal Support (continued)

answer supervision is to be returned prior to the connection of the operator position for the generation of zip tones.

- Office Identification Code Trunk Groups—OIC trunk groups may carry a combination of DA call types. Calls are received at the tandem office from a variety of end offices. The tandem office must delete the called digits passed from the end office. A 2-digit OIC code is inserted before routing the call to TOPS. The TOPS office uses the OIC information to identify the call origination type and route the call accordingly. The only traffic that can be forwarded over an OIC trunk is traffic that does not require called digits after the setting of the call type. Intercept calls can be sent over an OIC trunk if the intercept number is sent as the ANI spill.

Tables

With the implementation of the trunking feature, three tables are created. Table TOPSOIC identifies OIC received from an end office over a TOPS trunk group. Table OICBC verifies the calling NXX code as valid for AMA purposes. Table DABILL indicates specific call types as billable based on prevailing call types.

Limitations and restrictions

The following limitations and restrictions apply to NT Standard Interface - TPC:

- DA service provided while in an Intercept session is not billed since Intercept searches are currently not billed. Similarly, if Intercept service is provided while in a DA session, the Intercept search is billed.
- While in the Billing Screen, the following functions is displayed but causes an error if attempted to be used since they do not apply to DA billing.
 - Busy Verify
 - Notify
 - Request CAMA
 - Transfer IC
 - Time and Charges
 - Overseas
 - Start Timing
 - Cancel Timing
 - Person Call Back
 - Hold
 - Access Loop 2

TOPS MP Terminal Support (continued)

- Only one DA call can be at the TOPS MP Operator Position at any one time.
- The softkeys defaults to Localities on customer-defined DA call types as datafilled in Table TOPS.
- A TOPS MP Operator Position cannot be monitored by a TOPS-04 In-Charge or Assistance Position, or a TOPS-04 Operator to be monitored by a TOPS MP In-Charge or Assistance Position. If the Service Assistant or the In-Charge Manager attempts to monitor an invalid TOPS MP Operator Position, the DMS Central Control (CC) does not acknowledge the request.
- Only one TAMI may be attached to a TPC.
- Software upgrades must be incorporated in each TPC individually.
- The TPC and the TAMI should be in a secured location away from the operator positions.
- Each position must be defined (Toll and Assist, Assistance, In-charge, or Force Manager) from both the MAP and TAMI.
- Outgoing trunk numbers and functions must be defined from the TAMI terminal.
- The TAMI must be a VT100 compatible terminal.
- An MP terminal can be disabled from call processing only if it is first busied at the MAP and then at the TAMI.
- A MP position can be enabled for call processing only if it is first enabled at the TAMI and then at the MAP.
- All MP positions connected to the TPC must be disabled from call processing before TPC software upgrades.
- Once the TPC is completely operational with all required datafill, accessing the TAMI to perform TPC maintenance is necessary only when there are problems in the TPC. Attempting to access the TAMI while call processing is enabled might result in performance degradation.
- The TAMI terminal baud rate must be set to 1200-baud.
- This feature does not handle errors caused by defective disk hardware or software including errors caused by the Parallel Input/Output card.

TOPS MP Terminal Support (continued)

- Removing an HSLI card while a position is In-Service disrupts both the operation of the entire TPC and call processing of the operator positions controlled by the TPC.
- Passwords return to the default value of TOPS after a BCS insertion; therefore, operators and force and team administrators must reenter their passwords again after a BCS insertion.

TOPS MP DA/INT Queueing

Since calls can only be assigned one transfer/DA service at a time, calls requiring both language assistance and DA can create difficulties. If a 411 call is indicated as DA by Table TOPS, this call is connected to an operator capable of servicing DA calls. If this operator determines the call requires alternate language assistance, the call is transferred, thus changing the queue type. The call now recalls to a transfer operator but the transfer operator may not have DA capability. The Operating Companies can eliminate this problem by requiring all transfer positions to have DA capability.

The force manager can deactivate/activate transfer or DA services using commands issued from the FADS or SADS TTY. This could create a conflict for calls requiring transfer/DA services as indicated by Table TOPS. The force manager could deactivate a service, thus resulting in a call classification problem for calls requiring that service. To prevent this conflict, the force manager is not allowed to deactivate transfer/DA services that are datafilled in Table TOPS.

Interactions

TOPS MP Terminal Support has no functionality interactions.

TOPS MP Terminal Support (continued)

Datafilling office parameters

The following table shows the office parameters used by TOPS MP Terminal Support. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by TOPS MP Terminal Support

Table name	Parameter name	Explanation and action
OFCENG	TOPS_PASSWORD_ENABLE	<p>The TOPS_PASSWORD_ENABLE parameter turns the Operator Logon Password for TOPS MP feature on or off. Possible values are N (No) and Y (Yes). Setting the parameter to N turns off the password feature, Y activates it. Operators are required to enter a valid password before accessing the system when the parameter is set to Y.</p> <p>The default value is N. Activation is immediate.</p>

Datafill sequence

The following table lists the tables that require datafill to implement TOPS MP Terminal Support. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for TOPS MP Terminal Support

Table	Purpose of table
TOPS	Traffic Operator Position System. This table is used during translations to determine the type of service required by a call based on the call origination type.
TRKGRP	Trunk Group. This table contains information about trunk groups.
TOPSPOS	TOPS Position. This table defines TOPS positions to the switch. This table specifies the services that a position can provide.
TOPSDEV	TOPS Device. Lists devices requiring one trunk circuit (for data) and trunk circuit locations. Devices include teletypewriters (SADS, FADS, HADS, FADSHADS, SADSHADS, DUAQ and MFADS) and the FM CRT.
OPRDAT	Operator Data. This table defines the operator IDs that are valid in an office.
TOPSOIC	TOPS Office Identification Code. This table specifies valid office identification codes received from an end office over a TOPS trunk group.

TOPS MP Terminal Support (continued)

Datafill tables required for TOPS MP Terminal Support

Table	Purpose of table
OICBC	Office Identification Code Billing Code. This table verifies the calling NXX code as a valid billing code for AMA purposes and specifies a charge class for the call.
DABILL	Directory Assistance Billing. This table specifies whether calls are billable based on the prevailing tariff. This table is indexed based on the call origination type and the service class.
TOPSAMAOP	TOPS Automated Message Accounting Options. This table specifies TOPS Automated Message Accounting (AMA) related options.

Datafilling table TOPS

Table TOPS is used during translations to determine the type of service required by a call based on the call origination type.

The following table shows the datafill specific to TOPS MP Terminal Support for table TOPS. Only those fields that apply directly to TOPS MP Terminal Support are shown. For a description of the other fields, refer to the data schema section of this manual.

Datafilling table TOPS

Field	Subfield or refinement	Entry	Explanation and action
POSTYPE		DA	Enter DA for directory assistance.

Datafill example for table TOPS

The following example shows sample datafill for table TOPS.

MAP display example for table TOPS

CO	DISPLAY	NOAMA	POSTYPE
UNSPEC	S	N	GEN
555	S	Y	GEN
INTC	S	Y	GEN
DD	S	N	GEN
OA	S	N	GEN

Tables TRKGRP

Table TRKGRP was updated in BCS23.

TOPS MP Terminal Support (continued)

The following table shows the datafill specific to TOPS MP Terminal Support for table TRKGRP. Only those fields that apply directly to TOPS MP Terminal Support are shown. For a description of the other fields, refer to the data schema section of this manual.

Datafilling table TRKGRP

Field	Subfield or refinement	Entry	Explanation and action
STATCLAS		OIC or DA	

Datafilling table TOPSPOS

Table TOPSPOS defines TOPS positions to the switch. This table specifies the services that a position can provide.

The datafill in this table must be consistent with that defined at the TAMI. Refer to the *TOPS MP TAMI User Guide* and this document for information on defining the positions.

The TOPS Position (TOPSPOS) Table lists all positions requiring two trunk circuits (one for data and one for voice), trunk circuit locations, Traffic Office Numbers to which the position belongs, and specifies whether the position is an operator, In-Charge, or Assistance position.

When assigning operator positions, specify the types of calls the position can handle (general, transfer one, transfer two, directory assistance, or all).

Datafill example for table TOPSPOS

The following example shows sample datafill for table TOPSPOS.

MAP display example for table TOPSPOS

POSNO	VCCCKT	VCPDGRP	DTCKT	DTPGRP	CARDCODE	CNTRLR	PROTOCOL	POSAREA
300	TM8	2	4	NDPGP				
	TM8	2	5	NDPGP		2X88AA		
								OPR 2 30
								BELL202
301	TM8	8	20	NDPGP				
	TM8	8	21	NDPGP		2X88AA		
								OPR 1 10
								BELL202

TOPS MP Terminal Support (continued)

Datfilling table TOPSDEV

The TOPS Device (TOPSDEV) Table lists devices requiring one trunk circuit (for data) and trunk circuit locations. Devices include teletypewriters (SADS, FADS, HADS, FADSHADS, SADSHADS, DUAQ and MFADS) and the FM CRT.

Datfilling table OPRDAT

Table OPRDAT defines the operator IDs that are valid in an office.

Datfilling example for table OPRDAT

An example of datafill for Table OPRDAT is shown in the following figure.

MAP display example for table OPRDAT

OPRNUM	OPRVAR
100	OPR
111	OPR
200	OPR

Datfilling table TOPSOIC

Table TOPSOIC specifies valid office identification codes received from an end office over a TOPS trunk group.

The following table shows the datafill specific to TOPS MP Terminal Support for table TOPSOIC. Only those fields that apply directly to TOPS MP Terminal Support are shown. For a description of the other fields, refer to the data schema section of this manual.

Datfilling table TOPSOIC

Field	Subfield or refinement	Entry	Explanation and action
CO		alphanumeric	The call origination type is determined based on the CLLI and the OIC.

Datfilling example for table TOPSOIC

An example of the datafill for Table TOPSOIC is illustrated in the following figure.

TOPS MP Terminal Support (continued)

MAP display example for table TOPSOIC

OICKEY	CO
TOPSDAOIC 11	411
TOPSDAOIC 22	HOM555
TOPSDAOIC 33	FOR555
TOPSDAOIC 44	INTC
TOPSDAOIC 55	555

Datafilling table OICBC

Table OICBC verifies the calling NXX code as a valid billing code for AMA purposes. This table also specifies a charge class for the call.

Datafilling example for table OICBC

An example of the datafill for Table OICBC is shown in the following figure.

MAP display example for table OICBC

BCKEY	BILLCD	CHGCLSS
TOPSDAOIC 11 239	919239	TOPS
TOPSDAOIC 11 621	919621	TOPS
TOPSDAOIC 11 777	919777	TOPS
TOPSDAOIC 22 239	919239	TOPS

Datafilling table DABILL

Table DABILL specifies whether calls are billable based on the prevailing tariff. This table is indexed based on the call origination type and the service class.

The following table shows the datafill specific to TOPS MP Terminal Support for table DABILL. Only those fields that apply directly to TOPS MP Terminal

TOPS MP Terminal Support (continued)

Support are shown. For a description of the other fields, refer to data schema section of this manual.

Datafilling table DABILL

Field	Subfield or refinement	Entry	Explanation and action
REQNUM		Y or N	<p>In table DATRKOPT, if field BILLRQD=Y, field REQNRQD is ignored and field REQNUM in table DABILL is used. Otherwise, if field BILLRQD=N, field REQNRQD is used and field REQNUM in table DABILL is ignored.</p> <p>In table DABILL, field REQNUM affects the AMA record as follows:</p> <ul style="list-style-type: none"> • Field REQNUM=N: <p>An AMA record is always generated. This includes the following cases:</p> <ul style="list-style-type: none"> • The DA database search is successful and ARUs are available. • The DA database search is successful but ARUs are unavailable. • The DA database search is unsuccessful. • Field REQNUM=Y: <p>If number not found, the operator can cancel the call by depressing "CA CALL" and "POS RLS". Then, no AMA record is generated. Or, if the number is found but ARUs are unavailable, the operator gives the number verbally and must enter the number if an AMA record is to be generated. Under normal circumstances, when the number is found and ARUs are available, an AMA record is automatically generated.</p> <p>There is no default value for field REQNUM.</p>

Datafilling example for table DABILL

An example of the datafill for Table DABILL is shown in the following figure.

TOPS MP Terminal Support (continued)

MAP display example for table DABILL

DABKEY	REQNUM	CLGREQ	SERVNAME	ENHAMA	CCSURCHG	
555	STATION	N	Y	LOCALDA	N	N
555	COIN	N	Y	LOCALDA	N	N
411	STATION	N	Y	LOCALDA	N	N
411	HOTEL	N	N	TOLLFREE	N	N

Datafilling table TOPAMAOP

Table TOPS AMA Options contains TOPS Automated Message Accounting (AMA) related options.

The following table shows the datafill specific to TOPS MP Terminal Support for table TOPAMAOP. Only those fields that apply directly to TOPS MP Terminal Support are shown. For a description of the other fields, refer to the data schema section of this manual.

Datafilling table TOPAMAOP

Parameter	Explanation and action
RECORD_REQUESTED_NUMBER_FOR_DA	If the Forward Number is entered first followed by the Requested Number, only the Requested Number is known. If at this time the operator releases the position, the entire call is taken down and all parties are dropped. This situation also affects the AMA record that is generated if TOPS Extended BellCORE AMA Format (EBAF) Phase 2 is in use. This is determined in table TOPAMAOP, by field OPTINFO. If the RECORD_REQUESTED_NUMBER_FOR_DA option in DMS table TOPAMAOP is not turned on, the Requested Number is not recorded at all (and of course, neither is the Forward Number since the Requested Number replaced it).

Datafilling example for table TOPAMAOP

An example of the datafill for Table TOPAMAOP is shown in the following figure.

TOPS MP Terminal Support (end)

MAP display example for table TOPAMAOP

AMAOPT	OTPINFO
EBAF_PHASE	PHASE0
RECORD_REQUESTED_NUMBER_FOR_DA	Y

4 Datafilling Unbundling

This chapter contains the unbundling functionalities.

UNBN Billing Changes

Ordering codes

Functional group ordering code: UNBN0101

Functionality ordering code: not applicable

Release applicability

TOPS09 and up

UNBN Billing Changes was introduced in TOPS09.

Prerequisites

To operate, UNBN Billing Changes has the following prerequisites:

- Base Generic, BAS00003
- Operator Services Basic, OSB00001, and table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y

Description

This functionality provides service provider identification (SPID) for LIDB queries.

This functionality is a result of the recent Telecommunications Reform Act. Incumbent Local Exchange Carriers (ILEC) can buy Local Exchange Carrier (LEC) operator services and sell those services to competing LEC (CLEC) providers. The name of this process is unbundling.

Two types of SPIDs identify the ILEC or CLEC:

- Account owner (AO) SPID: This value identifies the dialtone and local service provider.
- Billing service provider (BSP) SPID: This value identifies the service provider that collects and generates the bill to the subscriber.

The AO SPIDs can apply to the calling, called, billing, and requested numbers. The BSP SPIDs can apply to the calling, called, and billing numbers. The AO and BSP SPIDs can be different values.

This functionality adds the SPID to the following:

- Line Information Database (LIDB) protocol: Billing AO and BSP SPIDs are returned from the LIDB for use in AMA records.
- Automatic Message Accounting (AMA) records
- Automated Calling Card Service verification (ACCSVER) tool

UNBN Billing Changes (continued)

- Back-end branding for Automatic Coin Toll Service (ACTS)
- Open Position Protocol (OPP): The position can set the billing and calling AO and BSP SPIDs for use in the AMA records. These SPIDs replace any billing SPID returned by the LIDB. Or, these SPIDs replace the calling SPID returned by an Originating Line Number Screening (OLNS) query.

This functionality is provided by the following features:

Feature number	Feature name
AF7133	Unbundling: Billing Changes

Operation

ACCSVER tool

The ACCSVER command interpreter (CI) tool sends queries to the LIDB or LIDB simulator, table ACCSDB. The returned results are displayed at the Maintenance and Administration Position (MAP). This functionality changes the displayed result, described in a later section

Command input (unchanged)

Enter this tool with either of two CI commands as follows:

- ACCSVER
- TESTSS ACCS from the SCCPLOC map level when the ACCS subsystem posts.

There is no change to the command input. The following are the command format and an example:

```
>accsver <intl> <clgnum> <cldnum> <billnum> [<pin>] [<ccitt>]
 [<val14dig>] [<gtname>]
```

```
>accsver n 6093201234 2102201212 5146444433331212
```

The above command format shows brackets for parameters with optional entries. The following are descriptions of the parameters:

- <intl> - International call (overseas)? If yes, enter Y. Otherwise, enter N.
- <clgnum> - Calling number
- <cldnum> - Called number
- <billnum> - Billing number
- <pin> - Personal identification number in the range 0-9999 or no number. Entry of a number causes a calling card verification (CCV) query. No entry

UNBN Billing Changes (continued)

of a number causes the system to default to a billed number screening (BNS) query. For information on BNS queries, refer to functionality Exchange Alternate Billing Service, ABS00001.

- <ccitt> - Is this a CCITT format calling card number? Enter Y if a CCITT card, N if not a CCITT card, or make no entry. If no entry, the system assumes that this parameter does not apply, which occurs, for example, for a collect billed number. If no <pin> parameter is entered, the system assumes that this call is a collect billed call. Therefore, this<ccitt> parameter is ignored by the system.
- <val14dig> - Is this a correct 14-digit format calling card number? Enter Y if 14-digit format or N if not a 14-digit format.
- <gtname> - Global title name defined in table C7GTTYPE. If no entry, the system uses the default.

Display output (changed)

This functionality changes the ACCSVR tool as follows:

- The LIDB (either the actual or simulator) returns billing AO and BSP SPIDs and they display. If no SPIDs are sent, there is no message display.
- The display now contains the service or equipment. Table ACCSDB in the datafill procedure section gives a list of service or equipment available for display.
- The LIDB simulator table ACCSDB contains new fields AOSPID and BSPSPID. Also, the service/equipment field SRVEQUIP values are revised to comply with Bellcore document GR-1149 Issue 2, Revision 2, June 1994. Refer to the datafill procedure section.

The following example output shows an AO SPID equal to AB12 and a BSP SPID equal to CD34.

UNBN Billing Changes (continued)

Example ACCSVR output with SPIDs

```

>ACCSVER N 6193201234 2012200000 2012200000

THE RESPONSE FROM THE DATABASE TOOK 0 MINUTES, 0 SECONDS, 996
MILLISECONDS
COMPANY ID IS: 1234
RECORD STATUS INDICATOR IS STABLE RECORD
COLLECT ACCEPTANCE INDICATOR IS ACCEPT COLLECT CALLS
THIRD NUMBER ACCEPTANCE INDICATOR IS ALLOW 3RD NUMBER BILLING
TREATMENT INDICATION IS AUTOMATED - TONE + ANNOUNCEMENT
SERVICE OR EQUIPMENT IS POTS LINE
INTERCEPT INDICATION IS NOT INTERCEPTED
THE RAO NUMBER IS: 234
PRIMARY PREFERRED IC INDICATOR IS NOT INDICATED
ALTERNATE PREFERRED IC INDICATOR IS NOT INDICATED
INTERNATIONAL PREFERRED IC INDICATOR IS NOT INDICATED
THE BILLING NUMBER IS: 2012200000
AO SPID IS: AB12
BSP SPID IS: CD34

```

The following example is the same as above except that no AO or BSP SPID was returned.

Example ACCSVR output without SPIDs

```

>ACCSVER N 6193201234 2012200000 2012200000

THE RESPONSE FROM THE DATABASE TOOK 0 MINUTES, 0 SECONDS, 996
MILLISECONDS
COMPANY ID IS: 1234
RECORD STATUS INDICATOR IS STABLE RECORD
COLLECT ACCEPTANCE INDICATOR IS ACCEPT COLLECT CALLS
THIRD NUMBER ACCEPTANCE INDICATOR IS ALLOW 3RD NUMBER BILLING
TREATMENT INDICATION IS AUTOMATED - TONE + ANNOUNCEMENT
SERVICE OR EQUIPMENT IS HOSPITAL
INTERCEPT INDICATION IS NOT INTERCEPTED
THE RAO NUMBER IS: 234
PRIMARY PREFERRED IC INDICATOR IS NOT INDICATED
ALTERNATE PREFERRED IC INDICATOR IS NOT INDICATED
INTERNATIONAL PREFERRED IC INDICATOR IS NOT INDICATED
THE BILLING NUMBER IS: 2012200000

```

UNBN Billing Changes (continued)

As mentioned above, the service/equipment field SRVEQIP values are changed. The following table lists the changes from old to new for call processing.

Service /equipment mapping for call processing

Grouping in call processing	Old service/equipment indicator	New service/equipment indicator
Nil value	NIL	RESERVED
POTS lines	POTS LINE	POTS LINE, BUSINESS/RESIDENTIAL POTS LINE, RESIDENTIAL, RATE 1 POTS LINE, RESIDENTIAL, RATE 2 POTS LINE, BUSINESS, FLAT RATE POTS LINE - BUSINESS, RATE 1 POTS LINE - BUSINESS, RATE 2 POTS LINE, RESIDENTIAL, FLAT RATE LEC PUBLIC ALTERNATE INTERFACE
Coin telephones	TELCO PUBLIC COIN CDF TELCO PUBLIC COIN CCF TELCO PUBLIC COIN POSTPAY	LEC PUBLIC, STANDARD INTERFACE, POSTPAY OVERTIME LEC PUBLIC, STANDARD INTERFACE, PREPAY OVERTIME
Semi-public coin	SEMI-PUBLIC COIN CDF SEMI-PUBLIC COIN CCF SEMI-PUBLIC COIN POSTPAY	LEC SEMI-PUBLIC
Public non-coin	PUBLIC COINLESS	COINLESS (NON-IPP) COINLESS (IPP)
Card readers	TELCO CARD READER 1 TELCO CARD READER 2	LEC PREPAID TELE COMMUNICATIONS CARD STATION

UNBN Billing Changes (continued)**Service /equipment mapping for call processing**

Grouping in call processing	Old service/equipment indicator	New service/equipment indicator
Other non-POTS lines	INTERLATA PUBLIC COIN, CDF	IC PUBLIC STANDARD INTERFACE
	INTERLATA PUBLIC COIN, CCF	IC PUBLIC ALTERNATE INTERFACE
	INTERLATA PUBLIC COIN POSTPAY	VOICE QUOTE, WITHOUT TAX, HOTEL
		VOICE QUOTE, WITH TAX, HOTEL
	INTERLATA SEMI PUBLIC COIN - CDF	IPP - STANDARD INTERFACE
	INTERLATA SEMI PUBLIC COIN - CCF	IPP - ALTERNATE INTERFACE
		HOSPITAL
	INTERLATA SEMI PUBLIC COIN - POSTPAY	PRISON (NON-IPP)
		AUTO QUOTE, WITHOUT TAX, HOTEL
	INTERLATA PUBLIC COINLESS	AUTO QUOTE - WITH TAX - HOTEL
	INTERLATA CARD READER 1	DORMITORY LINE
	INTERLATA CARD READER 2	CENTREX LINE
	CUSTOMER COIN	PBX LINE
	CUSTOMER COINLESS	PRISON (IPP)
	CUSTOMER CARD READER 1	WATS LINE
	CUSTOMER CARD READER 2	
	HOTEL/MOTEL GUEST LINE	
	DORMITORY LINE	
	CENTREX LINE	
	PBX LINE WITH AIOD	
PBX LINE WITHOUT AIOD		
WATS LINE		
The remaining indicators are not changed.		

The following are descriptions of terms used in the above table:

- Alternate interface - Sets whose functions (that is, rating, coin detection) are controlled locally.
- CDF - Coin, dial-tone first
- CCF - Coin, coin first

UNBN Billing Changes (continued)

- Incompatible network - The line is not ACTS compatible.
- IPP - Independent pay telephone provider
- Postpay overtime - A coin telephone where time intervals are paid after they occur.
- Prepay overtime - A coin telephone where time intervals are paid before they occur.
- Semi-public - An originating station is a coin telephone owned by an LEC with special agreements with the location provider.
- Standard interface - Telephone functions (that is, rating, coin detection) that are controlled by signaling from the network.

Back-end branding using SPID

Before release NA009, functionality TOPS Alternate Announcement (feature AL0417), ENSV0003, described ACTS back-end branding. Back-end branding occurs at the end of the service as a “thank you” message, which can be customized. Carrier calls use the Carrier Identification Code (CIC). Non-carrier calls use the non-Bell Exchange Carrier (NBEC) code. Mechanized Calling Card Service uses the same procedure.

This functionality provides ACTS back-end branding using the SPID for non-carrier calls. ACTS carrier calls continue to use the CIC and MCCS calls continue to use the NBEC.

Back-end branding (both ACTS and MCCS) for carriers and NBECs uses tables ACTSNBEC, EAACTSAN, MCCSNBEC, and EAMCCSAN. ACTS back-end branding with SPID uses field ACTSANN in table SPIDDB. Refer to the datafill procedure section.

For different announcement datafill against a SPID, NBEC, and CIC, the following order applies:

- A carrier call only uses the CIC from table EAACTSAN. Otherwise, the system plays a general carrier call branding announcement (if any).
- On a non-carrier call, only the NBEC and SPID apply. SPIDs have priority over NBECs. But, an existing calling AO SPID has an even higher priority. If a calling AO SPID exists, it has priority. However, if it is the default SPID, and table TOPSPARM parameter BRAND_USING_DEFAULT =

UNBN Billing Changes (continued)

N, branding does not use the SPID. The default SPID is given in table TOPSPARM parameter DEFAULT_SPID.

If the system identifies a SPID, the system checks table SPIDDB field ACTSANN for the SPID. If the SPID is present and enabled, the system uses it.

If an SPID is not identified or not allowed for branding in table SPIDDB, the system checks table ACTSNBEC for an NBEC. If the NBEC is present, the system uses it. If the NBEC is not present, the system plays the general non-carrier call branding announcement (if any).

Add and Modify SOC Options

The existing functionality TOPS SPID Branding, ENSV0017, is divided into two new functionalities UNBN (Unbundling) as follows:

- UNBN SPID Assignment, UNBN0101 - This functionality controls the assignment by SPID as well as table SPID. Also, this functionality takes on the value of the ENSV0017 SOC over a One Night Process (ONP).
- UNBN SPID Branding, UNBN0103 - This functionality controls the assignment and branding (both front-end and ACTS back-end) by SPID as well as table SPID. Also, this functionality takes on the value of the ENSV0017 SOC over a One Night Process (ONP).

This new functionalities replaces ENSV0017. The information in ENSV0017 does not change during the change to the new functionality.

For UNBN0101, there is SOC tracking and Ready to Use (RTU) stays at N.

OMs

OM group TOPPACT3 has new register SRVPROA to count the number of Service Provider ActIDs sent to the switch from OPP positions.

Translations table flow

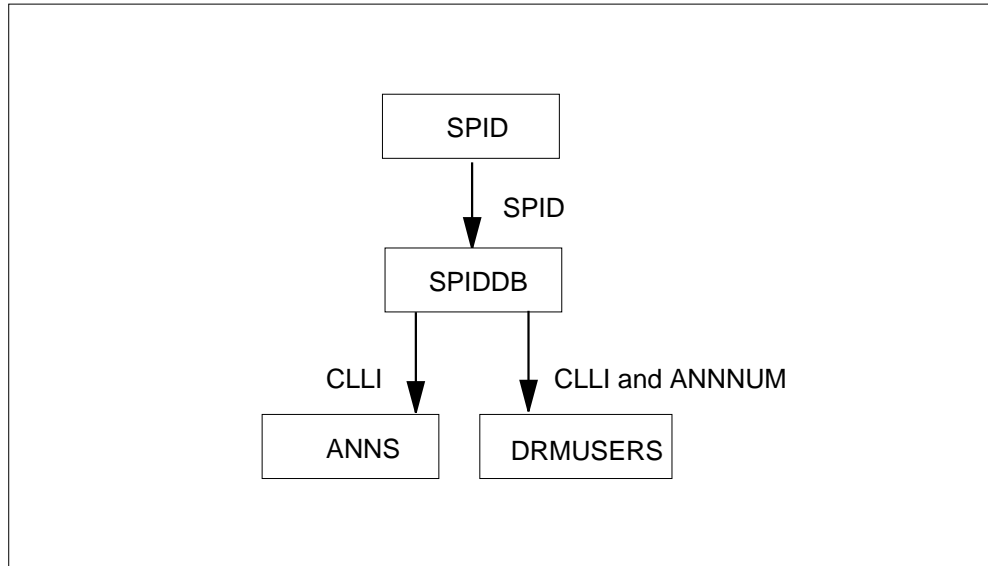
The UNBN Billing Changes translations tables are described in the following list:

- Table SPID defines the service provider identifiers.
- Table SPIDDB contains data on the SPID.
- Table ANNS defines announcement names.
- Table DRMUSERS defines announcement hardware.

The UNBN Billing Changes translation process is shown in the flowchart that follows.

UNBN Billing Changes (continued)

Table flow for UNBN Billing Changes



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

Datafill example for UNBN Billing Changes

Datafill table	Example data
SPID	12AB
SPIDDB	12AB N ALL \$ Y RBRAND Y RBRAND Y ACTSOPTS 41 ACTSTOPS 42 N N
ANNS	ACTSOPTS STND 26 30 14 1
DRMUSERS	ACTSOPTS 41 (GREETING)\$

Limitations and restrictions

The following limitations and restrictions apply to UNBN Billing Changes:

- The change of the standard (*GR-1149 Issue 2, Revision 2, June 1994*) of Service/Equipment values is a non-upward compatible change by Bellcore. When this standard changes (by removal of the Bellcore patch on LIDB), the downstream AMA processes must be ready for the new standard of Service/Equipment Indicators.
- The maximum number of branding announcements is 255 . These same announcements are shared between ACTS, MCCS, SPIDs, NBECs, and CICs. Therefore, use caution to conserve these announcements.

UNBN Billing Changes (continued)

- This feature does not handle MCCS back-end branding by SPID. NBECs and CICs can still be used with MCCS.
- This functionality is available only in North America.

Interactions

The following paragraphs describe the interactions between UNBN Billing Changes and other functionalities.

This functionality is part of the Telecom Reform Act 1996 (TRA96) unbundling feature group. This functionality interacts with the rest of the unbundling functionalities listed below to make the TOPS system in more agreement with TRA96.

- UNBN SPID Branding, UNBN0103 (feature AF6711, Branding for TOPS via SPID)
- UNBN Queueing, UNBN0102 (feature AF7160, Unbundling: QMS SPID Refinement)
- UNBN Translations and Routing, UNBN0101 (feature AF7159, TOPS Unbundling: SPID Processing, Translations and Routing)
- External RTRS Interface, ENSV0103 (feature AF7163, Unbundling: Rater Protocol Changes)
- UNBN Stats, UNBN0101 (feature AF7164, Unbundling: QMSMIS Support)

This functionality also interacts with the following functionalities that do not provide unbundling:

- Miscellaneous DA Enhancements, OSDA0101 (feature AF7132, DA Robustness)
- TOPS Alternate Announcement, OSB00101 (feature AL0417, Alternate Branding for ACTS and MCCS)

Activation/deactivation by the end user

UNBN Billing Changes requires no activation or deactivation by the end user.

Billing

When LIDB, OPP, or DA returns an AO or BSP SPID, the value goes into AMA Module Code 338. LIDB returns billing SPIDs, OPP returns calling and billing SPIDs, and DA systems return the requested AO SPID. If no SPID is available, Module Code 338 does not append.

UNBN Billing Changes (continued)

When the service changes from DA to Toll and Assistance (TA) a DA AMA record generates. This record contains the Module Code 338 with the requested AO SPID. Then, internally, the requested AO SPID becomes the called AO SPID. Therefore, that SPID appears in a Module Code 338 record as the called AO SPID. This record generates when the system bills the TA part of the call.

When the services changes from DA to DA, a DA AMA record contains the Module Code 338 with the requested AO SPID. Then internally, deletion of the requested AO SPID occurs. The requested AO SPID is available again for the second part of the call and appended to that record.

Table TOPAMAOP parameters RECORD_AO_SPID_INFO and RECORD_BSP_SPID_INFO control recording of these SPIDs. These parameters select the type of AO and BSP SPIDS to record. Refer to the datafill procedure section for more information.

The following table provides information for module code 338.

Service Provider Module (Module code 338)

Information	Values
Party identifier	001 - Originating Party DN Data
	002 - Terminating Party DN Data
	003 - Billing Party DN Data
	009 - Requested Party DN Data
	999 - Unknown
Service provider type	001 - Account Owner
	002 - Billing Service Provider
	999 - Unknown
Service provider ID	Four character SPID

The following example record is for an operator services call where a requested AO SPID of 1234 has an assignment to 6295201234. The changed part of the record is in bold type.

UNBN Billing Changes (continued)

Example AMA record with module code 338

```
*HEX ID:AA  STRUCTURE CODE:40752C  CALL CODE:192C
SENSOR TYPE:036C  SENSOR ID:0123456C  REC OFFICE TYPE:036C
REC OFFICE ID:0123456C  DATE:61122C  TIMING IND:00000C
STUDY IND:0200000C  SERVICE OBSERVED:0C  ORIG NPA:629C
ORIG NUMBER:5201234C  CONNECTTIME:1327120C
ELAPSED TIME:000000000C  OPERATOR IDS:0009999009999C
ACC OPERATOR WORK TIME:00000C  SERVICE FEATURE:000C
STATION SIGNALING IND:2C  SCREENING CODE:000C
CALLED NUMBER INPUT:1C  CALLING NUMBER SOURCE:1C
MODULE CODE:316C  LOCAL INDICATOR:1C  MODULE CODE:311C
ORIG CALL TYPE:002C  MODULE CODE:051C  OVERSEAS IND:0C
TERM NPA:00201C  TERM NUMBER:2201234C
COMPLETION IND:008C  RATE IND:1C
OSS CALL COMPLETION CONDITIONS:3111110C  MODULE CODE:338C
PARTY IDENTIFIER:009C  SERVICE PROVIDER TYPE:001C
SERVICE PROVIDER ID:F1F2F3F4  MODULE CODE:000C
```

Station Message Detail Recording

UNBN Billing Changes does not affect Station Message Detail Recording.

Datafilling office parameters

UNBN Billing Changes does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement UNBN Billing Changes. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for UNBN Billing Changes

Table	Purpose of table
SPID	Service Provider Identifier defines SPID names for use in other tables.
SPIDDB	Service Provider Identifier Database allows mapping information for SPIDs.
ACCSDB	Automatic Calling Card Service Database simulates the LIDB.
TOPAMAOP	TOPS AMA Options contains new a parameter to control AMA production.

Datafilling table SPID

The following table shows the datafill specific to UNBN Billing Changes for table SPID. Only those fields that apply directly to UNBN Billing Changes are

UNBN Billing Changes (continued)

shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table SPID

Field	Subfield or refinement	Entry	Explanation and action
SPID		exactly 4 alphanumeric characters	Service provider identifier. Enter four alphanumeric characters. This value has use in tables SPIDDB, DNSCRN, and TOPSPARM (parameter DEFAULT_SPID). This table is not changed. Enter any new SPIDs.

Datafill example for table SPID

The following example shows sample datafill for table SPID.

MAP display example for table SPID

SPID

1234
ABCD
12AB
4567

Datafilling table SPIDDB

ACTSANN is a new field.

The following table shows the datafill specific to UNBN Billing Changes for table SPIDDB. Only those fields that apply directly to UNBN Billing Changes

UNBN Billing Changes (continued)

are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table SPIDDB

Field	Subfield or refinement	Entry	Explanation and action
ACTSANN		see subfield	Automated coin toll service announcement. This new field consists of subfield ACTSBRND and refinements.
	ACTSBRND	Y or N	Automated coin toll service branding. This field enables ACTS back-end branding using this SPID. Enter Y to enable and datafill refinements CORRCTDP and OVERDEP. Enter N to disable and no refinements require datafill. The default over a One Night Process (ONP) is N.
	CORRCTDP	see subfields	Correct deposit. This field consists of subfields CLLI and ANNUM.
	CLLI	name from table ANNS	Common language location identifier. Enter the name for the correct deposit announcement. The name must be datafilled in table ANNS. The CLLI and ANNUM pair must be datafilled in table DRMUSERS.
	ANNUM	number from table DRMUSERS	Announcement number. Enter the index into table DRMUSERS for the correct deposit announcement. This index must be datafilled in table DRMUSERS. The CLLI and ANNUM pair must be datafilled in table DRMUSERS.
	OVERDEP	see subfields	Over deposit. This field consists of subfields CLLI and ANNUM.
	CLLI	name from table ANNS	Common language location identifier. Enter the name for the over deposit announcement. The name must be datafilled in table ANNS. The CLLI and ANNUM pair must be datafilled in table DRMUSERS.
	ANNUM	number from table DRMUSERS	Announcement number. Enter the index into table DRMUSERS for the over deposit announcement. This index must be datafilled in table DRMUSERS. The CLLI and ANNUM pair must be datafilled in table DRMUSERS.

UNBN Billing Changes (continued)

Datafill example for table SPIDDB

The following example shows sample datafill for table SPIDDB.

MAP display example for table SPIDDB

SPID	SCRNDISP	OPERSYS			TAANN	DAANN	
	ACCTSANN		XLA	SPIDCRIT			
1234	Y ATEL	OPERATOR	MCCS	ACTS	ADAS \$	Y ATABRAND	Y ADABRAND
	Y ACTSOPTS	41	ACTSTOPS	42	N	N	
ABCD	Y BCOM	MCCS	ACTS	ADAS \$		Y BBRAND	Y BBRAND
	N				N	N	
12AB	N	ALL				Y RBRAND	Y RBRAND
	Y CLLI12AB	5	CLLI12AB	6	N	N	
4567	Y CFON	NONE				N	N
	N				N	N	

Datafilling table ACCSDB

Table ACCSDB supports testing to represent the LIDB database for ACCS queries. The simulated LIDB response is equivalent to the tuple datafilled in table ACCSDB.

Because of the changes in this table, table SPID must be datafilled before ACCSDB. Tuples from table ACCSDB require deletion before deletion of the corresponding SPID in table SPID.

The following table shows the datafill specific to UNBN Billing Changes for table ACCSDB. Only those fields that apply directly to UNBN Billing

UNBN Billing Changes (continued)

Changes are shown. For a description of the other fields, refer to the data schema section of this document.

UNBN Billing Changes (continued)

Datafilling table ACCSDB

Field	Subfield or refinement	Entry	Explanation and action
ACCSCOMP		RESULT	ACCS component type. When the entry is RESULT, changed (SRVEQUIP) and new (AOSPID and BSPSPID) subfields are present.
	SRVEQUIP	AQNOTAX AQTAX BUS1 BUS2 BUSFLAT BUSML BUSSL CELL CELLR1 CELLR2 CENTREX DORM FGA HOSPITAL ICALT ICSTD INCMPIF IPALT IPSTD LECALT LECPOST LECPRE LECSEMI MAXIQUIP MOBILE NCNIPP NCNNOIPP OTHER1 OTHER2 OTHER3 OTHER4 PAGER PBX PCS PRETCS POST POTSLINE PRISON PRSNIPP	<p>Service machine. The values are changed. Enter the type of service equipment. There are three general groups of service equipment: public coin telephones, semi-public coin telephones, and non-coin telephones. The values are as follows:</p> <ul style="list-style-type: none"> • AQNOTAX - Autoquote without tax • AQTAX - Autoquote with tax • BUS1 - POTS line, business, message rate 1 • BUS2 - POTS line, business, message rate 2 • BUSFLAT - POTS line, business, flat rate • BUSML - POTS line, business, multiple line • BUSSL - POTS line, business, single line • CELL - Cellular • CELLR1 - Cellular rate 1 • CELLR2 - Cellular rate 2 • CENTREX - Centrex line • DORM - Dormitory line • FGA - Feature group A • HOSPITAL - Hospital • ICALT - Interlata carrier (IC) public, alternate interface • ICSTD - IC public, standard interface • INCMPIF - Public, incompatible network interface • IPALT - Independent payphone provider (IPP), alternate interface • IPSTD - IPP, standard interface

UNBN Billing Changes (continued)**Datafilling table ACCSDB**

Field	Subfield or refinement	Entry	Explanation and action
	SRVEQUIP (continued)	RES1 RES2 RESERVED RESFLAT SPLPOST SPLPRE WATS VQNOTAX VQTAX	<p>Service machine (continued). The values are as follows:</p> <ul style="list-style-type: none"> • LECALT - Local exchange carrier (LEC) public, alternate interface • LECPOST - LEC public, standard interface, postpay overtime • LECPRE - LEC public, standard interface, prepay overtime • LECSEMI - LEC semi-public • MAXEQUIP - • MOBILE - Mobile • NCNIPP - Coinless, IPP • NCNNOIPP - Coinless, non-IPP • OTHER1-4 - Other 1 to Other 4 • PAGER - Pager • PBX - PBX line • PCS - Personal communication service • PRETCS - LEC prepaid telecommunications card station • POST - Public postpay • POTSLINE - Plain ordinary telephone service (POTS) line, business or residential • PRISON - Prison IPP • PRSNIPP - Prison non-IPP • RES1 - POTS line, residential, message rate 1 • RES2 - POTS line, residential, message rate 2 • RESERVED - Reserved • RESFLAT - POTS line, residential, flat rate

UNBN Billing Changes (continued)

Datafilling table ACCSDB

Field	Subfield or refinement	Entry	Explanation and action
	SRVEQUIP (continued)		<p>Service machine (continued). The values are as follows:</p> <ul style="list-style-type: none"> • SPLPOST - LEC public, special billing, postpay overtime • SPLPRE - LEC public, special billing, prepay overtime • WATS -WATS line • VQNOTAX - Voice quote without tax • VQTAX - Voice quote with tax <p>Note: MAXEQUIP appears on the MAP display, but is not now supported.</p>
	AOSPID	see subfield AOIND	Account owner service provider identifier. This new field consists of subfield AOIND and refinement.
	AOIND	Y or N	Account owner SPID indicator. Is an AO SPID assigned to this billing number? Enter Y (yes) or N (no). If Y, datafill refinement SPID. The default is N.
	SPID	4 alphanumeric characters	Service provider identifier. If field AOIND = Y, datafill exactly four alphanumeric characters for the AO SPID.
	BSPSPID	see subfield BSPIND	Billing service provider identifier. This new field consists of subfield BSPIND and refinement.
	BSPIND	Y or N	Billing SPID indicator. Is a BSP SPID assigned to this billing number? Enter Y (yes) or N (no). If Y, datafill refinement SPID. The default is N.
	SPID	4 alphanumeric characters	Service provider identifier. If field BSPIND = Y, datafill exactly four alphanumeric characters for the BSP SPID.

Datafill example for table ACCSDB

The following example shows sample datafill for table ACCSDB.

UNBN Billing Changes (continued)

MAP display example for table ACCSDB

ACCSDBKY	ACCSCOMP	ACCSDBVR

2222121123	RESULT	
2212 UNRESTR	NILCCAN NILSERV 3 3496	DEFAULT VERCOLL A3RDNUM
POTSLINE 2122221212	353 NILIND NILIND NILIND	5555 5334 5665
N NOSPARE	NOTELSPARE NILCOMP 1SEC 0SEC	NOINT TONEANN Y 1234 Y
ABCD		

Dump and restore changes the field SRVEQUIP values as follows:

Field SRVEQUIP reformat mapping

Old SRVEQUIP value	
NILSRVEQ	RESERVED
POTSLINE	POTSLINE
PUBCNCDF and PUBCNPST	LECPOST
PUBCNCCF	LECPRE
SPBCNCDF, SPBCNCCF, and SPBCNPST	LECSEMI
PUBNC	NCNNOIPP
CARDRDR1 and CARDRDR2	PRETCS
INPUBDF, INPUBCF, INPUBPO, INSPUBDF, INSPUBCF, INSPUBPO, and INPUBCL	ICSTD
INRDR1 and INRDR2	ICALT
CUSTCOIN and CUSTCNLS	IPSTD
CUSTRDR1 and CUSTRDR2	IPALT
HOTGUEST	VQNOTAX
DORMLINE	DORM
CNTRXLN	CENTREX

UNBN Billing Changes (continued)

Field SRVEQUIP reformat mapping

Old SRVEQUIP value	
PBXAIOD and PBXNAIOD	PBX
WATS	WATS

Datafilling table TOPAMAOP

The following table shows the datafill specific to UNBN Billing Changes for table TOPAMAOP. Only those parameters that apply directly to UNBN Billing Changes are shown. For a description of the other parameters, refer to the data schema section of this document.

Datafilling table TOPAMAOP

Parameter name	Explanation
RECORD_AO_SPID_INFO	This parameter indicates the account owner service provider identifiers (AO SPID) that require recording in AMA module code 338. The values are ALL (all values), NONE (no values), CLG (calling), CLD (called), BLG (billing), and REQ (requested). Any number of these values can be datafilled. The default is ALL.
RECORD_BSP_SPID_INFO	This parameter indicates the billing service provider identifiers (BSP SPID) that require recording in AMA module code 338. The values are ALL (all values), NONE (no values), CLG (calling), CLD (called), and BLG (billing). Any number of these values can be datafilled. The default is ALL. Note, value REQ (requested) appears but currently has no support.

Datafill example for table TOPAMAOP

The following example shows sample datafill for table TOPAMAOP.

MAP display example for table TOPAMAOP

AMAOPT	OPTINFO

RECORD_AO_SPID_INFO	ALL
RECORD_BSP_SPID_INFO	CLG CLD

Translation verification tools

UNBN Billing Changes does not use translation verification tools.

UNBN Billing Changes (end)

SERVORD

UNBN Billing Changes does not use SERVORD.

UNBN Call Restrictions for Wholesaling

Ordering codes

Functional group ordering code: UNBN0101

Functionality ordering code: not applicable

Release applicability

TOPS12 and up

TOPS12 introduced UNBN Call Restrictions for Wholesaling.

Requirements

To operate, UNBN Call Restrictions for Wholesaling requires the functional groups that follow:

- BAS Generic, BAS00003
- Operator Services Basic, OSB00001, and table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- Table TOPSFTR parameter CALL_REST_FOR_WSALE = Y

Description

This feature provides the following:

- If the existing directory number (DN) based screening finds no restrictions, new billing type screening is available according to the criteria as follows:
 - Incoming trunk group
 - Carrier identification code (CIC)
 - Service provider identifier (SPID)
 - Automatic number identification identifier (ANI ID) digits
- ANI failure calls can be presented to the operator as ANI success.

Feature number	Feature name
59006832	Call Restrictions for Wholesaling

Operation

This section provides details of the feature.

UNBN Call Restrictions for Wholesaling (continued)

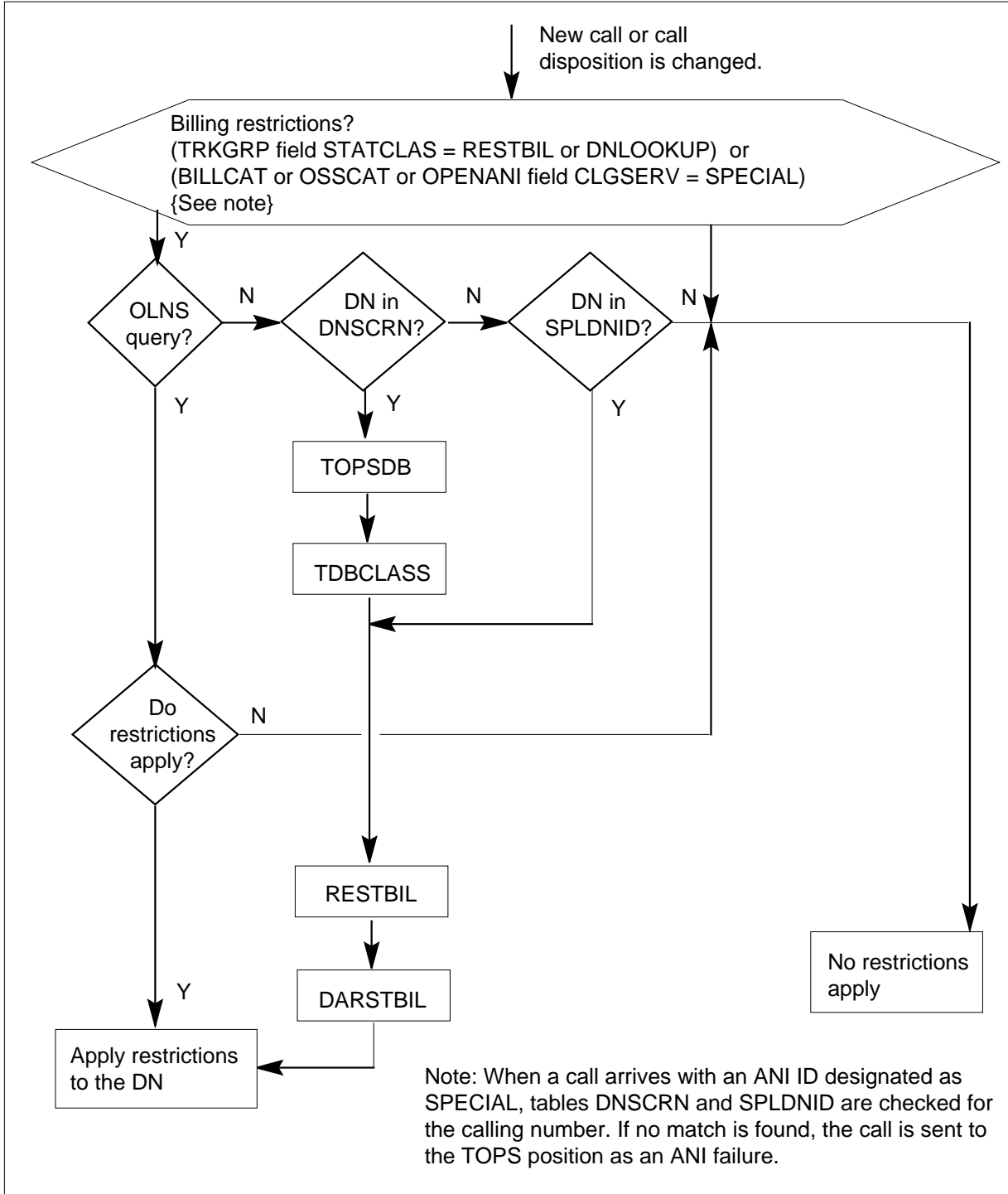
DN based screening, non-DACC (existing)

The existing DN screening for non-directory assistance call completion calls is shown in the figure that follows this description. The steps are as follows:

1. The following indicators are checked for billing restrictions:
 - Table TRKGRK field STATCLASS is set to RESTBIL or DNLOOKUP.
 - According to the type of signaling, table TRKGRP field SIGTYP, the applicable table is checked: BELLCAT (SIGTYP = BELL), OSSCAT (SIGTYP = OSS), or OPENANI (SIGTYP = OPENNUM) in field CLGSERV for SPECIAL.
2. If any of the above values are found, DN screening is applied. Otherwise, no restrictions apply.
3. If restrictions are indicated above, screening continues. If an OLNS query is indicated by functionality TOPS OLNS Interface, ABS00012, it provides the necessary restrictions. Otherwise, screening continues.
4. If no OLNS query is indicated, screening checks table DNSCRN, SPLDNID, TOPSDB, TDBCLASS, RESTBIL, and DARSTBIL as indicated in the flow diagram below.

UNBN Call Restrictions for Wholesaling (continued)

DN screening, non-DACC flow (existing)



UNBN Call Restrictions for Wholesaling (continued)

New screening, non-DACC

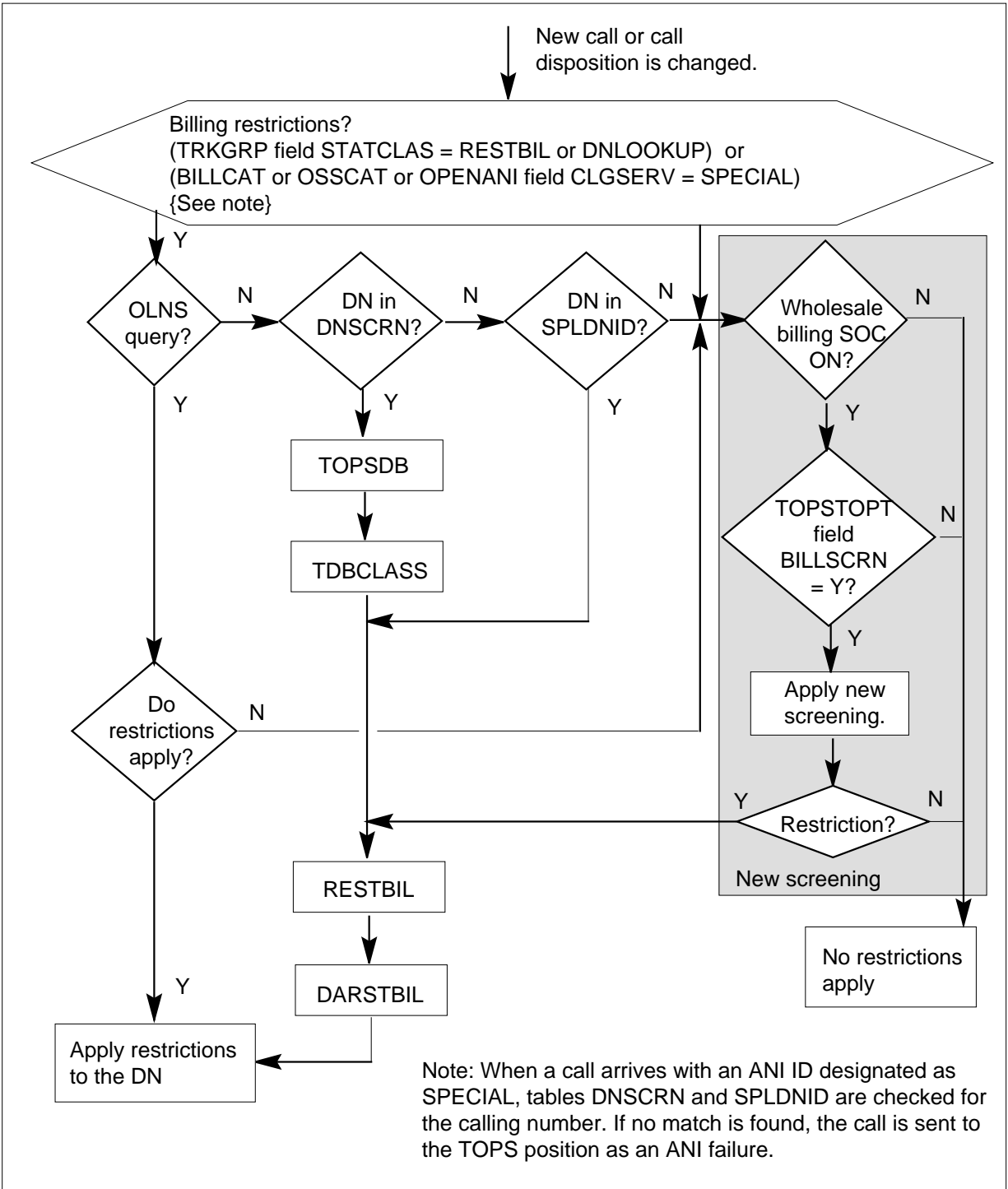
The new screening is used for the following reasons:

- As mentioned above, if restrictions are checked for DN based screening and there are no restrictions. For example, before routing to an automated system or DA call completion
- If the disposition of the call changes. For example, the call arrives as a 0-call and the operator enters a DN that changes the call to a carrier call. Or, if the operator changes the carrier for the call.

The following figure shows how the DN screening connects to the new screening.

UNBN Call Restrictions for Wholesaling (continued)

New screening, non-DACC flow



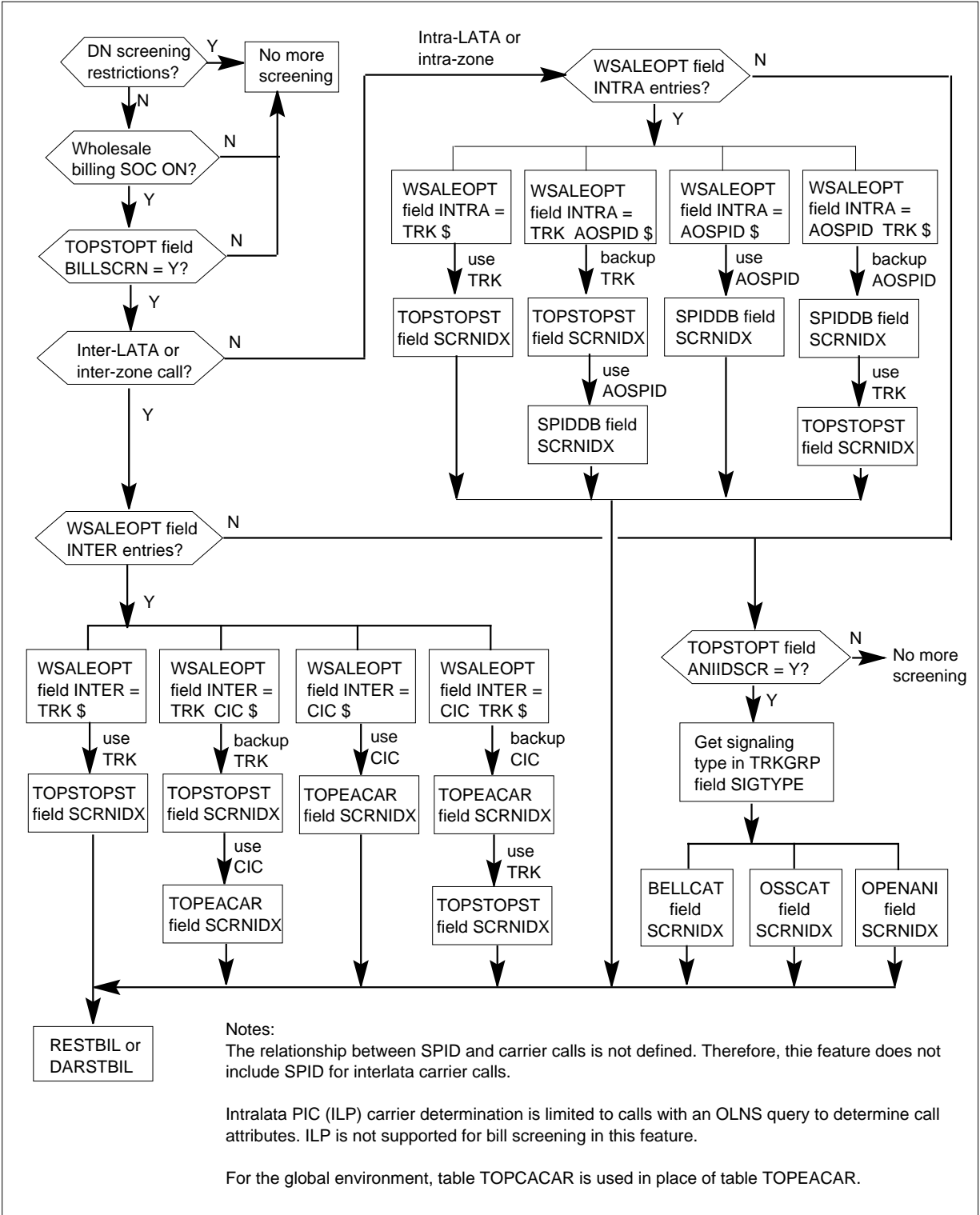
UNBN Call Restrictions for Wholesaling (continued)

Details of the new screening flow are as follows. A figure of the detailed flow is shown after these steps.

1. If there are no DN screening restrictions, verify that the new screening software optionality code (SOC) is on.
2. If the SOC is on, verify that the new screening is enabled in table TOPSTOPT by new field BILLSCRN = Y.
3. The new screening handles inter-lata and inter-zone calls differently from intra-lata and intra-zone calls. Functionality Table LATANAME Expansion, OSB00101, provides details on how these call types are determined.
4. Table TOPSTOPT new field WSIDX provides an index into new table WSALEOPT. Table WSALEOPT contains fields INTER and INTRA that point to indexes into either table RESTBIL or DARSTBIL. The applicable field, INTER or INTRA, is used according to the type of call. Table RESTBIL is used for toll and assist calls and table DARSTBIL is used for DA calls. The possible results are as follows:
 - If there are no entries, go to the next step.
 - If there is one entry, it is used to index applicable table RESTBIL or DARSTBIL.
 - If there are two entries, the second entry is used for the index. But, if the second entry is nil (value 100), the first entry is used. For details of the table WSALEOPT values, refer to the dattafill procedure section.
5. If there are no entries in table WSALEOPT applicable field INTER or INTRA, table TOPSTOPT field ANIIDSCR is checked. This field enables a check of the ANI ID of the calling number for restrictions. If this check is enabled, the signaling type, given by table TRKGRP field SIGTYPE, indicates table BELLCAT, OSSCAT, or OPENANI for further screening. These tables provide an index into table RESTBIL or DARSTBIL.

UNBN Call Restrictions for Wholesaling (continued)

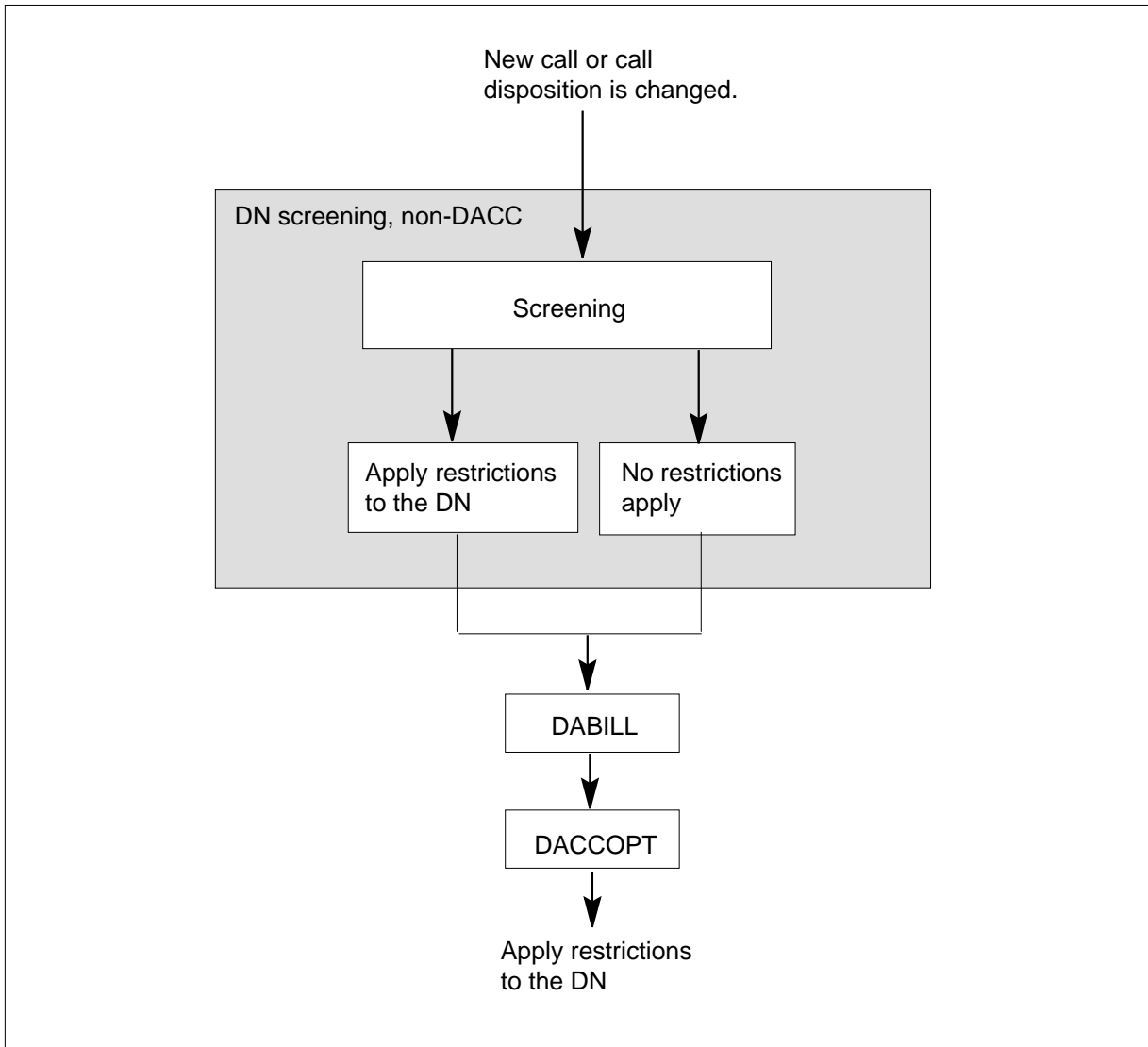
New screening, non-DACC flow (detailed)



UNBN Call Restrictions for Wholesaling (continued)

DACC

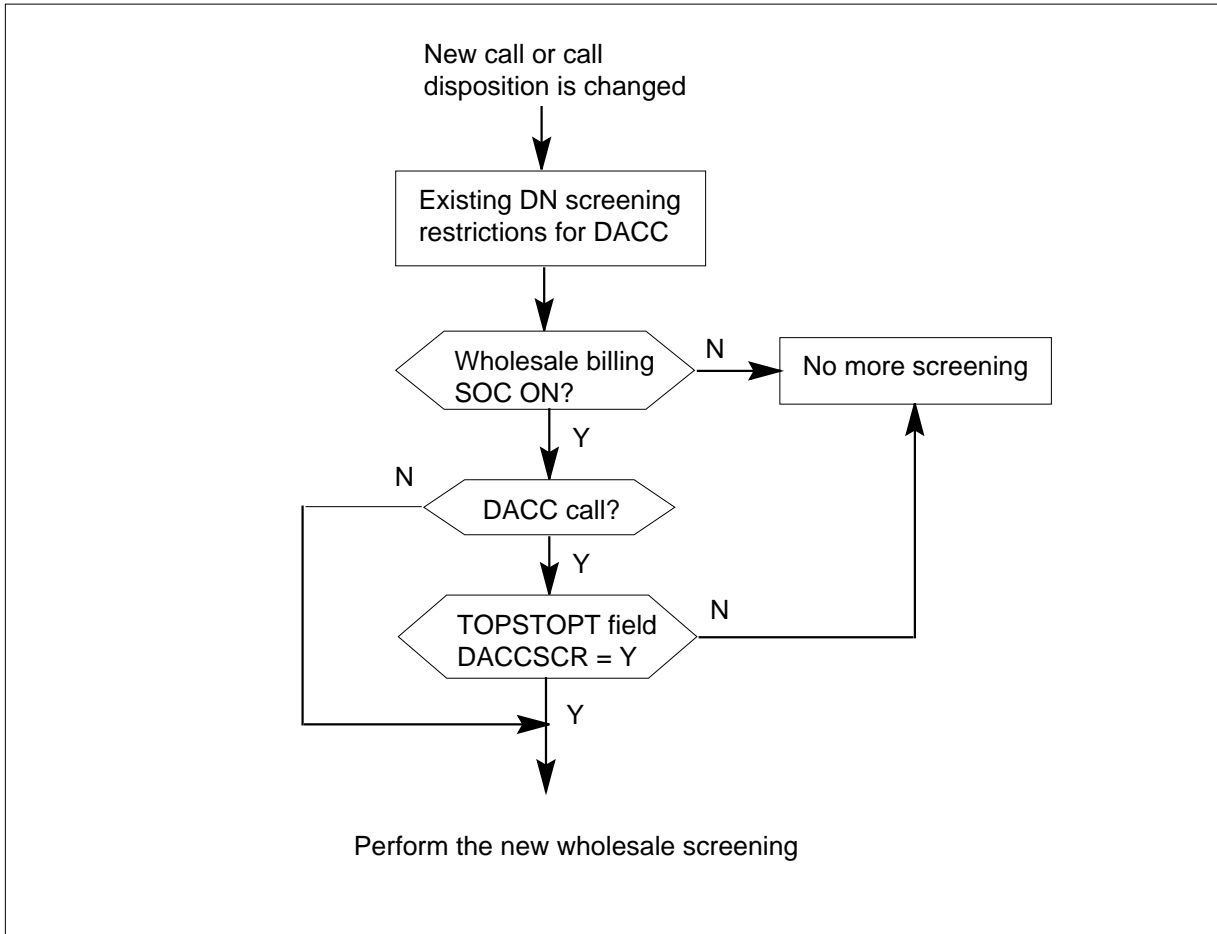
The existing screening for DACC calls has additional checks after the regular DN screening, described earlier. Restriction checks are made in tables DABILL and DACCOPT, regardless of whether restrictions were found in regular DN screening, shown below.

DN screening, DACC flow (existing)

For the new screening, if the wholesale billing SOC is on, table TOPSTOPT field DACCSCR is checked. If the field is set to Y, wholesale billing screening is performed for the DACC call. Otherwise, if DACCSCR = N, screening is done as shown in the following diagram.

UNBN Call Restrictions for Wholesaling (continued)

New screening, DACC flow



ANI Handling

When a call arrives with an ANI ID that is marked as special through the ANI ID tables, table SPLDNID and table DNSCRN are searched for the calling number. If it is not found, the calling number is discarded, and the call is displayed to the operator as an ANI failure. This display can be changed to ANI success as follows:

- On a DN basis by table TOPSPARM new parameter OVERRIDE_ANIFSPL_HANDLING.
- On a trunk group basis by table TOPSTOPT new field ANIFSPL.

Logs

When table TOPSTOPT indicates calls over a trunk are to be screened, table TOPSTOPT, TOPEACAR, SPIDDB, OSSCAT, BELLCAT, or OPENANI is used for the restricted billing index into either table RESTBIL or DARSTBIL.

UNBN Call Restrictions for Wholesaling (continued)

If the index is not found in RESTBIL or DARSTBIL, new log TOPS611 is output. The originating trunk, restricted billing index, and calling number is indicated in the log.

Feature optionality

This feature is under software optionality control (SOC) option UNBN0101. Once the SOC state is on, the feature can be activated on a trunk group basis in table TOPSTOPT field BILLSCRN. The type of screening for the trunk is specified by table WSALEOPT. In addition, for SPID based screening, SPID SOC option UNBN0003 must be on and SPID processing for the trunk group must be enabled by table TOPSTOPT field SPIDPRC.

The optional handling of calls marked as special but not found in the DN screening tables is not controlled by SOC. Table TOPSTOPT field ANIFSPL and TOPSPARM parameter OVERRIDE_ANIFSPL_HANDLING control this behavior independent of the SOC UNBN0101.

Translations table flow

The list that follows specifies the UNBN Call Restrictions for Wholesaling translations tables:

- Table TOPSTOPT specifies trunk options for TOPS trunks connecting to TOPS positions. The table also provides some basic control for the Call Restrictions for Wholesaling feature on a trunk group basis.
- Table WSALEOPT provides various values to screen billing restrictions.
- Table SPIDDB contains service provider identifier data on the SPID. The table also includes a SCRNIIDX into the restricted billing tables for the Call Restrictions for Wholesaling feature.
- Table TOPEACAR specifies supported operator services and billing for carriers. The table also provides a SCRNIIDX into the restricted billing tables for the Call Restrictions for Wholesaling feature.
- Table TOPCACAR defines the carrier identification codes (CICs) and carrier names for global environments.
- Table OSSCAT defines the FORMAT, CLGSERV, REST and ROUTE fields upon receipt of a specified pair of ANI ID digits over a TOPS trunk with Operator Service Signaling. The table also provides a SCRNIIDX into the restricted billing tables for the Call Restrictions for Wholesaling feature.
- Table BELLCAT defines the FORMAT, CLGSERV, and ROUTE fields upon receipt of a specified ANI ID digit over a TOPS trunk with Bell

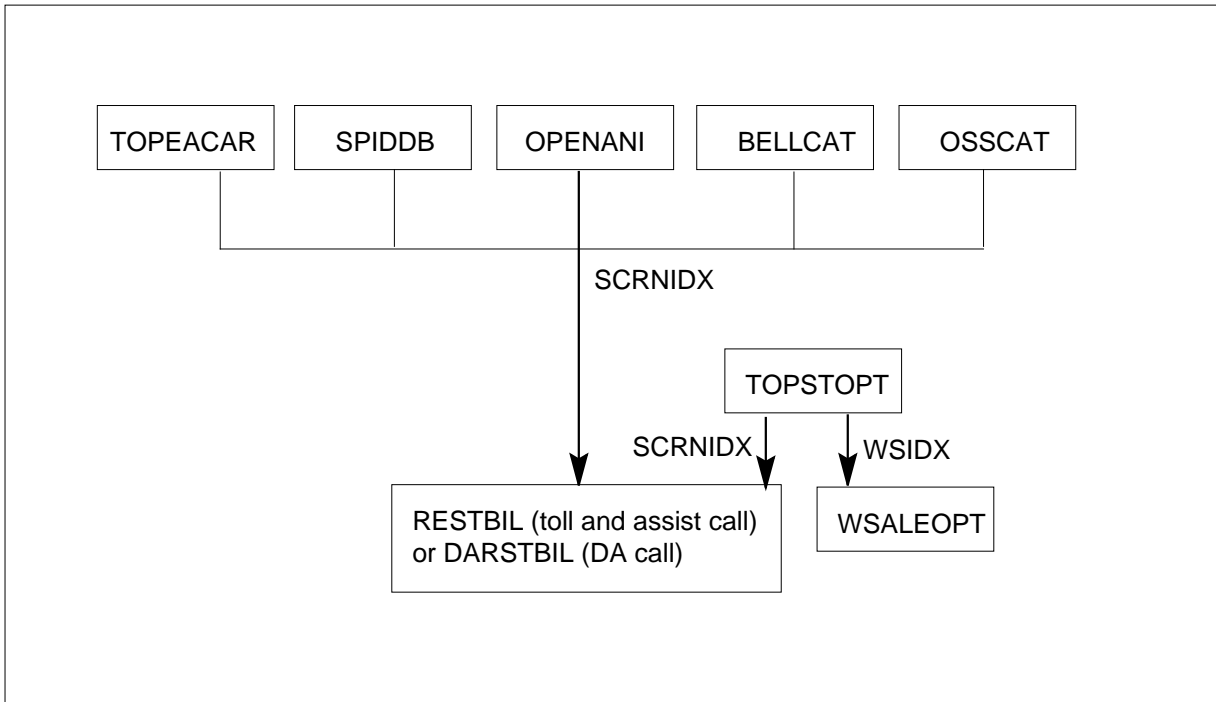
UNBN Call Restrictions for Wholesaling (continued)

Signaling. The table also provides a SCRNDX into the restricted billing tables for the Call Restrictions for Wholesaling feature.

- Table OPENANI determines the calling service feature for calls arriving on TOPS trunks that support open numbering. This table also provides the SCRNDX into the restricted billing tables for the Call Restrictions for Wholesaling feature.

The flowchart that follows provides the UNBN Call Restrictions for Wholesaling translations process.

Table flow for UNBN Call Restrictions for Wholesaling



The table that follows lists possible datafill content for tables that contribute to the functionality of Call Restrictions for Wholesaling.

Datafill example for UNBN Call Restrictions for Wholesaling

Datafill table	Example data
TOPSTOPT	ISUP2WITALT QMSCAM CORECAM N N NONE NA N NONE 0 N N Y N Y 1 59 N Y Y
WSALEOPT	1 TRK AOSPID \$ CIC \$

UNBN Call Restrictions for Wholesaling (continued)

Datafill example for UNBN Call Restrictions for Wholesaling

Datafill table	Example data
TOPEACAR	0111 C111 C111 Y Y 0111 UNREST UNREST SERV NOQUERY Y NOQUERY Y NOQUERY Y Y Y 100 0 N
SPIDDB	OLNS Y OLNSDSP ALL Y OLNSBRAND Y OLNSBRAND Y ACTSTOPS 25 ACTSTOPS 26 Y OLNSSPID N 100
OSSCAT	0 ANI STATION NONE N 100
BELLCAT	0 ANI STATION N 100
OPENANI	0 ANI STATION 100
RESTBIL	100 100 RSTRCOIN COL CC 3RD SPLCLG SPLCLD\$ NONE

Limitations and restrictions

The limitations and restrictions that follow apply to UNBN Call Restrictions for Wholesaling:

- Screening based on the SPID of a call is not currently supported for interlata interzone calls.
- CIC based screening is not supported for intralata calls. IntraLATA PIC (ILP) and resultant carrier information is not currently supported in screening of intralata/intrazone calls.
- The only SPID that this feature supports is AO SPID.
- Calls arriving with an ANI ID indicating hotel that are screened and restricted by this feature are marked as restricted. Hotel calls and restricted calls are mutually exclusive; that is, a call cannot be both hotel and restricted.

Interactions

The paragraphs that follow describe how UNBN Call Restrictions for Wholesaling interacts with other functionalities.

DN-based restrictions take precedence over restrictions that this feature introduces. If there are DN-based restrictions, then the screening methods that this feature introduces do not apply to a call.

During datafill, the restricted billing indexes entered in tables TOPSTOPT, TOPEACAR, SPIDDB, OSSCAT, BELLCAT, and OPENANI are not checked against table RESTBIL/DARSTBIL to verify the indexes entered are datafilled in table RESTBIL/DARSTBIL. This means a restricted billing index not

UNBN Call Restrictions for Wholesaling (continued)

contained in the RESTBIL/DARSTBIL tables may be entered into one of the following: TOPSTOPT, TOPEACAR, SPIDDB, OSSCAT, BELLCAT, or OPENANI. This is consistent with tables referencing RESTBIL/DARSTBIL prior to this feature. However, if a call is assigned a restricted billing index as a result of the screening introduced by this feature, and during call processing it is found that the resultant restricted billing index is not datafilled in the restricted billing tables, then a log indicating this is output. Additionally, no billing restrictions is assigned to the call. This is a change from the DN based use of non-datafilled RESTBIL/DARSTBIL indexes. Any DN based restricted call (that is, the screening prior to this feature), that indicates an index not datafilled in table RESTBIL/DARSTBIL, is assigned a default billing set including all billing types except sent paid.

When a call arrives with an ANI ID that is marked as special by the ANI ID tables, (OSSCAT, BELLCAT, and OPENANI) tables SPLDNID or DNSCRN are searched for the calling number. If not found, the calling number is discarded and the call is presented to the operator as an ANI failure. This feature introduces a new parameter and a new field in table TOPSTOPT, each which can allow these calls to be presented with the ANI intact, rather than an ANI ID failure. The TOPSPARM parameter, `VERRIDE_ANIFSPL_HANDLING`, controls this behavior office wide. If this parameter is set to N, the behavior of these calls can be controlled on a trunk group basis by the TOPSTOPT field ANIFSPL. The calling service for these calls are usually determined by the screening tables. If no data is found in these tables and data indicates the call is to be marked as an ANI success, the calling service is marked as station.

Functionality GR317/GR394 ISUP to/from TOPS, OSEA0005, must be active for ISUP calls to be restricted by Call Restrictions for Wholesaling.

Activation and deactivation by the user

UNBN Call Restrictions for Wholesaling is activated through Software Optionality Control (SOC) (UNBN0101).

Billing

UNBN Call Restrictions for Wholesaling does not change the generation or format of billing records.

Station Message Detail Recording

UNBN Call Restrictions for Wholesaling does not require Station Message Detail Recording.

UNBN Call Restrictions for Wholesaling (continued)

Office parameters used by UNBN Call Restrictions for Wholesaling

UNBN Call Restrictions for Wholesaling does not create new office parameters.

Datafill sequence

The table that follows lists the tables that require datafill to put UNBN Call Restrictions for Wholesaling into operation. You must enter data in table WSALEOPT before TOPSTOPT. This datafill sequence is the only order in which you must enter data. You do not have to follow an order of sequence to enter data in the remaining tables.

Datafill requirements for UNBN Call Restrictions for Wholesaling

Table	Purpose of table
WSALEOPT	Wholesale Options Table indicates criteria to screen billing restrictions.
TOPSTOPT	TOPS Trunk Option Table contains options for TOPS trunks.
SPIDDB	Service Provider Identifier Database Table contains TOPS call processing data for SPIDs.
TOPEACAR	TOPS Equal Access CARRIER Table specifies whether operator services are provided for certain carriers. It also defines the billing procedure for calls for a carrier.
TOPCACAR	TOPS Competitive Access Carrier Table controls transfer of a call to its carrier's network for additional service
OSSCAT	Operator Services Signaling CATEgory allows the operating company to define the FORMAT, CLGSERV, REST, and ROUTE fields. The operating company can define these fields after it receives a specified pair of ANI digits. The operating company receives the pair of digits over a TOPS trunk with Operator Services Signaling.
BELLCAT	Bell CATEgory allows the operating company to define the FORMAT, CLGSERV, and ANIROUTE fields after it receives specified ANI digits over a TOPS trunk with BELL signaling.
OPENANI	OPEN Numbering ANI defines the format and calling service for ANI digits.
TOPSPARM	TOPS Parameters contains office wide parameters for the TOPS office.

UNBN Call Restrictions for Wholesaling (continued)

Datafill related to UNBN Call Restrictions for Wholesaling for table WSALEOPT

The table that follows provides the datafill related to UNBN Call Restrictions for Wholesaling for table WSALEOPT. This table includes only those fields that apply directly to UNBN Call Restrictions for Wholesaling.

Datafill related to table WSALEOPT

Field	Subfield	Entry	Explanation and action
INDEX		0-99	Index. This field is the index into the table from table TOPSTOPT field WSIDX.

UNBN Call Restrictions for Wholesaling (continued)

Datafill related to table WSALEOPT

Field	Subfield	Entry	Explanation and action
INTRA		TRK,AOSPID	<p>Intra-LATA or intra-zone screening criteria. The values are as follows:</p> <ul style="list-style-type: none"> • TRK \$ - Trunk. Use table TOPSTOPT field SCRNDX to index table RESTBIL (TA call) or DARSTBIL (DA call). • AOSPID \$ - Account owner SPID. Use table SPIDDB field SCRNDX to index table RESTBIL (TA call) or DARSTBIL (DA call). • TRK AOSPID \$ - Use AOSPID (same as AOSPID above). But, if SPIDDB field SCRNDX = 100 (nil) or no SPID is associated with the call, then use TRK (same as TRK above). • AOSPID TRK \$ - Use TRK. But if TOPSTOPT field SCRNDX = 100 (nil) or no TRK is associated with the call, use AOSPID. <p>If both TRK and AOSPID are selected, then the order in which the entries are selected plays a role in the screening process. The last one entered is the first one selected. The last entry takes precedence if it is a non-nil SCRNDX.</p> <p>If the last entry results in a nil screening index, then the first entry is used. If both selector choices result in a nil index, then no screening applies to the call.</p>

UNBN Call Restrictions for Wholesaling (continued)

Datafill related to table WSALEOPT

Field	Subfield	Entry	Explanation and action
INTER		TRK, CIC	<p>Inter-LATA or inter-zone screening criteria. The values are as follows:</p> <ul style="list-style-type: none"> • TRK \$ - Trunk. Use table TOPSTOPT field SCRNIIDX to index table RESTBIL (TA call) or DARSTBIL (DA call). • CIC \$ - Carrier ID code. Use table TOPEACAR field SCRNIIDX to index table RESTBIL (TA call) or DARSTBIL (DA call). • TRK CIC \$ - Use CIC (same as CIC above). But, if TOPEACAR field SCRNIIDX = 100 (nil) or no CIC is associated with the call, then use TRK (same as TRK above). • CIC TRK \$ - Use TRK. But if TOPSTOPT field SCRNIIDX = 100 (nil) or no TRK is associated with the call, use CIC. <p>If both TRK and CIC are selected, then the order in which the entries are selected plays a role in the screening process. The last one entered is the first one selected. The last entry take precedence if it is a non-nil SCRNIIDX.</p> <p>If the last entry results in a nil screening index, then the first entry is used. If both selector choices result in a nil index, then no screening applies to the call.</p>

Datafill example for table WSALEOPT

The figure that follows shows sample datafill for table WSALEOPT.

MAP example for table WSALEOPT

IDX	INTRA	INTER
1	TRK AOSPID \$	CIC \$

UNBN Call Restrictions for Wholesaling (continued)

Datafill related to UNBN Call Restrictions for Wholesaling for table TOPSTOPT

The table that follows provides the datafill related to UNBN Call Restrictions for Wholesaling for table TOPSTOPT. This table includes only those fields that apply directly to UNBN Call Restrictions for Wholesaling.

Datafill related to table TOPSTOPT

Field	Subfield	Entry	Explanation and action
BILLSCRN		see subfield	Billing screening. This field consists of subfield BILLSCRN.
	BILLSCRN	Y or N	Billing screening. This field indicates whether the wholesale screening method applies to the trunk group. Wholesale screening is considered only if DN screening finds no restrictions for non-DACC calls. The values are as follows: <ul style="list-style-type: none"> • Y - Enable screening and datafill subfields WSIDX, SCRINDEX, DACCSCR, and ANIIDSCR. • N - Disable screening. This value is the default.
	WSIDX	0-99	Whole Sale Option index. This subfield is an index into table WSALEOPT.
	SCRINDEX	0-100	Screening index. This subfield is an index into table RESTBIL (TA call) or DARSTBIL (DA call). This subfield is used for trunk-based screening when table WSALEOPT field INTRA or INTER contains TRK. Value 100 is nil.
	DACCSCR	Y or N	Directory assistance call completion screening. This subfield indicates whether wholesale screening should apply to Directory Assistance Call Completion (DACC) calls. The values are Y (yes) and N (no).

UNBN Call Restrictions for Wholesaling (continued)

Datafill related to table TOPSTOPT

Field	Subfield	Entry	Explanation and action
	ANIIDSCR	Y or N	Automatic Number Identification Screening. This subfield determines whether calls should be screened based on the ANI ID. This screening is only considered if DN screening finds no restrictions and table WSALEOPT screening is attempted but there are no entries in applicable field INTER or INTRA. The values are Y (yes) and N (no). When enabled, the signaling type is determined from table TRKGRP field SIGTYPE to access applicable table BELLCAT, OSSCAT, or OPENANI field SCRNDX (all tables) for an index into applicable table RESTBIL (TA call) or DARSTBIL (DA call).
ANIFSPL		Y or N	<p>ANI ID failure special. This subfield determines on a trunk group basis whether an ANI failure call should be displayed as ANI success to the operator. An ANI failure occurs if the call is marked as special and no calling number is found in table SPLDNID or DNSCRN. The values are as follows:</p> <ul style="list-style-type: none"> • Y - An ANI failure is allowed to proceed through the system, no restrictions are marked against the call, and the call is displayed as ANI success. This value is valid only if table TOPSPARM parameter OVERRIDE_ANIFSPL_HANDLING = N, since this parameter has precedence over field ANIFSPL. • N - An ANI failure is displayed as ANI failure as prior to this feature. This value is the default. <p>This behavior applies to calls marked as special by the ANI ID tables (OSSCAT, BELLCAT, and OPENANI) that arrive on STATCLAS = DNLOOKUP or RESTBIL trunk groups.</p> <p>When a call arrives with an ANI ID marked as special, the screening tables are used to identify the calling service (for example, coin, restricted, and so forth). When there is no data in these tables for a call marked as special, and the datafill indicates not to mark this call as ANI failure, the calling service is marked as station.</p>

UNBN Call Restrictions for Wholesaling (continued)

Datafill example for table TOPSTOPT

The figure that follows shows sample datafill for table TOPSTOPT.

MAP example for table TOPSTOPT

GRPKEY	ORGAREA	DISPCLG	ADASERV	ADASANS				
ANITOCCLI	OLNSQRY	DCIBIDX	LNPCLGAM	XLASCHEM	SPIDPRC	TRKSPID		
BILLSCRN	ANIFSP							

ISUP2SITALT		N	N	NONE	NA			
N	NONE	0	N		N	Y		N
Y 1	59 N	Y						

Datafill related to UNBN Call Restrictions for Wholesaling for table SPIDDB

The table that follows provides the datafill related to UNBN Call Restrictions for Wholesaling for table SPIDDB. This table includes only those fields that apply directly to UNBN Call Restrictions for Wholesaling.

Datafill related to table SPIDDB

Field	Subfield	Entry	Explanation and action
SCRNIDX		0-100	Screen index. This new field is an index into table RESTBIL (TA call) or DARSTBIL (DA call). Value 100 is nil.

Datafill example for table SPIDDB

The figure that follows shows sample datafill for table SPIDDB.

MAP example for table SPIDDB

SPID	SCRNDISP		OPERSYS	TAANN
	DAANN		ACTSANN	XLA
	SPIDCRIT	SCRNIDX		

ABCD	Y SPD_ABCD		ALL	Y OLNSBRAND
	Y OLNSBRAND	Y ACTSTOPS 25	ACTSTOPS 26	Y OLNSSPID
	M	10		

UNBN Call Restrictions for Wholesaling (continued)

Datafill related to UNBN Call Restrictions for Wholesaling for table TOPEACAR

The table that follows provides the datafill related to UNBN Call Restrictions for Wholesaling for table TOPEACAR. This table includes only those fields that apply directly to UNBN Call Restrictions for Wholesaling.

Datafill related to table TOPEACAR

Field	Subfield	Entry	Explanation and action
SCRNIDX		0-100	Screen index. This new field is an index into table RESTBIL (TA call) or DARSTBIL (DA call). Value 100 is nil.

Datafill example for table TOPEACAR

The figure that follows shows sample datafill for table TOPEACAR.

MAP example for table TOPEACAR

CARDIG	CARNAME	ALTDISP	OPLSCLD	CAMABILL	ALTCARR	NATERM	OPSERV	TDBIDX	CICSCHM
INTERM									
SCRNIDX									
0111	C111	C111	Y	Y	Y	0111	UNREST		
UNREST	SERV	NOQUERY	Y	NOQUERY	Y	NOQUERY	Y	Y	Y
10						100	0		N

Datafill related to UNBN Call Restrictions for Wholesaling for table TOPCACAR

The table that follows provides the datafill related to UNBN Call Restrictions for Wholesaling for table TOPCACAR. This table includes only those fields that apply directly to UNBN Call Restrictions for Wholesaling.

Datafill related to table TOPCACAR

Field	Subfield	Entry	Explanation and action
SCRNIDX		0-100	Screen index. This new field is an index into table RESTBIL (TA call) or DARSTBIL (DA call). Value 100 is nil.

Datafill example for table TOPCACAR

The figure that follows shows sample datafill for table TOPCACAR.

UNBN Call Restrictions for Wholesaling (continued)

MAP example for table TOPCACAR

CICKEY	NAME	SERVICE
1	TLMX	COMPLETE 5 Y Y

Datafill related to UNBN Call Restrictions for Wholesaling for table OSSCAT

The table that follows provides the datafill related to UNBN Call Restrictions for Wholesaling for table OSSCAT. This table includes only those fields that apply directly to UNBN Call Restrictions for Wholesaling.

Datafill related to table OSSCAT

Field	Subfield	Entry	Explanation and action
SCRNIDX		0-100	Screening index. This new field is an index into table RESTBIL (TA call) or DARSTBIL (DA call). This field supports a check of billing restrictions based on the incoming ANI ID digits for OSS signaling. This field is used if table TOPSTOPT field ANIIDSCR = Y, table TRKGRP field SIGTYPE = OSS, and no other restrictions apply to the call.

Datafill example for table OSSCAT

The figure that follows shows sample datafill for table OSSCAT.

MAP example for table OSSCAT

ANI	FORMAT	CLGSERV	REST	ROUTE	SCRNIDX
0	ANI	STATION	NONE	N	10

UNBN Call Restrictions for Wholesaling (continued)

Datafill related to UNBN Call Restrictions for Wholesaling for table BELLCAT

The table that follows provides the datafill related to UNBN Call Restrictions for Wholesaling for table BELLCAT. This table includes only those fields that apply directly to UNBN Call Restrictions for Wholesaling.

Datafill related to table BELLCAT

Field	Subfield	Entry	Explanation and action
SCRNIDX		0-100	Screening index. This new field is an index into table RESTBIL (TA call) or DARSTBIL (DA call). This field supports a check of billing restrictions based on the incoming ANI ID digits for BELL signaling. This field is used if table TOPSTOPT field ANIIDSCR = Y, table TRKGRP field SIGTYPE = BELL, and no other restrictions apply to the call.

Datafill example for table BELLCAT

The figure that follows shows sample datafill for table BELLCAT.

MAP example for table BELLCAT

ID	FORMAT	CLGSERV	ANIRROUTE	SCRNIDX
0	ANI	STATION	N	10

UNBN Call Restrictions for Wholesaling (continued)

Datafill related to UNBN Call Restrictions for Wholesaling for table OPENANI

The table that follows provides the datafill related to UNBN Call Restrictions for Wholesaling for table OPENANI. This table includes only those fields that apply directly to UNBN Call Restrictions for Wholesaling.

Datafill related to table OPENANI

Field	Subfield	Entry	Explanation and action
SCRNIDX		0-100	Screening index. This new field is an index into table RESTBIL (TA call) or DARSTBIL (DA call). This field supports a check of billing restrictions based on the incoming ANI ID digits for OPENNUM signaling. This field is used if table TOPSTOPT field ANIIDSCR = Y, table TRKGRP field SIGTYPE = OPENNUM, and no other restrictions apply to the call.

Datafill example for table OPENANI

The figure that follows shows sample datafill for table OPENANI.

MAP example for table OPENANI

ANIDIGS	FORMAT	CLGSERV	SCRNIDX
0	ANI	STATION	10

UNBN Call Restrictions for Wholesaling (continued)

Datafill related to UNBN Call Restrictions for Wholesaling for table TOPSPARM

The table that follows provides the datafill related to UNBN Call Restrictions for Wholesaling for table TOPSPARM. This table includes only those fields that apply directly to UNBN Call Restrictions for Wholesaling.

Datafill related to table TOPSPARM

Parameter name	Explanation and action
<p>OVERRIDE_ANIFSPL_HANDLING</p>	<p>This parameter determines on a switch wide basis whether an ANI failure call should be displayed as ANI success to the operator. An ANI failure occurs if the call is marked as special and no calling number is found in table SPLDNID or DNSCRN. The values are as follows:</p> <ul style="list-style-type: none"> • Y - An ANI failure is allowed to proceed through the system, no restrictions are marked against the call, and the call is displayed as ANI success. This parameter has precedence over table TOPSTOPT field ANIFSPL. Therefore, when this parameter is set to Y, field ANIFSPL is not valid. • N - An ANI failure is displayed as ANI failure as prior to this feature. This value is the default. For this value only, an ANI failure can be displayed as ANI success on a trunk group basis according to table TOPSTOPT field ANIFSPL. <p>This behavior applies to calls marked as special by the ANI ID tables (OSSCAT, BELLCAT, and OPENANI) or arriving on STATCLAS = DNLOOKUP or RESTBIL trunk groups.</p> <p>When a call arrives with an ANI ID marked as special, the screening tables are used to identify the calling service, (for example, coin, restricted, and so forth). When there is no data in these tables for a call marked as special, and the datafill indicates not to mark this call as ANI failure, the calling service is marked as station.</p>

Datafill example for table TOPSPARM

The figure that follows shows sample datafill for table TOPSPARM.

UNBN Call Restrictions for Wholesaling (end)

MAP example for table TOPSPARM

PARMNAME	PARMVAL
-----	-----
OVERRIDE_ANIFSPL_HANDLING	Y

Translation verification tools

UNBN Call Restrictions for Wholesaling does not use translation verification tools.

SERVORD

UNBN Call Restrictions for Wholesaling does not use the Service Order System (SERVORD).

UNBN OPRTRANS and EA

Ordering codes

Functional group ordering code: UNBN0101

Functionality ordering code: not applicable

Release applicability

TOPS12 and up

TOPS12 introduced UNBN OPRTRANS and EA.

Requirements

To operate, UNBN OPRTRANS and EA requires the functional groups that follow:

- BAS Generic, BAS00003
- Operator Services Basic, OSB00001, and table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y

Description

This functionality provides unbundling as follows:

- Table OPRTRANS replacement
- Equal Access (EA) translations replacement

This functionality consists of the feature as follows:

Feature number	Feature name
A59006822	OPRTRANS and EA Unbundling

Operation

This section provides details of the functionality.

UNBN OPRTRANS and EA (continued)

Table OPRTRANS replacement

Unbundling of translations and routing continues, which started with functionality UNBN Translations and Routing in release TOPS09. That functionality made table changes as follows:

- Table TOPSTOPT - New fields are as follows:
 - XLASCHEM enables the new TOPS translations for a trunk group. When enabled, the trunk is assigned to an XLAGRP.
 - SPIDPRC allows SPID processing on the trunk group. This addition affects all SPID processing in the unbundling functionality group.
- Table SPIDDB - This existing table has new field XLA which enables use of the SPID in the new TOPS translations plan.
- Table XLAGRP - This new table defines translation group names for the new translations process.
- Table SPIDGRP - This new table defines names of SPID groups for use in the new TOPS translations plan. SPIDs that require the same processing are grouped to conserve resources.
- Table XLASPID - This new table refines the XLAGRP by the AO SPID of the originator. This table is not used if SOC UNBN0003, UNBN Translations and Routing, is not activated.
- Table XLAODIGS - This new table refines the XLAGRP by the NPA-NXX of the originator.
- Table TOPSDP - This new table indicates the XLAGRP pretranslator, STS, and screening names. The screening names are used for operator and mechanized calling card service (MCCS) calls, and originator and local screening.

In summary, an initial XLAGRP is assigned in table TOPSTOPT and can be refined by the AO SPID and NPA-NXX of the originator. The final XLAGRP is used to index into table TOPSDP for translations and screening names.

As given above, table TOPSDP provides screening and pretranslators for operator and MCCS calls that use to be obtained from table OPRTRANS tuples OPERATOR and MCCS, shown below.

UNBN OPRTRANS and EA (continued)

MAP example for table OPRTRANS

KEY	STS	SCRNCL	PRTNM	LCANAME
OPERATOR	619	NSCR	OPER	NLCA
VERIFY	619	NSCR	OPVE	NLCA
SPLVfy	619	NSCR	OPER	NLCA
DELAY	619	NSCR	BACK	NLCA
MCCS	619	NSCR	MCCS	NLCA
OVERSEAS	619	NSCR	NPRT	NLCA

For TOPS12, new table OPRINFO supports these remaining call types in the new TOPS translations and screening. Example datafill follows:

MAP example for table OPRINFO

OPERGRP	NEWXLA	XLAGRP
OPERCLG	Y	CLGXLA
OPERCLD	Y	CLDXLA
OVERSEAS	Y	OVSXLA
THIRD	Y	3RDXLA
BLV	Y	BLVXLA

UNBN OPRTRANS and EA (continued)

These tuples replace the table OPRTRANS tuples as follows:

OPRTRANS replacement

Table OPRTRANS tuples	Replacement for new TOPS translations
OPERATOR (called number) - Normally, the STS, SCRNL, and PRTNM are used from the originating trunk (not the OPERATOR tuple). However, if this originating data is not desired (for example, a zenith call), the data is not available, the call is a forward connection established by the operator, or the call is an operator assisted call, the OPERATOR tuple provides the data. An exception is the screening class, where screening is performed twice using data from both the originating trunk and OPRTRANS.	For TOPS09, table TOPSDP fields OPERPRTN (pretranslator), STS (code translations and local screening), ORIGSCRN (screening), OPERSCRN (screening), and LCANAME (local screening) are used.
OPERATOR (called number and no originating party nor agent is present) - Since the originating data is not available, table OPRTRANS fields STS, SCRNL, and PRTNM are used.	For TOPS12, table TOPSDP fields OPERPRTN (pretranslator), STS (code translations and local screening), and OPERSCRN (or ORIGSCRN) (screening) are used. Table OPRINFO tuple OPERCLD enables this replacement and provides the XLAGRP.
VERIFY (busy line verification)	For TOPS12, table TOPSDP fields OPERPRTN (pretranslator), STS (code translations and local screening), and OPERSCRN (screening) are used. Table OPRINFO tuple BLV enables this replacement and provides the XLAGRP.
SPLVFY (third number billing verification)	For TOPS12, table TOPSDP fields OPERPRTN (pretranslator), STS (code translations and local screening), and OPERSCRN (screening) are used. Table OPRINFO tuple THIRD enables this replacement and provides the XLAGRP.
DELAY (calling number with no originating agent)	For TOPS12, table TOPSDP fields OPERPRTN (pretranslator), STS (code translations and local screening), and OPERSCRN (screening) are used. Table OPRINFO tuple OPERCLG enables this replacement and provides the XLAGRP.

UNBN OPRTRANS and EA (continued)

OPRTRANS replacement

Table OPRTRANS tuples	Replacement for new TOPS translations
MCCS (MCCS calling card sequence calls)	<p>For TOPS09, table TOPSDP fields MCCSPRTN and MCCSSCRN are used.</p> <p>Table TOPSTOPT field XLASCHEM enables this replacement and provides the initial XLAGRP. If not enabled, the OPRTRANS tuple MCCS tuple is used.</p>
OVERSEAS	<p>For TOPS12, table TOPSDP fields OPERPRTN (pretranslator), STS (code translations and local screening), and OPERSCRN (screening) are used.</p> <p>Table OPRINFO tuple OVERSEAS enables this replacement and provides the initial XLAGRP.</p>

Table OPRINFO field NEWXLA enables the new TOPS translations on a call type basis for the calls marked in the previous table as TOPS12. The TOPS09 marked call are not affected by table OPRINFO. Field XLAGRP assigns an XLA group when field NEWXLA is set to Y; otherwise, table OPRTRANS is used.

Release TOPS09 provided XLAGRP refinement in tables XLASPID and XLAODIGS for operator (originator is present) and MCCS calls. However, this TOPS12 functionality does not allow refinement of the XLAGRP in table OPRINFO. The exception is the overseas tuple, which allows refinement.

When a tuple in table OPRINFO field NEWXLA = Y, pretranslator and screening information is used from table TOPSDP fields STS, OPERPRTN, and OPERSCRN.

Pre-TOPS12 EA functionality

Before this functionality, EA calls did not use the new TOPS translations and screening. Table TOPEATRK provided an STS (field SCRINDEX) and screening class in fields INTRASSC (intrastate), INTERSCC (interstate), and OVSSCL (overseas). Example datafill follows:

UNBN OPRTRANS and EA (continued)**MAP example for table TOPEATRK**

TRUNKGRP	ENDOFFICE	CARRIER	LATANM	INTRASSC	INTERSSC	OVSSCL
SCRNIDX	DNLOOK	DFLTPIC	BYPASS			
TBELLIC1	CONFORM	0111	L123	STRA	STER	SOVS
619	N	N	\$			

This screening information was used to index table CLSVSCRC for an outgoing route. This table divides traffic between operator assisted (OA) and direct dial (DD), and then provides a route.

Example datafill follows:

MAP example for table CLSVSCRC

NPASCTYP	NORSLTS	TMTOFRT	CLSVSCR
619 STER DD	2	N NONE	(1)
619 STER OA	2	N NONE	(1)
619 STRA DD	2	N NONE	(1)
619 STRA OA	2	N NONE	(1)
619 SOVS DD	2	N NONE	(1)
619 SOVS OA	2	N NONE	(1)

MAP example for subtable CLSVSCR (of CLSVSCRC tuple 619 STER DD)

FROMDIGS	TODIGS	SUB_TMTOFRT
01110	01112	T OFRT 803
111313	0111313	T OFRT 836
01114	01119	T OFRT 803
0112	0112	T OFRT 100
0122	0122	T OFRT 803
0888	0888	T OFRT 804

UNBN OPRTRANS and EA (continued)

New call flow

The call flow for the new TOPS translations and screening is as follows: (A flow chart is given at the end of this section.)

1. Determine the call category as follows:
 - Operator (with caller present) or MCCS: These types were converted to the new TOPS translations and screening in TOPS09. Go to step 3.
 - The call types in table OPRINFO (OPERCLG, OPERCLD, OVERSEAS, THIRD, and BLV), created in TOPS12. Go to step 2.
2. For a call type in table OPRINFO, check if the call type is enabled in field NEWXLA.
 - If the call type is enabled (NEWXLA = Y), use field XLAGRP to access table TOPSDP for translations and screening information. Go to step 6.
 - If the call type is not enabled (NEWXLA = N), perform the old (pre-TOPS12) TOPS translations and screening, which uses table OPRTRANS.
3. For a call type not in table OPRINFO, which is either an operator (caller is present) or MCCS call, check if the new TOPS translations and screening is enabled by table TOPSTOPT field XLASCHEM.
 - If the new scheme is enabled (field XLASCHEM = Y), go to the next step.
 - If the new scheme is not enabled (field XLASCHEM = N), perform the old (pre-TOPS09) TOPS translations and screening, which uses table OPRTRANS.
4. Table TOPSTOPT field XLASCHEM provides an initial XLAGRP for standard translations and screening as given in TOPS09 functionality TOPS Translations and Screening.
5. Perform optional refinement of the XLAGRP in existing tables XLASPID and XLAODIGS. These tables refine by the calling AO SPID and NPA-NXX of the originator.
6. Use the resultant XLAGRP to access table TOPSDP for screening and translations information. This translations and screening must be successful (it cannot result in treatment) in order to go to the next step. This requirement is because EA translations only perform class of service screening to modify an existing route and this route must come from standard translations.

UNBN OPRTRANS and EA (continued)

7. Check the route for a carrier call.
 - If a local call, route the call using the the resultant XLAGRP as a final outgoing route.
 - If a carrier call, go to the next step.
8. Check if the new TOPS translations and screening for EA calls is enabled in table TOPEATRK field XLASCHEM.
 - If the new processing is enabled (field XLASCHEM = Y), new field EAXLAGRP provides an initial XLAGRP for refinement in the following steps to determine a final outgoing route. Go to the next step.
 - If the new processing is not enabled (field XLASCHEM = N), use the old method (pre-TOPS12) where screening information in table TOPEATRK is used for screening in table CLSVSCRC. The screening fields in TOPEATRK are INTRASSC, INTERSSC, OVSSCL, and STS. Go to step 14.
9. Get the initial XLAGRP from table TOPEATRK.
10. Perform optional refinement of the XLAGRP in existing tables XLASPID and XLAODIGS. These tables refine by the calling AO SPID and NPA-NXX of the originator.
11. Perform optional refinement of the XLAGRP by the carrier identification code (CIC) with new table XLACIC. New table CICGRP defines the CIC groups used in table XLACIC. The CICGRP is optionally assigned in table TOPEACAR field CICSCHEM. Since table TOPEACAR can assign more than one carrier to a CICGRP, the number of entries in table XLACIC can be reduced.
12. Perform optional refinement of the XLAGRP by the region of the called number in new table XLAEAREG. The region can be defined in table TOPEATRK as intrastate, interstate, overseas, or a value defined in new tables EAREGN and EASCRN.

Regions are introduced by TOPS12 functionality Table LATANAME Expansion, OSB00001. Region is a definable replacement for the STATE status. Therefore, a national call is intra- or interLATA, and intra- or interSTATE/REGION. For international calls, the LATA status is interlata and the STATE/REGION status is overseas.
13. The final XLAGRP is used to index table TOPSDP for the STS and screening class (field ORIGSCRN). Fields STS and ORIGSCRN are used to index table CLSVSCRC along with the CIC digits which are prepended to the called number for class of service screening to determine a final outgoing route.

UNBN OPRTRANS and EA (continued)

14. Perform screening in table CLSVSCRC. If a screening class from applicable table TOPSP (field ORIGSCRN in step 13) or table TOPEATRK (step 8) is set to NSCR, or there are no matching digits in table CLSVSCRC, no EA screening is performed. Then, the route is based on the standard translations result (that is, the non-EA route) using data based on the XLAGRP from table TOPSTOPT.

15. Route the call.

The above refinements of the XLAGRP allows calls on the same trunk group to have different STSs for routing. Therefore, the STS is not associated with the trunk group but with the final XLAGRP.

As indicated above, there is interaction between table TOPSTOPT field XLASCHEM and table TOPEATRK field XLASCHEM as follows:

Interaction of tables TOPSTOPT and TOPEATRK

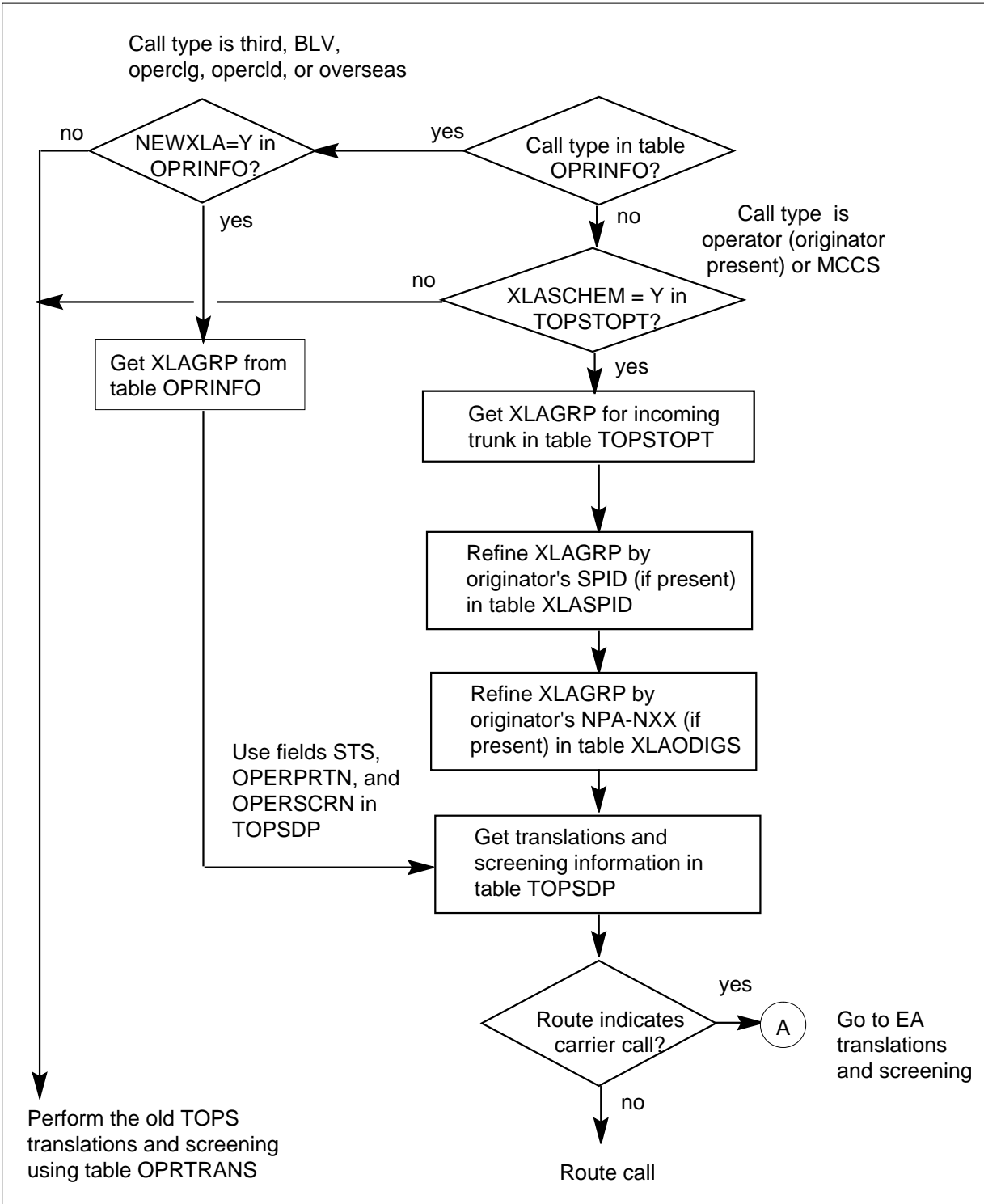
Table TOPSTOPT field XLASCHEM	Table TOPEATRK field XLASCHEM	Comments
Y XLAGRP	Y XLAGRP1	The new TOPS translations is enabled for EA and non-EA (operator with caller present and MCCS) calls.
Y XLAGRP	N STER STRA OVS 619	The new TOPS translations is enabled for non-EA (operator with caller present and MCCS) calls only. EA translations use the old TOPS translations.
N	Y XLAGRP	This combination is not allowed.
N	N STER STRA OVS 619	The old TOPS translations is used for EA and non-EA (operator with caller present and MCCS) calls.

Note: The calls in table OPRINFO (OPERCLG, OPERCLD, OVERSEAS, THIRD, and BLV) are independent of field XLASCHEM in tables TOPSTOPT and TOPEATRK. Therefore, table OPRINFO field NEWXLA is the only control for these calls.

The figures that follow show the call flow for the new TOPS translations and screening.

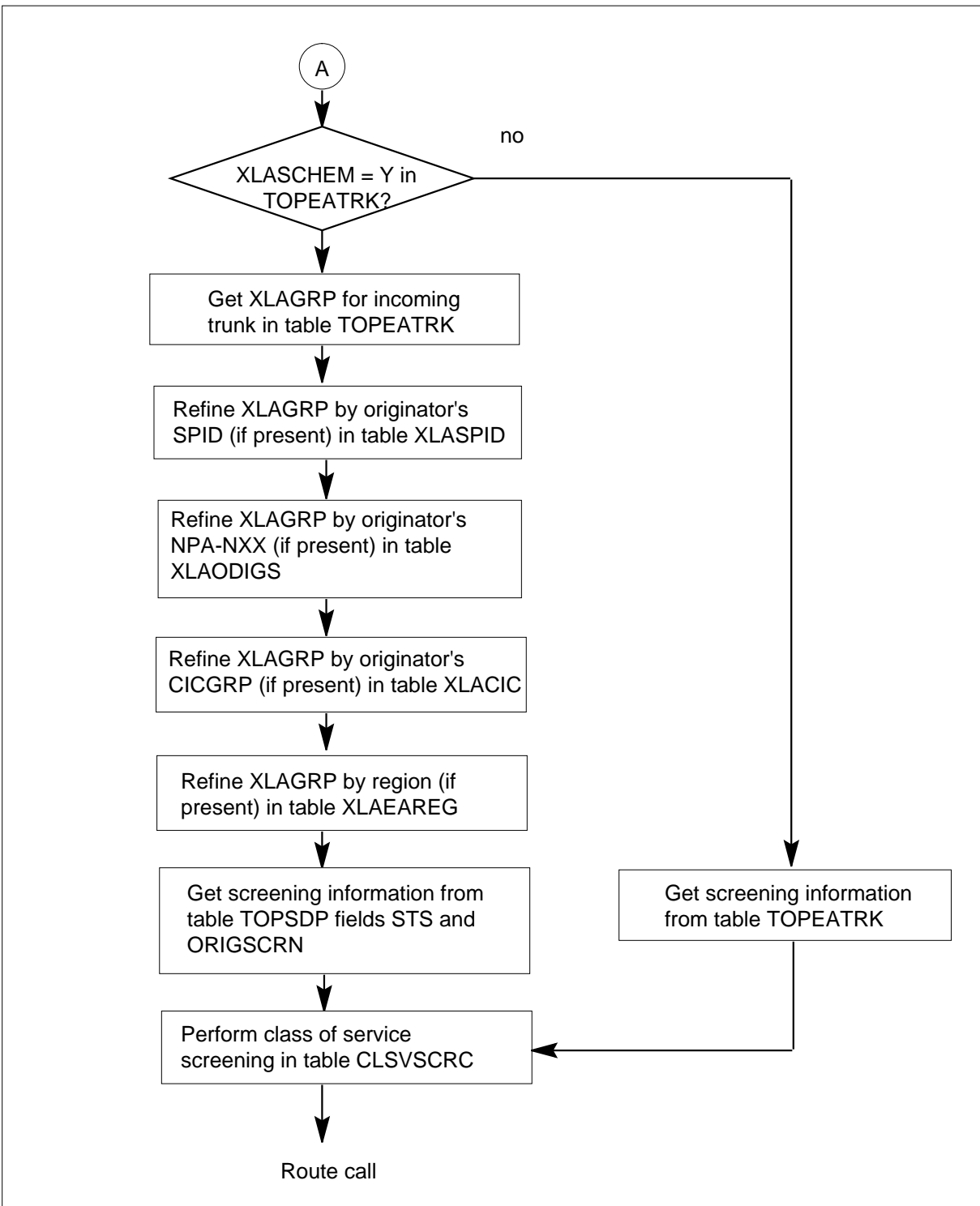
UNBN OPRTRANS and EA (continued)

Initial call processing



UNBN OPRTRANS and EA (continued)

EA refinement order



UNBN OPRTRANS and EA (continued)

Example EA call flows

This section provides examples of equal access call flows.

LATA screening, traditional translations

LATA screening and traditional translations is the way EA calls were translated before the LATA alternative and EA unbundling features discussed above.

Table LATANAME defines the valid LATAs for the office as follows:

MAP example for table LATANAME

LATANAME	LATANUM
L123	123

Trunks used for EA calls are defined in table TOPEATRK and assign a LATA to the trunk as follows.

MAP example for table TOPEATRK

TRUNKGRP	ENDOFFICE	CARRIER	SCRNFLDS	XLASCHEM
DNLOOK	DFLTPIC	BYPASS		
ICTRK1	CONFORM	0111	LATA L123	N STRA STER SOVS 619
Y	Y	\$		

Table TOPEATRK specifies the type of screening and translations for the trunk group as follows:

- SCRNTYPE = LATA — LATA screening is in affect for the trunk group.
- LATANM = L123 — The LATA name is L123.
- NEWXLA = N — The XLAGRP translations method for EA calls is not in use. Using the existing translations scheme.
- INTRASSC = STRA — If the call is intraSTATE, then STRA is the class of service screening name used to index table CLSVSCRC to obtain the outgoing route.
- INTERSSC = STER — If the call is interSTATE, then STER is the class of service screening name used to index table CLSVSCRC for the outgoing route.

UNBN OPRTRANS and EA (continued)

- OVERSEAS = SOVS — If the call is an overseas call, then SOVS is the class of service screening name used to index table CLSVSCRC for the outgoing route.
- STS = 619 — STS 619 is used to build the key to index table CLSVSCRC.

Table LATAXLA is indexed using the LATANM from table TOPEATRK (L123) and a subset or all of the called digits as follows.

MAP example for table LATAXLA

LATACODE	LATA	STATE	EATYPE
L123 212220	INTER	INTER	STD

The above example indicates as follows:

- LATA = INTER — The LATA field indicates that the call is an interLATA call, that is, an EA call.
- STATE = INTER — The STATE field indicates that the call is an interSTATE call.

This call indexes table CLSVSCRC with the key as follows:

- STS (619) is obtained from table TOPEATRK, field SCRNDIX.
- The class of service screening name comes from table TOPEATRK field INTERSSC.
- The type of call for operator handled calls is always OA (Operator Assisted).

MAP example for table CLSVSCRC

NPASCTYP	NORSLTS	TMTOFRT	CLSVSCR
619 STER OA	2	N NONE	(1)

The subtable is indexed by prepending the carrier digits to the called number. In this case, the carrier is 0111 (using the default from the trunk group). Datafill points to office route 803 as follows.

UNBN OPRTRANS and EA (continued)

MAP example for table CLSVSCRC.CLVSCR

FROMDIGS	TODIGS	SUB_TMTOFRT
0111212	0111212	T OFRT 803

Table OFRT indicates the outgoing trunk as follows.

MAP example for table OFRT

RTE	RTELIST
803	(S D ATCC111OG1)\$

LATA screening, XLAGRP translations

The following example shows datafill for a call using the existing LATA screening method and XLAGRP method of translations.

Use of the XLAGRP translations for EA calls requires that the NEWXLA method be activated on the trunk group in table TOPSTOPT before it can be used in table TOPEATRK, shown in the example as follows.

MAP example for table TOPSTOPT

GRPKEY	ORGAREA	DISPCLG	ADASERV	ADASANS	ANITOCCLI	OLNSQRY	DCIBIDX
LNPCLGAM	XLASCHEM		SPIDPRC	TRKSPID		BILLSCRN	ANIFSPL
ICTRK1	N	Y	NONE	NA	N	NONE	0
Y	Y	TRK1GRP1	Y	Y	TRK1SPID1	N	N

Table TOPSTOPT activates the XLAGRP method of translations for the trunk group as follows:

- NEWXLA = Y — This value turns on the XLAGRP method of translations.
- XLAGRP = TRK1GRP1 — XLAGRP specifies the initial translations group for non-EA calls.

It is important to note that for EA calls, the EAXLAGRP obtained from table TOPEATRK is used only to determine the final outgoing route for the call. The standard translations and screening on the call must still be done using the

UNBN OPRTRANS and EA (continued)

XLAGRP from table TOPSTOPT as a starting point. Standard translations must be successful (that is, it cannot result in treatment) in order for call processing to proceed to table TOPEATRK and EAXLAGRP. Refer to 297-8403-905, *TOPS Translations and Screening User's Guide*, for complete details on standard translations. An example of table TOPEATRK follows.

MAP example for table TOPEATRK

TRUNKGRP DNLOOK	ENDOFFICE DFLTPIC	CARRIER BYPASS	SCRNFLDS	XLASCHEM
ICTRK1 N	CONFORM N	0111 \$	LATA L123	Y TRK1EAGRP1

Table TOPEATRK specifies the type of screening and the type of translations for the trunk group:

- SCRNTYPE = LATA — LATA screening is in affect for the trunk group.
- LATANM = L123 — The LATA name is L123.
- NEWXLA = Y — The XLAGRP method of translations is activated for EA calls. This value turns on the XLAGRP method of translations.
- EAXLAGRP = TRK1EAGRP1 — This value specifies the initial XLAGRP for EA calls. If using XLAGRP translations for EA call, then the group must be specified in this table. EA screening does not use the XLAGRP in table TOPSTOPT.

Table LATAXLA is indexed using the LATANM from table TOPEATRK (L123) and a subset or all of the called digits as follows.

MAP example for table LATAXLA

LATACODE	LATA	STATE	EATYPE
L123 212220	INTER	INTER	STD

The above example indicates as follows:

- LATA = INTER — The LATA field indicates that the call is an interLATA call, that is, an EA call.
- STATE = INTER — The STATE field indicates that the call is interSTATE call.

UNBN OPRTRANS and EA (continued)

This call is an EA call because it is an interLATA call. It uses the XLAGRP from table TOPEATRK to translate, starting with table XLASPID as follows.

MAP example for table XLASPID

XLAGRP	SPIDGRP	NEWXLAGRP
TRK1EAGRP1	TRK1SPID1GRP	EAGRP1SPID1

Table XLASPID has a two-part key as follows:

- The XLAGRP associated with the call. In this case, it is the XLAGRP from table TOPEATRK.
- The SPID group associated with the SPID of the call¹. The SPID group is obtained from table SPIDDB, field SPIDGRP. Table SPIDDB is indexed, in this example, using the SPID from table TOPSTOPT, field SPID.

The new XLAGRP associated with this call now is EAGRP1SPID1.

Translations proceeds to table XLAODIGS as follows, regardless of whether an entry was found in table XLASPID.

MAP example for table XLAODIGS

XLAGRP	ORIGDIGS	NEWXLAGRP
EAGRP1SPID1	619321	619EAGRP1SPID

Table XLAODIGS has a two-part key as follows:

- The XLAGRP associated with the call
- The calling number.

The new XLAGRP associated with this call now is 619EAGRP1SPID.

Translations proceeds to table XLACIC, regardless of whether an entry was found in table XLAODIGS. An example follows.

¹ There are a number of ways of obtaining a SPID on a call. Refer to the TOPS Unbundling User's Guide (297-8403-903) for complete details.

UNBN OPRTRANS and EA (continued)

MAP example for table XLACIC

XLAGRP	CICGRP	NEWXLAGRP
619EAGRP1SPID1	111GRP	111SPID1

Table XLACIC has a two-part key as follows:

- The XLAGRP associated with the call.
- The carrier group. The carrier group is datafilled in table TOPEACAR, field CICGRP, against the carrier as follows.

MAP example for table TOPEACAR

CARDIGS OPSERV	CARNAME	ALTDISP	OPLSCLD	CAMABILL	ALTCARR TDBIDX	NATERM CICSCHM	INTERM
0111 NOSERV	C111 NOQUERY	C111 N	Y NOQUERY	Y N	0111 Y Y Y 0	UNREST Y 111GRP	UNREST

Valid CIC group names for the office are datafilled in table CICGRP. A CIC group must first be defined in table CICGRP before it can be datafilled in table TOPEACAR as follows.

MAP example for table CICGRP

CICGRP
111GRP

Based on the datafill above, the new XLAGRP associated with this call now is 111SPID1.

Translations proceeds to table XLAEAREG as follows, regardless of whether an entry was found in table XLACIC.

UNBN OPRTRANS and EA (continued)

MAP example for table ELAEAREG

XLAGRP	REGION	NEWXLAGRP
111SPID1	INTER	111SPID1INTER

Table XLAEAREG has a two-part key as follows.

- The XLAGRP currently associated with the call
- The region of the call, defined in table EAREGN as follows.

MAP example for table EAREGN

REGION
INTRA
INTER
OVERSEAS

When using LATA screening, the region refers to the STATE designation of the call. The STATE designation is obtained from table LATA XLA field STATE as follows.

MAP example for table LATA XLA

LATACODE	LATA	STATE	EATYPE
L123 212220	INTER	INTER	STD

For field STATE, the two possible values are INTER or INTRA. If the call is an overseas call, then region is OVERSEAS.

When using LATA screening, INTER, INTRA, and OVERSEAS are the only possible region designations available as an index into table XLAEAREG.

Based on the example datafill above, the final XLAGRP associated with this call now is 111SPID1INTER. This XLAGRP provides an index into table TOPSDP field ORIGSCRN as follows.

UNBN OPRTRANS and EA (continued)

MAP example for table TOPSDP

XLAGRP	STS	OPERPRTN	ORIGSCRN	OPERSCRN	MCCSPRTN	MCCSSCR	LCANAME
111SPID1INTER	619	OPER	STER	NSCR	MCCS	NSCR	LCA1

Field ORIGSCRN provides the class of service screening name to index into table CLSVSCRC as follows. Note that field ORIGSCRN is equivalent to using field INTERSSC in table TOPEATRK.

MAP example for table CLSVSCRC

NPASCTYP	NORSLTS	TMTOFRT	CLSVSCR
619 STER OA	2	N NONE	(1)

Table CLSVSCRC has a three-part key as follows.

- The STS (619), which is obtained from table TOPSDP, field STS.
- The class of service screening name, which also comes from table TOPSDP, field ORIGSCRN.
- The type of call, which for operator handled calls is OA (Operator Assisted).

The subtable is index by prepending the carrier digits to the called number. In this case, the carrier is 0111 (using the default from the trunk group).

MAP example for table CLSVSCRC.CLVSCR

FROMDIGS	TODIGS	SUB_TMTOFRT
0111212	0111212	T OFRT 803

Datafill points to office route 803 in table OFRT as follows.

UNBN OPRTRANS and EA (continued)

MAP example for table OFRT

RTE	RTELIST
803	(S D ATCC111OG1)\$

Table OFRT specifies the outgoing trunk.

ZONE screening, traditional translations

The following example shows the datafill for a call using ZONE screening and traditional translations.

The following diagram shows the table dependency differences between LATA and ZONE screening:

UNBN OPRTRANS and EA (continued)

Table flow for LATA and ZONE traditional screening

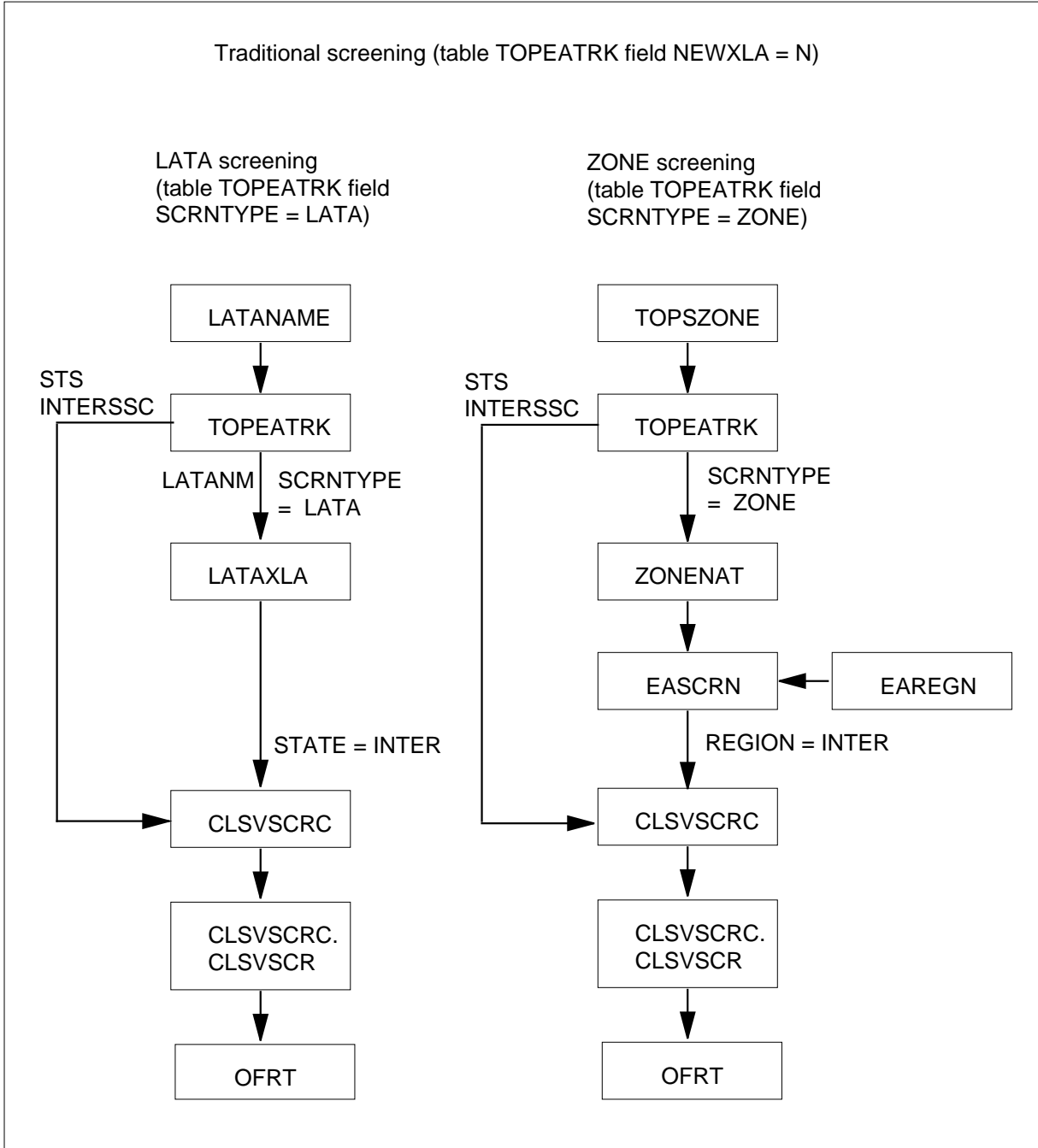


Table TOPSZONE defines the valid ZONES for the office. Up to 2000 ZONES can be defined. An example follows.

UNBN OPRTRANS and EA (continued)

MAP example for table TOPSZONE

INDEX	TOPSZONE
0	RALEIGH

Table TOPEATRK, field SCRNTYPE, specifies the type of screening for the trunk group as follows.

MAP example for table TOPEATRK

TRUNKGRP	ENDOFFICE	CARRIER	SCRNFLDS	XLASCHEM					
DNLOOK	DFLTPIC	BYPASS							
ICTRK1	CONFORM	0111	ZONE Y	RALEIGH	N	STRA	STER	SOVS	619
Y	Y	\$							

In this example, ZONE screening is in use. In addition, the ZONE is datafilled against the trunk group, field TRKZONE = Y and ZONENM = RALEIGH. Having the ZONE datafilled against the trunk group means that no attempt is made to obtain a ZONE based on the calling number. This functionally parallels how LATA screening works.

In addition, traditional translations are in use, NEWXLA = N.

In this example, a call incoming on ICTRK1 has a originating ZONE of RALEIGH.

Table ZONENAT is indexed with the called digits to obtain the ZONE associated with the called number as follows.

MAP example for table ZONENAT

FROMDIGS	TODIGS	TOPSZONE
212220	212220	NEWYORK

UNBN OPRTRANS and EA (continued)

This table is always indexed with the called number to obtain the terminating ZONE (that is, the ZONE associated with the called number) when using ZONE screening.

Note: If a ZONE name was not datafilled against the trunks group in table TOPEATRK (that is, TRKZONE = N), then table ZONENAT would also be indexed using the calling digits in order to obtain the ZONE associated with the calling number; that is, an originating ZONE. In such a scenario, table ZONENAT would be indexed twice: once for the calling number and once for the called number.

In this example, the terminating ZONE, based on the called number of 212220, is NEWYORK.

Table EASCRN is checked to see if this call is an EA call as follows.

MAP example for table EASCRN

ORIGZONE	TERMZONE	REGION
RALEIGH	NEWYORK	INTER

Table EASCRN has a two-part key as follows:

- The ZONE of the originating party (calling number)
- The ZONE of the terminating party (called number).

An entry in table EASCRN implies that the call is an EA call (interZONE, the same concept as interLATA). The REGION field is the equivalent of the STATE in table LATAXLA when using LATA screening. When using traditional translations, the REGION field is limited to INTRA, INTER, or OVERSEAS, which are the default regions defined in table EAREGN as follows.

MAP example for table EAREGN

REGION

INTRA
INTER
OVERSEAS

UNBN OPRTRANS and EA (continued)

Based on the datafill in this example, a call with an originating ZONE of RALEIGH and terminating ZONE of NEWYORK is an EA call since its REGION is defined as INTER.

Since translations are traditional in this example (field NEWXLA = N in table TOPEATRK), the class of service screening name is obtained from TOPEATRK, field INTERSSC, because the region (or STATE) is INTER. An example follows.

MAP example for table TOPEATRK

TRUNKGRP	ENDOFFICE	CARRIER	SCRNFLDS	XLASCHM
DNLOOK	DFLTPIC	BYPASS		
ICTRK1	CONFORM	0111	ZONE Y RALEIGH	N STRA STER SOVS 619
Y	Y	\$		

The class of service screening is provided by table CLSVSCRC as follows.

MAP example for table CLSVSCRC

NPASCTYP	NORSLTS	TMTOFRT	CLSVSCR
619 STER OA	2	N NONE	(1)

The subtable is indexed by prepending the carrier digits to the called number. In this case, the carrier is 0111 (using the default from the trunk group: TOPEATRK, field CARRIER).

MAP example for table CLSVSCRC.CLVSCR

FROMDIGS	TODIGS	SUB_TMTOFRT
0111212	0111212	T OFRT 803

Datafill in the subtable points to office route 803 in table OFRT as follows.

UNBN OPRTRANS and EA (continued)

MAP example for table OFRT

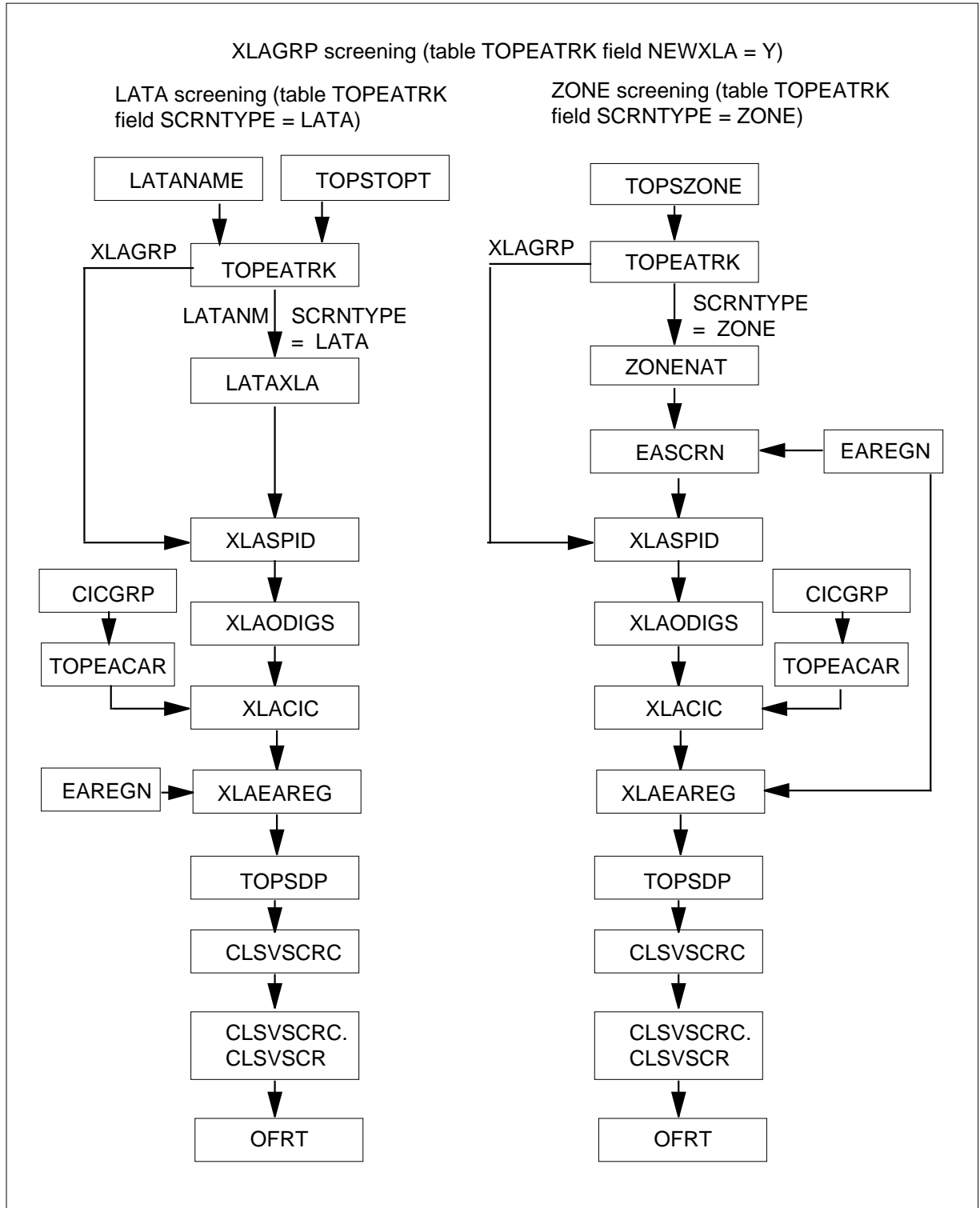
RTE	RTELIST
803	(S D ATCC111OG1)\$

ZONE screening, XLAGRP translations

The following diagram shows the table dependency differences between LATA and ZONE screening.

UNBN OPRTRANS and EA (continued)

Table flow for LATA and ZONE XLAGRP screening



UNBN OPRTRANS and EA (continued)

The following example shows the datafill for a call using ZONE screening and XLAGRP translations.

Table TOPSZONE defines the valid ZONEs for the office as follows. Up to 2000 ZONEs can be defined.

MAP example for table TOPSZONE

INDEX	TOPSZONE
0	RALEIGH

Table TOPEATRK field SCRNTYPE specifies the type of screening for the trunk group as follows.

MAP example for table TOPEATRK

TRUNKGRP DNLOOK	ENDOFFICE DFLTPIC	CARRIER BYPASS	SCRNFLDS	XLASCHEM
ICTRK1 Y	CONFORM Y	0111 \$	ZONE Y RALEIGH	Y TRK1EAGRP1

In this example, ZONE screening is in use. In addition, the ZONE is datafilled against the trunk group, field TRKZONE = Y and ZONENM = RALEIGH. Having the ZONE datafilled against the trunk group means that no attempt is made to obtain a ZONE based on the calling number. This functionally parallels how LATA screening works.

In addition, the XLAGRP method of translations is activated for EA calls in table TOPEATRK as follows.

- NEWXLA = Y — This value turns on the XLAGRP method of translations.
- EAXLAGRP = TRK1EAGRP1 — This value specifies the initial XLAGRP for EA calls. If using XLAGRP translations for EA call, then the initial XLAGRP group must be specified in this table. EA calls do not use the XLAGRP in table TOPSTOPT.

Note that the XLAGRP method of translations must be activated for the trunk group and that can only be done in table TOPSTOPT field NEWXLA as follows.

UNBN OPRTRANS and EA (continued)

MAP example for table TOPSTOPT

GRPKEY	ORGAREA	DISPCLG	ADASERV	ADASANS	ANITOCCLI	OLNSQRY	DCIBIDX
LNPCLGAM	XLASCHEM		SPIDPRC	TRKSPID		BILLSCRN	ANIFSPL
ICTRK1	N	Y	NONE	NA	N	NONE	0
Y	Y	TRK1GRP1	Y	Y	TRK1SPID1	N	N

In this example in table TOPEATRK, a call incoming on ICTRK1 has a originating ZONE of RALEIGH and an initial XLAGRP of TRK1EAGRP1.

Table ZONENAT is indexed with the called digits to obtain the ZONE associated with the called number (the terminating zone). This table is always indexed with the called number to obtain the ZONE associated with the called number when using ZONE screening. An example follows.

MAP example for table ZONENAT

FROMDIGS	TODIGS	TOPSZONE
212220	212220	NEWYORK

Note: If a ZONE name was not datafilled against the trunks group in table TOPEATRK (that is, TRKZONE = N), then table ZONENAT also is indexed using the calling digits in order to obtain the ZONE associated with the calling number (originating zone). In such a scenario, table ZONENAT is indexed twice: once for the calling number and once for the called number.

In this example, the terminating zone based on the called number of 212220 is NEWYORK.

Table EAREGN defines the valid regions for the office as follows.

UNBN OPRTRANS and EA (continued)

MAP example for table EAREGN

REGION

INTRA
INTER
OVERSEAS
NEAST
SEAST

Table EASCRN is checked to see if this call is an EA call as follows.

MAP example for table EASCRN

ORIGZONE	TERMZONE	REGION

RALEIGH	NEWYORK	NEAST

Table EASCRN has a two-part key: the ZONE of the originating party (calling number) and the ZONE of the terminating party (called number).

An entry in table EASCRN implies that the call is an EA call (interZONE, the same concept as interLATA).

The REGION field is equivalent to the STATE in table LATAXLA when using LATA screening. When using traditional screening, the REGION field is limited to INTRA, INTER, or OVERSEAS, which are the default regions defined in table EAREGN. However, when using XLAGRP screening, any of the regions defined in table EAREGN can be datafilled.

Based on the datafill in this example, a call with a originating ZONE of RALEIGH and terminating ZONE of NEWYORK is an EA call and its REGION is NEAST.

Refinement of the XLAGRP from table TOPEATRK starts with table XLASPID as follows.

UNBN OPRTRANS and EA (continued)

MAP example for table XLASPID

XLAGRP	SPIDGRP	NEWXLAGRP
TRK1EAGRP1	TRK1SPID1GRP	EAGRP1SPID1

Table XLASPID has a two-part key as follows:

- The XLAGRP associated with the call. In this case, it is the XLAGRP from table TOPEATRK.
- The SPID group associated with the SPID of the call ². The SPID group is obtained from table SPIDDB field SPIDGRP as follows.

MAP example for table SPIDDB

SPID	SCRNDISP	OPERSYS	TAANN	DAANN	ACTSAN
XLA		SPIDCRIT			
TRK1SPID1	Y	SPID1	ALL	Y	SPID1TA
Y	TRK1SPID1FRP	N		Y	SPID1DA
					N

Table SPIDDB is indexed, in this example, using the SPID from table TOPSTOPT field SPID as follows.

MAP example for table TOPSTOPT

GRPKEY	ORGAREA	DISPCLG	ADASERV	ADASANS	ANITOCCLI	OLNSQRY	DCIBIDX
LNPCLGAM	XLASCHEM		SPIDPRC	TRKSPID		BILLSCRN	ANIFSPL
ICTRK1	N	Y	NONE	NA	N	NONE	0
Y	Y	TRK1GRP1	Y	Y	TRK1SPID1	N	N

Based on the datafill example above in table XLASPID, the new XLAGRP associated with this call now is EAGRP1SPID1.

Translations proceeds to table XLAODIGS as follows, regardless of whether an entry was found in table XLASPID.

² There are a number of ways of obtaining a SPID on a call. Refer to the TOPS Unbundling User's Guide (297-8403-903) for complete details.

UNBN OPRTRANS and EA (continued)

MAP example for table XLAODIGS

XLAGRP	ORIGDIGS	NEWXLAGRP
EAGRP1SPID1	619321	619EAGRP1SPID

Table XLAODIGS has a two-part key: the XLAGRP associated with the call and the calling number. The new XLAGRP associated with this call now is 619EAGRP1SPID.

Translations proceeds to table XLACIC as follows, regardless of whether an entry was found in table XLAODIGS.

MAP example for table XLACIC

XLAGRP	CICGRP	NEWXLAGRP
619EAGRP1SPID	111GRP	111SPID1

Table XLACIC has a two part key: the XLAGRP associated with the call and the carrier group. The carrier group is datafilled in table TOPEACAR field CICGRP against the carrier as follows.

MAP example for table TOPEACAR

CARDIGS OPSERV	CARNAME	ALTDISP	OPLSCLD	CAMABILL	ALTCARR	NATERM TDBIDX	INTERM CICSCHM
0111 NOSERV	C111 NOQUERY	C111 N	Y NOQUERY	Y N	0111 Y Y Y	0	UNREST Y 111GRP

Valid CIC groups for the office are datafilled in table CICGRP. A CIC group must first be defined in table CICGRP before it can be datafilled in table TOPEACAR as follows.

UNBN OPRTRANS and EA (continued)

MAP example for table CICGRP

CICGRP

111GRP

The new XLAGRP associated with this call now is 111SPID1.

Translations would proceed to the next table, XLAEAREG as follows, regardless of whether an entry was found in table XLACIC.

MAP example for table ELAEAREG

XLAGRP	REGION	NEWXLAGRP

111SPID1	NEAST	111SPID1NEAST

Table XLAEAREG has a two-part key: the XLAGRP currently associated with the call and the region. When using ZONE screening, the region is obtained from table EASCRN field REGION as follows.

MAP example for table EAREGN

REGION

INTRA
INTER
OVERSEAS
NEAST
SEAST

The final XLAGRP associated with this call is 111SPID1NEAST. This XLAGRP is used to index table TOPSDP field ORIGSCRN as follows.

MAP example for table TOPSDP

XLAGRP	STS	OPERPRTN	ORIGSCRN	OPERSCRN	MCCSPRTN	MCCSSCR	LCANAME

111SPID1NEAST	619	OPER	STER	NSCR	MCCS	NSCR	LCA1

UNBN OPRTRANS and EA (continued)

Field ORIGSCRN indicates the class of service screening name to index into table CLSVSCRC as follows.

MAP example for table CLSVSCRC

NPASCTYP	NORSLTS	TMTOFRT	CLSVSCR
619 STER OA	2	N NONE	(1)

Table CLSVSCRC has a three-part key as follows.

- The STS (619), which is obtained from table TOPSDP, field STS.
- The class of service screening name, which also comes from table TOPSDP, field ORIGSCRN.
- The type of call, which for operator handled calls is OA (Operator Assisted).

The subtable is index by prepending the carrier digits to the called number. In this case, the carrier is 0111 (using the default from the trunk group).

MAP example for table CLSVSCRC.CLVSCR

FROMDIGS	TODIGS	SUB_TMTOFRT
0111212	0111212	T OFRT 803

Datafill points to office route 803 in table OFRT as follows.

MAP example for table OFRT

RTE	RTELIST
803	(S D ATCC111OG1)\$

Table OFRT specifies the outgoing trunk.

UNBN OPRTRANS and EA (continued)

Translations table flow

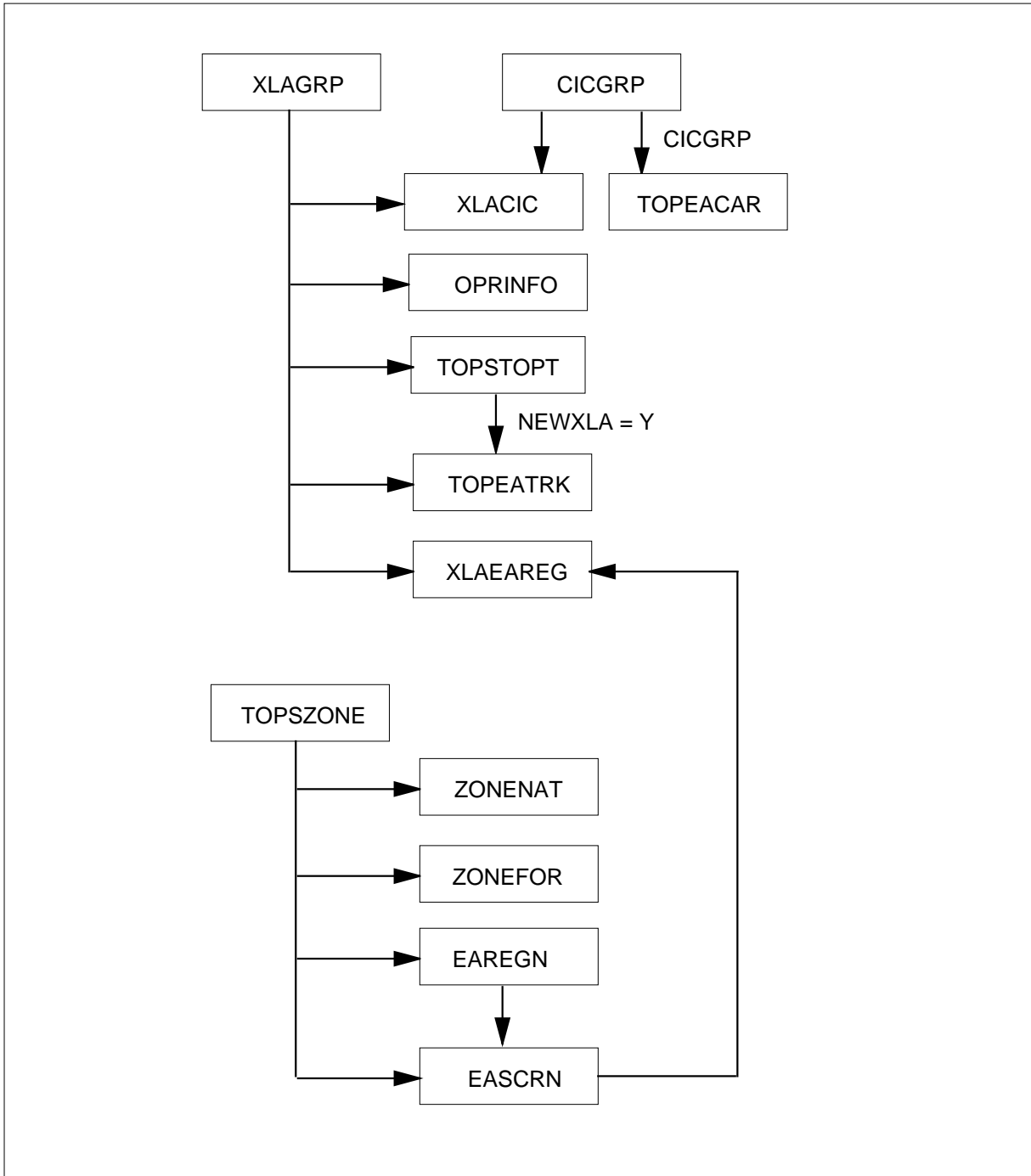
The list that follows includes the UNBN OPRTRANS and EA translations tables:

- Table XLAGRP defines translation group names
- Table CICGRP defines carrier id group names
- Table XLACIC refines the XLAGRP by the CICGRP
- Table TOPEACAR defines characteristics for carriers
- Table TOPSTOPT provides TOPS trunk group options
- Table TOPEATRK contains information for trunks to carriers
- Table OPRINFO supports the new TOPS translations for certain call types
- Table TOPSZONE defines zones for TOPS calls
- Table ZONENAT assigns a zone to a national calling or called number
- Table ZONEFOR assigns a zone to a foreign called number
- Table EAREGN defines the intersection region between the originating and terminating zones
- Table EASCRN checks if the call is a carrier call
- Table XLAEAREG refines an XLAGRP by the region

The flowchart that follows provides the UNBN OPRTRANS and EA translations process.

UNBN OPRTRANS and EA (continued)

Table flow for UNBN OPRTRANS and EA



UNBN OPRTRANS and EA (continued)

The table that follows lists the datafill content used in the flowchart.

Datafill example for UNBN OPRTRANS and EA

Datafill table	Example data
XLAGRP	CLGXLA EAXLAGRP1 TRK1 TRK3 TRK2CLEC
CICGRP	1234 C123
XLACIC	TRK1 1234 TRK1CLEC
TOPEACAR	0802 C802 C802 Y Y 0802 UNREST UNREST NOSERV N N 0 Y C123
TOPSTOPT	ISUP2WITALT OMSCAM CORECAM N N NONE NA N NONE 0 N Y TRK1 Y N
TOPEATRK	TBELLIC2 CONFORM 0111 L123 Y EAXLAGRP1 N N \$
OPRINFO	OPERCLG Y CLGXLA
TOPSZONE	0 RALEIGH 1 BURLINGT 5 PARIS
ZONENAT	919 919 RALEIGH 336 336 BURLINGT
ZONEFOR	111 111 PARIS
EAREGN	BURLXRAL
EASCRN	RALEIGH BURLINGT INTRA
XLAEAREG	TRK3 BURLXRAL TRK2CLEC

Limitations and restrictions

UNBN OPRTRANS and EA has no limitations or restrictions.

UNBN OPRTRANS and EA (continued)

Interactions

The paragraphs that follow describe how UNBN OPRTRANS and EA interacts with other functionalities.

This feature interacts with functionality UNBN Translations and Routing. This feature implements SPID refinements for carrier calls. This refinement is optionally controlled by existing SOC UNBN0101. Before this feature, SPIDs and CICs were not associated together on the same call. This activity allows the two to be associated with the same call, and also allows the operating company to refine the XLAGRP based on these two characteristics.

For non-equal access calls, the initial XLAGRP is obtained from table TOPSTOPT.

For equal access calls, the initial XLAGRP is obtained from table TOPEATRK. Each refinement step created by this feature is optional.

This functionality also interacts with functionality Table LATANAME Expansion, OSB00101.

Functionality Auto Country Direct, ENSV0010, is a service that allows a user in a foreign country to dial an access code to reach an operator in the country where the call is to be billed, usually the subscriber's home country. Country direct calls don't have a real calling number. The only way that ZONE screening can apply to country direct calls is if the zone is datafilled against the trunk group, similarly for LATA screening. If the zone is not datafilled against the trunk group, then country direct calls are treated as interlata/interzone for national calls and interlata/overseas for overseas calls.

This feature does not change the current TOPS EA approach of prepending carrier digits to the called number for EA screening of carrier calls.

Activation and deactivation by the user

UNBN OPRTRANS and EA does not require activation or deactivation by the user.

Billing

For calls with an associated SPID and carrier, this feature ensures that modules codes 338 and 053/054 are attached to the same billing record. Before this feature, this combination was not produced for equal access calls.

Station Message Detail Recording

UNBN OPRTRANS and EA does not require Station Message Detail Recording.

UNBN OPRTRANS and EA (continued)

Office parameters used by UNBN OPRTRANS and EA

UNBN OPRTRANS and EA does not generate office parameters.

Datafill sequence

The table that follows lists the tables that require datafill to put UNBN OPRTRANS and EA into operation. You must enter data into the tables in this order.

Datafill requirements for UNBN OPRTRANS and EA

Table	Purpose of table
TOPEATRK	TOPS Equal Access Trunks contains information for trunks to carriers
CICGRP	Carrier Identification Code Group defines names of CIC groups
TOPEACAR	TOPS Equal Access Carrier defines characteristics for carriers
OPRINFO	Operator Information supports the new TOPS translations for certain call types
XLACIC	Translations Carrier Identification Code refines an XLAGRP by the CIC.
XLAEAREG	Translations Equal Access Region refines an XLAGRP by the region

Datafill related to UNBN OPRTRANS and EA for table TOPEATRK

The table that follows provides the datafill related to UNBN OPRTRANS and EA for table TOPEATRK. This table includes only those fields that apply directly to UNBN OPRTRANS and EA.

UNBN OPRTRANS and EA (continued)

Enter datafill in tables XLAGRP and TOPSTOPT before table TOPEATRK.

Datafill related to table TOPEATRK

Field	Subfield	Entry	Explanation and action
XLASCHEM		see subfield	Translations scheme. This new field consists of subfield NEWXLA.
	NEWXLA	Y or N	<p>New TOPS translations. This field enables the new TOPS translations and screening for this trunk group, which only has equal access calls. For enable, enter Y and enter datafill in field EAXLAGRP. For disable, which is the old translations method, enter N and enter datafill in subfields INTRASSC, INTERSSC, OVSSCL, and STS. The default is N.</p> <p>Value Y is allowed only when table TOPSTOPT field XLASCHEM = Y for the trunk. And a change of NEWXLA from Y to N is allowed only if table TOPSTOPT field XLASCHEM = N for the trunk.</p>
	INTRASSC	alphanumeric (1 to 4 characters) or NSCR	<p>Intrastate screening. This field only appears if field NEWXLA = N. If class of service screening is required for intrastate-interLATA calls, enter the name of the class of service screening subtable (table CLSVSCRC subtable CLSVSCR) where the screening is to be performed. The name of this subtable must also be defined in tables CLSVSCRC and SCRNCCLAS.</p> <p>Enter NSCR if class of service screening is not required.</p> <p>The DMS sets this field to the default value of NSCR when table TRKGRP is datafilled for trunk group type TOPS.</p> <p>Note: Field STATE in table LATA XLA determines the type of domestic screening (INTRASSC or INTERSSC) that is used.</p>

UNBN OPRTRANS and EA (continued)

Datafill related to table TOPEATRK

Field	Subfield	Entry	Explanation and action
	INTERSSC	alphanumeric (1 to 4 characters) or NSCR	<p>Interstate screening. This field only appears if field NEWXLA = N. If class of service screening is required for interstate-interLATA calls, enter the name of the class of service screening subtable (table CLSVSCRC subtable CLSVSCR) where the screening is to be performed. The name of this subtable must also be defined in tables CLSVSCRC and SCRNCCLAS.</p> <p>Enter NSCR if class of service screening is not required.</p> <p>The DMS sets this field to the default value of NSCR when table TRKGRP is datafilled for trunk group type TOPS.</p>
	OVSSCL	alphanumeric (1 to 4 characters) or NSCR	<p>Overseas call class of service screening table name. This field only appears if field NEWXLA = N. If class of service screening is required for overseas calls, enter the name of the class of service screening subtable (table CLSVSCRC subtable CLSVSCR) where the screening is to be performed. The name of this subtable must also be defined in tables CLSVSCRC and SCRNCCLAS.</p> <p>Enter NSCR if class of service screening is not required.</p> <p>The DMS sets this field to the default value of NSCR when table TRKGRP is datafilled for trunk group type TOPS.</p>

UNBN OPRTRANS and EA (continued)

Datafill related to table TOPEATRK

Field	Subfield	Entry	Explanation and action
	STS	000 to 999	<p>Serving translations scheme. This field only appears if field NEWXLA = N. If class of service screening is required for either or both inter-LATA and overseas calls, enter the serving translation scheme NPA used with the class of service screening subtable name as an index into table CLSVSCRC.</p> <p>When table TRKGRP is datafilled for trunk group type TOPS, the DMS sets the default value for this field to the value of field SNPA in table TRKGRP.</p> <p>This field is a rename of field SCRNDIX.</p>
	EAXLAGRP	name from table XLAGRP	<p>Equal access translations group. This field only appears if field NEWXLA = Y. Enter a translations group name defined in table XLAGRP that contains this trunk group (field GRPKEY). The EAXLAGRP entry is the initial XLAGRP used for refinement to determine a final outgoing route.</p>

Datafill example for table TOPEATRK

The figure that follows shows sample datafill for table TOPEATRK.

MAP example for table TOPEATRK

TRUNKGRP	ENDOFFICE	CARRIER	LATANM	XLASCHEM	DNLOOK
DFLTPIC	BYPASS				
TBELLIC1	CONFORM	0111	L123	N STRA STER SOVS 619	N
N	\$				
TBELLIC2	CONFORM	0111	L123	Y EAXLAGRP1	N
N	\$				

Datafill related to UNBN OPRTRANS and EA for table CICGRP

Carrier Identification Code Group is a new table that defines CIC group names for the new TOPS translations and screening. This table allows carriers to be grouped when they have the same processing requirements. The CICGRP name is assigned to a trunk in table TOPEACAR and used for refinement of an equal access XLAGRP in table XLACIC. Therefore, CICGRP is used to refine an XLAGRP based on the carrier.

UNBN OPRTRANS and EA (continued)

Enter datafill in table TOPEACAR after table CICGRP.

Datafill related to table CICGRP

Field	Subfield	Entry	Explanation and action
CICGRP		up to 32 alphanumeric characters	Carrier Identification Code Group. Define a CIC group name for use in tables TOPEACAR and XLACIC.

Datafill example for table CICGRP

The figure that follows shows sample datafill for table CICGRP.

MAP example for table CICGRP

```

CICGRP
-----
CD12
A112
C123
    
```

Datafill related to UNBN OPRTRANS and EA for table TOPEACAR

The table that follows provides the datafill related to UNBN OPRTRANS and EA for table TOPEACAR. This table includes only those fields that apply directly to UNBN OPRTRANS and EA.

Enter datafill in table CICGRP before table TOPEACAR.

Datafill related to table TOPEACAR

Field	Subfield	Entry	Explanation and action
CICSCHEM		see subfield	Carrier identification code scheme. This new field consists of subfield NEWXLA.
	NEWXLA	Y or N	New TOPS translations. This field enables assignment of a CICGRP to a carrier. Then, the CICGRP can be used in table XLACIC to refine an XLAGRP based on the carrier. Enter Y to enable and enter datafill in subfield CICGRP. Enter N to disable. The default is N.
	CICGRP	name from table CICGRP	Carrier identification code group. This field only appears if field NEWXLA = Y. Enter a CIC group name defined in table CICGRP.

UNBN OPRTRANS and EA (continued)

Datafill example for table TOPEACAR

The figure that follows shows sample datafill for table TOPEACAR.

MAP example for table TOPEACAR

CARDIG OPSERV	CARNAME TDBIDX	ALTDISP CICSCHEM	OPLSCLD	CAMABILL	ALTCARR	NATERM	INTERM
0802	C802	C802	Y	Y	0802	UNREST	UNREST
NOSERV	N N	0	Y C123				
0912	C912	C912	Y	Y	0912	UNREST	UNREST
NOSERV	N N	0	Y C123				
0888	C888	C888	Y	Y	0888	UNREST	UNREST
NOSERV	N N	0	N				
0123	C123	C123	Y	Y	0888	UNREST	UNREST
NOSERV	N N	0	Y D234				

Datafill related to UNBN OPRTRANS and EA for table OPRINFO

Operator Information is a new table that is used by the new TOPS translation and screening for non-equal access calls. This table supports the types of numbers as follows:

- calling number (no originating party present)
- called number (no originating party present)
- third number
- busy line verification number
- overseas calling number

UNBN OPRTRANS and EA (continued)

Enter datafill in tables XLAGRP and TOPSDP before table OPRINFO.

Datafill related to table OPRINFO

Field	Subfield	Entry	Explanation and action
NUMTYP		OPERCLG, OPERCLD, OVERSEAS, THIRD, BLV	<p>Number type. This field defines the type of call that can access the table. These tuples are predefined and cannot be added nor deleted. Only field XLASCHEM can be changed. The values for field NUMTYP are as follows:</p> <ul style="list-style-type: none"> • OPERCLG - Operator to calling number connection. This tuple is used when the operator is trying to connect the calling party and no originating party or agent is present. This call is a backward connection due to a previous call request, such as a time and charges request when the calling party hangs up and the operator must re-establish the connection. Translations and screening are as follows: <ul style="list-style-type: none"> — Table TOPSDP field OPERPRTN is used for pretranslations. — Table TOPSDP field STS is used for code translations. — Table TOPSDP field OPERSCRN is used for class of service screening. — Table TOPSPARM parameter DELAY_SPECIFIED_SNPA is used for expanding a seven digit back number to ten digits. <p>Since the operator is viewed as the starting point to translations, the Local Call Area Name is not applicable. In the past, this call was controlled by the DELAY tuple in table OPRTRANS.</p>

UNBN OPRTRANS and EA (continued)

Datafill related to table OPRINFO

Field	Subfield	Entry	Explanation and action
			<ul style="list-style-type: none"> <li data-bbox="820 430 1396 840"> <p>• OPERCLD - Operator to called number connection. This tuple is used when connecting to a called party with no originating party present. Some examples include a zenith call or when an operator accesses a loop at an idle position, and next may enter a CLD number to begin outputting. Translations and screening are the same as for OPERCLG except table TOPSDP tuple ORIGSCRN may be used instead of OPERSCRN. In the past, this call was controlled by the OPERATOR tuple in table OPRTRANS.</p> <li data-bbox="820 861 1396 1281"> <p>• THIRD - Third billing number. This tuple is used when connecting to a DN for third number verification. The originating agent information is not used for translations and screening because the originator is not calling the third party. Instead, the operator is calling the third party to verify billing acceptance.</p> <p>Translations and screening are the same as for OPERCLG, except there is no number expansion. In the past, this call was controlled by the SPLVFY tuple in table OPRTRANS.</p> <li data-bbox="820 1302 1396 1701"> <p>• BLV - Busy Line Verification. This tuple is used when connecting to a DN for BLV. The originating agent information is not used for translations and screening because the originator is not calling the BLV number. Instead, the operator is performing BLV on a DN that was supplied by the originator.</p> <p>Translations and screening are the same as for OPERCLG, except there is no number expansion. In the past, this call was controlled by the VERIFY tuple in table OPRTRANS.</p>

UNBN OPRTRANS and EA (continued)

Datafill related to table OPRINFO

Field	Subfield	Entry	Explanation and action
			<ul style="list-style-type: none"> OVERSEAS - Overseas calling number. This tuple is used when connecting forward to an overseas number. The originating agent information is not used for translations and screening. <p>Translations and screening are the same as for OPERCLG, except there is no number expansion. In the past, this call was controlled by the OVERSEAS tuple in table OPRTRANS.</p>
XLASCHEM		see subfields	Translations scheme. This field consists of subfields NEWXLA and XLAGRP.
	NEWXLA	Y or N	Enhanced translations. This field enables the new TOPS translations and screening for the call type in field NUMTYP. Enter Y to enable the new method and enter datafill in field XLAGRP. Enter N to use the old method, which uses table OPRTRANS. The default is N.
	XLAGRP	name from XLAGRP	Translations group. This field is valid only when field NEWXLA = Y. This field assigns a translations group to access table TOPSDP for translations and screening information. The group must be defined in table XLAGRP.

Datafill example for table OPRINFO

The figure that follows shows sample datafill for table OPRINFO.

MAP example for table OPRINFO

NUMTYP	XLASCHEM	
OPERCLG	Y	CLGXLA
OPERCLD	Y	CLDXLA
OVERSEAS	Y	OVSXLA
THIRD	Y	3RDXLA
BLV	N	

As indicated above, only field XLASCHEM can be changed.

UNBN OPRTRANS and EA (continued)

Datafill related to UNBN OPRTRANS and EA for table XLACIC

Translations Carrier Identification Code is a new table that refines the XLAGRP based on the CICGRP name associated with the carrier for the new TOPS translations and screening. The starting XLAGRP is defined in table TOPEATRK.

Enter datafill in tables CICGRP, TOPEACAR, XLAGRP, and TOPSDP before table XLACIC.

Datafill related to table XLACIC

Field	Subfield	Entry	Explanation and action
GRPKEY		see subfields	Group key. This field is the key field and consists of subfields XLAGRP and CICGRP.
	XLAGRP	name from table XLAGRP	Translations group. Enter a translations group name defined in table XLAGRP.
	CICGRP	name from table CICGRP	Carrier identification code group. Enter a CIC group name defined in table CICGRP. Translation and screening uses this group.
NEWXLGRP		name from table XLAGRP	New translations group. Enter a translations group name defined in table XLAGRP. This new group is a part of the XLAGRP that contains only CICs in the CICGRP.

Datafill example for table XLACIC

The figure that follows shows sample datafill for table XLACIC.

MAP example for table XLACIC

GRPKEY		NEWXLGRP

TRK1	0111	TRK1ILEC
TRK1	1234	TRK1CLEC

Datafill related to UNBN OPRTRANS and EA for table XLAEAREG

Translations Equal Access Region is a new table that refines the XLAGRP based on the region for the new TOPS translations and screening. The starting XLAGRP is defined in table TOPEATRK.

UNBN OPRTRANS and EA (continued)

Enter datafill in tables XLAGRP, TOPSDP, and EAREGN before table XLAEAREG.

Datafill related to table XLAEAREG

Field	Subfield	Entry	Explanation and action
GRPKEY		see subfields	Group key. This field is the key field and consists of subfields XLAGRP and REGION.
	XLAGRP	name from table XLAGRP	Translations group. Enter a translations group name defined in table XLAGRP.
	REGION	name from EAREGN	<p>Region. Enter a region name according to the screening as follows:</p> <ul style="list-style-type: none"> • LATA screening (table TOPEATRK field SCRNTYPE = LATA): Only predefined values INTRA, INTER, and OVERSEAS are allowed. These values are defined in table EAREGN. • ZONE screening (table TOPEATRK field SCRNTYPE = ZONE): All values defined in table EAREGN are allowed. These values include the predefined (INTRA, INTER, and OVERSEAS) and Operating Company defined values. <p>The predefined values are defined as follows:</p> <ul style="list-style-type: none"> • INTRA—A domestic carrier call that is intrastate • INTER—A domestic carrier call that is interstate • OVERSEAS—An international call when using traditional LATA screening. For ZONE screening, the REGION can be Operating Company defined in tables EAREGN and EASCRN.
NEWXLGRP		name from table XLAGRP	New translations group. Enter a translations group name defined in table XLAGRP. This new group contains only members that belong to the region.

Datafill example for table XLAEAREG

The figure that follows shows sample datafill for table XLAEAREG.

UNBN OPRTRANS and EA (end)

MAP example for table XLAEAREG

GRPKEY		NEWXLGRP
TRK1	INTRA	TRK1ILEC
TRK2	INTER	TRK1ILEC
TRK3	OVERSEAS	TRK1CLEC
TRK3	BURLXRAL	TRK2CLEC

Translation verification tools

UNBN OPRTRANS and EA does not use translation verification tools.

SERVORD

UNBN OPRTRANS and EA does not use the Service Order System (SERVORD).

UNBN Queueing

Ordering codes

Functional group ordering code: UNBN0101

Functionality ordering code: UNBN0102

Release applicability

TOPS09 and up

UNBN Queueing was introduced in TOPS09.

Prerequisites

To operate, UNBN Queueing has the following prerequisites:

- BAS Generic, BAS00003
- Operator Services Basic, OSB00001, and table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- QMS Host/Remote Queueing, OSB00101
- SPID Branding, UNBN0103, and table TOPSFTR parameter UNBUNDLING_BRANDING_VIA_SPID = Y
- Table TOPSFTR parameter UNBUNDLING_REFINEMENT_FOR_SPID = Y

Description

This functionality changes the existing Queue Management System (QMS) functionality with the addition of call type refinement table CT4QSPID. This table segregates traffic based on the service provider identifier (SPID).

This functionality is a result of the recent Telecommunications Reform Act of 1996 (TRA96). Incumbent Local Exchange Carriers (ILEC) can buy Local Exchange Carrier (LEC) operator services and sell those services to Competing LEC (CLEC) providers. The name of this process is unbundling.

Two types of SPIDs identify the ILEC or CLEC:

- Account owner (AO) SPID: This value identifies the dialtone and local service provider.
- Billing service provider (BSP) SPID: This value identifies the service provider that collects and generates the bill to the subscriber.

The AO SPIDs can apply to the calling, called, billing, and requested numbers. The BSP SPIDs can apply to the calling, called, and billing numbers. The AO

UNBN Queueing (continued)

and BSP SPIDs can be different values. This functionality only uses the calling AO SPID.

An update of the QMS tools, QCALL and QVIEW, includes this new refinement.

QMS, released in BCS34, is in the following functionality:

- QMS Host/Remote Queueing, OSB00101

For additional information on SPIDs, refer to functionality TOPS SPID Branding (UNBN0103). This functionality describes branding of SPIDs.

This functionality consists of the following features:

Feature number	Feature name
AF7160	Unbundling: QMS SPID Refinement

Operation

Separation of operator traffic by SPID would be useful in the following:

- All traffic for a Service Provider (SP) is sent to a set of operators or service nodes assigned to that SP.
- Different types of traffic for SPs are sent to different queues during high-traffic times and combined during light traffic times.
- SPIDs with similar calling traffic are grouped together. A grouping of SPIDs helps to conserve the number of allocated CT4Qs. Since there can be up to 10 call refinement types competing for up to 2047 CT4Qs, CT4Qs may require conservation.

QCALL tool

The QCALL CI increment tool has new command SPID.

Command SPID sets or displays the value of the SPID for a hypothetical call queue assignment. Entry of an SPID sets the SPID. Or, no entry of an SPID displays of the current SPID.

The HELP and PROMPTME commands now include the SPID command.

QVIEW

The existing FROMTABLE and TOTABLE commands for the QVIEW CI increment tool now support table CT4QSPID.

UNBN Queueing (continued)

SOC

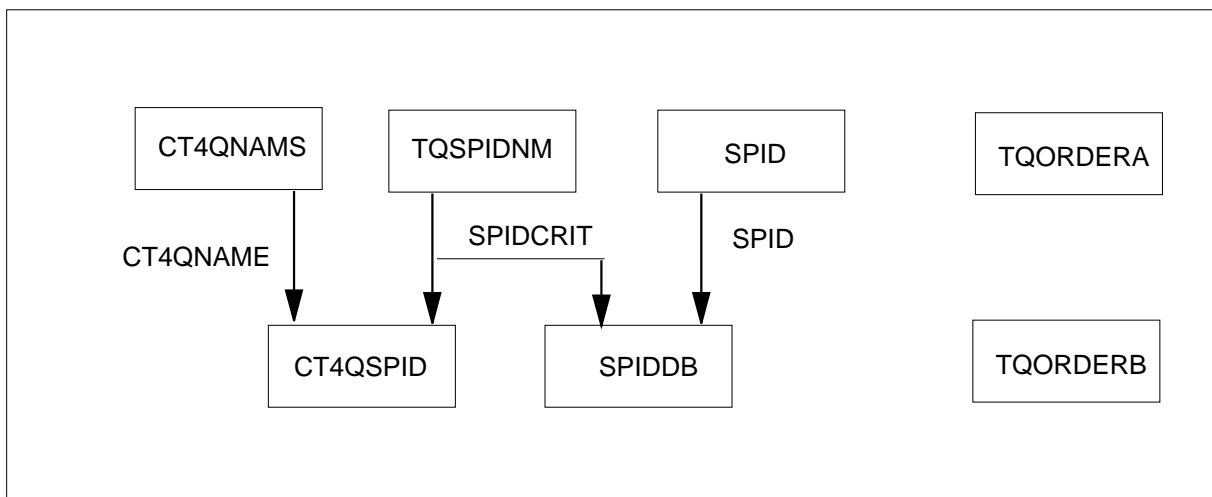
Software Optionality Control (SOC) option UNBN0102 controls this functionality. Datafill is acceptable in tables TQSPIDNM, CT4QSPID, and field SPIDCRIT in SPIDDB. And, field CT4QSPID can have a value other than zero in tables TQORDERA and TQORDERB. These conditions apply regardless of the SOC state. The QCALL and QVIEW tools are operational, regardless of the SOC state. But, the SOC state must be ON for CT4Q refinement by table CT4QSPID.

Translations table flow

The UNBN Queueing translations tables are described in the following list:

- Table CT4QNAMS defines CT4Q names.
- Table CT4QSPID refines CT4Qs by SPID groups.
- Table TQSPIDNM defines group names for SPIDs.
- Table SPID defines SPIDs.
- Table SPIDDB contains information about SPIDs.
- Tables TQORDERA and TQORDERB indicate the order of the refinement tables.

The UNBN Queueing translation process is shown in the flowchart that follows.

Table flow for UNBN Queueing

UNBN Queueing (continued)

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

Datafill example for UNBN Queueing

Datafill table	Example data
CT4QNAMS	5 0_MINUS N TOPSOPR Y 0_MINUS N N 6 0M_CLECS N TOPSOPR Y 0M_CLEC N N
TQSPIDNM	1 CLECS
CT4QSPID	O_MINUS CLECS 0M_CLECS
SPID	12AB
SPIDDB	12AB N ALL Y RBRAND Y RBRAND Y ACTSOPTS 41 ACTSTOPS 42 N Y CLECS
TQORDERA	CT4QSPID 3 0 0 0
TQORDERB	CT4QSPID 3 0 0 0

The above example shows sample ordering in tables TQORDERA and TQORDERB. There is no ordering requirement.

Limitations and restrictions

The following limitations and restrictions apply to UNBN Queueing:

- The maximum number of SPIDCRITs (SPID groups) QMS can handle (in table TQSPIDNM) is 255.
- The maximum number of CT4Qs (defined in table CT4QNAMS) is 2047. Therefore, it may be important to conserve the number of new SPID CT4Qs.
- The maximum number of call queues (CQs) is 255.
- If multiple SPIDs are assigned to a SPIDCRIT, QMS FM statistics are not available to provide statistics by SPID.

Recommendations due to a limited number of CT4Qs and SPIDCRITs

Since there are a limited number of CT4Qs, group CLECs that are close in type together for refinements. For instance, consider an ILEC that handles traffic for SPID groups ABCD and EFGH. If both groups receive basically the same traffic flow, both of their traffic could route into the same CQ. And if warranted, the two groups could be combined. As stated in feature AF6711 (Branding via SPID), each CLEC would continue to have branding of its name

UNBN Queueing (continued)

when the call reached the operator, and save a CQ. Feature AF6711 is in functionality SPID Branding, UNBN0103.

Also, consider if the number of QMS SPIDCRITs (in table TQSPIDNM) is getting close to the maximum. Certain CLECs could be left out by combining their traffic with another SPID. Again, branding would continue to be by the SPID. Statistics would not be available in the force management control (FMCT) tables on traffic to the CLEC. But since handling of CLEC traffic is the same as the ILECs, the Federal Communication Commission (FCC) requirement of equal access quality for unbundled elements should be provable. Alternatively, the QMS MIS could support statistics reporting that lists statistics by SPID, regardless of SPID-SPIDCRIT mappings.

Interactions

The following paragraphs describe the interactions between UNBN Queueing and other functionalities.

SPIDs must be datafilled in table SPID before SPIDs have assignment of a SPIDCRIT in table SPIDDB.

CT4Qs used in fields OLDCT4Q and NEWCT4Q in table CT4QSPID must first be datafilled in table CT4QNAMS.

The AO SPIDs can apply to the calling, called, billing, and requested numbers. The BSP SPIDs can apply to the calling, called, and billing numbers. The AO and BSP SPIDs can be different values. This functionality only uses the calling AO SPID.

The SPIDCRITs referred to in this document are only for use in QMS SPID refinement. The other Unbundling features use the SPID.

Activation/deactivation by the end user

UNBN Queueing requires no activation or deactivation by the end user.

Billing

UNBN Queueing does not affect billing.

Station Message Detail Recording

UNBN Queueing does not affect Station Message Detail Recording.

Datafilling office parameters

UNBN Queueing does not affect office parameters.

UNBN Queueing (continued)

Datafill sequence

The following table lists the tables that require datafill to implement UNBN Queueing. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for UNBN Queueing

Table	Purpose of table
CT4QNAMS	Call Type for Queueing defines CT4Q names used by other QMS tables.
TQSPIDNM	TOPS QMS SPID Names defines group names for SPIDs.
CT4QSPID	Call Type for Queueing Service Provider Identifier refines CT4Qs by SPID groups.
SPID	Service Provider Identifier defines SPID names for use in other tables.
SPIDDB	SPID Database provides information on SPIDs.
TQORDERA	TOPS QMS Order A indicates the order of access for the CT4Q refinement tables.
TQORDERB	TOPS QMS Order B indicates the order of access for the CT4Q refinement tables.

Datafilling table CT4QNAMS

The following table shows the datafill specific to UNBN Queueing for table CT4QNAMS. Only those fields that apply directly to UNBN Queueing are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table CT4QNAMS

Field	Subfield or refinement	Entry	Explanation and action
CT4QNAME		up to 32 characters	This table is not changed. Add tuples for new queue names used in table CT4QSPID.

Datafill example for table CT4QNAMS

The following example shows sample datafill for table CT4QNAMS.

UNBN Queueing (continued)**MAP display example for table CT4QNAMS**

CT4QNUM	CT4QNAME	NOAMA	SYSAREA
8	O_MINUS_THEM	N	TOPSOPR Y 0-_SPID N N
9	O_MINUS_THEM2	N	TOPSOPR Y 0-_SPID N N
15	O_PLUS_THEM	N	TOPSOPR Y 0+_SPID N N
17	O_PLUS_THEM2	N	TOPSOPR Y 0+C_SPID N N

Datafilling table TQSPIDNM

TOPS Queue Management System Service Provider Identifier Name is a new table that defines the SPID requirement for use in the queue management system (QMS). Table SPIDDB uses the name to define a group of SPIDs and then segregate incoming traffic in table CT4QSPID. This separation conserves CT4Qs.

Tuple 0 is a default entry for SPIDs that are not present.

The following is a description of the fields.

Datafilling table TQSPIDNM

Field	Subfield or refinement	Entry	Explanation and action
SPIDCODE		0 to 254	SPID code. This field is the key to the table that associates an integer index with each SPIDCRIT.
SPIDCRIT		up to 32 characters	SPID criteriion. Define a name for a group of SPIDs with like calling traffic. SPIDs are assigned to this group in table SPIDDB and QMS traffic segregates by this group in table CT4QSPID. There can be from zero to many SPIDs associated with this group in table SPIDDB.

Datafill example for table TQSPIDNM

The following example shows sample datafill for table TQSPIDNM.

UNBN Queueing (continued)

MAP display example for table TQSPIDNM

SPIDCODE	SPIDCRIT
0	UNKNOWN_SPIDCRIT
1	ILEC
2	CLECS
3	SMALLCLECS
4	BIGLEC
5	OTHERS

For the above example, tuple zero is a default entry for not present SPIDs. Change of this tuple is not allowed.

This datafill shows example categories as follows:

- ILEC is for a single SPID.
- SMALLECS is for ten small CLECs with essentially identical traffic styles.
- BIGCLEC is for the traffic of a large CLEC that routes to a set of operators or service nodes assigned to it.

Error messages for table TQSPIDNM

The following error messages apply to table TQSPIDNM.

Error messages for table TQSPIDNM

Error message	Explanation and action
This SPIDCRIT is in use in table CT4QSPID or SPIDDB. You must remove all references to this SPIDCRIT before deleting it.	The SPIDCRITs used in table CT4QSPID must be datafilled in this table first. Likewise, deletion of SPIDCRIT is not allowed from table TQSPIDNM if it is in use in table CT4QSPID or SPIDDB. This message displays for an attempt to delete a tuple from TQSPIDNM under a condition. The condition applies when the SPIDCRIT value is in use in table CT4QSPID. Or, this condition applies for the assignment of one or more SPIDs to the SPIDCRIT in table SPIDDB,

UNBN Queueing (continued)

Error messages for table TQSPIDNM

Error message	Explanation and action
This tuple is fixed, no deletes allowed.	For an attempt to delete the default UNKNOWN_SPIDCRIT tuple, deletion is not possible and this message displays. This tuple serves as an SPID of <NIL>.
This tuple is fixed, no changes allowed.	For an attempt to change the name of the UNKNOWN_SPIDCRIT default tuple, the system blocks the attempt and displays this message.

Datafilling table CT4QSPID

Call Type for Queueing Service Provider Identifier (CT4QSPID) is a new table. This table refines the call type by a single or groups of SPIDs defined in table TQSPIDNM.

The following is a description of the fields.

Datafilling table CT4QBLST

Field	Subfield or refinement	Entry	Explanation and action
OLDCT4Q		name from table CT4QNAMS	Old call type for queueing. This field is part of the key to the table. Enter the name of the previous CT4Q defined in table CT4QNAMS that is to receive refinement.
SPIDCRIT		name from table TQSPIDNM	SPID criterion. This field is part of the key to the table. Indicate if this segregated traffic belongs to this SPID criterion defined in table TQSPIDNM.
NEWCT4Q		name from table CT4QNAMS	New call type for queueing. Enter the CT4Q name from table CT4QNAMS that meets the criterion in field SPIDCRIT.

Datafill example for table CT4QSPID

The following example shows sample datafill for table CT4QSPID.

UNBN Queueing (continued)

MAP display example for table CT4QSPID

OLDCT4Q	SPIDCRIT	NEWCT4Q
0_MINUS	CLECGRP1	0_MINUS_THEM
0_MINUS	CLECGRP2	0_MINUS_THEM2
0_PLUS	CLECGRP1	0_PLUS_THEM
0_PLUS_COIN	CLECGRP	0_PLUS_THEM

Datafilling table SPID

The following table shows the datafill specific to UNBN Queueing for table SPID. Only those fields that apply directly to UNBN Queueing are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table SPID

Field	Subfield or refinement	Entry	Explanation and action
SPID		exactly 4 alphanumeric characters	Service provider identifier. Enter four alphanumeric characters. This value is an entry in tables SPIDDB, DNSCRN, and TOPSPARM (parameter DEFAULT_SPID). This table is not changed. Enter any new SPIDs.

Datafill example for table SPID

The following example shows sample datafill for table SPID.

MAP display example for table SPID

SPID
1234
ABCD
12AB
4567

UNBN Queueing (continued)

Datafilling table SPIDDB

The following table shows the datafill specific to UNBN Queueing for table SPIDDB. Only those fields that apply directly to UNBN Queueing are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table SPIDDB

Field	Subfield or refinement	Entry	Explanation and action
SPIDCRIT		see subfield	Service provider identifier criterion. This new field consists of subfield USECRIT.
	USECRIT	N or Y	User criterion. This field indicates if this SPID belongs to a group of SPIDs for use in QMS CT4s. The values are Y (yes) and N (no). If Y, datafill refinement CRIT.
	CRIT	name from table TQSPIDNM	QMS criterion. If field USECRIT = Y, datafill this field. Enter a group name for SPIDs. The name must be datafilled in table TQSPIDNM. This name can be assigned to many SPIDs.

Datafill example for table SPIDDB

The following example shows sample datafill for table SPIDDB.

MAP display example for table SPIDDB

SPID	SCRNDISP	OPERSYS		TAANN	DAANN
	ACCTSANN		XLA	SPIDCRIT	
1234	Y ATEL	OPERATOR	MCCS ACTS ADAS \$	Y ATABRAND	Y ADABRAND
	Y ACTSOPTS	41 ACTSTOPS	42 N	Y 1234	
ABCD	Y BCOM	MCCS ACTS ADAS \$		Y BBRAND	Y BBRAND
	N		N	Y CLECS	
12AB	N	ALL		Y RBRAND	Y RBRAND
	Y CLLI12AB	5 CLLI12AB	6 N	Y CLECS	
4567	Y CFON	NONE		N	N
	N		N	N	

Datafilling tables TQORDERA and TQORDERB

The following table shows the datafill specific to UNBN Queueing for tables TQORDERA and TQORDERB. Only those fields that apply directly to

UNBN Queueing (end)

UNBN Queueing are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling tables TQORDERA and TQORDERB

Field	Subfield or refinement	Entry	Explanation and action
CT4QTABL		CT4QSPID	Call type for queueing. New value CT4QSPID appears automatically with default values (zeros) for the remaining fields.

Datafill example for tables TQORDERA and TQORDERB

The following example shows sample datafill for table TQORDERA.

MAP display example for tables TQORDERA and TQORDERB

CT4QTABL	PREOPR	POSTAUTO	RECALL	ASST
CT4QCLAS	1	0	0	0
CT4QREST	0	0	0	0
CT4QPFXT	0	0	0	0
CT4QCAR	0	0	0	0
CT4QCLD	0	0	0	0
CT4QORIG	2	0	0	0
CT4QTIME	0	0	0	0
CT4QLANG	0	2	2	0
CT4QAUTO	0	1	1	0
CT4QSPID	3	0	0	0
CT4QBLST	0	0	0	0

Translation verification tools

UNBN Queueing does not use translation verification tools.

SERVORD

UNBN Queueing does not use SERVORD.

UNBN Screening for Billing Agreement

Ordering codes

Functional group ordering code: UNBN0101

Functionality ordering code: not applicable

Release applicability

TOPS13 and up

TOPS13 introduced UNBN Screening for Billing Agreement.

Requirements

To operate, SPID Assignment has the following requirements:

- BAS Generic, BAS00003
- Operator Services Basic, OSB00001, and table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- UNBN Unbundling, UNBN0101

Description

This functionality performs the following tasks

- Screens for a billing agreement between the service provider of the calling party and the service provider of the billed-to party/entity. The billed-to party/entity can be either a directory number (DN)—in the case of a collect or third number—or a calling card.
- Tracks billing agreements separately for Calling Card Validation (CCV) and Billing Number Screening (BNS).
- Allows screening on the billed party Account Owner (AO) Service Profile Identifier (SPID) and on the Billing Service Provider (BSP) SPID.
- Allows each service provider to use its own billing agreements or the billing agreements established by the Operator Services wholesaler.
- Screens on calls handled by the local exchange company (LEC), on calls handled by an Inter-eXchange Carrier (IXC) for only those carriers served by the LEC, and on cellular calls.

The following feature provides this functionality:

Feature number	Feature name
59011929	Screening for Billing Agreement

UNBN Screening for Billing Agreement (continued)

Operation

The contents of this section are as follows:

- Overview and background
- Functional overview
- Billing agreement groups
- Operator services agreements
- Service provider tables
- Billed party AO and BSP SPID screening
- Call processing
 - Determining the billing agreement group
 - LEC calls
 - Carrier calls
 - Cellular calls
 - 0+ call to an automated system
 - Logs

Overview and background

Service Provider IDentification (SPID) was introduced as a result of the Telecom Reform Act of 1996, which allowed new market entrants to provide local and/or long distance service. The new competition meant that it was no longer possible to determine who owned a DN on the sole basis of the NPA-NXX. Thus, SPIDs were introduced to allow for this identification.

Beginning in TOPS09, TOPS has been adding SPIDs into the call processing logic, including updates to various protocols that allow the sending and receiving of SPID information. One such updated protocol was the Line Information DataBase (LIDB) protocol for Alternate Billing Services (ABS). Currently, if a billing service provider (BSP) SPID is returned from the database on an alternately billed call, it is recorded on the billing record for the call only; no call processing logic is based on it.

The SPID of the originator for a Local Exchange Company (LEC) call or the Carrier Identification Code (CIC) for a carrier call is determined through switch datafill or a database query. The SPID originator can be the calling party or the Operator Services wholesaler.

This feature uses the SPID of the billed-to party returned from the LIDB database to screen the call during call setup to determine whether that SPID

UNBN Screening for Billing Agreement (continued)

has a billing agreement with the originator providing the service. The SPID may be associated with a DN for a collect or third number, or the provider of a calling card. If an agreement exists, the call is allowed to complete. If an agreement does not exist, the call is prevented from completing or from using that particular method of billing. Then, the user can either hang up or use some other billing method.

If no AO or BSP SPID is returned from the LIDB, the default behavior is defined by field NOSPDERR in Tables SPIDDB and TOPEACAR. A TOPS 612 log with a reason of “No Billed AO or BSP SPID Returned” is generated when no AO or BSP SPID is returned from the LIDB query.

If billing is blocked due to lack of a billing agreement, from an operator perspective, the call is treated just as any other invalid billing; i.e., the operator does not need to have any knowledge that the reason billing was not accepted was due to lack of a billing agreement between the LEC or carrier and the billed-to Service Provider. The only action the operator can take is to ask the subscriber for some other method of payment.

If billing is blocked due to lack of a billing agreement, from an automated services perspective, the call is treated just as any other invalid billing; i.e., no new announcements are defined. The subscriber is prompted for some other method of payment.

Note: If this feature is not turned on through SOC, no screening for billing agreements is performed.

Note: The terminology “at call setup” used throughout this document means either prior to the call outpulsing to the terminating party or prior to call float. Call float refers to the operator releasing the call from the position which connects the originating and terminating parties together.

Refer to the TOPS Unbundling User’s Guide for more detailed information on SPIDs.

Functional overview

This feature applies to call originations that route either to an operator or an automated system (ACCS, AABS, or OSSAIN) for alternate billing. These calls can be billed either collect, to a third party, or to a calling card.

An alternately billed call usually results in either a BNS or CCV query to a LIDB. The LIDB usually returns either an AO SPID, BSP SPID, or both that is associated with the billed-to party/entity.

UNBN Screening for Billing Agreement (continued)

By using the AO or BSP SPID returned in the RETURN RESULT response from the LIDB, TOPS checks to see whether a billing agreement exists between the service provider of the originating subscriber and the service provider of the collect or third DN, or the calling card. If a billing agreement exists, TOPS allows the call to continue. If a billing agreement does not exist, TOPS blocks the call from billing to that collect, third number, or calling card. A new log (TOPS 612 No Billing Agreement) with a reason of "No Billing Agreement" is generated when the call is blocked.

Datafill

This section gives a brief description of datafill. Details are given in the datafill procedure section.

Billing agreement groups

Billing agreement groups are a way to arrange SPIDs and, or CICs that have the same billing agreements into logical groups. A billing agreement group, which is associated with a SPID in table SPIDDB or a CIC in table TOPEACAR, is used as part of the index into the new billing agreement tables CCVAGRMT and BNSAGRMT. These tables provide tracking based on Credit Card Validation (CCV) and Billed Number Screening (BNS).

Before a billing agreement group can be used in the above tables, it must be defined in new table BAGNAME.

Operator services agreement

In order to allow operator services providers to wholesale their billing agreements when the CLECs do not want to secure their own agreements, two new parameters are added to table TOPSPARM.

- ALL_CALLS_USE_OPR_SVC_AGRMTS

If this parameter is set to Y, all calls incoming on TOPS/ISUP trunks use the operator services billing agreements for the checks. The agreement groups are obtained from TOPSPARM parameter OPR_SVC_AGRMTS.

If this parameter is set to N, use of operator services agreements is determined on an individual basis by new field BILAGRMT in table TOPECAR or SPIDDB.

- OPR_SVC_AGRMTS

This parameter identifies the billing agreement groups of the Operator Services wholesaler.

Billed party AO and BSP SPID screening

The LIDB can return both an account owner (AO) SPID and a billing service provider (BSP) SPID. Normally, screening is done only on the AO SPID. Now,

UNBN Screening for Billing Agreement (continued)

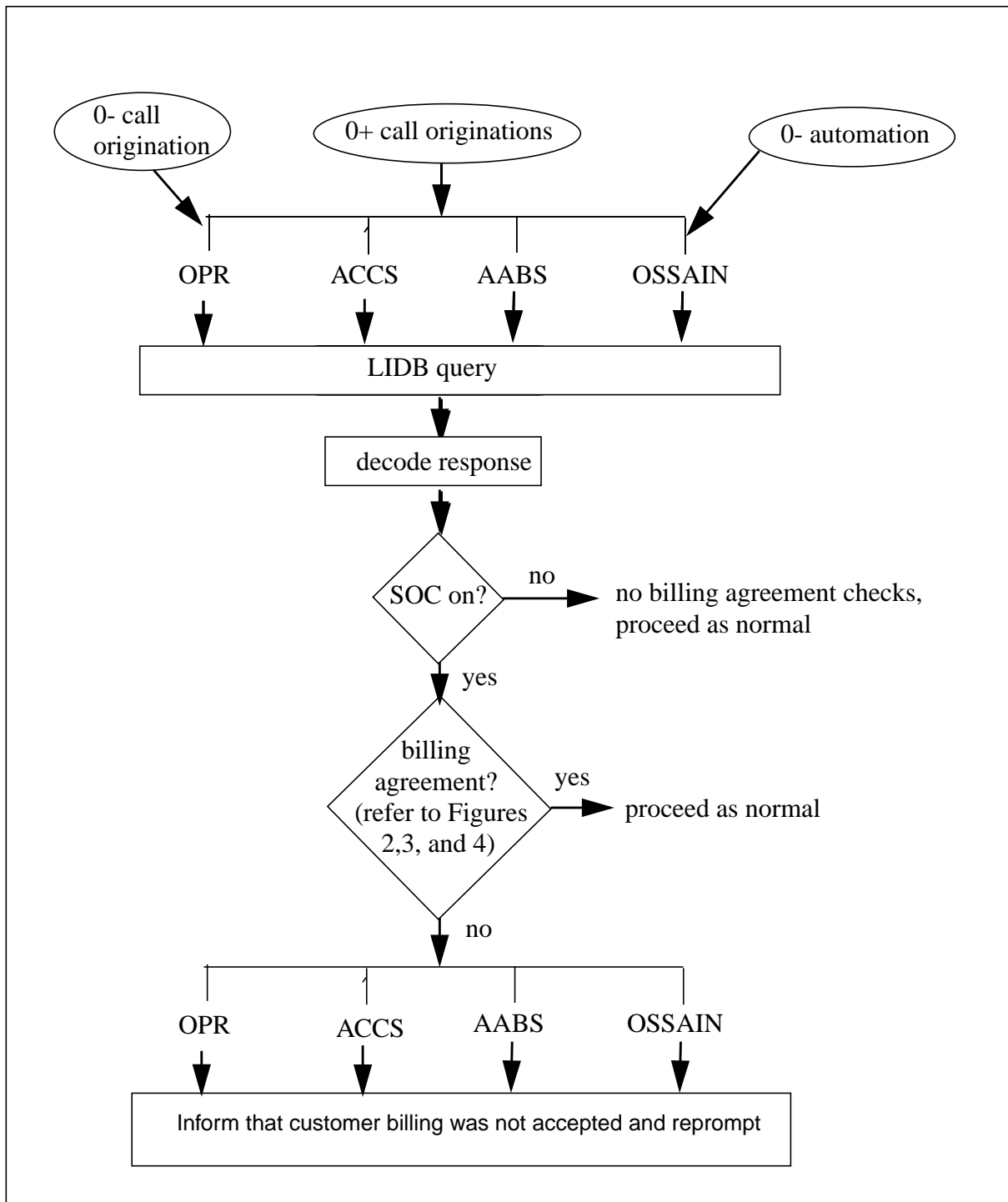
new TOPSPARM parameter CHECK_BILL_AGRMT_USING_BSP_SPID
can enable screening on the BSP SPID.

Call processing

A high level call flow is shown in the following figure.

UNBN Screening for Billing Agreement (continued)

High level call flow (figure 1)



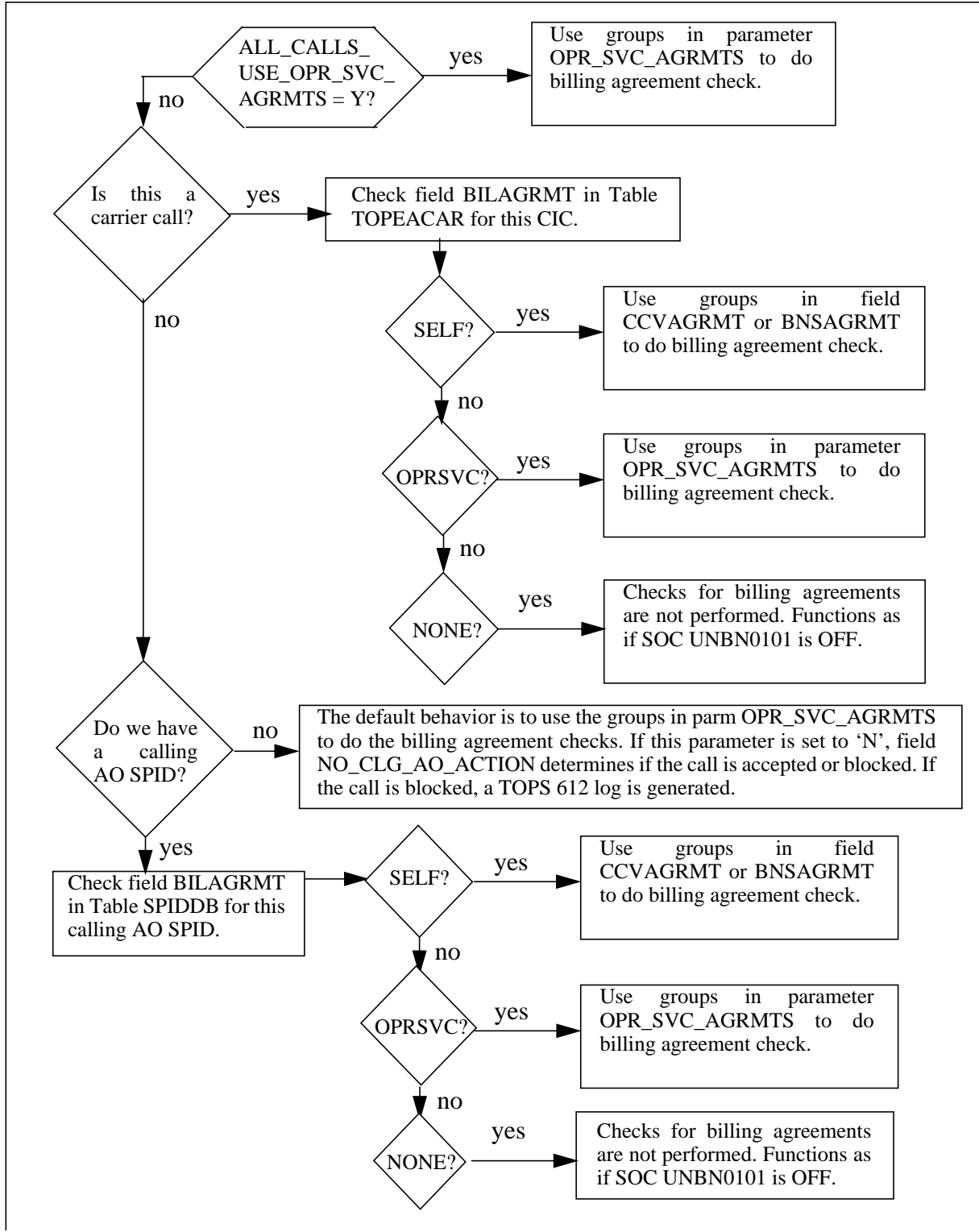
UNBN Screening for Billing Agreement (continued)

Determine the billing agreement group

Prior to checking for a billing agreement, the billing agreement group of the originating party must be determined. The steps for this procedure are shown in the following figure. This flowchart assumes the SOC is on.

UNBN Screening for Billing Agreement (continued)

Determining the billing agreement group of originating SPID or CIC (figure 2)

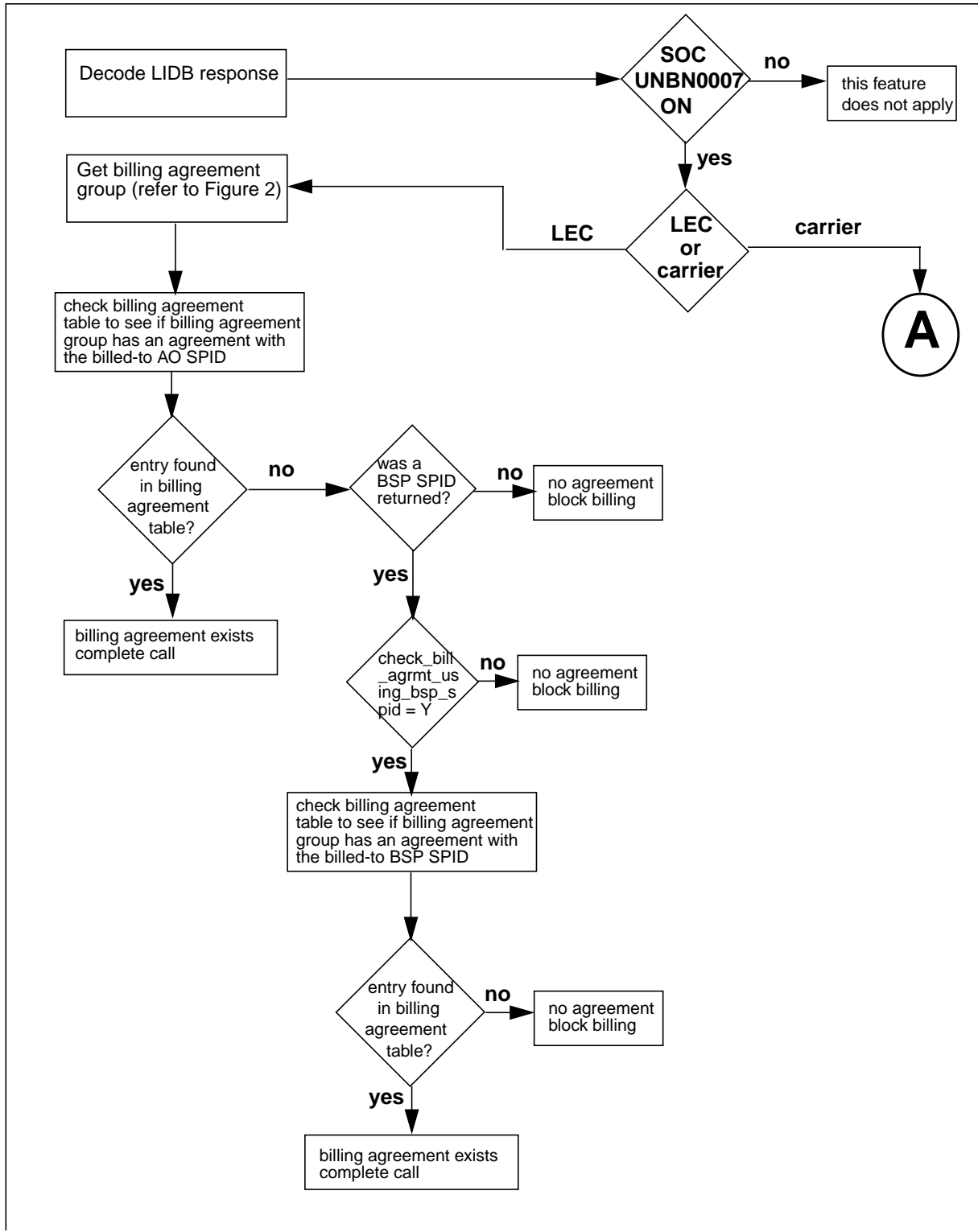


UNBN Screening for Billing Agreement (continued)

The following figure shows the processing for billing agreement.

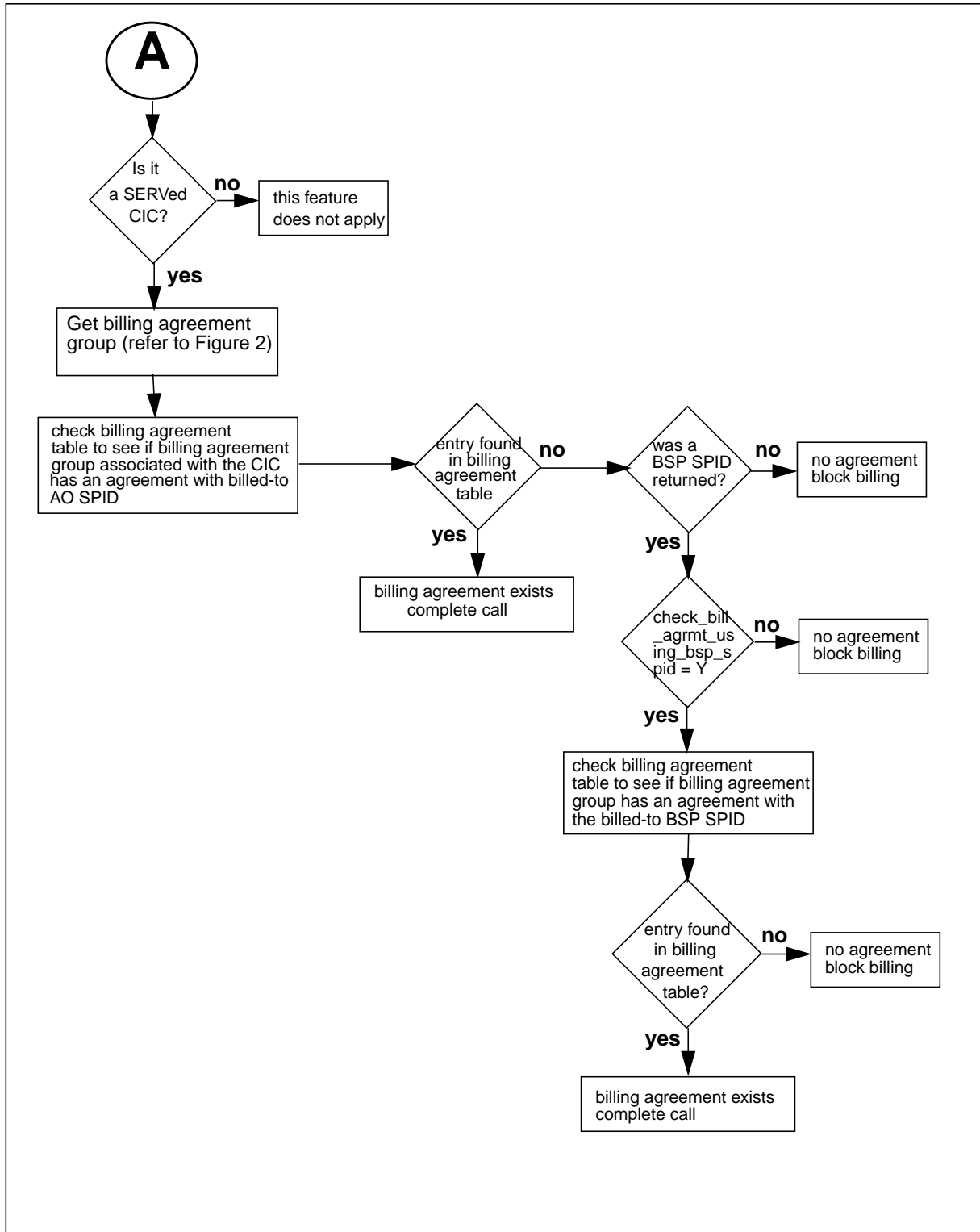
UNBN Screening for Billing Agreement (continued)

Billing agreement processing (figure 3)



UNBN Screening for Billing Agreement (continued)

Billing agreement processing (continued) (figure 4)



UNBN Screening for Billing Agreement (continued)

LEC calls

An LEC call is any call that originates and terminates within an LEC's network.

For LEC calls, the AO SPID of the calling party can be obtained in one of the following ways:

- OLNS query
- table DNSCRN (SPID of originating DN)
- table TOPTOPT (SPID of originating trunk)
- table TOPSPARM (tuple DEFAULT_SPID)

Once the AO SPID of the calling party has been determined, new field BILAGRMT in table SPIDDB is checked to see which group (SELF, OPR SVC, or NONE) should be used to perform billing agreement checks. This group, and the AO or BSP SPID returned from the LIDB query, are used to index either table CCVAGRMT or table BNSAGRMT to determine whether an agreement exists.

If the AO SPID of the calling party cannot be determined, the Operator Services Agreements are used. If parameter OPR_SVC_AGRMTS is set to N, field NO_CLG_AO_ACTION is checked to determine if the call should be accepted or blocked. If the call is blocked, a TOPS 612 log with reason 'No Calling AO SPID or OPR SVC Agreements' is generated if parameter GEN_NO_BILL_AGRMT_LOG is set to Y.

Note: Billing agreement checks may become invalid if the OSSAIN Service Node changes the AO SPID after the LIDB query has been launched. If this is the case, the node will be notified that billing has been denied.

Carrier calls

Traditionally, a carrier call is any call that originates or terminates outside the LEC's network and is handled by an Inter-eXchange Carrier (IXC). For this feature, a carrier call is any call handled by an IXC.

A call is determined to be a carrier call based on the calling and called numbers. (Tables TOPEATRK, LATA XLA, and EASCRN are used to make this determination if the call is not signaled as a carrier call.) Once a call is determined to be a carrier call, a CIC is obtained, if one was not signaled. A CIC can be obtained in a number of ways: signaled, OLNS, DNPIC, or TOPEATRK (default for the trunk group). Once the CIC is determined for the call, new field BILAGRMT in table TOPEACAR is checked to see which group (SELF, OPR SVC, or NONE) should be used to perform billing

UNBN Screening for Billing Agreement (continued)

agreement checks. This group, and the AO or BSP SPID returned from the LIDB query, are used to index either table CCVAGRMT or table BNSAGRMT to determine whether an agreement exists.

Note 1: Billing agreement checks may become invalid if the CIC is changed at the Operator Position after the LIDB query has been launched. If this is the case, the operator will need to prompt the user for another billing method.

Note 2: Billing agreement checks may become invalid if the OSSAIN Service Node changes the CIC after the LIDB query has been launched. If this is the case, the node will be notified that billing has been denied.

If a call is not signaled as a carrier call, then both the calling and the called numbers are used to determine whether the call is a carrier call. The presence of the called number in the LIDB CCV query is optional. It is possible, in the case of a 0- call, to launch a query without the called number and have a billing agreement between the SPID of the originating party (which can be the calling party or the operator services wholesaler) and the SPID of the calling card. After the operator enters the called number and the call is determined to be a carrier call, there may no longer be an agreement between the IXC and the SPID of the calling card. To eliminate this sort of potential confusion, the called number must be present before the LIDB query is launched for the calling card. Presently, this is controlled by field CLDREQ in table CCVPARMS and must be set to Y. If this feature is SOCed on, the called number must be present before the LIDB query is launched, regardless of the datafill of field CLDREQ. If the called number is not present, the LIDB query is deferred until the called number is entered. This applies to BNS queries as well as CCV queries, and it applies to LEC calls as well as carrier calls.

Once the CIC has been determined as described above, table TOPEACAR is checked to see whether services are provided on behalf of the carrier. If services are provided, then billing must be secured on the call before it can be floated. If services are not provided, the call is transferred to the carrier. Screening for billing agreement is only applied to carrier calls that are destined for carriers that are SERVED by the LEC—that is, datafilled as SERV in table TOPEACAR.

Cellular calls

This feature provides no special handling for cellular calls. If the operating company provides operator services for a cellular carrier and wishes this feature to apply, then it will function as described for non-cellular calls. For the LEC cases, if calling AO SPID information is not provided on a per-call basis, then a default can be defined for the trunk group. For the carrier cases, the CIC associated with the call is used to do the screening for billing agreement.

UNBN Screening for Billing Agreement (continued)

Example call flows

For the following call flows, it is assumed that the feature SOC is on.

0+ call to operator

The following datafill is assumed.

MAP example for table TOPSPARM

PARMNAME	PARMVAL
ALL_CALLS_USE_OPR_SVC_AGRMTS	Y
OPR_SVC_AGRMTS	Y OPRCCVGRP OPRBNSGRP BLOCK
CHECK_BILL_AGRMT_USING_BSP_SPID	Y

MAP display example for table TOPEACAR

CARDIG	CARNAME	ALTDISP	OPLSCLD	CAMABILL	ALTCARR	NATERM	OPSERV
0111	C111	C111	Y	Y	0111	UNREST	OPRSVC
UNREST		SERV	NOQUERY	Y	NOQUERY	Y	Y
0	N					100	

MAP example for table CCVAGRMT

CCVKEY	
OPRCCVGRP	LECA
OPRCCVGRP	LECB
OPRCCVGRP	C111
OPRCCVGRP	C222
OPRBNSGRP	LECB

1. Calling party 619-320-1234 dials 0+212-220-1234. The call routes to an operator. The call is a carrier call destined for carrier 111. The subscriber bills it to a calling card. A CCV query is launched and a response is

UNBN Screening for Billing Agreement (continued)

received. An AO SPID for the billed-to party is not returned; however, a BSP SPID is returned. The BSP SPID is C111.

2. Table TOPSPARM parameter
ALL_CALLS_USE_OPR_SVC_AGRMTS is checked to determine what agreement group to use for billing agreement checks. Since ALL_CALLS_USE_OPR_SVC_AGRMTS is set to Y, the operator services agreements is used.
3. Parameter OPR_SVC_AGRMTS is referenced for the index into table CCVAGRMT; OPRCCVGRP in this case.

Note: Table control prevents ALL_CALLS_USE_OPR_SVC_AGRMTS from being set to Y if OPR_SVC_AGRMTS is not datafilled with valid billing agreement groups.

4. Since a billed-to AO SPID for the billed-to party was not returned, but a billed-to BSP SPID was, a check of parameter CHECK_BILL_AGRMT_USING_BSP_SPID is made to see if the BSP SPID should be used to check for a billing agreement. The parameter is set to Y (Yes) so the BSP SPID (C111) is used to check for billing

UNBN Screening for Billing Agreement (continued)

agreement. Table CCVAGRMT is indexed with OPRCCVGRP and C111 and an entry is found, so the call is allowed to complete.

- **What happens if OPRCCVGRP is not datafilled in table CCVAGRMT?**

If OPRCCVGRP is not found in table CCVAGRMT then billing to this calling card is blocked. The operator must prompt the subscriber for another billing method.

The new TOPS 612 log with reason “No Billing Agreement” is generated if parameter GEN_NO_BILL_AGRMT_LOG is set to Y (Yes).

The same type of behavior applies to table BNSAGRMT.

- **What happens if C111 is not found in the BILLSPID field?**

If C111 is not found in the BILLSPID field then billing to this calling card is blocked. The operator must prompt the subscriber for another billing method.

The new TOPS 612 log with reason “No Billing Agreement” is generated if parameter GEN_NO_BILL_AGRMT_LOG is set to Y (Yes).

- **What happens if neither an AO or BSP SPID are returned by the LIDB?**

Field NOSPDERR of parameter OPR_SVC_AGRMTS is referenced. In this example, it is set to BLOCK, which results in that billing method being blocked.

The new TOPS 612 log with reason “No Billed AO or BSP SPID Returned” is generated if parameter GEN_NO_BILL_AGRMT_LOG is set to Y(Yes).

0+ call to an automated system

The following datafill is assumed.

MAP example for table TOPSPARM

PARMNAME	PARMVAL
ALL_CALLS_USE_OPR_SVC_AGRMTS	N
OPR_SVC_AGRMTS	Y OPRCCVGRP OPRBNSGRP OPER

UNBN Screening for Billing Agreement (continued)

MAP display example for table SPIDDB

SPID	SCRNDIS	OPERSYS	TAANN	DAANN	SCRNIDX
ACTSANN		XLA		SPIDCRIT	
BILAGRMT					

DN	Y D	NSC	ALL	Y D	NSC
Y	ACT	STOPS	27	ACT	STOPS
			28	Y	
SELF	DN	SC	CC	V	CR
				DN	SC
				B	NS
				G	R
				P	
					ACC
					PT

MAP example for table BNSAGRMT

BNSKEY	

GRP2	LECA
DN	SC
B	NS
G	R
P	
	LE
	CC

1. Calling subscriber 619-320-1234, whose service provider is DNSC, dials 0+201+220+1234. The call routes to AABS.
2. AABS prompts the calling party to select a method of payment and the calling party elects to bill the call to a third number.
3. A BNS query is launched. An AO SPID of LECA is returned in the response from the LIDB.
4. TOPSPARM parameter ALL_CALLS_USE_OPR_SVC_AGRMTS is checked to see if all calls are using the operator services billing agreements. In this case, they are not.
5. Next, table SPIDDB is checked to determine the type of agreement in place for service provider DNSC. Based on the datafill, DNSC has its own billing agreements.
 - **What happens if ALL_CALLS_USE_OPR_SVC_AGRMTS is set to N and table SPIDDB is set to NONE?**
No billing agreement checking is performed for this SPID. It functions as if SOC UNBN0007 is OFF.
6. Field BNSAGRMT is referenced to obtain the index into table BNSAGRMT, DN

UNBN Screening for Billing Agreement (continued)

7. Table BNSAGRMT is indexed with DNSCBNSGRP and LECA.
8. An entry is found so DNSC has a billing agreement with LECA and the call is allowed to complete.
 - **What happens if an entry is not found in the table?**

If an entry is not found, then billing to the third number is blocked.

The new TOPS 612 log with reason “No Billing Agreement” is generated if parameter GEN_NO_BILL_AGRMT_LOG is set to Y(Yes).
 - **What happens if a SPID is not returned in the BNS query?**

Field NOSPDERR is examined to determine how to proceed with the call. In this example, field NOSPDERR is set to ACCPT, which means the call is allowed to proceed as normal.

If NOSPDERR had been set to OPER, the call would have been routed to an operator.

The new TOPS 612 log with reason “No Billed AO or BSP SPID Returned” is generated if parameter GEN_NO_BILL_AGRMT_LOG is set to Y(Yes).

Logs

New log TOPS612 is generated under various conditions and there is no billing agreement. This log is enabled by table TOPSPARM parameter GEN_NO_BILL_AGRMT_LOG. Refer to this parameter in the datafill procedure section for details.

Translations table flow

The list that follows includes the UNBN Screening for Billing Agreement translations tables:

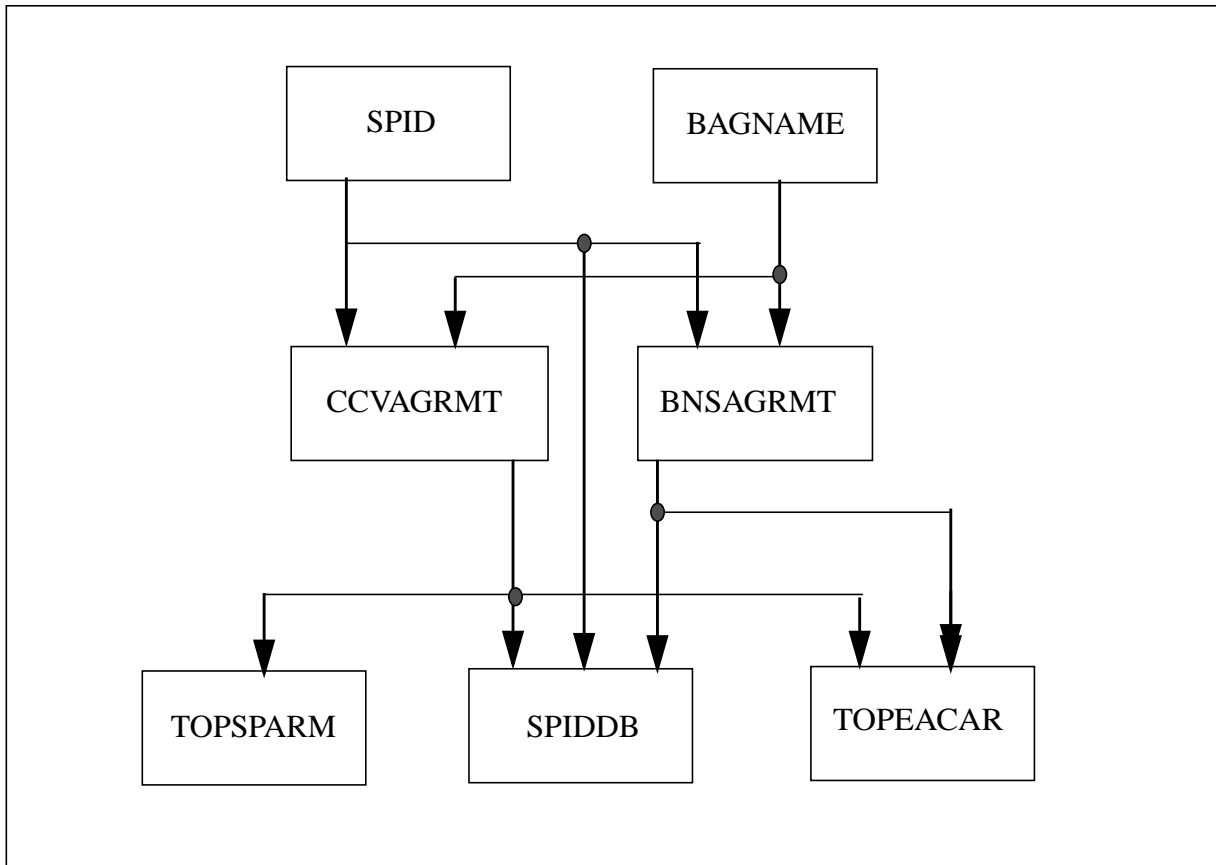
- Table SPID defines SPID names for use in other tables.
- Table BAGNAME contains the names of all the billing agreement groups in the switch.
- Table BNSAGRMT lists the billing agreements between an originator’s billing agreement group and a billed-to AO or BSP SPID for billed number screening.
- Table CCVAGRMT lists the billing agreements between an originator’s billing agreement group and a billed-to AO or BSP SPID for calling card validation.
- Table SPIDDB contains TOPS call processing data for SPIDs.

UNBN Screening for Billing Agreement (continued)

- Table TOPEACAR specifies whether operator services are provided for certain carriers and defines the billing procedure for calls to that carrier.
- Table TOPSPARM lists office parameters unique to TOPS offices.

The flowchart that follows provides the UNBN Screening for Billing Agreement translations process.

Table flow for UNBN Screening for Billing Agreement



UNBN Screening for Billing Agreement (continued)

The table that follows lists the datafill content used in the flowchart.

Datafill example for UNBN Screening for Billing Agreement

Datafill table	Example data
SPIDDB	LECB LCBC
BAGNAME	DNSCBNSGRP DNSCCCVGRP OPRCCVGRP OPRBNSGRP
BNSAGRMT	DNSCBNSGRP LECB OPRBNSGRP LECC
CCVAGRMT	DNSCCCVGRP LECB OPRCCVGRP LECC
SPIDDB	DNSC Y DNSCDSP ALL Y DNSCBRAND Y DNSCBRAND Y ACTSTOPS 27 ACTSTOPS 28 Y DNSCRNSPID N 100 SELF DNSCCCVGRP DNSCBNSGRP ACCT
TOPEACAR	0111 C111 C111 Y Y 0111 UNREST UNREST SERV NOQUERY Y NOQUERY Y NOQUERY Y Y Y Y 100 SELF C1CCVGRP C1CBNSGRP BLOCK
TOPSPARM	ALL_CALLS_USE_OPR_SVC_AGRMTS Y OPR_SVC_AGRMTS Y OPRCCVGRP OPRBNSGRP OPER

Limitations and restrictions

The limitations and restrictions that follow apply to UNBN Screening for Billing Agreement.

- Any SPID datafilled in table BNSAGRMT or table CCVAGRMT must first be datafilled in table SPID.
- Billing agreement groups must be defined in table BAGNAME before they can be used in tables BNSAGRMT, CCVAGRMT, SPIDDB, TOPEACAR, or TOPSPARM.
- This feature requires OAP Version 7 or higher to function properly with OSSAIN calls.

UNBN Screening for Billing Agreement (continued)

- This feature screens for billing agreements between Calling AO SPID or CIC of the origination party and the billed-to entity (DN or Calling Card). In cases where a call is initially billed collect and the person accepting the charges chooses to bill them to a calling card, this feature does not provide any screening between the AO SPID of the called party and the billed-to entity.
- Screening for Billing Agreements is supported in the North American market only and even though the feature can be enabled through SOC it is not supported in any Global software loads.

Interactions

The paragraphs that follow describe how Populate ModHeading attribute interacts with other functionalities.

- If this feature is SOCed On, the called number is required before a LIDB query is launched, regardless of the datafill of field CLDREQ in table CCVPARMS.
- For OSSAIN calls, the node has complete control of the call. In the case where no AO or BSP SPID is returned from the LIDB query, the node is not guaranteed to route the call to an operator even if the NOSPDERR field is set to OPER.

Activation and deactivation by the user

UNBN Screening for Billing Agreement does not require activation or deactivation by the user.

Billing

No new AMA requirements are identified for this feature. Module Code 52 is the alternate billing services module and is appended to the billing record for

UNBN Screening for Billing Agreement (continued)

these calls. However, it should be noted that the following combinations will exist when this feature blocks a call because of the lack of a billing agreement:

- for BNS queries:
 - LIDB RESPONSE (Field 286) will be set to ACCEPT (value 01).
 - OPERATOR SERVICES SYSTEM ACTION (Field 291) will be set to PROVIDED RESTRICTED BILLING TREATMENT (value 5).
- for CCV queries:
 - LIDB RESPONSE (Field 286) will be set to PIN MATCH (value 05).
 - OPERATOR SERVICES SYSTEM ACTION (Field 291) will be set to PROVIDED RESTRICTED BILLING TREATMENT (value 5).

For TOPS Call Detail Recording (TDR) billing, fields LIDB RESPONSE and OPERATOR SERVICES SYSTEM ACTION are contained in the following templates: Combined, Call Completion, Listing Services, BLV/Intercept, General Assistance, and Charge Adjust. These fields will be updated as follows when this feature blocks the call owing to the lack of a billing agreement:

- for BNS queries:
 - LIDB RESPONSE will be set to BNS ACCEPT (value 01).
 - OPERATOR SERVICES SYSTEM ACTION will be set to PROVIDED RESTRICTED BILLING TREATMENT (value 5).
- for CCV queries:
 - LIDBRESP will be set to CCV PIN MATCH (value 05).
 - OPERATOR SERVICES SYSTEM ACTION will be set to PROVIDED RESTRICTED BILLING TREATMENT (value 5).

Station Message Detail Recording

UNBN Screening for Billing Agreement does not require Station Message Detail Recording.

Office parameters used by UNBN Screening for Billing Agreement

UNBN Screening for Billing Agreement does not generate office parameters.

UNBN Screening for Billing Agreement (continued)

Datafill sequence

The table that follows lists the tables that require datafill to put UNBN Screening for Billing Agreement into operation. You must enter data into the table in this order.

Datafill requirements for UNBN Screening for Billing Agreement

Table	Purpose of table
SPID	The Service Provider IDentification table lists all SPID names.
BAGNAME	The Billing Agreement Group Name table contains the names of all the billing agreement groups in the switch.
BNSAGRMT	The Billing Number Screening Agreement table lists the billing agreements between an originator's billing agreement group and a billed-to AO or BSP SPID for billed number screening.
CCVAGRMT	The Calling Card Validation Agreement table lists the billing agreement group and billed-to AO or BSP SPID for calling card validation.
SPIDDB	The Service Provider IDentification DataBase table contains TOPS call processing data for SPIDs.
TOPEACAR	The TOPS Equal Access Carrier Table specifies whether operator services are provided for certain carriers and defines the billing procedure for calls to that carrier.
TOPSPARM	The TOPS Office Parameter table lists office parameters unique to TOPS offices.

Datafill related to UNBN Screening for Billing Agreement for table SPID

The table that follows provides the datafill related to UNBN Screening for Billing Agreement for table BAGNAME. This table includes only those fields that apply directly to UNBN Screening for Billing Agreement.

Datafill related to table SPID

Field	Subfield	Entry	Explanation and action
SPID		up to 8 characters	This table is not changed. Add necessary new SPIDs for use in tables CCVAGRMT and BNSAGRMT.

Datafill example for table SPID

The figure that follows shows sample datafill for table SPID.

UNBN Screening for Billing Agreement (continued)

MAP example for table SPID

```

SPID
-----
LECC
LECD
LECE
LECF
C123
C456
C333
    
```

Datafill related to UNBN Screening for Billing Agreement for table BAGNAME

Table Billing agreement name is a new table that defines billing agreement group names for use in tables CCVAGRMT and BNSAGRMT. These groups provide a way to arrange SPIDs and, or CICs that have the same billing agreements.

The table that follows provides the datafill related to UNBN Screening for Billing Agreement for table BAGNAME. This table includes only those fields that apply directly to UNBN Screening for Billing Agreement.

Datafill related to table BAGNAME

Field	Subfield	Entry	Explanation and action
BAGNAME		A billing agreement group name of up to 16 characters	Billing agreement group name. This field defines a billing agreement group name associated with the originating party. For an LEC call, this group name is associated with an SPID in table SPIDDB. For a carrier call, this group name is associated with a CIC in table TOPEACAR. This group name is used as part of the index into the agreement tables, CCVAGRMT and BNSAGRMT.

Datafill example for table BAGNAME

The figure that follows shows sample datafill for table BAGNAME.

UNBN Screening for Billing Agreement (continued)

MAP example for table BAGNAME

```

BAGNAME
-----
OPRCCVGRP
OPRBNSGRP
LECCCVGRP
LECBNSGRP
    
```

Datafill related to UNBN Screening for Billing Agreement for table BNSAGRMT

Each service provider can have different billing agreements with a given service provider based on the billing method. New table BNSAGRMT provides tracking of billing agreements separately based on Billed Number Screening. Table BNSAGRMT lists the billing agreements between an originator’s billing agreement group and a billed-to AO or BSP SPID for billed number screening.

The table that follows provides the datafill related to UNBN Screening for Billing Agreement for table BNSAGRMT. This table includes only those fields that apply directly to UNBN Screening for Billing Agreement.

Datafill related to table BNSAGRMT

Field	Subfield	Entry	Explanation and action
BNSKEY		see subfields	Billing number screening key. This field is the key to the table and consists of subfields ORIGGRP and BILLSPID. The presence of a tuple in this table indicates an agreement exists between the billing agreement group of the originator and the billed-to SPID.

UNBN Screening for Billing Agreement (continued)

Datafill related to table BNSAGRMT

Field	Subfield	Entry	Explanation and action
	ORIGGRP	name from table BAGNAME	Originating group. This field is the billing agreement group name associated with the originating party. For an LEC call, this group name is associated with a SPID in table SPIDDB. For a carrier call, this group name is associated with a CIC in table TOPEACAR. The name must be defined in table BAGNAME.
	BILLSPID	value from table SPID	Billed-to SPID. Enter the AO or BSP SPID of the billed-to party/entity. The SPID must be defined in table SIPD. The SPID returned from the LIDB query is compare to this field to screen for billing agreements.

Datafill example for table BNSAGRMT

The figure that follows shows sample datafill for table BNSAGRMT.

MAP example for table BNSAGRMT

BNSKEY	
OPRBNSGRP	LECD
OPRBNSGRP	LECE
OPRBNSGRP	C123
OPRBNSGRP	C456
LECBNSGRP	LECC
LECBNSGRP	LECF
LECBNSGRP	C123
LECBNSGRP	C333

Datafill related to UNBN Screening for Billing Agreement for table CCVAGRMT

Each service provider can have different billing agreements with a given service provider based on the billing method. New table CCVAGRMT provides tracking of billing agreements separately based on Calling Card Validation. Table CCVAGRMT lists the billing agreements between an originator’s billing agreement group and a billed-to AO or BSP SPID for calling card validation.

UNBN Screening for Billing Agreement (continued)

The table that follows provides the datafill related to UNBN Screening for Billing Agreement for table CCVAGRMT. This table includes only those fields that apply directly to UNBN Screening for Billing Agreement.

Datafill related to table CCVAGRMT

Field	Subfield	Entry	Explanation and action
CCVKEY		see subfields	Calling card validation key. This field is the key to the table and consists of subfields ORIGGRP and BILLSPID. The presence of a tuple in this table indicates an agreement exists between the billing agreement group of the originator and the billed-to SPID.
	ORIGGRP	name from table BAGNAME	Originating group. This field is the billing agreement group name associated with the originating party. For an LEC call, this group name is associated with a SPID in table SPIDDB. For a carrier call, this group name is associated with a CIC in table TOPEACAR. The name must be defined in table BAGNAME.
	BILLSPID	value from table SPID	Billed-to SPID. Enter the AO or BSP SPID of the billed-to party/entity. The SPID must be defined in table SIPD. The SPID returned from the LIDB query is compare to this field to screen for billing agreements.

Datafill example for table CCVAGRMT

The figure that follows shows sample datafill for table CCVAGRMT.

MAP example for table CCVAGRMT

CCVKEY	

OPRCCVGRP	LECA
OPRCCVGRP	LECB
OPRCCVGRP	C111
OPRCCVGRP	C222
LECCCVGRP	LECC
LECCCVGRP	LECD
LECCCVGRP	C333
LECCCVGRP	C444

UNBN Screening for Billing Agreement (continued)

Datafill related to UNBN Screening for Billing Agreement for table SPIDDB

The existing table SPIDDB provides details on SPIDs for the various CLEC service providers for LEC calls. Field BILAGRMT is new.

UNBN Screening for Billing Agreement (continued)

The table that follows provides the datafill related to UNBN Screening for Billing Agreement for table SPIDDB. This table includes only those fields that apply directly to UNBN Screening for Billing Agreement.

UNBN Screening for Billing Agreement (continued)

Datafill related to table SPIDDB

Field	Subfield	Entry	Explanation and action
BILAGRMT		see subfield AGRMTYPE	Billing agreement. This field consists of subfield AGRMTYPE. This field is examined to determine the type of billing agreement that is in place for the given provider. This field is checked when table TOPSPARM parameter ALL_CALLS_USE_OPR_SVC_AGRMTS is set to N (No).

UNBN Screening for Billing Agreement (continued)

Datafill related to table SPIDDB

Field	Subfield	Entry	Explanation and action
	AGRMTYPE	SELF, OPRSVC, or NONE	<p>Agreement type. This field indicates the type of billing agreement. The values are as follows:</p> <ul style="list-style-type: none"> • SELF - The service provider has its own billing agreements. Datafill refinements CCVAGRMT, BNSAGRMT, and NOSPDERRThe refinement includes a group name for CCV and BNS agreements and a field for error handling when no SPID is returned from the LIDB query. • OPRSVC - The service provider is using the billing agreements already established by the Operator Services wholesaler. No refinements require datafill. The billing agreement groups used to index tables CCVAGRMT and BNSAGRMT are obtained from parameter OPR_SVC_AGRMTS in table TOPSPARM. • NONE - No billing agreement checking is to be performed. No refinements require datafill. This value is used for the following reasons. <ul style="list-style-type: none"> — to allow a default for ONPs from a pre-TOP13 — to allow for default datafill when the feature is not SOCed On — to allow for default datafill when TOPSPARM parameter ALL_CALLS_USE_OPR_SVC_AGRMTS is set to Y and individual agreements are irrelevant — to allow screening for billing agreements to be activated on a per SPID or per CIC basis

UNBN Screening for Billing Agreement (continued)

Datafill related to table SPIDDB

Field	Subfield	Entry	Explanation and action
			For value NONE, if this feature is SOCed ON and TOPSPARM parameter ALL_CALLS_USE_OPR_SVC_AGRMTS is set to N, checks for billing agreements are not performed and the call is handled as if this feature is SOCed IDLE.
	CCVAGRMT	name from table BAGNAME	Calling card validation agreement. This field is the billing agreement group name associated with the originating party. For an LEC call, this group name is associated with a SPID in table SPIDDB. For a carrier call, this group name is associated with a CIC in table TOPEACAR. The name must be defined in table BAGNAME. This group name is used as part of the index into table CCVAGRMT.

UNBN Screening for Billing Agreement (continued)

Datafill related to table SPIDDB

Field	Subfield	Entry	Explanation and action
	BNSAGRMT	name from table BAGNAME	Billing number service agreement. This field is the billing agreement group name associated with the originating party. For an LEC call, this group name is associated with a SPID in table SPIDDB. For a carrier call, this group name is associated with a CIC in table TOPEACAR. The name must be defined in table BAGNAME. This group name is used as part of the index into table BNSAGRMT.
	NOSPDERR	ACCPT, BLOCK, or OPER	<p>No AO nor BSP SPID is returned from the LIDB database. Log TOPS12, No Billed AO or BSP SPID Returned, is produced. This field determines error handling with the values as follows:</p> <ul style="list-style-type: none"> • ACCPT—Accept the call. • BLOCK—Block the call. • OPER—Send the call to an operator if the call is not at an operator (that is, at an automated system), or if at an operator, block that billing method and allow the operator to prompt for another method of payment.

Datafill example for table SPIDDB

The figure that follows shows sample datafill for table SPIDD

UNBN Screening for Billing Agreement (continued)

MAP display example for table SPIDDB

SPID	SCRNDISP	OPERSYS	TAANN
DAANN	ACTSANN	XLA	
SPIDCRIT	SCRNIDX	BILAGRMT	

DNSC	Y DNSCDSP	ALL	Y DNSCBRAND
Y DNSCBRAND	Y ACTSTOPS 27	ACTSTOPS 28	Y DNSCRNSPID
N	100	SELF DNSCCVGRP	DNSCBNSGRP ACCPT
LEC1	Y CLEC1SPID	ALL	Y TOPSBRND1
Y TOPSBRND1	Y ACTSTOPS 25	ACTSTOPS 26	N
Y CLEC1_CRIT	100		OPRSVC
LEC2	Y CLEC2SPID	ALL	Y TOPSBRND2
Y TOPSBRND1	Y ACTSTOPS 25	ACTSTOPS 26	N
Y CLEC12_CRIT	100		NONE

Datafill related to UNBN Screening for Billing Agreement for table TOPEACAR

The existing table TOPEACA specifies whether operator services are provided for certain carriers, defines the billing procedure for calls to that carrier, and provides information on IXC type service providers. Field BILAGRMT is new.

UNBN Screening for Billing Agreement (continued)

The table that follows provides the datafill related to UNBN Screening for Billing Agreement for table TOPEACAR. This table includes only those fields that apply directly to UNBN Screening for Billing Agreement.

Datafill related to table TOPEACAR

Field	Subfield	Entry	Explanation and action
OPSERV		NOSERV or SERV	Operator service. For value SERV, new subfield BILAGRMT is added.
	BILAGRMT	see subfield AGRMTYPE	Billing agreement. This field consists of subfield AGRMTYPE. This field is examined to determine the type of billing agreement that is in place for the given provider. This field is checked when table TOPSPARM parameter ALL_CALLS_USE_OPR_SVC_AGRMTS is set to N (No).

UNBN Screening for Billing Agreement (continued)

Datafill related to table TOPEACAR

Field	Subfield	Entry	Explanation and action
	AGRMTYPE	SELF, OPR SVC, or NONE	<p>Agreement type. This field indicates the type of billing agreement. The values are as follows:</p> <ul style="list-style-type: none"> • SELF - The service provider has its own billing agreements. Datafill refinements CCVAGRMT, BNSAGRMT, and NOSPDERRThe refinement includes a group name for CCV and BNS agreements and a field for error handling when no SPID is returned from the LIDB query. • OPR SVC - The service provider is using the billing agreements already established by the Operator Services wholesaler. No refinements require datafill. The billing agreement groups used to index tables CCVAGRMT and BNSAGRMT are obtained from parameter OPR_SVC_AGRMTS in table TOPSPARM. • NONE - No billing agreement checking is to be performed. No refinements require datafill. This value is used for the following reasons. <ul style="list-style-type: none"> — to allow a default for ONPs from a pre-TOP13 — to allow for default datafill when the feature is not SOCD On — to allow for default datafill when TOPSPARM parameter ALL_CALLS_USE_OPR_SVC_AGRMTS is set to Y and individual agreements are irrelevant — to allow screening for billing agreements to be activated on a per SPID or per CIC basis

UNBN Screening for Billing Agreement (continued)

Datafill related to table TOPEACAR

Field	Subfield	Entry	Explanation and action
			For value NONE, if this feature is SOCed ON and TOPSPARM parameter ALL_CALLS_USE_OPR_SVC_AGRMTS is set to N, checks for billing agreements are not performed and the call is handled as if this feature is SOCed IDLE.
	CCVAGRMT	name from table BAGNAME	Calling card validation agreement. This field is the billing agreement group name associated with the originating party. For an LEC call, this group name is associated with a SPID in table SPIDDB. For a carrier call, this group name is associated with a CIC in table TOPEACAR. The name must be defined in table BAGNAME. This group name is used as part of the index into table CCVAGRMT.

UNBN Screening for Billing Agreement (continued)

Datafill related to table TOPEACAR

Field	Subfield	Entry	Explanation and action
	BNSAGRMT	name from table BAGNAME	Billing number service agreement. This field is the billing agreement group name associated with the originating party. For an LEC call, this group name is associated with a SPID in table SPIDDB. For a carrier call, this group name is associated with a CIC in table TOPEACAR. The name must be defined in table BAGNAME. This group name is used as part of the index into table BNSAGRMT.
	NOSPDERR	ACCPT, BLOCK, or OPER	<p>No AO nor BSP SPID is returned from the LIDB database. Log TOPS12, No Billed AO or BSP SPID Returned, is produced. This field determines error handling with the values as follows:</p> <ul style="list-style-type: none"> • ACCPT—Accept the call. • BLOCK—Block the call. • OPER—Send the call to an operator if the call is not at an operator (that is, at an automated system), or if at an operator, block that billing method and allow the operator to prompt for another method of payment.

Datafill example for table TOPEACAR

The figure that follows shows sample datafill for table TOPEACAR.

UNBN Screening for Billing Agreement (continued)

MAP display example for table TOPEACAR

CARDIG	CARNAME	ALTDISP	OPLSCLD	CAMABILL	ALTCARR	NATERM	
INTERM							OPSERV
TDBIDX	CICSCHM						
0111	C111	C111	Y	Y	0111	UNREST	
UNREST		SERV NOQUERY	Y NOQUERY	Y NOQUERY	Y Y Y Y	100 SELF	
0	N					CICCVGRP	CICBNSGRP BLOCK
0222	C222	C222	Y	Y	0222	UNREST	
UNREST		SERV NOQUERY	Y NOQUERY	Y NOQUERY	Y Y Y Y	100 OPR SVC	
0	N						
0333	C333	C333	Y	Y	0222	UNREST	
UNREST		SERV NOQUERY	Y NOQUERY	Y NOQUERY	Y Y Y Y	100 NONE	
0	N						

UNBN Screening for Billing Agreement (continued)

Datafill related to UNBN Screening for Billing Agreement for table TOPSPARM

The table that follows provides the datafill related to UNBN Screening for Billing Agreement for table TOPSPARM. This table includes only those fields that apply directly to UNBN Screening for Billing Agreement.

Datafill related to table TOPSPARM

Parameter	Explanation and action
ALL_CALLS_USE_OPR_SVC_AGRMTS	<p>This parameter allows the operator services provider to wholesale their billing agreements when CLECs do not want to secure their own agreements. The values are as follows:</p> <ul style="list-style-type: none"> • Y - All calls incoming on TOPS/ISUP trunks use the operator services billing agreements for the checks. The agreement groups are obtained from TOPSPARM parameter OPR_SVC_AGRMTS, if OPR_SVC_AGRMTS is set to Y. • N - Determine whether to use the operator services agreements on an individual basis by field BILAGRMT in table TOPEACAR or SPIDDB.
OPR_SVC_AGRMTS	<p>This parameter allows CLECs to use their own billing agreements or use the billing agreements already established by the Operator Services wholesaler. This parameter identifies the billing agreement groups of the Operator Services wholesaler. This parameter is used as the default behavior when no Calling AO SPID is associated with the call.</p>

UNBN Screening for Billing Agreement (continued)

Datafill related to table TOPSPARM

Parameter	Explanation and action
OPR_SVC_AGRMTS (continued)	<p>The values are as follows:</p> <ul style="list-style-type: none"> • Y - There are operator services billing agreements. Datafill the following refinements: <ul style="list-style-type: none"> — CCVAGRMT - Call card validation. Enter a billing agreement group name defined in table BAGNAME. This name is used as part of an index into table CCVAGRMT. — BNSAGRMT - Billed number screening. Enter a billing agreement group name defined in table BAGNAME. This name is used as part of an index into table BNSAGRMT. — NOSPDERR - No SPID is returned from the database. The values for error handling are as follows: <ul style="list-style-type: none"> — ACCPT—Accept the call. — BLOCK—Block the call. — OPER—Send the call to an operator if the call is not at an operator (that is, at an automated system), or if at an operator, block that billing method and allow the operator to prompt for another method of payment. • N - There are no operator services billing agreements. This value is allowed only if TOPSPARM parameter ALL_CALLS_USE_OPR_SVC_AGRMTS = N and no SPID in table SPIDDB nor CIC in table TOPEACAR is using the operator services billing agreements. Datafill refinement NO_CLG_AO_ACTION. This refinement allows the Operator Services wholesaler to define default handling when there is no Calling AO SPID associated with the call (for LEC calls only) and no Operator Services Agreements are datafilled. The values are as follows: <ul style="list-style-type: none"> — ACCPT - Accept the call (default). This value allows the feature to be activated through SOC and screening for billing agreement to be done on a per SPID basis. After all necessary datafill is in place for all SPIDs in table SPIDDB, this field can be changed to BLOCK if desired. — BLOCK - block the call

UNBN Screening for Billing Agreement (continued)

Datafill related to table TOPSPARM

Parameter	Explanation and action
CHECK_BILL_AGRMT_USING_BSP_SPID	<p>The LIDB can return both an AO SPID and a BSP SPID. This feature allows for screening on both the AO and BSP SPIDs. Screening is always done on the AO SPID. Optional screening on the BSP SPID is controlled by this parameter. .</p> <p>If no AO or BSP SPID is returned from the LIDB, the default behavior is defined by field NOSPDERR in applicable table SPIDDB or TOPEACAR.</p> <p>The values of this parameter are as follows:</p> <ul style="list-style-type: none"> • Y - screen on both the AO and BSP SPID. <p>If both an AO and a BSP SPID are returned by the LIDB, then screening is done on the basis of the AO SPID first. If an agreement based on the AO SPID is not found, then the BSP SPID is used to screen. If, however, an agreement is found based on the AO SPID, then no further screening on the basis of the BSP SPID is done.</p> <ul style="list-style-type: none"> • N - screen only on the AO SPID
GEN_NO_BILL_AGRMT_LOG	<p>This parameter enables generation of new log TOPS612, No Billing Agreement, which is generated under the following conditions.</p> <ul style="list-style-type: none"> • billing is blocked due to the lack of a billing agreement • no Billed AO or BSP SPID is returned from the LIDB database • no Calling AO SPID and TOPSPARM parameter OPR_SVC_AGRMTS is set to N BLOCK <p>The values of the parameter are as follows:</p> <ul style="list-style-type: none"> • Y - enable generation of the log • N - disable generation of the log

Datafill example for table TOPSPARM

The following example shows sample datafill for table TOPSPARM.

UNBN Screening for Billing Agreement (end)

MAP example for table TOPSPARM

PARMNAME	PARMVAL
ALL_CALLS_USE_OPR_SVC_AGRMTS	Y
OPR_SVC_AGRMTS	Y OPRCCVGRP OPRBNSGRP OPER
CHECK_BILL_AGRMT_USING_BSP_SPID	Y
GEN_NO_BILL_AGRMT_LOG	N

Translation verification tools

UNBN Screening for Billing Agreement does not use translation verification tools.

SERVORD

UNBN Screening for Billing Agreement does not use the Service Order System (SERVORD).

UNBN SPID Assignment

Ordering codes

Functional group ordering code: UNBN0001

Functionality ordering code: does not apply

Release applicability

TOPS07 and later versions

The SPID Assignment feature was introduced in TOPS07.

Requirements

To operate, SPID Assignment has the following requirements:

- BAS Generic, BAS00003
- Operator Services Basic, OSB00001, and table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y

Description

This functionality determines the calling Service Provider Identifier (SPID).

This functionality is a result of the Telecommunications Reform Act of 1996 (TRA96). Incumbent Local Exchange Carriers (ILEC) can resell Local Exchange Carrier (LEC) operator services to competing LEC (CLEC) providers. The name of this process is unbundling.

Two types of SPIDs identify the ILEC or CLED:

- Account owner (AO) SPID: This value identifies the dialtone and local service provider.
- Billing service provider (BSP) SPID: This value identifies the service provider that collects and generates the bill to the subscriber.

Apply the AO and BSP SPIDs to the calling, called, billing and requested numbers. The AO and BSP SPIDs can be different values.

The following features provide this functionality:

Feature number	Feature name
AF6711	Branding for TOPS through SPID
AF6431	TOPS (CCM) Global AMA Enhancements

UNBN SPID Assignment (continued)

Operation

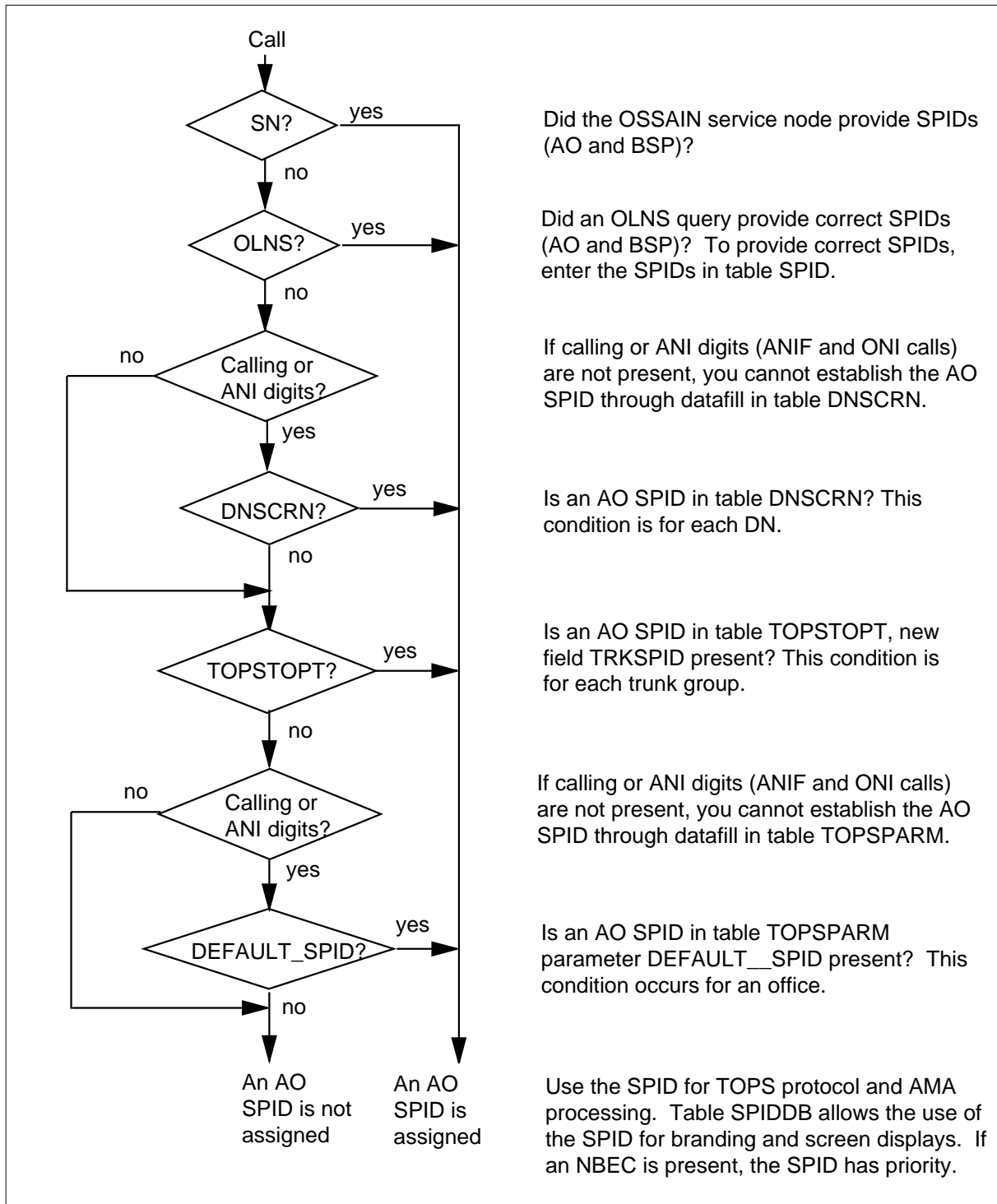
This functionality allows the ILEC to assign and use an Account Owner Service Provider Identifier (AO SPID). The AO SPID is for the originating party directory number (DN). Use the AO SPID for branding, screen displays and recording on AMA. If an NBEC is present, the SPID has priority.

Determining an SPID.

Assignment of the SPID occurs. Refer to the following figure:

UNBN SPID Assignment (continued)

Assigning a calling SPID



UNBN SPID Assignment (continued)

The previous figure indicates the order in which you determine the SPIDs (AO and BSP) for the calling number. The following description is equivalent:

1. The OSSAIN service node (SN)—The SN can get the AO and BSP SPIDs and send these SPIDs to the TOPS switch. For additional details, refer to the Interactions section.
2. The OLNS query—The system modifies the OLNS query to include the AO and BSP SPIDs. For a returned SPID to be correct, enter the SPID in new table SPID. For additional details, refer to the Interactions section.
3. Datafill—The system checks switch datafill.
 - a. DNSCRN:

The system modifies this table to allow specification of an AO SPID on a calling DN level. Specification of an AO SPID does not occur for a trunk group or office.
 - b. TOPSTOPT:

The system checks new field TRKSPID for an AO SPID. This condition allows a default AO SPID for a trunk group. This condition allows an ILEC to assign an AO SPID for calls incoming on the given trunk without DNSCRN datafill. This condition implies that the CLEC traffic is segregated to a CLEC trunk group.
 - c. TOPSPARM:

The system checks new parameter DEFAULT_SPID. This parameter indicates if the system can use the default AO SPID. If the system can use this default, the system includes the default AO SPID in the tuple. This assignment occurs for an office.
4. The system uses an SPID that a previous field specifies for TOPS protocol and AMA records. The system uses the SPID for branding and, or, operator screen displays if enabled in table SPID.

New table SPID defines AO and BSP SPIDs used in datafill (AO). New table SPID defines AO and BSP SPIDs that return from OLNS queries (AO and BSP). New table SPIDDB provides data for branding and screen displays. For additional details, refer to the datafill procedure section.

A BSP SPID is not available from switch datafill. A BSP SPID cannot be assigned to a call. Switch datafill are tables DNSCRN, TOPSTOPT and TOPSPARM. Enter the BSP SPIDs from OLNS in table SPID.

The switch uses an SPID available at a higher level before SPIDs from a lower level. The system uses an available SPID before an NBEC for branding.

UNBN SPID Assignment (continued)

Assigning SPIDs by switch datafill

The system uses the calling number to perform the SPID look up in DNSCRN. Calling digits must be present to set the AO SPID of the originating party according to DNSCRN for the call. For calls that signal with automatic number identification (ANI) digits, the system performs a look up. The system performs a look up of the AO SPID of the originating party during call setup. This process occurs after the system receives the last stage of digits. This process occurs before the call connects to an operator, MCCS, ACTS, AABS, or ADAS.

Examples of calls that do not have a calling number are ANI failure (ANIF) and operator number identification (ONI). You cannot use table DNSCRN to establish the AO SPID during call setup because the ANI is not available. The default SPID from table TOPSPARM does not apply. If a trunk that associates with SPID designated in TOPSTOPT for the incoming trunk is present, that AO SPID is assigned to the call*¹. For calls that an operator handles, the following process occurs. If the operator enters calling digits and an AO SPID is not assigned to the originating party, the system performs a look up. The system performs a look up of the AO SPID of the originating party. The AO SPID does not appear to the operator. The operator can obtain the SPID display by call details.

Screen updates

The system sends the SPID information to the position for the following conditions:

- at call presentation
- as a result of a call details request

The call is assigned an AO SPID for the originating party. Table SPIDDB specifies a display. The system sends the following position types AO SPID information under the following conditions:

- The MP OPP—For OPP compatible positions, the system sends the screen display and the AO SPID of the originating party to the position.
- The TOPS MP ASCII—For MP positions, the system sends the screen display that associates with the AO SPID of the originating party to the position.

¹* This allows calls segregated by the serving CLEC over distinct trunk groups to receive the appropriate SPID assignment without accompanying DNSCRN datafill.

UNBN SPID Assignment (continued)

The SPID display occupies the same area as the trunk group display. The switch must determine the correct display when the two displays apply. The following requirements determine this decision:

- the carrier status of the call
- the availability of a correct trunk or SPID display
- the value of TOPSPARM parameter OPP_ALWAYS_SEND_SPID_INFO

The following table indicates the hierarchy that determines the display that the system uses for a TOPS MP ASCII position. The table indicates the display that the system uses for an OPP compatible position with OPP_ALWAYS_SEND_SPID_INFO=N.

SPID/Trunk Group Display Hierarchy with OPP_ALWAYS_SEND_SPID_INFO = N

Carrier status	Trunk group display	SPID display	Display
Carrier call	yes	yes	Trunk group display
	yes	no	Trunk group display
	no	yes	
	no	no	
Non-carrier call	yes	yes	SPID display
	yes	no	Trunk group display
	no	yes	SPID display
	no	no	

The previous table indicates that the trunk group display applies for carrier calls. For non-carrier calls, the SPID display overrides the trunk group display when the two displays are present. When the TOPSPARM parameter is Y, the system can ignore the difference between carrier and non-carrier calls. The system can ignore this difference for an OPP-compatible position. The system sends the SPID display to the position if available. The display that the

UNBN SPID Assignment (continued)

OPP-compatible position must use with OPP_ALWAYS_SEND_SPID_INFO = Y appears in the following table.

SPID/Trunk Group Display Hierarchy with OPP_ALWAYS_SEND_SPID_INFO = Y

Carrier status	Trunk group display	SPID display	Display
Carrier or non-carrier call	yes	yes	SPID display and trunk group display
	yes	no	Trunk group display
	no	yes	SPID display
	no	no	

The system does not send SPID information or the associated screen display Basic Purpose (BP) and Single Purpose (SP) positions. An example of a BP position is MPX. The SP position is TOPS IV.

Feature AF2019 specifies how the branding ICON works. The OFCENG parameter TOPS_BRAND_DISPLAY controls the branding ICON.

Message Protocols

DA Protocol Extensions for SPID

The Northern Telecom Standard DA protocol includes the transmission of the SPID to the DAS from the switch. Refer to NIS: Q210-1, *Standard Nortel-DMS/DAS Protocol*.

The IBM protocol does not update to include SPID information.

The system moves the DA protocol version functionality that the following VROPT parameters provide out of the table:

- DA_STANDARD_PROTOCOL_VERSION
- DA_IBM_PROTOCOL_VERSION

The DA protocol version for each protocol is in a new field, VERSION in table SERVICES. An example of table SERVICES occurs in the datafill procedure section.

UNBN SPID Assignment (continued)

The system uses the VROPT parameters during dump and restore to set the VERSION field in table SERVICES.

Before this feature, the following SOCs interacted with the VROPT version parameters:

- OSDA0102, Cell/IXC/LEC ADACC
- OSDA0101, DA Automation I/F (ADAS+)

Removal of the VROPT version parameters occurs. The interaction between the maximum version allowed in VROPT and the SOC options does not apply. Removal of the interactions also occurs. To achieve associated functionality, the SOCs must be ON. For example, OSDA0101 must be SOCed on for ADAS+ to function correctly on link sets with VERSION set to a minimum of 3. The AO SPID field contains the nil value when the VERSION is set to 4. The SOC option ENSV0017 feature is not SOCed on.

The DA_INTERACTIVE_RECONNECT parameter in table VROPT required one or two of the SOCs from the previous list to be ON. These SOCs were required to be on before the parameter was set to Y. This feature removes the need for this interaction. The DA interactive reconnect depends on the protocol VERSION and not the SOC options. The DA interactive reconnect functionality requires the following:

- Set DA_INTERACTIVE_RECONNECT to Y. The setting does not depend on SOC options.
- the protocol version in table SERVICES must be greater than 1

Before this feature, the ADASPLUS_ENABLE parameter in table TOPSPARM required that the DA_STANDARD_PROTOCOL_VERSION in table VROPT be set to 3 or greater. This feature removes the DA_STANDARD_PROTOCOL_VERSION parameter. The cross check between ADASPLUS_ENABLE and DA_STANDARD_PROTOCOL_VERSION cannot occur. For the ADAS+ to function properly, the following conditions must be present:

- the ADASPLUS_ENABLE in table TOPSPARM must be set to Y
- in table SERVICES:
 - the protocol must be set to CCI
 - the ADASPLUS must be set to Y
 - the VERSION must be greater than or equal to 3
- The SOC option OSDA0101 must be ON

UNBN SPID Assignment (continued)

OAP extensions for SPID

This feature provides extensions to OAP that allow the system to send SPID to and receive SPID from an SN. When the SN initiates a session between the switch and SN, the following occurs. The switch sends SPID information, if available, to the SN. The switch sends the SPID, if available, when the SN requests call details. When the SN initiates a session with the switch, the SN can send SPID information, if available. A new operation allows the SN to send the SPID to the switch during a session.

The extended OLSN Information Data Block includes the AO and BSP SPIDs. The information includes these SPIDs if the AO and BSP SPIDs originate from OLSN. If the OLSN response does not include SPID fields, the fields in the data block are nil. Refer to NIS: Q325-1, *OSSAIN Open Automated Protocol Specification*.

OPP extensions for AO SPID

This feature extends the OPP protocol. The extended OPP protocol allows the switch to send the SPID, if available, to the operator position at call presentation. This event can also occur when a request for call details occurs. Refer to NIS: Q214-1, *Open Position Protocol*.

Translations table flow

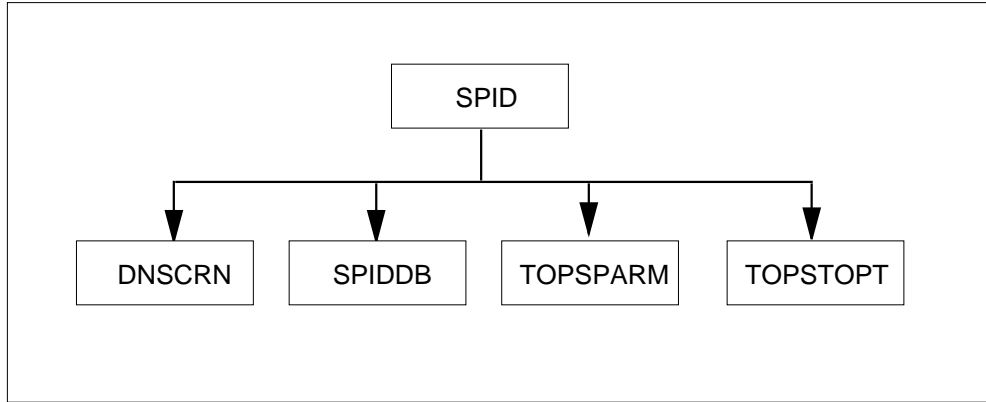
Descriptions of the SPID Assignment translations tables appear in the following list:

- Table SPID defines the service provider identifiers.
- Table SPIDDB contains service provider identifier data on the SPID.
- Table DNSCRN contains screening data according to the DN.
- Table TOPSPARM contains different TOPS office parameters.
- Table TOPSTOPT defines options for a trunk group.

The SPID Assignment translation process appears in the following flowchart.

UNBN SPID Assignment (continued)

Table flow for SPID Assignment



Datafill content used in the flowchart appears in the following table.

Datafill example for SPID Assignment

Datafill table	Example data
SPID	12AB
SPIDDB	12AB N ALL \$ Y RBRAND Y RBRAND
DNSCRN	6193221234 SPID 12AB
TOPSPARM	DEFAULT_SPID Y 12AB
TOPSTOPT	TRK1 TOPS ACD N NONE NA N NONE 0 N Y 12AB

Limits

The SPID Assignment does not support the following functions:

- receipt of the AO and BSP SPIDs from a LIDB query
- transmission of SPIDs to TOPS IV (Single Purpose) and MPX (Basic Purpose) positions
- transmission of SPIDs over the IBM DA protocol
- transmission of SPIDs over the AABS protocol. The AABS system requires parallel datafill for SPIDs for each DN if you use AABS branding.
- transmission of SPIDs over the PARS protocol
- interwork with feature AL0417, TOPS Alternate MCCA Announcement in functionality TOPS Alternate Announcement, OSB00101

UNBN SPID Assignment (continued)

Turn off the ACTS and MCCS back end branding that feature AL0417 provides. If this condition does not apply, use an SPID to front end brand the call. Use an NBEC for non-carrier calls to back end brand.

- rate the call according to SPID
- global operator services (GOS)

Interactions

The interactions between SPID Assignment and other functionalities appear in the following paragraphs.

- Functionality OSSAIN, ENSV0014 is modified. The open automated protocol (OAP) can send and receive SPIDs between the TOPS switch and service node (SN). The switch uses SPIDs for the following:
 - For a call that OSSAIN handles, the SN can assign AO and BSP SPIDs for the originating party.
 - For calls that the system sends to an SN, the system can send the AO SPID of the originating party to the SN. Use the AO SPID for front and back end branding. The configuration determines if SN can look up the SPID.
- The Northern Telecom Standard DA protocol is modified. The DA protocol can send the AO SPID to the directory assistance system (DAS) from the TOPS switch. The switch uses the AO SPID for the following:
 - The DAS can provide back end branding of DA call completion. The subscriber uses this service where later billing interactions with the subscriber are not required to complete the call. The system selects continue billing or sent paid billing for the call completion part of the call.
 - The DAS has two choices for call completions that use the standard DA protocol that require alternate billing interaction. The DAS can transfer the call to the current AABS system or transfer the call to an OSSAIN SN. The AABS node must have parallel datafill to provide SPID branding.
- Functionality TOPS OLNS Interface, ABS00101, is modified to include the AO and BSP SPIDs for the calling number in a query.
- Operator position protocols are modified in the following way:
 - MP OPP—For OPP compatible positions, the system sends the screen display and the AO SPID of the originating party to the position.
 - TOPS MP ASCII—For MP positions, the system sends the screen display that associates with the AO SPID of the originating party to the

UNBN SPID Assignment (continued)

position. The system does not send the SPID. The SPID display overrides the trunk group display in table TRKGRP.

Activation/deactivation by the end user

The SPID Assignment feature does not require activation or deactivation by the end user.

Billing

Module code 338 appends to the AMA record for some TOPS calls. These calls have structure codes 0752 and 0772 that have an SPID that associates with the call. Table DNSCRN, table TOPSPARM parameter DEFAULT_SPID, or an OLNS query can assign the originating AO SPID to the originating party.

The Party Identifier field is set to Originating Party Directory Number. The type of Service Provider field is Account Owner. The Service Provider ID field contains the assigned AO SPID in EBCDIC format.

Assignment of a BSP to an originating party DN can occur through several means; for example, an OLNS query. When this condition occurs, module code 338 appends to a call with structure codes 0752 or 0772. The Party Identifier field is set to Originating Party Directory Number. The Type of Service Provider field is set to Billing Service Provider. The Service Provider ID field contains the assigned BSP in EBCDIC format.

The Service Provider Information Module records the Service Provider Identifier for different services. The Service Provider Information Module is module code 338. A description of the module appears in the following table.

Module code 338: Service Provider Information Module

Information	Field number	Number of characters
Module code identification (current)	88	4
Party identifier (current)	730	4
Type of service provider (new)	638	4
Service provider ID (new)	639	4

UNBN SPID Assignment (continued)

Information for Table 730 appears in the following table.

730: Party identifier

Character	Value	Meaning
1-3		Party identifier
	001	Originating party directory number
	002	Terminating party directory number
	003	Billing party directory number
	006	Third party verification
	007	Busy line verification
	999	Unknown
4	C	Sign (hex C)

Information for Table 638 appears in the following table.

638: Type of service provider

Character	Value	Meaning
1-3		Type of service provider
	001	Account owner
	002	Billing service provider
	003	Facility owner
	999	Unknown
4	C	Sign (hex C)

Information for Table 639 appears in the following table.

739: Service provider ID

Character	Value	Meaning
1-4		Service provider ID (EBCDIC field)

The following figure is an example of an AMA record with module code 338.

UNBN SPID Assignment (continued)

Example AMA record with module code 338

```
*HEX ID:AA STRUCTURE CODE:40752C CALL CODE:192C
SENSOR TYPE:036C SENSOR ID:0123456C REC OFFICE TYPE:036C
REC OFFICE ID:0123456C DATE:61122C TIMING IND:00000C
STUDY IND:0200000C SERVICE OBSERVED:0C ORIG NPA:629C
ORIG NUMBER:5201234C CONNECTTIME:1327120C
ELAPSED TIME:000000000C OPERATOR IDS:0009999009999C
ACC OPERATOR WORK TIME:00000C SERVICE FEATURE:000C
STATION SIGNALING IND:2C SCREENING CODE:000C
CALLED NUMBER INPUT:1C CALLING NUMBER SOURCE:1C
MODULE CODE:316C LOCAL INDICATOR:1C MODULE CODE:311C
ORIG CALL TYPE:002C MODULE CODE:051C OVERSEAS IND:0C
TERM NPA:00201C TERM NUMBER:2201234C
COMPLETION IND:008C RATE IND:1C OSS
CALL COMPLETION CONDITIONS:3111110C MODULE CODE:338C
PARTY IDENTIFIER:001C SERVICE PROVIDER TYPE:001C
SERVICE PROVIDER ID:F1F2F3F4 MODULE CODE:000C
```

Station Message Detail Recording

The SPID Assignment feature does not affect Station Message Detail Recording.

Datafilling office parameters

The SPID Assignment feature does not affect office parameters.

Datafill sequence

The tables that require datafill to implement SPID Assignment appear in the following table. The tables appear in the correct entry order.

Datafill requirements for SPID Assignment

Table	Purpose of table
SPID	Service Provider Identifier defines the IDs.
DNSCRN	Directory Number Screening
SPIDDB	Service Provider Identifier Database contains data on the SPID.
SERVICES	Services defines characteristics for TOPS services.
TOPSPARM	TOPS Parameters contains different TOPS office wide parameters.

UNBN SPID Assignment (continued)

Datafill requirements for SPID Assignment

Table	Purpose of table
TOPSTOPT	TOPS Trunk Group Options specifies characteristics for each trunk group.
VROPT	Voice Response Options contains parameters for external voice response units.

Datafilling table SPID

Service Provider Identifier is a new table that defines the service provider IDs. The two types of SPIDs appear in the following sections:

- **AO SPID**—The account owner (AO) SPID is the company that provides the service of the calling party.
- **BSP SPID**—The billing service provider (BSP) SPID is the company that provides billing services for the AO service provider.

Enter data in table SPID before tables DNSCRN, SPIDDB, and TOPSPARM (parameter DEFAULT_SPID).

A description of the fields appears in the following table.

How to enter data into table SPID

Field	Subfield or refinement	Entry	Description
SPID		exactly 4 alphanumeric characters	<p>Service provider identifier. Enter 4 alphanumeric characters. Use this value in tables SPIDDB, DNSCRN, and TOPSPARM (parameter DEFAULT_SPID).</p> <p>Enter the AO or BSP SPID in table SPID. This procedure allows you to consider an AO or BSP SPID that the system returns in an OLNS query correct.</p> <p>Letters must be upper case. The MAP display indicates a maximum of 8 characters. Enter 4 characters.</p>

Datafill example for table SPID

Sample datafill for table SPID appears in the following example.

UNBN SPID Assignment (continued)

MAP example for table SPID

SPID ----- 1234 ABCD

Error messages for table SPID

The following error messages apply to table SPID.

Error messages for table SPID

Error message	Description
SPIDs must be exactly 4 alphanumeric characters	If you attempt to enter an SPID that is not 4 characters in length, this message appears.
Only 0..9 and A..Z are supported	If you attempt to add an SPID with an character that is not correct, this message appears.
SPID datafilled in table DNSCRN	If you attempt to delete an SPID that a tuple in table DNSCRN uses, this message appears. To delete the SPID, remove every reference to the SPID from table DNSCRN.
SPID datafilled in table TOPSTOPT	If you attempt to delete an SPID that a tuple in table TOPSTOPT uses, this message appears. To delete the SPID, remove every reference to the SPID from table TOPSTOPT.
SPID datafilled in table SPIDDB	If you attempt to delete an SPID that a tuple in table SPIDDB references, this message appears. To delete the SPID, remove every reference to the tuple from table SPIDDB.
SPID datafilled in table TOPSPARM as DEFAULT_SPID	If you attempt to delete the SPID specified as the DEFAULT_SPID in table TOPSPARM, this message appears. To delete the SPID, change the DEFAULT_SPID to another value in table TOPSPARM.

UNBN SPID Assignment (continued)

Datafilling table DNSCRN

Datafill for SPID Assignment for table DNSCRN appears in the following table. The fields that apply to SPID Assignment appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table DNSCRN

Field	Subfield or refinement	Entry	Description
ATTROPTS		SPID	Attributes. Enter data in new value SPID. When you enter the new value, enter data in refinement SPID.
	SPID	value from table SPID	Service provider identifier. Enter data in this field if you set field ATTROPTS to SPID. Enter a value that table SPID defines. You cannot enter a default SPID here. You can enter the default in table TOPSPARM parameter DEFAULT_SPID. The TOPSPARM parameter BRAND_USING_DEFAULT_SPID is Y.

Datafill example for table DNSCRN

Sample datafill for table DNSCRN appears in the following example.

MAP example for table DNSCRN

DN	ATTROPTS

6193221234	SPID 1234
6195204567	SPID ABCD

Datafilling table SPIDDB

Service Provider Identifier Database is a table that contains TOPS call processing data for SPIDs.

The system sends the AO SPID of the originator to TOPS MP and OPP compatible positions. Field SCRNDISP allows the system to display this information. The SPID display occurs in the same area as the trunk group

UNBN SPID Assignment (continued)

display. The switch decides which information to display according to the following table:

SPID/trunk group display hierarchy

Carrier status	Trunk group display	SPID display	Display
Carrier call	yes	yes	Trunk group display
	yes	no	Trunk group display
	no	yes	
	no	no	
Non-carrier call	yes	yes	SPID display
	yes	no	Trunk group display
	no	yes	SPID display
	no	no	

The previous table indicates that the system uses the trunk group display for carrier calls. For for non-carrier calls, the SPID display overrides the trunk group display when the two calls are present.

The system does not send SPID information or the associated screen display to Basic Purpose (BP) and Single Purpose (SP). The BP is MPX, and the SP is TOPS IV.

For OPP-compatible positions, table TOPSPARM parameter `OPP_ALWAYS_SEND_SPID_INFO` affects the previous hierarchy. Examples of the affect on the hierarchy appears in the following tables:

**SPID/Trunk Group Display Hierarchy
with `OPP_ALWAYS_SEND_SPID_INFO = N`**

Carrier status	Trunk group display	SPID display	Display
Carrier call	yes	yes	Trunk group display
	yes	no	Trunk group display
	no	yes	
	no	no	

UNBN SPID Assignment (continued)

SPID/Trunk Group Display Hierarchy
 with **OPP_ALWAYS_SEND_SPID_INFO = N**

Carrier status	Trunk group display	SPID display	Display
Non-carrier call	yes	yes	SPID display
	yes	no	Trunk group display
	no	yes	SPID display
	no	no	

SPID/Trunk Group Display Hierarchy
 with **OPP_ALWAYS_SEND_SPID_INFO = Y**

Carrier status	Trunk group display	SPID display	Display
Carrier or non-carrier call	yes	yes	SPID display and trunk group display
	yes	no	Trunk group display
	no	yes	SPID display
	no	no	

Enter data in tables SPID and ANNS before table SPIDDB. Enter data in these tables if these tables are TA and DA announcements.

A description of table SPIDDB appears in the following table.

Datafilling table SPIDDB

Field	Subfield or refinement	Entry	Description
SPID		value from table SPID	Service provider identifier. Enter an identifier that table SPID defines.
SCRNDISP		N or Y	Screen display. This field enables or disables operator display of the AO SPID of the originator. Enter Y to enable or N to disable the display. If you enter Y, enter data in refinement DISPLAY. This display applies to TOPS MP and OPP compatible positions.

UNBN SPID Assignment (continued)

Datafilling table SPIDDB

Field	Subfield or refinement	Entry	Description
SCRNDISP		refer to subfield	Screen display. This field contains subfield SPIDDISP.
	SPIDDISP	N or Y	Screen display. This field enables or disables operator display of the AO SPID of the originator. Enter Y to enable or N to disable the display. If you enter Y, enter data in refinement DISPLAY. This display applies to TOPS MP and OPP compatible positions.
	DISPLAY	a maximum of 8 characters	Display. Enter this field if field SCRNDISP is Y. The system sends this display to TOPS MP and OPP compatible positions.
OPERSYS		set of {OPERATOR MCCS ACTS AABS ADAS}, ALL, or NONE	Operator system. This field determines which operator systems require calling party branding before the call connects to the following systems: <ul style="list-style-type: none"> • the OPERATOR—Live TOPS operator • the MCCS—Mechanized calling card service • the ACTS—Automated coin toll service • the AABS - Automated alternate billing service • the ADAS—Automated directory assistance service • the ALL—All of the above systems (OPERATOR, MCCS, ACTS, AABS, and ADAS) • the NONE—No services
TAANN		refer to subfield	Toll and assist announcement. This field contains subfield BRAND_TA.
	BRAND_TA	Y or N	Branding toll and assist announcement. This field specifies if you brand TA calls for the SPID. Enter Y to brand or N not to brand. If you enter Y, enter data in refinement TACLLI.
	TACLLI	name from table ANNS	Toll and assist CLLI name. If field TAANN = Y, enter this field with an announcement CLLI for TA calls.

UNBN SPID Assignment (continued)

Datafilling table SPIDDB

Field	Subfield or refinement	Entry	Description
DAANN		refer to subfield	Directory assistance announcement. This field contains subfield BRAND_DA.
	BRAND_DA	Y or N	Branding directory assistance announcement. This field specifies if you brand DA calls for the SPID. Enter Y to brand or N not to brand. If you enter Y, enter data in refinement DACLLI.
	DACLLI	name from table ANNS	Directory assistance CLLI name. If field DAANN = Y, enter this field with an announcement CLLI for DA calls.

Datafill example for table SPIDDB

Sample datafill for table SPIDDB appears in the following table.

MAP example for table SPIDDB

SPID	SCRNDISP	OPERSYS	TAANN	DAANN
1234	Y ATEL	OPERATOR	MCCS ACTS ADAS \$	
			Y ATABRAND	Y ADABRAND
ABCD	Y BCOM	MCCS ACTS ADAS \$	Y BBRAND	Y BBRAND
12AB	N	ALL \$	Y RBRAND	Y RBRAND
4567	Y CFON	NONE \$	N	N

The previous SPID 12AB operating company SPID is the default for the office. The operating company does not want this SPID to appear.

UNBN SPID Assignment (continued)

Error messages for table SPIDDB

The following error messages apply to table SPIDDB.

Error messages for table SPIDDB

Error message	Description
Allocation of store for table SPIDDB failed.	This error message appears if the system cannot allocate store when you enter data in table SPIDDB.
No screen display was entered.	This error message appears if you enter Y for SPIDDISP but do not make an entry for DISPLAY. Enter \$ at the DISPLAY prompt.
Branding CLLIs must be datafilled in table ANNS.	This error message displays if you do not enter data in table ANNS after you enter data in TACLLI or DACLLI.

Datafilling table SERVICES

Datafill for SPID Assignment for table SERVICES appears in the following table. The fields that apply to SPID Assignment appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table SERVICES

Field	Subfield or refinement	Entry	Description
VERSION		1 to 1000	Version. This new field allows specification of the protocol version for each a link set. This condition allows upgrades of the respective DAS to new versions of the protocol to occur. This upgrade is separate from the switch software upgrade.

Datafill example for table SERVICES

Sample datafill for table SERVICES appear in the following example.

MAP example for table SERVICES

INDEX	PROTOCOL	LSDBID	SWITCHID	VERSION
TOPSVR1 0	CCI N	1234	14	4
TOPSVR2 0	IBM	4321	14	1

UNBN SPID Assignment (continued)

Error and warning messages for table SERVICES

The following error and warning messages apply to table SERVICES.

Error and warning messages for table SERVICES

Error or warning message	Description
The maximum VERSION supported for CCI is 4.	This error message appears if you attempt to enter a VERSION greater than 4 with the CCI protocol.
The maximum VERSION supported for IBM is 1.	This error message appears if you attempt to enter a VERSION greater than 1 with the IBM protocol.
VERSION must be 3 or greater for ADASPLUS to take effect.	This warning message appears when you enter a protocol version less than 3 for the CCI protocol with ADASPLUS set to Y. This message indicates that ADAS+ does not function on the link set. The ADAS+ functions if the VERSION is 3 or greater. The ADAS+ does not function even if you set the ADASPLUS to Y. Set the ADASPLUS_ENABLE parameter in TOPSPARM to Y. The SOC option OSDA0006 must be ON for ADAS+ to operate.

Dump and restore

Software handles dump and restore. Note the following characteristics with regards to dump and restore of the new field in table SERVICES.

If you enter the DA_STANDARD_PROTOCOL_VERSION parameter in table VROPT before TOP07, the value restores in the VERSION field of table SERVICES. The value restores when you set the protocol to CCI. If you do not enter the DA_STANDARD_PROTOCOL_VERSION parameter, the following process occurs. The system restores link sets that use CCI as the protocol in table SERVICES to version 1 in the VERSION field.

If you enter the DA_IBM_PROTOCOL_VERSION parameter in table VROPT before TOP07, the system restores the value in the VERSION field of table SERVICES. The value restores when you set the protocol to IBM. If you do not enter the DA_IBM_PROTOCOL_VERSION parameter, the following process occurs. The system restores link sets that use IBM as the protocol in table SERVICES to version 1 in the VERSION field.

UNBN SPID Assignment (continued)

Datafilling table TOPSPARM

Enter data in table TOPSPARM after table SPID. The system does not add the SPID parameters. The operating company must add SPID parameters to table TOPSPARM to specify the default.

Datafill for SPID Assignment for table TOPSPARM appears in the following table. The fields that apply to SPID Assignment appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TOPSPARM

Parameter name	Description
DEFAULT_SPID	<p>This parameter indicates the default account owner (AO) SPID for the office. Use this parameter if the following do not assign an AO SPD:</p> <ul style="list-style-type: none"> • OSSANI SN • OLNS query • calling or ANI digits • table DNSCRN • table TOPSTOPT <p>Use the AO SPID for TOPS protocols and screen updates. Use the AO SPID for AMA processing and front end calling party branding of non-carrier calls. Table SPIDDB provides additional data.</p> <p>The values for DEFAULT_SPID are Y and N. The values indicate a default SPID is or is not specified, in that order. If you enter Y, enter the default SPID that you enter in table SPID.</p> <p>You cannot remove an SPID from table SPID if you enter the SPID as the DEFAULT_SPID in table TOPSPARM.</p>

UNBN SPID Assignment (continued)**Datafilling table TOPSPARM**

Parameter name	Description
OPP_ALWAYS_SEND_SPID_INFO	This parameter indicates if the system sends trunk group and SPID display information to an OPP compatible position. This parameter indicates if trunk group and SPID display apply. If this parameter is N, the switch passes the SPID display or the trunk group display to the position that applies. When these conditions apply, the system sends the displays. For additional information, see table SPIDDB.
ADASPLUS_ENABLE	<p>Before this feature, the ADASPLUS_ENABLE parameter required that the DA_STANDARD_PROTOCOL_VERSION parameter in table VROPT be set to 3 or greater. This feature removes the DA_STANDARD_PROTOCOL_VERSION parameter. The cross check does not apply. For the ADAS+ to function properly, the following conditions apply:</p> <ul style="list-style-type: none"> • set ADASPLUS_ENABLE in table TOPSPARM to Y • in table SERVICES: <ul style="list-style-type: none"> — set the protocol to CCI — set ADASPLUS to Y — VERSION is greater than or equal to 3 • set the SOC option OSDA0101 to ON <p>Note that this feature does not affect the range of values for the ADASPLUS_ENABLE parameter.</p>

Datafill example for table TOPSPARM

Sample datafill for table TOPSPARM appear in the following example.

MAP example for table TOPSPARM

PARMNAME	PARMVAL
-----	-----
DEFAULT_SPID	Y 12AB
OPP_ALWAYS_SEND_SPID_INFO	Y

UNBN SPID Assignment (continued)

Datafilling table TOPSTOPT

Datafill for SPID Assignment for table TOPSTOPT appears in the following table. The fields that apply to SPID Assignment appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TOPSTOPT

Field	Subfield or refinement	Entry	Description
TRKSPID		Y or N	Trunk Service Provider Identifier. This new field indicates if a default SPID is assigned for the given trunk group. If you set this field to N, a trunk-associated default SPID is not available. If you set this field to Y, enter data in refinement SPID
	SPID	ID from table SPID	Trunk Service Provider Identifier. Enter this field if TRKSPID = Y with the default SPID that associates with this trunk group.

Datafill example for table TOPSTOPT

Sample datafill for table TOPSTOPT appear in the following example.

MAP example for table TOPSTOPT

GRPKEY	ACDDATA	DISPCLG	ADASERV	ADASANS	ANITOCCLI	OLNSQRY	DCIBIDX
LNPCLGAM	TRKSPID						
TRK1	TOPSACD	N	NONE	NA	N	NONE	0
N	N						
TRK2	TOPSACD	N	NONE	NA	N	NONE	0
N	Y	1234					

Enter data in table TOPSTOPT after table SPID.

The system cannot remove a SPID from table SPID if an SPID is entered in a tuple in table TOPSTOPT.

UNBN SPID Assignment (continued)

Datafilling table VROPT

Datafill for SPID Assignment for table VROPT appears in the following table. The fields that apply to SPID Assignment appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table VROPT

Parameter name	Description
DA_STANDARD_PROTOCOL_VERSION	Remove this parameter. Enter the DA protocol version in table SERVICES, field VERSION. For additional information, refer to table SERVICES.
DA_IBM_PROTOCOL_VERSION	Remove this parameter. Enter the DA protocol version in table SERVICES, field VERSION. For additional information, refer to table SERVICES.
DA_INTERACTIVE_RECONNECT	<p>The table cross checks for this parameter do not require SOC options to be on.</p> <p>Before this feature, the DA_INTERACTIVE_RECONNECT parameter required that one or two of the following SOCs be ON. The SOCs must be set to ON before you set the parameter to Y.</p> <ul style="list-style-type: none"> OSDA0102, Cell/IXC/LEC ADACC OSDA0101, DA Automation I/F (ADAS+) <p>This feature causes the removal of this interaction. The DA interactive reconnect depends on the protocol VERSION and not the SOC options. The DA interactive reconnect functionality requires the following:</p> <ul style="list-style-type: none"> Set DA_INTERACTIVE_RECONNECT to Y. The DA interactive does not depend on SOC options. The protocol version in table SERVICES must be greater than 1. <p>This feature does not affect the range of values for the DA_INTERACTIVE_RECONNECT parameter.</p>

Datafill example for table VROPT

Sample datafill for table VROPT appears in the following example.

UNBN SPID Assignment (end)

MAP example for table VROPT

PARAM	VALUE
DA_INTERACTIVE_RECONNECT	Y

Tools for verifying translations

The SPID Assignment feature does not use tools for verifying translations.

SERVORD

The SPID Assignment feature does not use SERVORD.

UNBN SPID Branding

Ordering codes

Functional group ordering code: UNBN0103

Functionality ordering code: UNBN0101

Release applicability

TOPS07 and up

TOPS SPID Branding was introduced in TOPS07.

Prerequisites

To operate, TOPS SPID Branding has the following prerequisites:

- BAS Generic, BAS00003
- Operator Services Basic, OSB00101, and table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- Table TOPSFTR parameter UNBUNDLING_BRANDING_VIA_SPID = Y

Description

This functionality provides Service Provider Identifier (SPID) branding.

This functionality is a result of the recent Telecommunications Reform Act of 1996 (TRA96). Incumbent Local Exchange Carriers (ILEC) can resell Local Exchange Carrier (LEC) operator services to competing LEC (CLEC) providers. This process is referred to as unbundling.

The ILEC or CLED is identified by two types of SPIDs:

- Account owner (AO) SPID: This value identifies the dialtone and local service provider.
- Billing service provider (BSP) SPID: This value identifies the service provider who collects and generates the bill to the subscriber.

The AO and BSP SPIDs can be applied to the calling, called, billing, and requested numbers. The AO and BSP SPIDs can be different values.

UNBN SPID Branding (continued)

This functionality is provided by the following features:

Feature number	Feature name
AF6711	Branding for TOPS via SPID
AF6431	TOPS (CCM) Global AMA Enhancements

Operation

This section describes front end (calling number) branding using DRAMs and OSSAIN, and back end (called number) branding.

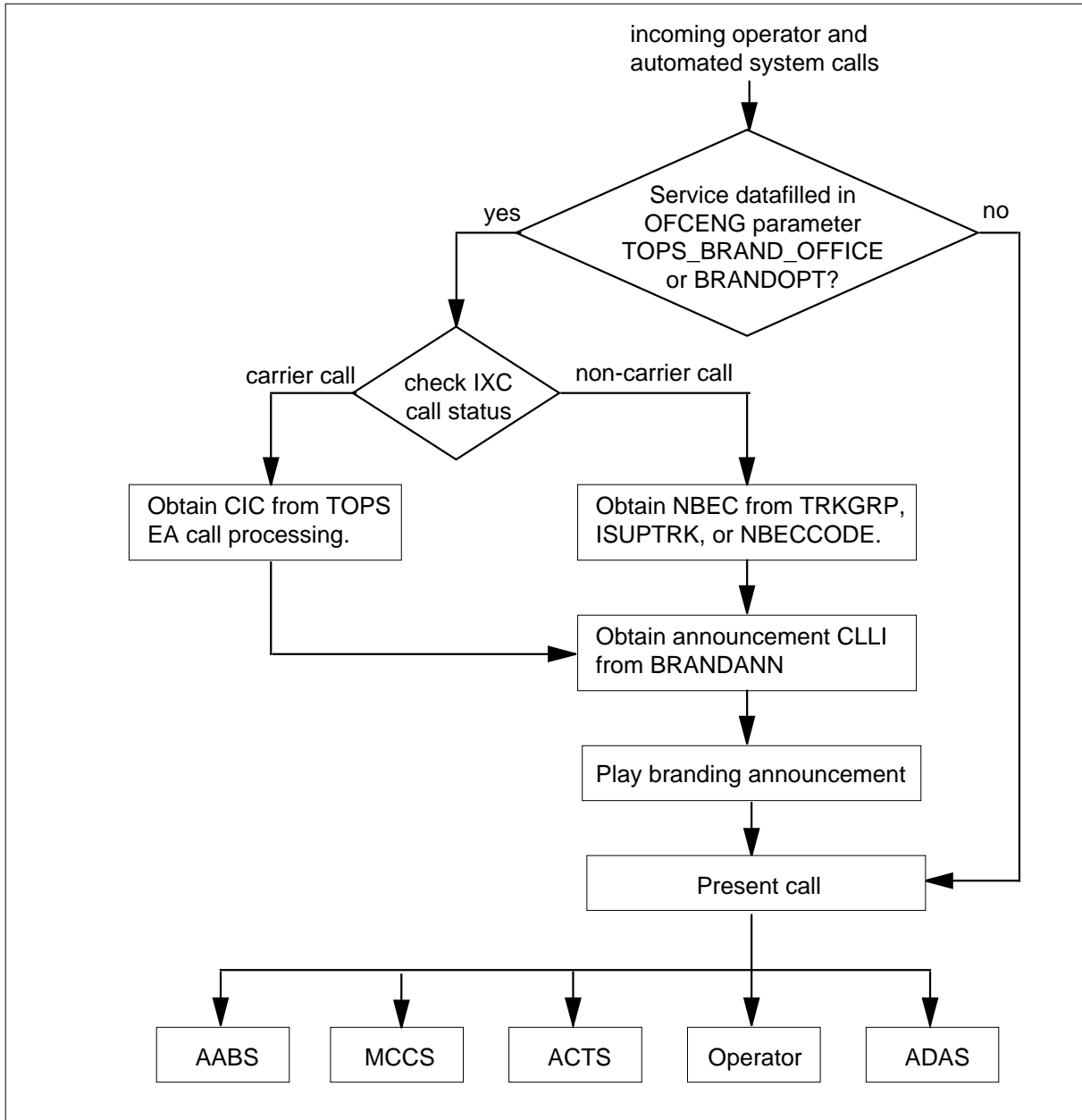
Front end branding using DRAMs

This functionality modifies and uses functionality DA/Toll Branding, OSB00001 (feature AF2019) for front end branding. The modification uses the AO SPID, if available, over the non-Bell exchange carrier (NBEC) code for branding. Since SPIDs represent local service providers, there is no interworking issue between SPID and CIC (used for carrier calls)**. The following figure show the prior branding logic.

Note: Note that 0- calls for which a CIC is entered by either an operator or SN may be branded using SPID prior to reaching the operator or SN.

UNBN SPID Branding (continued)

Feature AF2019 branding logic



The above figure shows that parameter TOPS_BRAND_OFFICE and table BRANDOPT determine the types of operator and automated system calls to be branded. Carrier calls use the carrier identification code (CIC) for branding while non-carrier calls use the NBEC code. For additional details, refer to the DA/Toll Branding functionality.

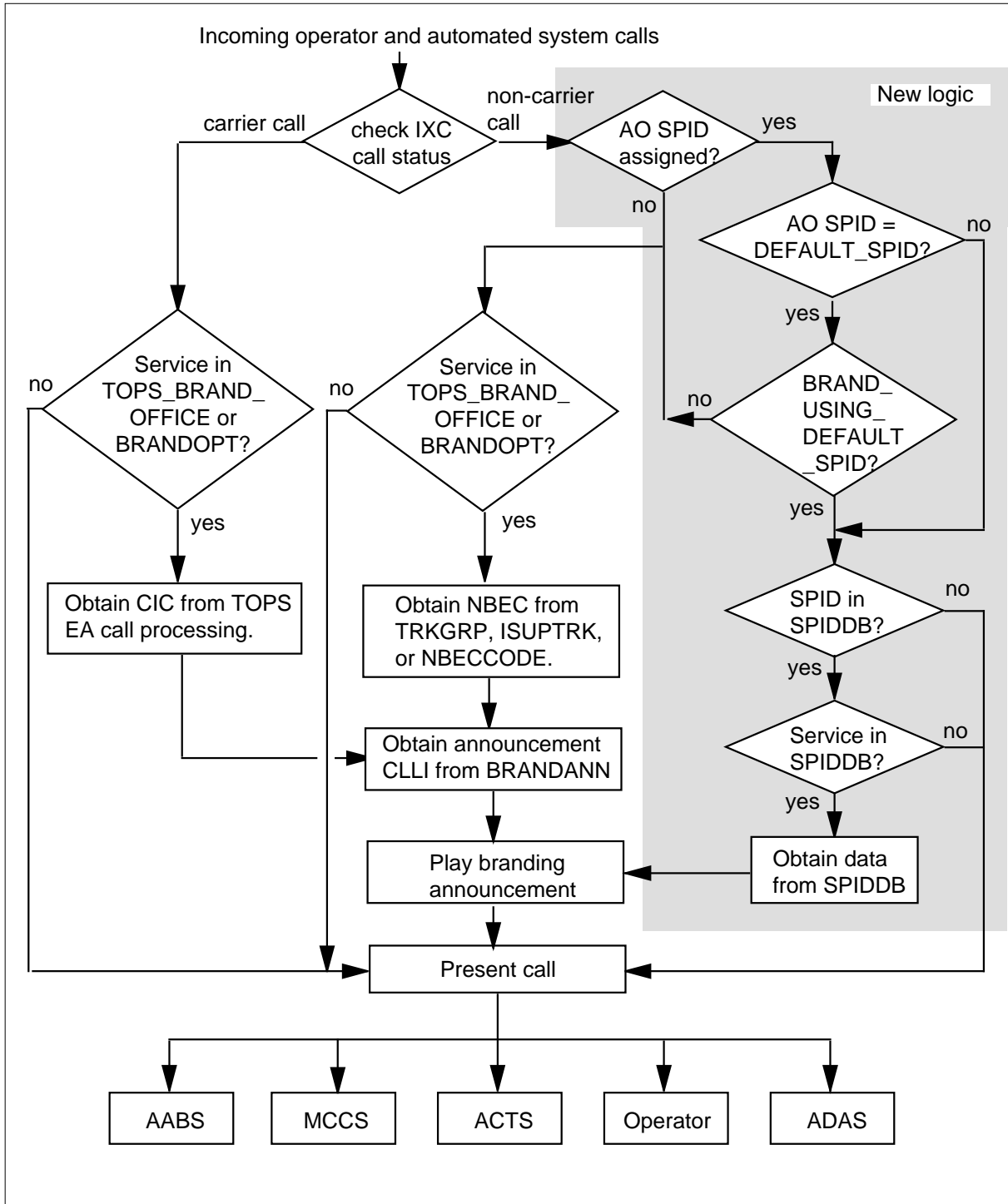
UNBN SPID Branding (continued)

The TOPS_BRAND_OFFICE parameter is not considered for SPID branding. Similar information for the originating party's AO SPID is obtained from table SPIDDB.

The following figure shows the new logic which uses the AO SPID for non-carrier call branding instead of the NBEC.

UNBN SPID Branding (continued)

New branding logic



UNBN SPID Branding (continued)

The above figure shows that the functionality for CIC and NBEC branding is unchanged except that when an AO SPID is assigned by an OSSAIN service node, OLSN query, or datafill, it takes precedence over an NBEC. Specifically, the new logic is as follows:

1. Is an AO SPID assigned, as shown in an earlier figure? If no, an NBEC is used according to the prior AF2019 branding logic. If yes, go to the next step.
2. Is the assigned AO SPID also datafilled in parameter DEFAULT_SPID of table TOPSPARM? If no, go to step 4. If yes, go to the next step.
3. Since the DEFAULT_SPID is specified, table TOPSPARM parameter BRAND_USING_DEFAULT_SPID is checked which allows the ILEC (using DRAMs) two choices in branding their own calls:
 - If BRAND_USING_DEFAULT_SPID = N, the ILEC may provide their own front end branding using the default NBEC code of 0000. For further information, refer to functionality “DA/Toll Branding“, OSB00001 (feature AF2019)
 - If BRAND_USING_DEFAULT_SPID = Y, go to the next step.
 - The ILEC may use the default AO SPID given in table SPIDDB.
4. Is the assigned SPID datafilled in table SPIDDB? If no, the NBEC code is not used, so no branding takes place. If yes, go to the next step.
5. Does the assigned SPID in table SPIDDB have the service enabled? If no, the NBEC code is not used, so no branding takes place. If yes, data is obtained from table SPIDDB and branding is provided using the assigned SPID.

Front end branding using OSSAIN

In order to facilitate front end branding for OSSAIN calls, the switch sends SPIDs if available when the call is presented to an OSSAIN service node.

Back end branding

In order to facilitate back end call branding, the switch passes the originating party's AO SPID to the DAS for DA calls and to SNs for OSSAIN calls. Note that for DA calls, only the NT Standard DA Protocol supports AO SPID.

It is expected that the DAS uses the AO SPID to provide back end branding for DA call completion for the case where subsequent billing interactions with the subscriber are not required to complete the call. In other words, continue billing or sent paid billing is selected for the call completion portion of the call.

For DA call completions using the standard DA protocol that require alternate billing interaction, the DAS can either cause the call to transfer to the existing

UNBN SPID Branding (continued)

AABS system or it can explicitly transfer the call to an OSSAIN SN. The AABS node must have parallel datafill in order to provide SPID based branding. An OSSAIN SN, however, is updated with the SPID information.

For OSSAIN calls, the SN (for example, AABS replacement node) may brand the back end of a call using the AO SPID passed in the OAP or obtained otherwise (for example, the SN may lookup the SPID depending on the configuration).

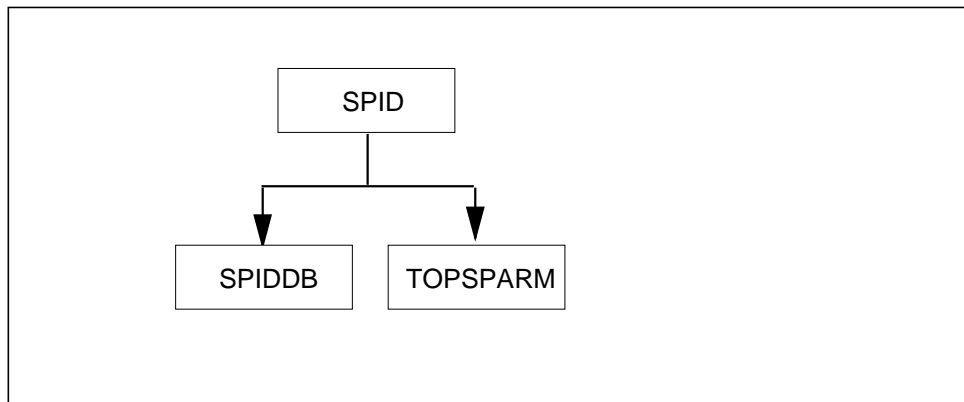
Translations table flow

The TOPS SPID Branding translations tables are described in the following list:

- Table SPID defines the service provider identifiers.
- Table SPIDDB contains service provider identifier data on the SPID.
- Table TOPSPARM contains various TOPS office wide parameters

The TOPS SPID Branding translation process is shown in the flowchart that follows.

Table flow for TOPS SPID Branding



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

Datafill example for TOPS SPID Branding

Datafill table	Example data
SPID	12AB
SPIDDB	12AB N ALL \$ Y RBRAND Y RBRAND
TOPSPARM	DEFAULT_SPID Y 12AB

UNBN SPID Branding (continued)

Limitations and restrictions

TOPS SPID Branding does not support the following:

- branding based on an IntraLATA Presubscription (ILP) carrier
- back end (called party) branding for ACTS and MCCS calls

ACTS and MCCS back end branding provided by feature AL0417 must be turned off. Otherwise, the call may be front end branded using an SPID and back end branded using an NBEC for non-carrier calls.

- interworking of TOPS DRAM branding with OSSAIN calls

Interactions

The following paragraphs describe the interactions between TOPS SPID Branding and other functionalities.

- Functionality DA/Toll Branding, OSB00001, is extended to provide front end branding based on the AO SPID. Prior functionality is modified to use the AO SPID, if present, rather than the NBEC for branding.
- The Nortel Standard DA protocol is modified to send the AO SPID to the directory assistance system (DAS) from the TOPS switch. The AO SPID is used for the following:
 - The DAS can provide back end branding of DA call completion. This service is used where later billing interactions with the subscriber are not required to complete the call. Continue billing or sent paid billing is selected for the call completion part of the call.

Activation/deactivation by the end user

TOPS SPID Branding requires no activation or deactivation by the end user.

Billing

TOPS SPID Branding does not affect billing.

Station Message Detail Recording

TOPS SPID Branding does not affect Station Message Detail Recording.

UNBN SPID Branding (continued)

Datafilling office parameters

The following table shows the office parameters used by TOPS SPID Branding. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by TOPS SPID Branding

Table name	Parameter name	Explanation and action
OFCENG	TOPS_BRAND_DISPLAY	This parameter controls the branding ICON as given in functionality DA/Toll Branding, OSB00001 (feature AF2019). This parameter is not changed, only referenced.

Datafill sequence

The following table lists the tables that require datafill to implement TOPS SPID Branding. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for TOPS SPID Branding

Table	Purpose of table
SPIDDB	Service Provider Identifier Database contains data on the SPID.
TOPSPARM	TOPS Parameters contains various TOPS office wide parameters.

Datafilling table SPIDDB

Table SPIDDB contains TOPS call processing data for SPIDs. This table was introduced by functionality SPID Assignment, UNBN0001.

Tables SPID and ANNS (if TA and DA announcements) must be datafilled prior to table SPIDDB.

UNBN SPID Branding (continued)

The following is a description of table SPIDDB.

Datafilling table SPIDDB

Field	Subfield or refinement	Entry	Explanation and action
SPID		value from table SPID	Service provider identifier. Enter an identifier defined in table SPID.
SCRNDISP		N or Y	Screen display. This field enables or disables operator display of the originators AO SPID. Enter Y to enable or N to disable the display. If Y is entered, datafill refinement DISPLAY. This display is applicable to TOPS MP and OPP compatible positions.
SCRNDISP		see subfield	Screen display. This field consists of subfield SPIDDISP.
	SPIDDISP	N or Y	Screen display. This field enables or disables operator display of the originator's AO SPID. Enter Y to enable or N to disable the display. If Y is entered, datafill refinement DISPLAY. This display is applicable to TOPS MP and OPP compatible positions.
	DISPLAY	up to 8 characters	Display. Datafill this field if field SCRNDISP is set to Y. This display is sent to TOPS MP and OPP compatible positions.
OPERSYS		set of {OPERATOR MCCS ACTS AABS ADAS}, ALL, or NONE	Operator system. This field determines which operator systems require calling party branding prior to the call being connected to the system as follows: <ul style="list-style-type: none"> • OPERATOR - Live TOPS operator • MCCS - Mechanized calling card service • ACTS - Automated coin toll service • AABS - Automated alternate billing service • ADAS - Automated directory assistance service • ALL - All of the above systems (OPERATOR, MCCS, ACTS, AABS, and ADAS) • NONE - No services

UNBN SPID Branding (continued)

Datafilling table SPIDDB

Field	Subfield or refinement	Entry	Explanation and action
TAANN		see subfield	Toll and assist announcement. This field consists of subfield BRAND_TA.
	BRAND_TA	Y or N	Branding toll and assist announcement. This field specifies whether TA calls should be branded for the SPID. Enter Y to brand or N not to brand. If Y is entered, datafill refinement TACLLI.
	TACLLI	name from table ANNS	Toll and assist CLLI name. If field TAANN = Y, datafill this field with an announcement CLLI for TA calls.
DAANN		see subfield	Directory assistance announcement. This field consists of subfield BRAND_DA.
	BRAND_DA	Y or N	Branding directory assistance announcement. This field specifies whether DA calls should be branded for the SPID. Enter Y to brand or N not to brand. If Y is entered, datafill refinement DACLLI.
	DACLLI	name from table ANNS	Directory assistance CLLI name. If field DAANN = Y, datafill this field with an announcement CLLI for DA calls.

Datafill example for table SPIDDB

The following example shows sample datafill for table SPIDDB.

MAP display example for table SPIDDB

SPID	SCRNDISP	OPERSYS	TAANN	DAANN
1234	Y ATEL	OPERATOR MCCS ACTS ADAS \$	Y ATABRAND	Y ADABRAND
ABCD	Y BCOM	MCCS ACTS ADAS \$	Y BBRAND	Y BBRAND
12AB	N	ALL \$	Y RBRAND	Y RBRAND
4567	Y CFON	NONE \$	N	N

UNBN SPID Branding (continued)

The following are comments on the above datafill example:

- ATEL does not use switch based DRAMs to brand their AABS calls. Also, ATEL uses different brands for TA and DA calls.
- BCOM does not brand their operator or AABS calls. The calls BCOM does brand (MCCS, ACTS, and ADAS) use a single brand regardless of the service type.
- The operating company (SPID 12AB) does not wish to display their own SPID since it is the default for the office.
- CFON does not brand any of their operator services calls.

Error messages for table SPIDDB

The following error messages apply to table SPIDDB.

Error messages for table SPIDDB

Error message	Explanation and action
Allocation of store for table SPIDDB failed.	This error message appears if store cannot be allocated when datafilling table SPIDDB.
No screen display was entered.	This error message appears if Y is entered for SPIDDISP but nothing is entered for DISPLAY (that is, \$ is entered at the DISPLAY prompt).
Branding CLLIs must be datafilled in table ANNS.	This error message is displayed if the entered TACLLI or DACLLI is not datafilled in table ANNS.

Datafilling table TOPSPARM

Table TOPSPARM should be datafilled after table SPID. Note that the SPID parameters are not automatically added by the system. If the operating company needs to specify a default SPID, they must explicitly add these parameters to table TOPSPARM.

The following table shows the datafill specific to TOPS SPID Branding for table TOPSPARM. Only those parameters that apply directly to TOPS SPID

UNBN SPID Branding (continued)

Branding are shown. For a description of the other parameters, refer to the data schema section of this document.

Datafilling table TOPSPARM

Parameter name	Explanation
BRAND_USING_DEFAULT_SPID	<p>This parameter enables front end (calling party) branding for non-carrier calls using the SPID in TOPSPARM parameter DEFAULT_SPID. The values for BRAND_USING_DEFAULT_SPID are Y (enable) and N (disable). Therefore, if BRAND_USING_DEFAULT_SPID = Y and no SPID is given in table DNSCRN for the calling party's DN, then the default SPID in TOPSPARM parameter DEFAULT_SPID is used for front end branding. Also, data in table SPIDDB is used for the branding.</p> <p>If BRAND_USING_DEFAULT_SPID = N or no SPID is assigned to the calling DN, the NBEC code is used for branding of non-carrier calls. No SPID is assigned if an SPID is not provided by an OSSAIN SN or OLSN query, there is no SPID entry in table DNSCRN, or parameter DEFAULT_SPID is not datafilled with a default SPID.</p>
DEFAULT_SPID	<p>This parameter indicates the default account owner (AO) SPID on an office wide basis. This parameter is used if no AO SPID is assigned by an OSSANI SN, OLSN query, calling or ANI digits, table DNSCRN, or table TOPSTOPT.</p> <p>The AO SPID is used for TOPS protocols, screen updates, AMA processing, and front end (calling party) branding of non-carrier calls. Table SPIDDB provides supportive data.</p> <p>The values for DEFAULT_SPID are Y and N, indicating a default SPID is or is not specified, respectively. If Y is entered, also enter the default SPID, previously datafilled in table SPID.</p> <p>An SPID cannot be removed from table SPID if it is datafilled as the DEFAULT_SPID in table TOPSPARM.</p>

Datafill example for table TOPSPARM

The following example shows sample datafill for table TOPSPARM.

MAP display example for table TOPSPARM

PARMNAME	PARMVAL
BRAND_USING_DEFAULT_SPID	Y
DEFAULT_SPID	Y 12AB

UNBN SPID Branding (end)

Translation verification tools

TOPS SPID Branding does not use translation verification tools.

SERVORD

TOPS SPID Branding does not use SERVORD.

Ordering codes

Functional group ordering code: UNBN0001

Functionality ordering code: not applicable

Release applicability

TOPS09 and up

UNBN Statistics was introduced in TOPS09.

Prerequisites

To operate, UNBN Statistics has the following prerequisites:

- Base Generic, BAS00003
- Operator Services Basic, OSB00001, and table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- QMS Host/Remote Queueing, OSB00101
- UNBN Translations and Routing, UNBN0101, and table TOPSFTR parameter UNBUNDLING_TRANSLATIONS_VIA_SPID = Y
- UNBN Queueing, UNBN0102, and table TOPSFTR parameter UNBUNDLING_REFINEMENT_FOR_SPID = Y
- Table TOPSFTR parameter UNBUNDLING_SPID_IN _MIS_STREAM = Y

Description

This functionality changes the existing Queue Management System (QMS) Management Information System (MIS) as follows:

- The break out of TOPS queueing and operator statistics by service provider.
- The break out of interactions between service providers and InterLATA carriers. This break out is by addition of the access indicator and CT4Q in both the queue and position messages.
- The break out of the CT4Q allows identification of the operator resources that handle calls for a specific service provider or carrier. But, it is up to the MIS system to reflect accurately the datafill of the QMS CT4Q refinement tables. This requirement is for the correct capture of operator resource mapping.
- The update of the QMS tool TQMIST. New fields are added in the information displayed for the DUMP command.

UNBN Statistics (continued)

Note, basic QMS statistics as provided by functionality Host QMS are not changed.

This functionality is provided by the following feature:

Feature number	Feature name
AF7164	Unbundling: QMS MIS Support

Operation

This functionality is a result of the recent Telecommunications Reform Act of 1996 (TRA96). Incumbent Local Exchange Carriers (ILEC) can buy Local Exchange Carrier (LEC) operator services and sell those services to competing LEC (CLEC) providers. The name of this process is unbundling.

Two types of SPIDs identify the ILEC or CLED:

- Account owner (AO) SPID: This value identifies the dialtone and local service provider.
- Billing service provider (BSP) SPID: This value identifies the service provider that collects and generates the bill to the subscriber.

The AO and BSP SPIDs can apply to the calling, called, billing, and requested numbers. The AO and BSP SPIDs can be different values. As mentioned above, this functionality only uses the calling AO SPID.

Note, basic QMS stats as provided by functionality Host QMS is not changed.

TQMIST CI tool

The TQMIST CI tool allows capture and display of QMS MIS messaging in a QMS MIS message buffer. This buffer is on the DMS switch (with or without an attached MIS system). This functionality adds the calling AO SPID, Access Indicator, carrier access code (CAC), and CT4Q fields to the formatted display dump of QMS MIS messages. The following is an example display with the new fields in bold.

UNBN Statistics (continued)**MAP display example of DUMP command report**

```

***** CQUE EVENT MESSAGE *****

      Application ID : #00          - QMS TOPS
      Sequence Number : #01        - 1
CW Indicator and Queue Event : #02  - ...
      Queueing Event : ...         - Call Presented To Operator
      CW Indicator : ...           - OFF
      Switch ID : #FE              - Standalone/Host Switch
      Originating Trunk CLLI : #00E8 - 232
      Orig Trunk Group Member ID : #0000 - 0
      Call Type For Queueing, CT4Q : #0065 - 101
      Call Queue : #04             - 4
      Time in Queue/Pred Wait Time : #0000 - 0
      Current Call Queue Size : #0000 - 0
      Position Number : #0259      - 601
      Call ID : #0119 0000 - 18415616
      Tenths of Seconds Stamp : #0660 - 1632
      AO Service Provider ID : - 3257
      Access Indicator : - Telco
      Carrier Access Code : #FFFF - N/A

***** POS EVENT MESSAGE *****

      Application ID : #00          - QMS TOPS
      Sequence Number : #00        - 0
      Reset Time Flag : #01        - YES
      Tenths of Second Stamp : #0668 - 1640
      Position Number : #0259      - 601
      Team Number : #04            - 4
      FM Position State : #09      - Occ, Oper Logged In, Not
                                   POS BUSY
      Position Type : #01          - Opr w/ Call Queue Profile
      Profile Identifier : #0F      - 15
      Service Profile Identifier : #32 - 50
      Operator Number : #01F4      - 500
      Call Queue : #FF             - N/A
      Service : #FF                - N/A
      Queue Peg Indicators- Peg... : #20 - IDLT
      Srv Peg Indicators- Peg... : #00 - No Peg
      Loop Num and Call Disp : #00 - ...

```

(continued)

UNBN Statistics (continued)

MAP display example of DUMP command report (continued)

```

          Loop Number : ...           - No Active Loop
    Call Disposition : ...           - No Peg
          Class Charge : #FF         - ...
    Cls Charge - How Call Handle : ... - N/A
          Cls Charge - Paying Party : ... - N/A
          Special Number Type : #FF  - ...
    Special Num Type - Validity : ... - N/A
          SPL Num Type - Scope : ...  - N/A
          SPL Num Type - Type of SPL : ... - N/A
          Call ID : #FFFF FFFF      - N/A
          Station Class : #FF       - N/A
          Prefix Type : #FF        - N/A
          Called Number Type : #FF  - N/A
          Call Origination Type : #FF - N/A
          Restricted Billing Index : #FF - N/A
          Carrier Access Code : #FFFF - N/A
          Automated System : #FF    - N/A
          Language : #FF           - N/A
          Miscellaneous : #00      - Empty Set
          FM Call Type : #FFFF     - N/A
          Originating Trunk CLLI : #FFFF - N/A
          Orig Trunk Group Member ID : #FFFF - N/A
          Switch ID : #FF         - N/A
          OGT Key : #FF          - N/A
          AO Service Provider ID : - 3257
          Access Indicator : #00   - Telco
          Call Type For Queueing, CT4Q : #0065 - 101
  
```

Translations table flow

The UNBN Stats functionality does not have a translations table flow

Limitations and restrictions

The following limitation and restriction applies to UNBN Stats:

The QMS MIS protocol (which includes this functionality) does not support the older TOPS automatic call distribution (ACD) system. Nor does this protocol support reporting for automated operator systems like the Operator Services System Advanced Intelligent Network (OSSAIN) at this time (TOPS09). The Basic QMS Stats (feature AF2965 in QMS Host/Remote Queueing, OSB00101) is not changed by this functionality.

UNBN Statistics (continued)

Interactions

The following paragraphs describe the interactions between UNBN Stats and other functionalities.

This functionality enhances existing feature AF2964 (functionality Host QMS) to include new fields in QMS MIS Call Queue and Position Event messages.

Activation of this functionality through software optionality code (SOC) UNBN0004 depends on the following:

- activation of functionality UNBN Translations and Routing, UNBN0101
- activation of functionality UNBN Queueing, UNBN0102
- activation of table TQMISOPT parameter QMS_MIS_CAM_ON

Activation/deactivation by the end user

UNBN Stats requires no activation or deactivation by the end user.

Billing

UNBN Stats does not affect billing.

Station Message Detail Recording

UNBN Stats does not affect Station Message Detail Recording.

Datafilling office parameters

UNBN Stats does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement UNBN Stats. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for UNBN Stats

Table	Purpose of table
TQMISOPT	TOPS queue management information system options contains office wide QMS MIS parameters.
TQMSOPT	TOPS queue management system options contains office wide QMS parameters.

Datafilling table TQMISOPT

The following table shows the datafill specific to UNBN Stats for table TQMISOPT. Only those parameters that apply directly to UNBN Stats are

UNBN Statistics (continued)

shown. For a description of the other parameters, refer to the data schema section of this document.

Datafilling table TQMISOPT

PARAMNAME	Explanation and action
QMS_MIS_CALL_PLACED_IN_Q_THRESH	This existing parameter is not changed. It controls the number of calls placed in queue (no other queueing event) before a Call Placed in Queue event routes to the MIS. This parameter must be low enough to send the call queue event messages which contain new information added by this functionality. If the parameter is too high, the information throttles. Value 0 enables a message for each call. the range is 0 to 32,767.
QMS_MIS_CAM_ON	This existing parameter is not changed. The value must be Y to activate the QMS MIS message, which contains new information from this functionality. Also, this parameter value must be Y to use the QMS_MIS_CALL_PLACED_IN_Q_THRESH and QMS_MIS_COMPOSE_POS_ON parameters.

Datafill example for table TQMISOPT

The following example shows sample datafill for table TQMISOPT.

MAP display example for table TQMISOPT

PARMNAME	PARMVAL
-----	-----
QMS_MIS_CALL_PLACED_IN_Q_THRESH	0
QMS_MIS_CAM_ON	Y

Datafilling table TQMSOPT

The following table shows the datafill specific to UNBN Stats for table TQMSOPT. Only those parameters that apply directly to UNBN Stats are shown. For a description of the other parameters, refer to the data schema section of this document.

Datafilling table TQMISOPT

PARAMNAME	Explanation and action
QMS_MIS_COMPOSE_POS_ON	This existing parameter is not changed. The value must be Y to enable QMS MIS Position Event messages, which contain new information added by this functionality.

Datafill example for table TQMSOPT

The following example shows sample datafill for table TQMSOPT.

MAP display example for table TQMSOPT

PARMNAM	PARMVAL
-----	-----
QMS_MIS_COMPOSE_POS_ON	Y

Translation verification tools

UNBN Stats does not use translation verification tools.

SERVORD

UNBN Stats does not use SERVORD.

UNBN Translations and Routing

Ordering codes

Functional group ordering code: UNBN0101

Functionality ordering code: not applicable

Release applicability

TOPS09 and up

UNBN Translations and Routing was introduced in TOPS09.

Prerequisites

To operate, UNBN Translations and Routing has the following prerequisites:

- Base Generic, BAS00003
- Operator Services Basic, OSB00001, and table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- Table TOPSFTR parameter UNBUNDLING_TRANSLATIONS_VIA_SPID = Y

Description

This functionality adds the calling Account Owner service provider identifier (AO SPID) to the TOPS translations and screening.

This functionality is a result of the recent Telecommunications Reform Act of 1996 (TRA96). Incumbent Local Exchange Carriers (ILEC) can buy Local Exchange Carrier (LEC) operator services and sell those services to competing LEC (CLEC) providers. The name of this process is unbundling.

Two types of SPIDs identify the ILEC or CLEC:

- Account owner (AO) SPID: This value identifies the dial tone and local service provider.
- Billing service provider (BSP) SPID: This value identifies the service provider that collects and generates the bill to the subscriber.

The AO SPIDs can apply to the calling, called, billing, and requested numbers. The BSP SPIDs can apply to the calling, called, and billing numbers. The AO and BSP SPIDs can be different values. This functionality only uses the calling AO SPID.

UNBN Translations and Routing (continued)

This functionality consists of the following feature:

Feature number	Feature name
AF7159	TOPS Unbundling: SPID Processing, Translations and Routing

Operation

This section consists of the following subsections.

- Old translations and screening
 - Phases of translations and screening
 - Stages and types of translations and screening
 - TOPS standard initial translations and screening
 - TOPS standard subsequent translations and screening
 - TOPS standard subsequent translations and screening for non-called numbers and non-billable numbers
 - TOPS standard translations summary
 - TOPS equal access translations and screening
- New functionality
 - New TOPS standard initial translations and screening
 - New TOPS standard subsequent translations and screening
 - Unchanged TOPS standard subsequent translations and screening for non-called numbers and non-billable calls
 - New TOPS standard translations summary
- Example
- SOC

Old translations and screening

This section describes translations and screening for the TOPS system before this functionality.

Phases of translations and screening

Translations determine a route to the destination based on correct digits dialed by the subscriber. If the dialed digits are not correct, the call normally routes to treatment. The dial plan defines the correct digits. For example, the dial plan dictates the standard 'NPA-NXX-XXXX' format for calls dialed in North America.

UNBN Translations and Routing (continued)

Translations has the following phases in the given order:

1. **Pre-translation:** This phase (table STDPRTCT) processes any dialed prefix digits (that is, 1+, 0+, 10xxx), and builds the remaining “address” digits into a standard format. Pretranslations can also be used to identify any service codes dialed (for example, 911, 411, and so forth). After interpretation of the prefix digits, they are eliminated from further translations processing.
2. **Main translations:** This phase (tables HNPACONT and FNPACONT) processes the address digits and determines a route for the call. In some cases the switch may determine a route directly out of the pretranslation phase, and then bypasses the main translations phase.
3. **Class of service screening:** This phase (table CLSVSCRC) has two purposes. First, to modify the route, if required, based on characteristics of the call. Example calls are direct dialed or operator assisted, local or toll. Second, to modify the route based on characteristics of the originator. An example is a call from a prison or a subscriber with restricted billing options.

Class of service screening generally uses the NPA and, or the NPA-NXX of the address digits for modifying the route.

4. **Local call area screening:** This phase (table LCASCRCN) identifies if the call is a local call (to the originator). This screening does not affect the route chosen, unless the screening results in a treatment as the call disposition.

Stages and types of translations and screening

TOPS office calls have two stages of translations and routing as follows:

- **Initial translations:** This stage occurs before call delivery to the operator or automated system. The purpose is to identify it as an operator call rather than pass through as a cut-through or tandem call.
- **subsequent translations:** This stage occurs when the call routes from the operator to its final destination. A retranslation occurs because the operator has certain dialing patterns that a subscriber does not.

Therefore, a TOPS call translates twice, once for each of these two stages.

The TOPS system performs two types of translations and screening:

- **Standard translations:** This type operates on non-carrier calls, using datafill to translate and screen the call. These tables are TRKGRP, TOPSBC, and OPRTRANS.
- **Equal access (EA) translations:** This type operates on carrier calls, using data from table TOPEATRK to translate and screen the call.

UNBN Translations and Routing (continued)

When a call reaches the TOPS switch, initial translations and screening are performed. The initial translations and screening are actually two separate steps. The following functions take place between initial translations and initial screening:

- collection of automatic number identification (ANI) (depending on the signaling type)
- a local number portability (LNP) query on the calling digits (as appropriate)
- an originating line number screening (OLNS) query (as appropriate)

This initial translations and screening presents an interesting condition not normally encountered in subsequent translations and screening. This condition occurs as the TOPS system completes a call forward in the network. During initial translations, the ANI digits are not normally present. If the ANI is not present, the AO SPID of the originating party is likely unknown since the OLNS query has not yet been launched. This condition implies that for initial translations, the TOPS system cannot depend on the presence of the ANI and AO SPID. However, for initial screening this data is present and used to determine the screening attributes. Also, the perspective of the operator is not applied at this time because the call may not route to the operator.

TOPS standard initial translations and screening

The following normally applies to the initial translations and screening of TOPS calls:

- Pretranslation occurs using the pretranslator name from field PRTNM in table TRKGRP for the originating trunk group.
- The serving translations scheme (STS) used for code translations comes from table TRKGRP (SNPA) for the originating trunk group.
- Class of service screening uses the SCRNCCL screening name from fields in tables TRKGRP and TOPSBC. Each table contributes to screening and returns a screening result. This result can be a correct route, where it replaces the previous route. The result can also be "no screening" (NSCR), then the established route remains unchanged. The result can also be a treatment, then the treatment replaces the route.

Class of service screening occurs two times using tables TRKGRP TOPSBC, in that order. If either screening returns a result of a treatment, this treatment replaces the route and the screening process stops. Whatever route remains after screening from these two tables is the final result.

- Local Call Area (LCA) screening is performed using the LCANAME screen names obtained from tables TRKGRP and TOPSBC for TOPS trunks. For ISUP IT and ISUP ATC trunks, LCANAME comes from table

UNBN Translations and Routing (continued)

ISUPTRK. Local Call Area Screening is not performed for MF IT and MF ATC trunks. This is because the ANI is not available for these calls.

LCA screening uses table LCASCRN to determine if the call is local. The TOPS system does NOT determine a route from LCA screening. For calls on TOPS, ISUP IT and ISUP ATC trunks, tables TRKGRP and TOPSBC are always both used for screening. Each table returns a screening result of either "local" or "non-local". If either table returns a result of "local", the call is marked as local, no matter what screening result the other table returns.

In addition to returning a screening result, LCA screening also can set a treatment. Thus calls are marked as "local" (if applicable), and also have a treatment set for the call. In this case, the call is routed to the specified treatment.

TOPS standard subsequent translations and screening

The following normally applies to the subsequent translations and screening of the called digits on TOPS calls. The following call types are covered in a later section: translations and screening for third number, busy line verification, numbers sequence calls, overseas called number, delay calls and calling numbers.

- Pretranslation for the outgoing stage occurs using the pretranslator name from field PRTNM in table OPRTRANS. The pretranslator from table TRKGRP is not used.
- The STS for code translations comes from table TRKGRP (SNPA) for the originating trunk group.
- Class of service screening uses the SCRNCN screening name from fields in tables TRKGRP, TOPSBC, and OPRTRANS. Screening uses each table and returns a screening result. This result can be a correct route; therefore it replaces the previous route. The result also can be "no screening" (NSCR), then the established route remains unchanged. The result can also be a treatment, in which case the treatment replaces the route.

Class of service screening occurs up to three times. Screening uses tables TRKGRP, TOPSBC, and OPRTRANS, in that order. If any screening table returns a result of a treatment, this treatment replaces the route and the screening process halts. Whatever route remains after screening from these three tables is the final result.

- Local call area (LCA) screening is performed using the LCANAME screen names obtained from tables TRKGRP and TOPSBC for TOPS trunks. For non-ISUP IT and ISUP ATC trunks, LCANAME comes from table

UNBN Translations and Routing (continued)

OPRTRANS (for toll and assist (TA) calls only). For ISUP IT and ISUP ATC trunks, LCANAME comes from table ISUPTRK.

LCA screening uses table LCASCRN to determine if the call is local. The TOPS system does NOT determine a route from LCA screening. For calls on TOPS trunks, tables TRKGRP and TOPSBC are always used for screening. The result is either "local" or "non-local". If either table returns a result of "local", the call is marked as local, no matter what result is returned by the other table.

In addition to returning a screening result, LCA screening can also set a treatment. Thus calls are marked as "local" (if applicable), and also have a treatment set for the call. In this case, the call is routed to the specified treatment.

TOPS standard subsequent translations and screening for non-called and non-billable numbers

The following applies to translations and screening for third number, busy line verification, numbers sequence calls, overseas called number, delay calls, calling numbers and non-billable called numbers. These calls generally only use table OPRTRANS to obtain the translations and screening parameters. There are non-changable tuples that address each of these types of numbers.

- Pretranslation for the outgoing stage occurs using the pretranslator name from field PRTNM in table OPRTRANS. The pretranslator from table TRKGRP is not used.
- The STS for code translations comes from table OPRTRANS.
- Class of service screening uses the SCRNCN screening name from table OPRTRANS. This result can be a correct route, which replaces the previous route. The result also can be "no screening" (NSCR), then the established route remains unchanged. The result can also be a treatment, so the treatment replaces the route.
- Local Call Area (LCA) screening is not done for these numbers.

UNBN Translations and Routing (continued)

TOPS standard translations summary

The following table summarizes the initial translations and subsequent translations which shows the accessed datafill tables.

TOPS standard translations summary

Stage and type of translations and screening	Pretranslations phase	Code translations phase	Class of service screening phase	Local call area screening phase
Standard initial Translations and Screening (TOPS Trunks)	Table TRKGRP field PRTNM	Table TRKGRP field SNPA	Table TRKGRP field SCRNCCL Table TOPSBC field SCRNCCL	Table TRKGRP field LCANAME Table TOPSBC field LCANAME
Standard initial translations and screening (ISUP IT and ISUP ATC trunks)	Table TRKGRP field PRTNM	Table TRKGRP field SNPA	Table TRKGRP field SCRNCCL Table TOPSBC field SCRNCCL	Table TRKGRP field LCANAME Table TOPSBC field LCANAME
Standard initial translations and screening (MF IT and MF ATC trunks)	Table TRKGRP field PRTNM	Table TRKGRP field SNPA	none	none
Standard subsequent translations and screening (TOPS trunks)	Table OPRTRANS field PRTNM	Table TRKGRP field SNPA	Table TRKGRP field SCRNCCL Table TOPSBC field SCRNCCL Table OPRTRANS field SCRNCCL	Table TRKGRP field LCANAME Table TOPSBC field LCANAME
Standard subsequent translations and screening (ISUP IT and ISUP ATC trunks)	Table OPRTRANS field PRTNM	Table TRKGRP field SNPA	Table TRKGRP field SCRNCCL Table TOPSBC field SCRNCCL Table OPRTRANS field SCRNCCL	Table ISUPTRK field LCANAME Table TOPSBC field LCANAME

UNBN Translations and Routing (continued)

TOPS standard translations summary

Stage and type of translations and screening	Pretranslations phase	Code translations phase	Class of service screening phase	Local call area screening phase
Standard subsequent translations and screening (MF IT and MF ATC trunks)	Table OPRTRANS field PRTNM	Table TRKGRP field SNPA	Table OPRTRANS field SCRNCCL	none
Standard subsequent translations and screening for non-called numbers	Table OPRTRANS field PRTNM	Table OPRTRANS field SNPA	Table OPRTRANS field SCRNCCL	none

TOPS equal access translations and screening

TOPS EA translation and screening operates on carrier calls after standard translations and screening. This process implies that standard translations and screening must provide a correct route for carrier calls. But, EA translations and screening overrides the route.

The only form of translations used by TOPS EA carrier calls is class of service screening. These translations require a three-part key consisting of STS, screening name, and type of call (OA, DD, NP, or NL). The STS and screening name are obtained from table TOPEATRK. The TOPS system uses call attributes, for example the call origination type and other characteristics, to determine the type of call. The TOPS system also appends the carrier number to the called digits before invoking class of service screening. This step allows differences in route selection based on the carrier identification code (CIC). Other forms of translations (that is, pretranslations and code translations) are not used during EA translations and screening.

New functionality

This section describes how TOPS translations and screening are changed to add the AO SPID.

Note: These TOPS translations and screening changes are applicable to all TOPS functionality groups.

For information on identification of the calling party AO SPID, refer to functionality SPID Branding, UNBN0101.

UNBN Translations and Routing (continued)

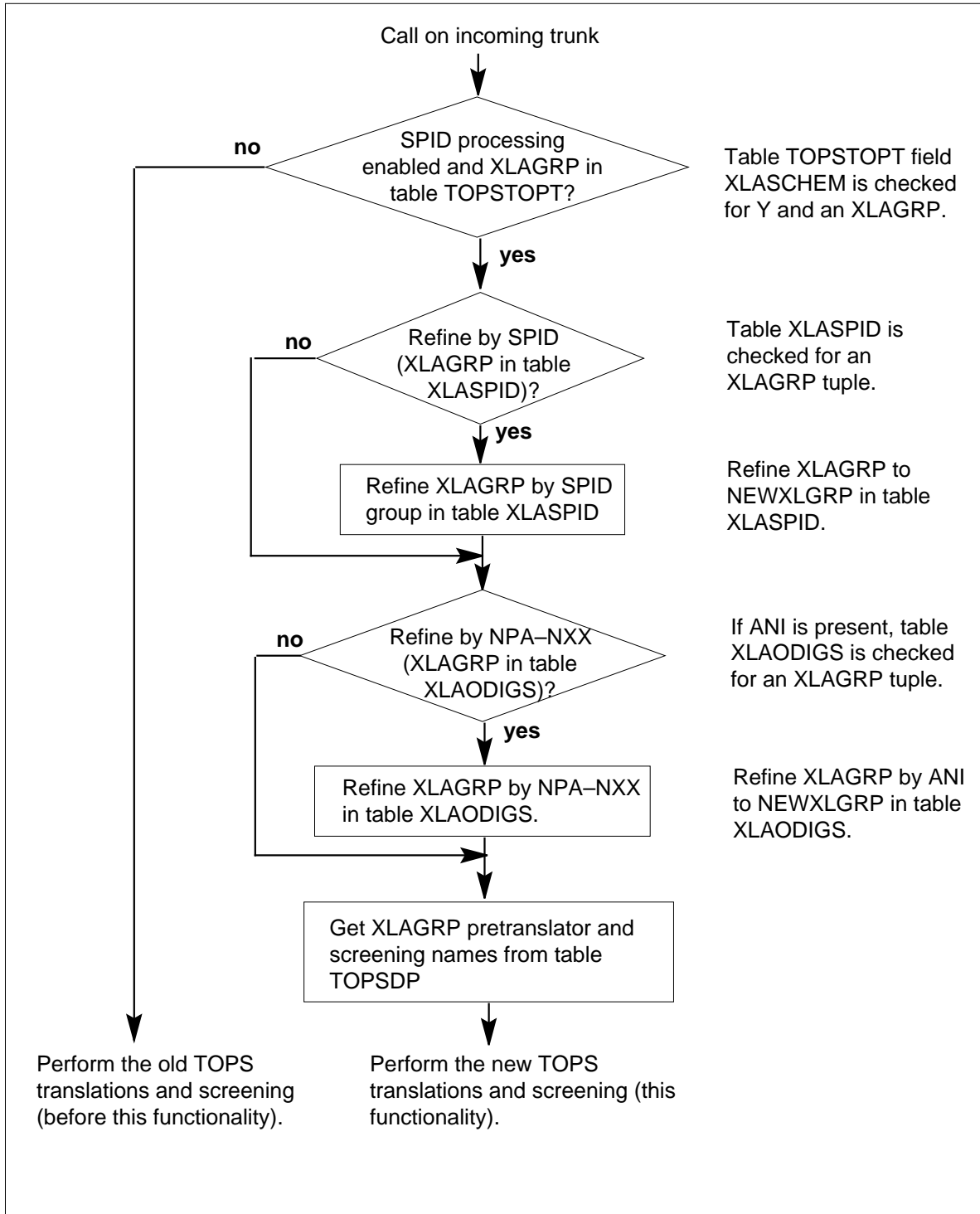
The following datafill table changes add the AO SPID to translations and screening:

- Table TOPSTOPT - The following are new fields:
 - XLASCHEM enables the new TOPS translations for the trunk group. When enabled, the trunk is assigned to an XLAGRP.
 - SPIDPRC allows SPID processing according to trunk group. This addition affects all SPID processing in the unbundling functionality group.
- Table SPIDDB - This existing table has new field XLA which enables use of the SPID in the new TOPS translations plan.
- Table XLAGRP - This new table defines translation group names for the new translations process.
- Table SPIDGRP - This new table defines names of SPID groups for use in the new TOPS translations plan. SPIDs that require the same processing are grouped to conserve resources.
- Table XLASPID - This new table refines the XLAGRP AO SPID of the originator to create new group NEWXLGRP.
- Table XLAODIGS - This new table refines the XLAGRP NPA-NXX of the originator to create new group NEWXLGRP.
- Table TOPSDP - This new table indicates the XLAGRP pretranslator and screening names.

Details of these tables are given in the datafill procedure section. The following figure shows the logic flow for these tables.

UNBN Translations and Routing (continued)

XLAGRP processing



UNBN Translations and Routing (continued)

New TOPS standard initial translations and screening

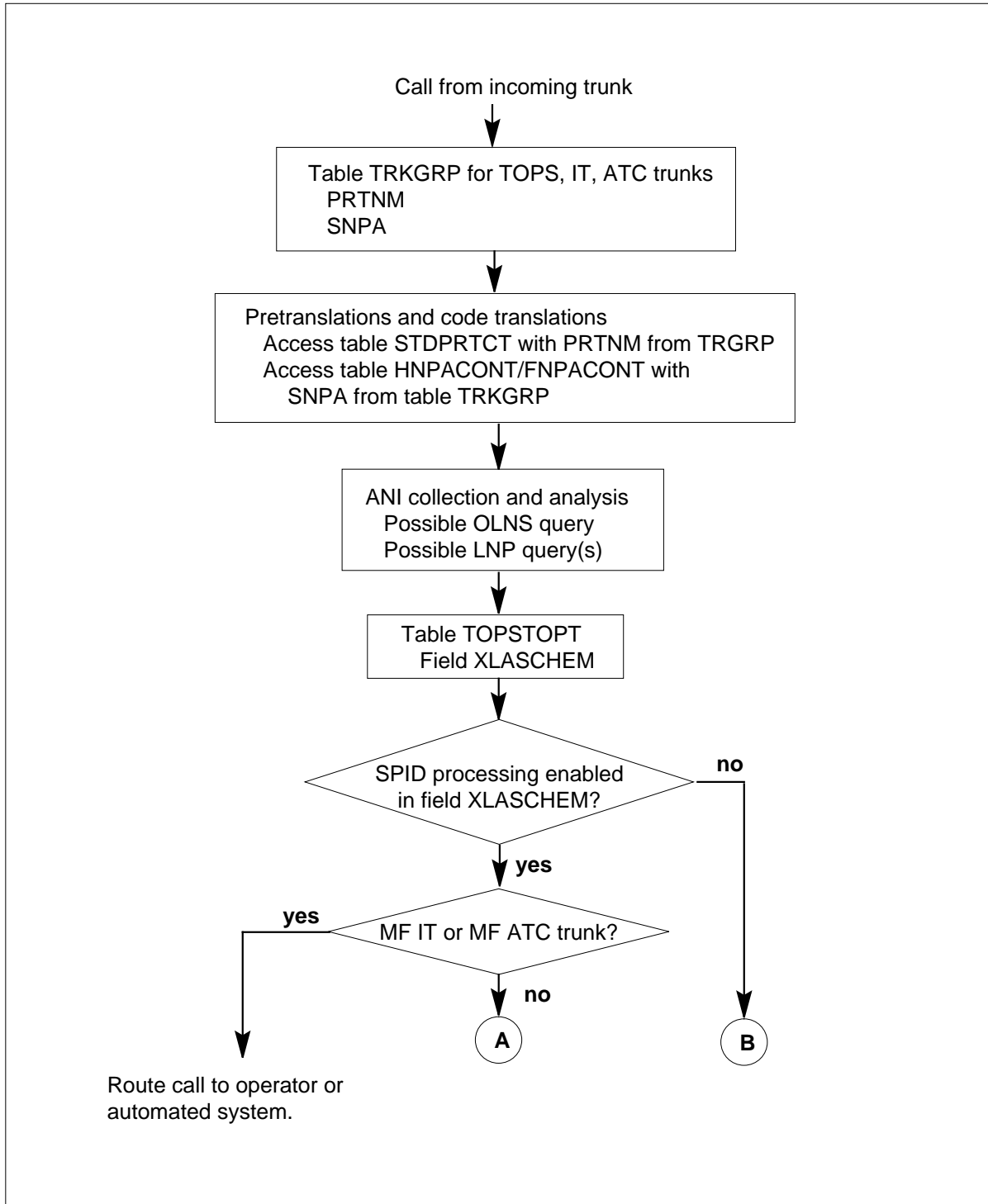
The following applies to the initial translations and screening of TOPS calls.

- Pretranslation uses the pretranslator name from field PRTNM in table TRKGRP for the originating trunk group.
- The STS for code translations comes from table TRKGRP (SNPA) of the originating trunk group.
- Class of service screening uses the ORIGSCRN screening name from table TOPSDP. The datafilled XLAGRP refinement determines the index to table TOPSDP. The screening result can be a correct route, so it replaces the previous route. The result also can be “no screening” (NSCR), so the established route remains unchanged. The result can also be a treatment, so the treatment replaces the route.
- Local Call Area (LCA) screening is performed using the LCANAME screen name from table TOPSDP. LCA Screening is not performed for MF IT and MF ATC trunks because the ANI is not available for these calls.

The following diagrams show the initial translations and screening table flow.

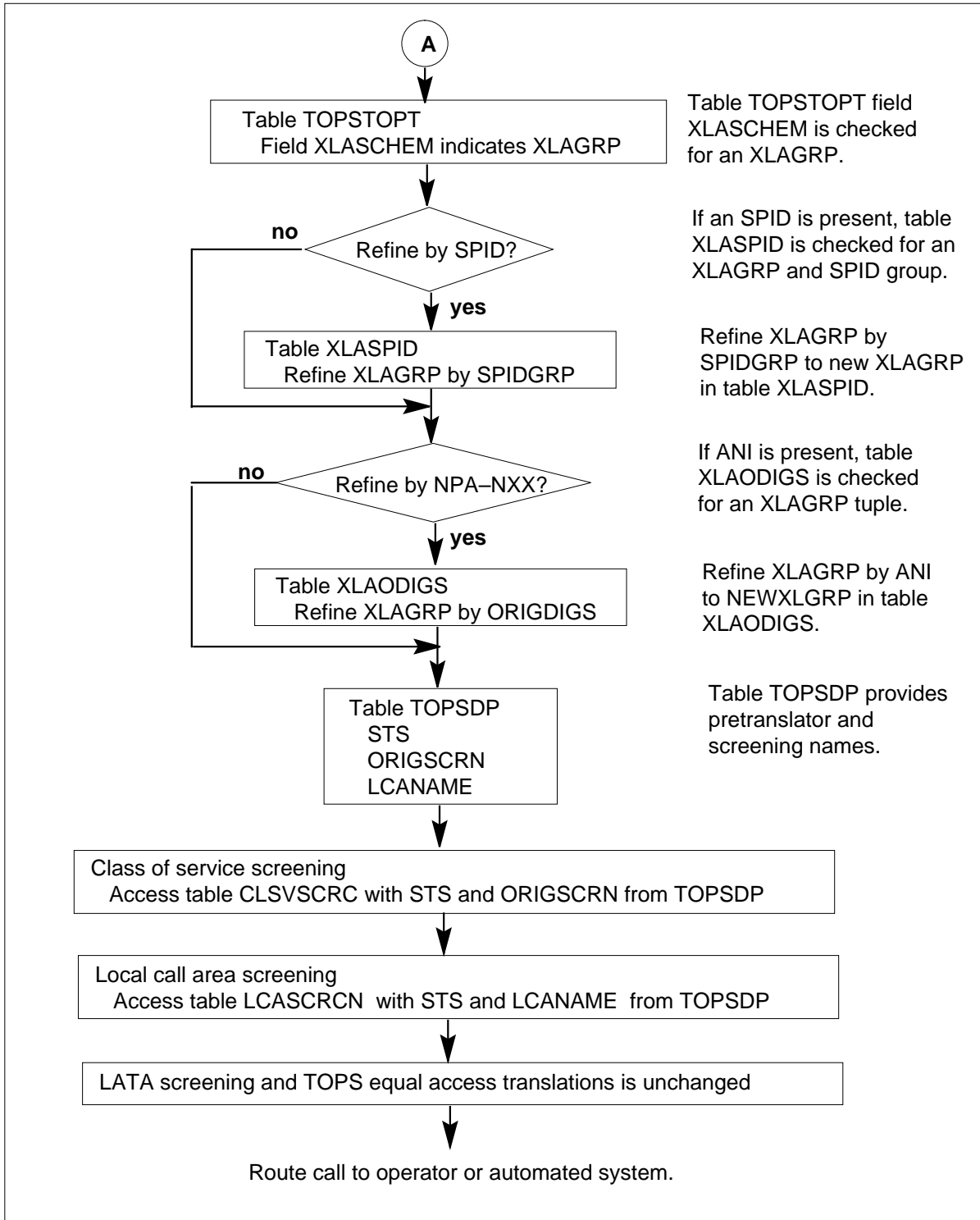
UNBN Translations and Routing (continued)

New TOPS initial translations and screening table flow



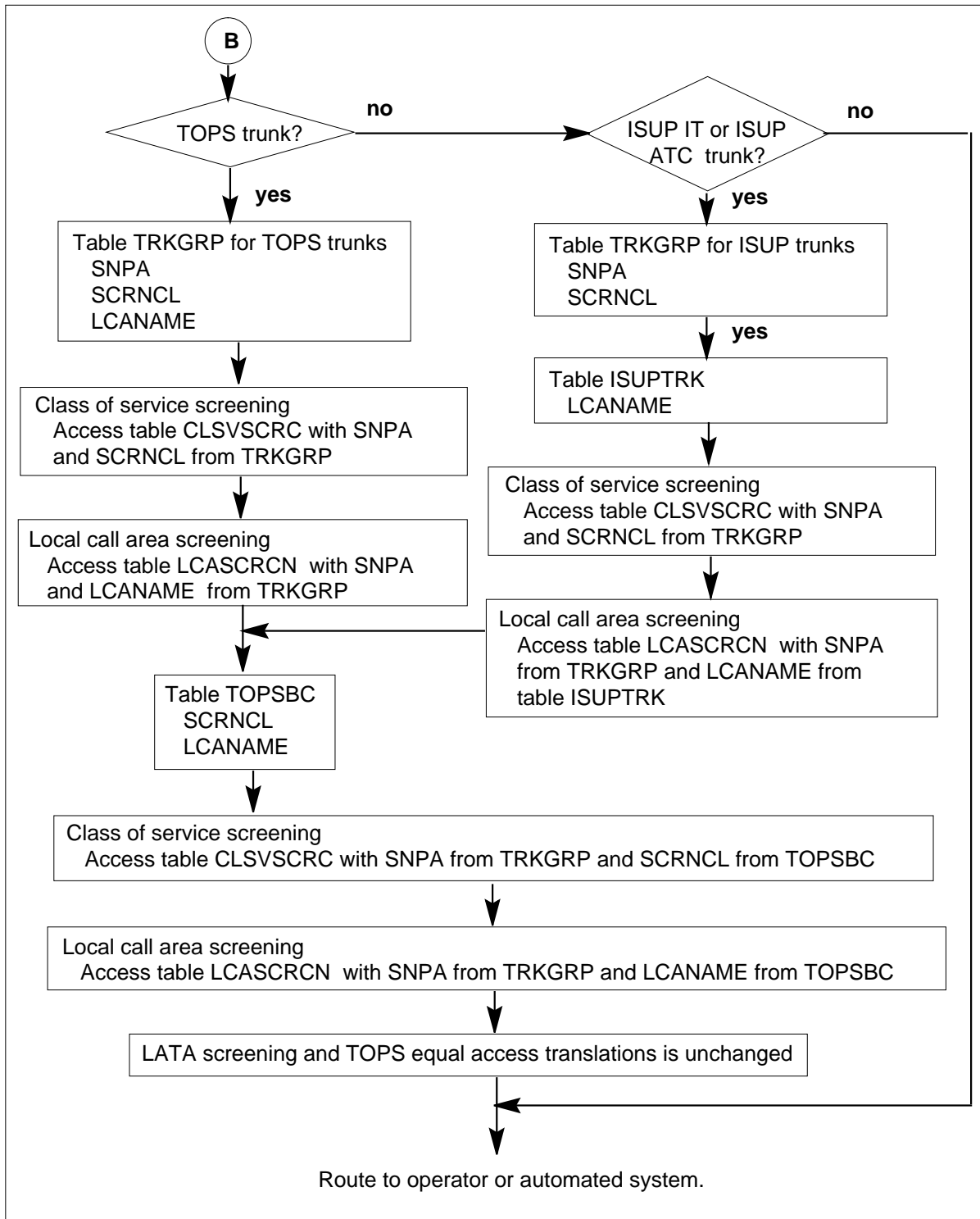
UNBN Translations and Routing (continued)

New TOPS initial translations and screening table flow (continued)



UNBN Translations and Routing (continued)

New TOPS initial translations and screening table flow (continued)



UNBN Translations and Routing (continued)

New TOPS standard subsequent translations and screening

The following normally applies to the subsequent translations and screening of the called digits on TOPS calls. Translations and screening for third number, busy line verification numbers, sequence calls, overseas called numbers, delay calls and calling numbers are not covered here. These call types are discussed in the following section.

- Pretranslation for the outgoing stage uses the pretranslator name from field PRTNM in table OPRTRANS. The pretranslator from table TRKGRP is not used.
- The STS for code translations comes from table TOPSDP.
- Class of service screening uses the class of service screening names from table TOPSDP. Screening uses each name and returns a screening result. This result can be a correct route, which replaces the previous route. The result also can be "no screening" (NSCR), so the established route remains unchanged. The result also can be a treatment, which replaces the route.

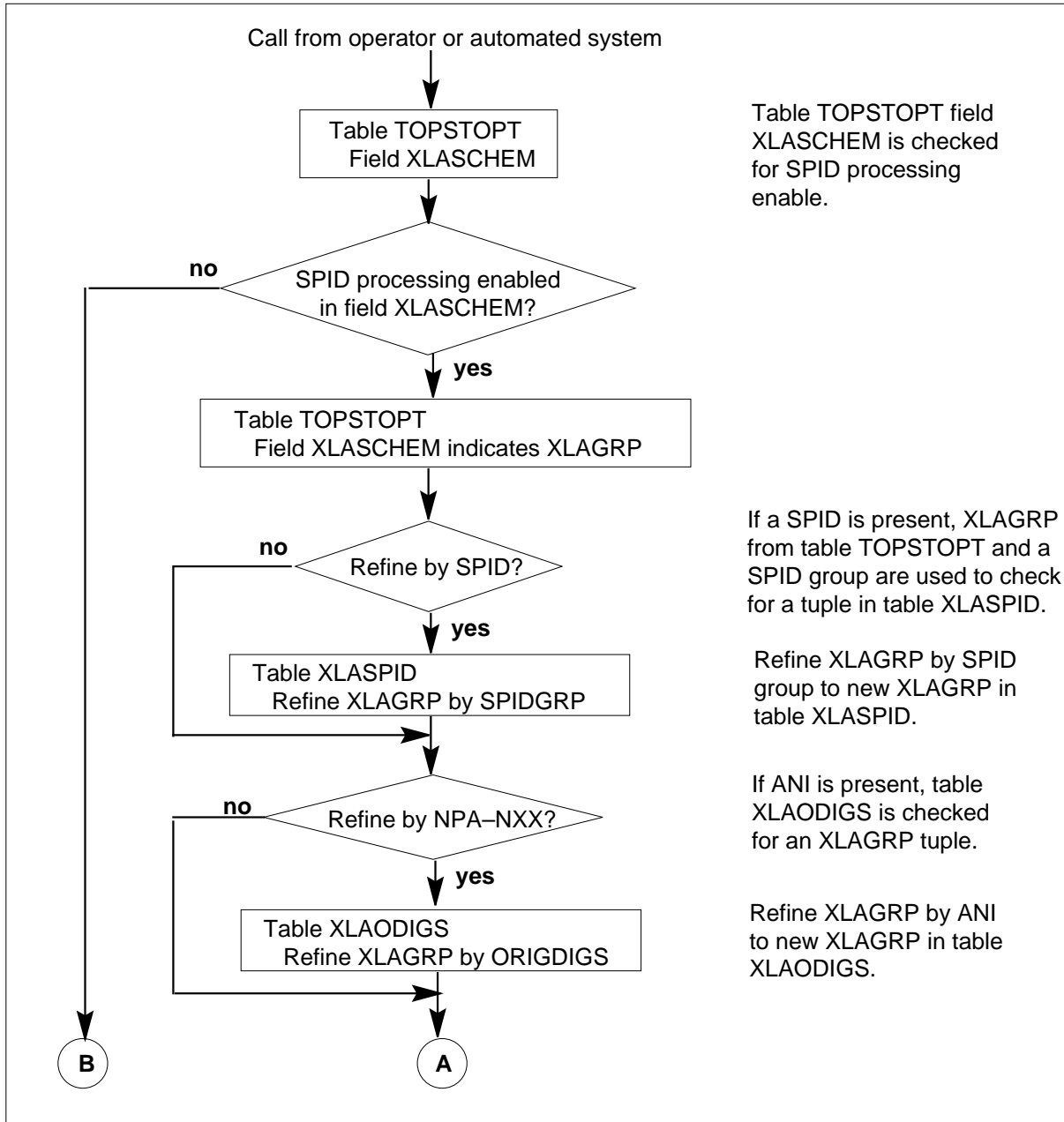
Class of service screening occurs up to two times. Fields ORIGSCRN and OPERSCRN (in this order) are used. If either screening returns a result of a treatment, this treatment replaces the route and the screening process halts. Whatever route remains after screening is the final result.

- Local Call Area (LCA) screening uses the LCANAME from table TOPSDP.

The following diagrams show the subsequent translations and screening table flow.

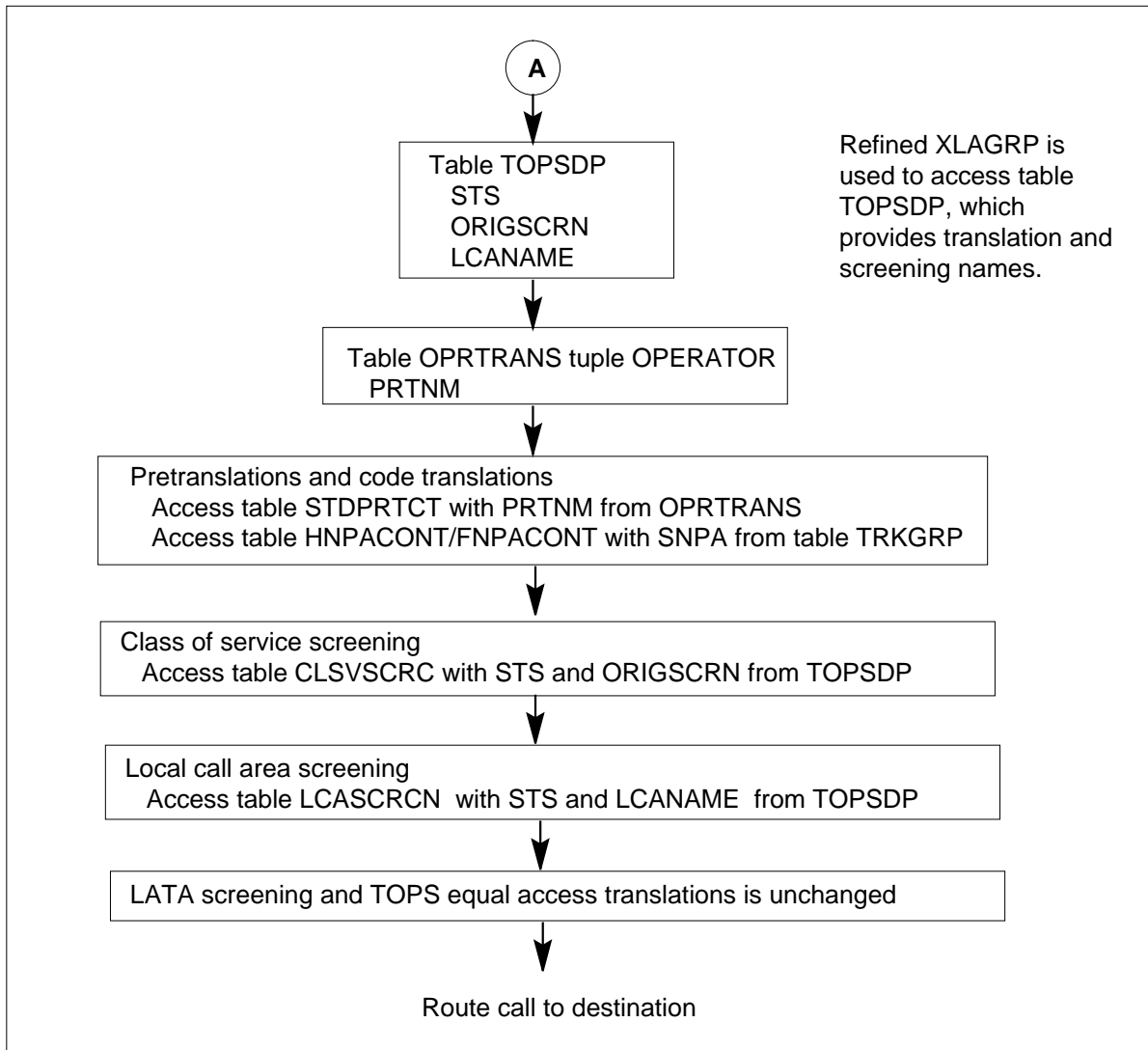
UNBN Translations and Routing (continued)

New TOPS subsequent translations and screening table flow



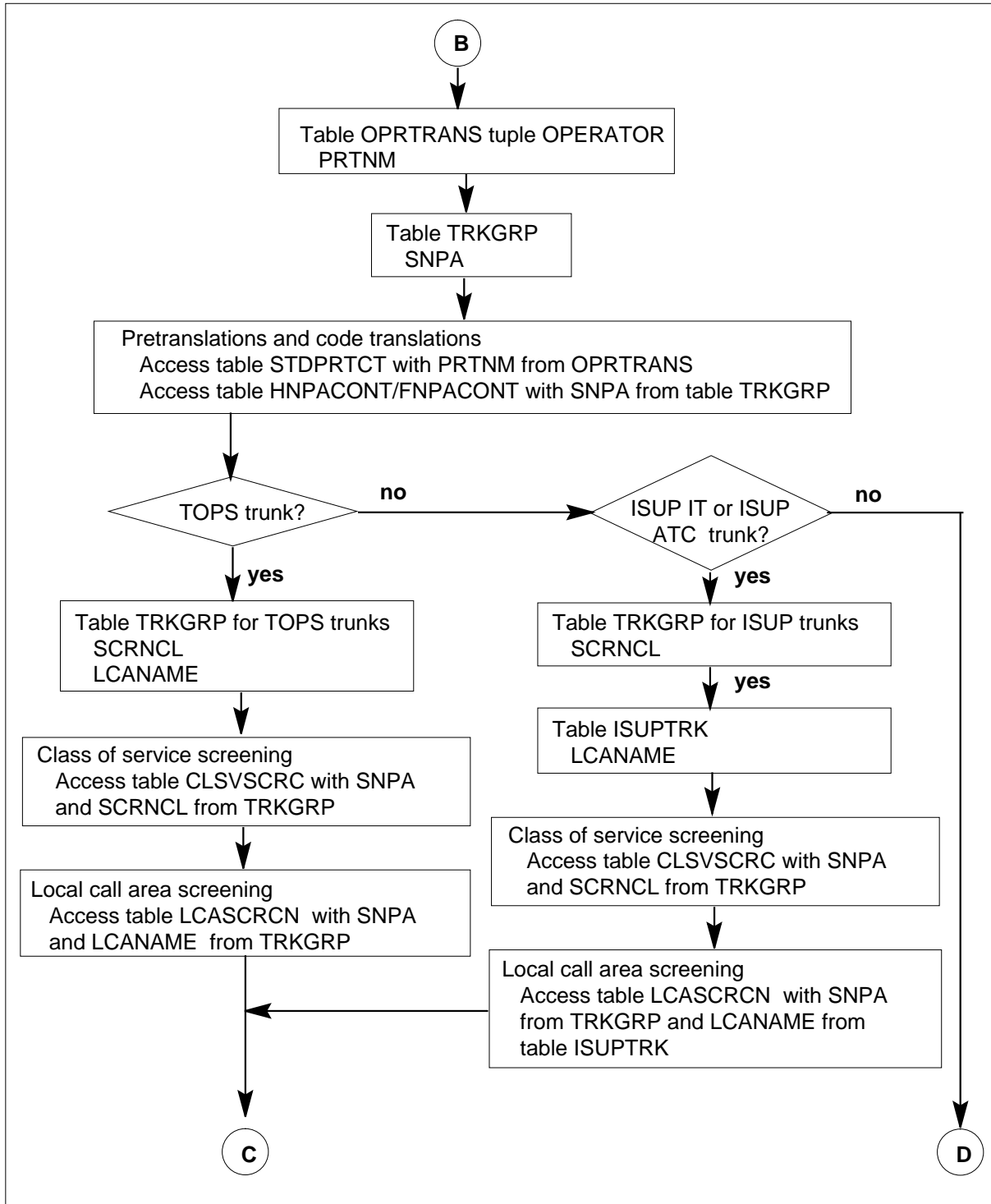
UNBN Translations and Routing (continued)

New TOPS subsequent translations and screening table flow (continued)



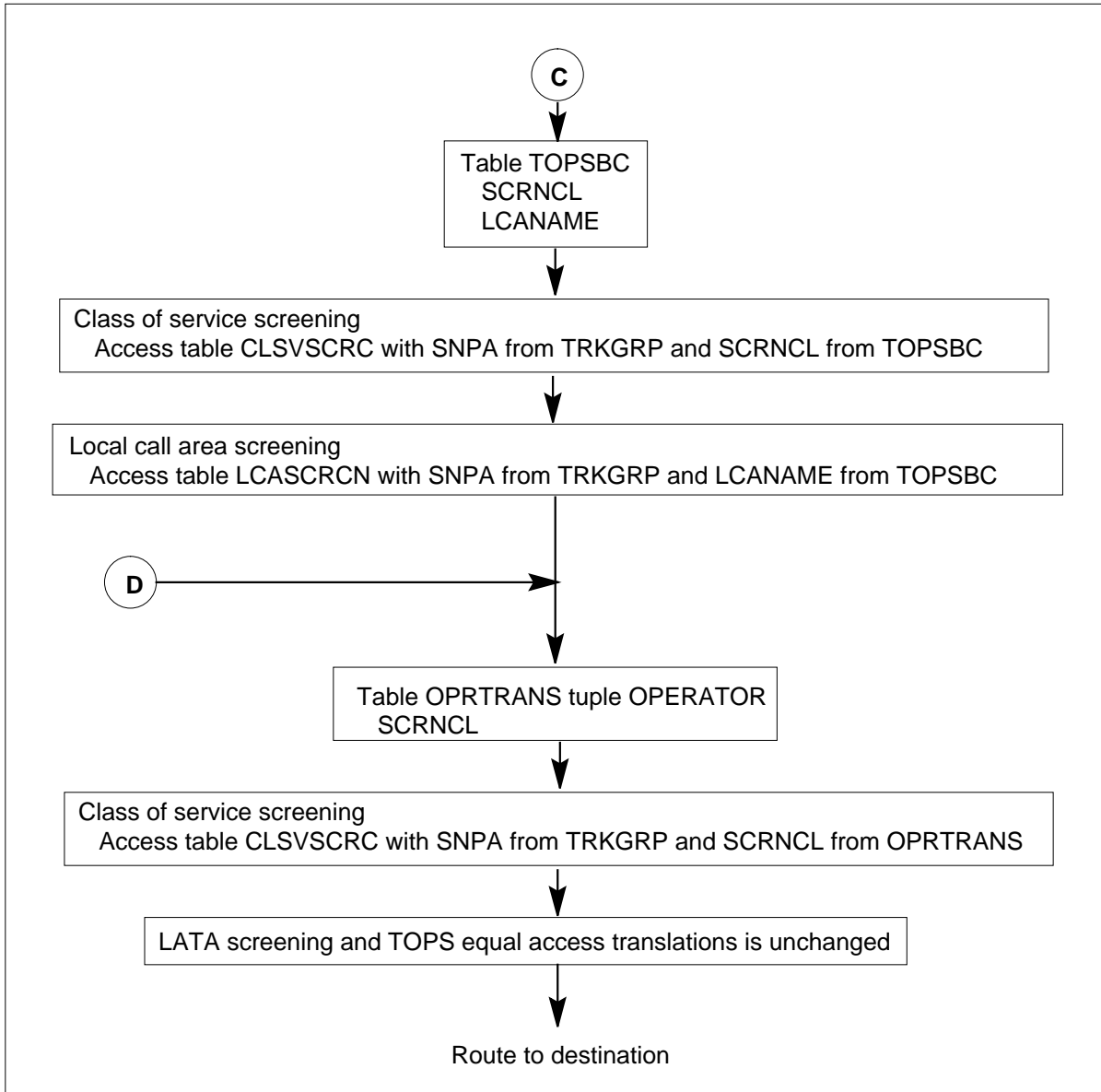
UNBN Translations and Routing (continued)

New TOPS subsequent translations and screening table flow (continued)



UNBN Translations and Routing (continued)

New TOPS subsequent translations and screening table flow (continued)



Unchanged TOPS standard subsequent translations and screening for non-called numbers and non-billable calls

The following normally applies to translations and screening of third numbers, busy line verification numbers, sequence calls, overseas called numbers, delay calls, calling numbers, and called numbers that are non-billable. The new translations process does not apply to these translations; therefore, these

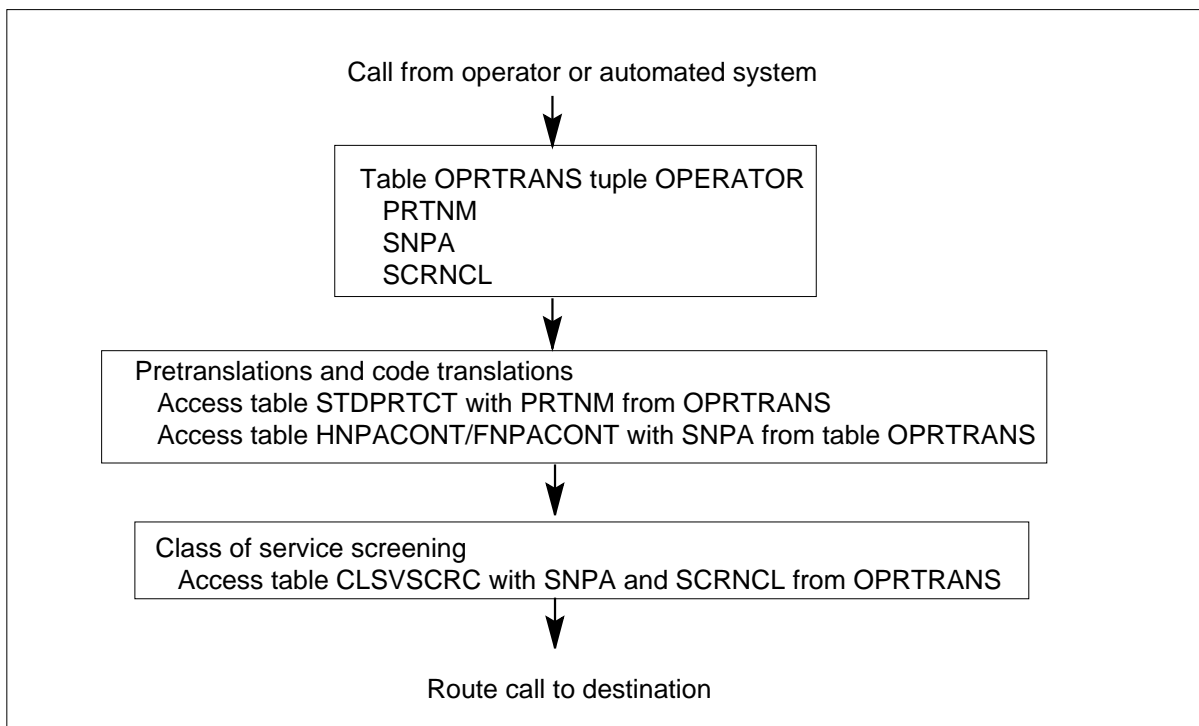
UNBN Translations and Routing (continued)

translations are unchanged. Translations continues to use existing table OPRTRANS.

- Pretranslation for the outgoing stage uses the pretranslator name from field PRTNM in table OPRTRANS. The pretranslator from table TRKGRP is not used.
- The STS for code translations comes from table OPRTRANS.
- Class of service screening uses the SCRNCCL screening name from table OPRTRANS. This result can be a correct route, which replaces the previous route. The result also can be “no screening” (NSCR), then the established route remains unchanged. The result can also be a treatment that replaces the route.
- Local Call Area (LCA) screening is not done for these numbers.

The following diagram shows the subsequent translations and screening.

Unchanged subsequent translations and screening for non-called numbers table flow



UNBN Translations and Routing (continued)

New TOPS standard translations summary

The following table summarizes the initial translations and subsequent translations, which shows the accessed datafill tables.

New TOPS standard translations summary

Stage and type of translations and screening	Pretranslations phase	Code translations phase	Class of service screening phase	Local call area screening phase
Standard initial translations and screening (TOPS Trunks)	Table TRKGRP field PRTNM	Table TRKGRP field SNPA	Table TOPSDP field ORIGSCRN	Table TOPSDP field LCANAME
Standard initial translations and screening (ISUP IT and ISUP ATC trunks)	Table TRKGRP field PRTNM	Table TRKGRP field SNPA	Table TOPSDP field ORIGSCRN	Table TOPSDP field LCANAME
Standard initial translations and screening (MF IT and MF ATC trunks)	Table TRKGRP field PRTNM	Table TOPSDP field STS	none	none
Standard subsequent translations and screening (TOPS trunks)	Table OPRTRANS field PRTNM	Table TOPSDP field STS	Table TOPSDP fields ORIGSCRN and OPERSCRN	Table TOPSDP field LCANAME
Standard subsequent translations and screening (ISUP IT and ISUP ATC trunks)	Table OPRTRANS field PRTNM	Table TOPSDP field STS	Table TOPSDP fields ORIGSCRN and OPERSCRN	Table TOPSDP field LCANAME

UNBN Translations and Routing (continued)

New TOPS standard translations summary

Stage and type of translations and screening	Pretranslations phase	Code translations phase	Class of service screening phase	Local call area screening phase
Standard subsequent translations and screening (MF IT and MF ATC trunks)	Table OPRTRANS field PRTNM	Table TOPSDP field STS	Table OPRTRANS field SCRNCCL	none
Standard subsequent translations and screening for non-called numbers	Table OPRTRANS field PRTNM	Table OPRTRANS field SNPA	Table OPRTRANS field SCRNCCL	none

Example

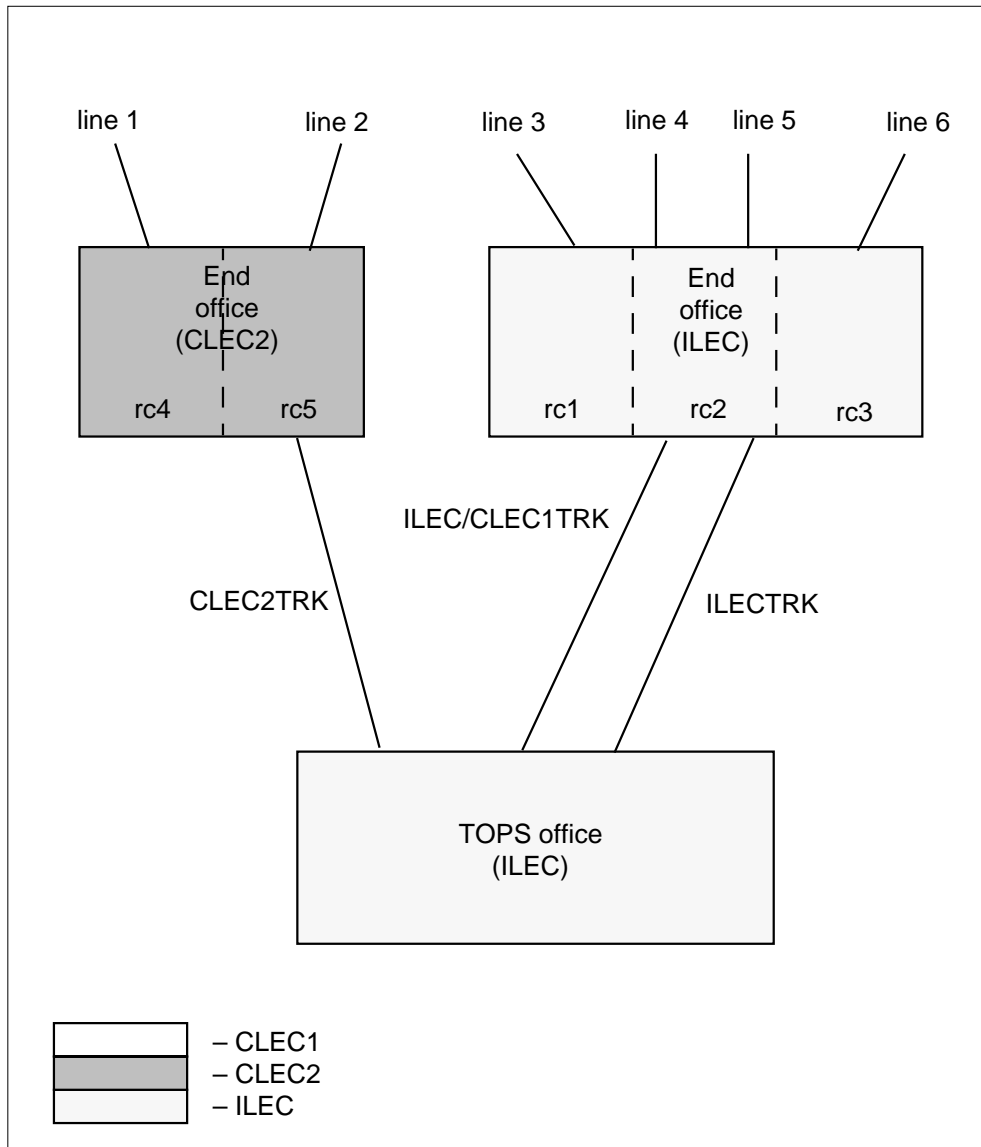
This section provides a network example where the following different translations and screening plans are needed in the TOPS office:

- ILEC line 6 in rate center 3 carried on trunk ILECTRK
- ILEC line 5 in rate center 2 carried on trunk ILEC/CLEC1TRK
- CLEC1 line 4 in rate center 2 carried on trunk ILEC/CLEC1TRK
- CLEC1 line 3 in rate center 1 carried on trunk CLEC1TRK
- CLEC2 line 2 in rate center 5 carried on trunk CLEC2TRK
- CLEC2 line 1 in rate center 4 carried on trunk CLEC2TRK

The following diagram shows this network.

UNBN Translations and Routing (continued)

Example TOPS network



The following examples illustrate the associated datafill needed to support this example

UNBN Translations and Routing (continued)

MAP display example for table TRKGRP

```

GRPKEY
                                                    GRPINFO
-----
ILECTRK
  TOPS 0 NPDGP NCRT IC MIDL 619 PRT1 NLCA NSCR N NIL COMBINED N N 3
  0000 NONE BELL 10 7 7 N Y OFFHK N N $
ILEC/CLEC1TRK
  TOPS 0 NPDGP NCRT IC MIDL 619 PRT1 NLCA NSCR N NIL COMBINED N N 3
  0000 NONE BELL 10 7 7 N Y OFFHK N N $
CLEC2TRK
  TOPS 0 NPDGP NCRT IC MIDL 202 PRT1 NLCA NSCR N NIL COMBINED N N 3
  0000 NONE BELL 10 7 7 N Y OFFHK N N $
    
```

MAP display example for table XLAGRP

```

XLAGRP
-----
ILECRC3
ILECRC2
CLEC1RC2
CLEC1RC1
CLEC2RC4
CLEC2RC5
    
```

MAP display example for table OPRTRANS

```

KEY          SNPA  SCRNL  PRTNM  LCANAME
-----
OPERATOR    619   OPRS   PRT2   NLCA
    
```

MAP display example for table TOPSTOPT

GRPKEY	ACDDATA	DISPCLG	ADASERV	ADASANS	ANITOCCLI	OLNSQRY
DCIBIDX	LNPCLGAM	XLASCHEM	SPIDPRC	TRKSPID		
ILECTRK	QMSCAM	N	NONE	NA	N	NONE
0	N	Y ILECRC3	N		Y ILEC	
ILEC/CLEC1TRK	QMSCAM	N	NONE	NA	N	NONE
0	N	Y ILECRC2	N		N	
CLEC2TRK	QMSCAM	N	NONE	NA	N	NONE
0	N	Y CLEC2RC4	Y		Y CLEC2	

UNBN Translations and Routing (continued)

MAP display example for table SPIDGRP

```

SPIDGRP
-----
CLEC1XLA
    
```

MAP display example for table SPIDDB

SPID	SCRNDISP	OPERSYS	TAANN	DAANN	ACTSANN	XLA	SPIDCRIT
ILEC	N	ALL	N	N	N	N	N
CLEC1	N	ALL	N	N	N	Y CLEC1XLA	N
CLEC2	N	ALL	N	N	N	N	N

MAP display example for table XLASPID

```

GRPKEY                      NEWXLA
-----
ILECRC2  CLEC1XLA  CLEC1RC2
    
```

MAP display example for table XLAODIGS

```

GRPKEY                      NEWXLA
-----
CLEC2RC4  202320  CLEC2RC5
CLEC1RC2  619443  CLEC1RC3
    
```

UNBN Translations and Routing (continued)

MAP display example for table TOPSDP

XLAGRP LCANAME	STS	OPERPRTN	ORIGSCRN	OPERSCRN	MCCSPRTN	MCCSSCRN
ILECRC3 LCA1	619	PRTNM1	SCR1	OPR1	PRTNM1	SCR1
ILECRC2 LCA2	619	PRTNM2	SCR2	OPR1	PRTNM2	SCR2
CLEC1RC2 LCA3	619	PRTNM2	SCR2	OPR2	PRTNM2	SCR2
CLEC1RC1 LCA4	619	PRTNM3	SCR3	OPR2	PRTNM3	SCR3
CLEC2RC4 LCA5	202	PRTNM4	SCR4	OPR3	PRTNM4	SCR4
CLEC2RC5 LCA6	202	PRTNM4	SCR4	OPR3	PRTNM4	SCR4

The following table flows illustrate how the translations and screening parameters are accessed for calls from the six lines in the example.

Example 1 Line 1 (owned by CLEC2) makes a call to the TOPS office, originating on CLEC2TRK. This example illustrates translations and screening for a CLEC dedicated trunk group that supports multiple rate

UNBN Translations and Routing (continued)

centers. In this example, rate center 4 is the default which is why table XLAODIGS is not used. Example 2 illustrates the non-default condition.

- Initial translations and screening
 - Table TRKGRP
 - CLEC2TRK TOPS 202 PRT1 NLCA NSCR
 - Table STDPRTCT (use PRTNM from table TRKGRP)
 - PRT1
 - Table HNPACONT (use SNPA from table TRKGRP)
 - 202
 - Table TOPSTOPT
 - CLEC2TRK QMSCAM N NONE NA N NONE 0 N Y
CLEC2RC4
 - Table SPIDDB
 - CLEC2 N ALL N N N
 - Table XLAODIGS (use XLAGRP from table TOPSTOPT)
 - tuple not found
 - Table TOPSDP
 - CLEC2RC4 202 SCR4 OPR3 LCA5
 - Table CLSVSCRC (use STS and ORIGSCRN from table TOPSDP)
 - 202 SCR4 OA
 - Table LCASCRCN (use STS and LCANAME from table TOPSDP)
 - 202 LCA5
 - <continue with TOPS equal access translations>
- subsequent translations and screening
 - Table TOPSTOPT
 - CLEC2TRK QMSCAM N NONE NA N NONE 0 N Y
CLEC2RC4
 - Table SPIDDB
 - CLEC2 N ALL N N N
 - Table XLAODIGS (use XLAGRP from table TOPSTOPT)
 - tuple not found
 - Table TOPSDP

UNBN Translations and Routing (continued)

- CLEC2RC4 202 SCR4 OPR3 LCA5
- Table OPRTRANS
 - OPERATOR 619 OPRS PRT2 NLCA
- Table STDPRTCT (use PRTNM from table OPRTRANS)
 - PRT2
- Table HNPACONT (use STS from table TOPSDP)
 - 202
- Table CLSVSCRC (use STS and ORIGSCRN from table TOPSDP)
 - 202 SCR4 OA
- Table CLSVSCRC (use STS and OPERSCRN from table TOPSDP)
 - 202 OPR3 OA
- Table LCASCRCN (use STS and LCANAME from table TOPSDP)
 - 202 LCA5
- <continue with TOPS equal access translations>

Example 2 Line 2 (owned by CLEC2) makes a call to the TOPS office, originating on CLEC2TRK. This example is like example 1 that shows the rate center 4 as the default translations and screening for the trunk group. This example shows how rate center five can use the combined trunk. However, the

UNBN Translations and Routing (continued)

center continues to maintain its translations and screening by using table XLAODIGS.

- Initial translations and screening
 - Table TRKGRP
 - CLEC2TRK TOPS 202 PRT1 NLCA NSCR
 - Table STDPRTCT (use PRTNM from table TRKGRP)
 - PRT1
 - Table HNPACONT (use SNPA from table TRKGRP)
 - 202
 - Table TOPSTOPT
 - CLEC2TRK QMSCAM N NONE NA N NONE 0 N Y
CLEC2RC4
 - Table SPIDDB
 - CLEC2 N ALL N N N
 - Table XLAODIGS (use XLAGRP from table TOPSTOPT)
 - CLEC2RC4 202320 CLEC2RC5
 - Table TOPSDB
 - CLEC2RC5 202 SCR4 OPR3 LCA6
 - Table CLSVSCRC (use STS and ORIGSCRN from table TOPSDP)
 - 202 SCR4 OA
 - Table LCASRCRN (use STS and LCANAME from table TOPSDP)
 - 202 LCA6
 - <continue with TOPS Equal Access Translations>
- subsequent Translations and Screening
 - Table TOPSTOPT
 - CLEC2TRK QMSCAM N NONE NA N NONE 0 N Y
CLEC2RC4
 - Table SPIDDB
 - CLEC2 N ALL N N N
 - Table XLAODIGS (use XLAGRP from Table TOPSTOPT)
 - CLEC2RC4 202320 CLEC2RC5
 - Table TOPSDP

UNBN Translations and Routing (continued)

- CLEC2RC5 202 SCR4 OPR3 LCA6
- Table OPRTRANS
 - OPERATOR 619 OPRS PRT2 NLCA
- Table STDPRTCT (use PRTNM from table OPRTRANS)
 - PRT2
- Table HNPACONT (use STS from table TOPSDP)
 - 202
- Table CLSVSCRC (use STS and ORIGSCRN from table TOPSDP)
 - 202 SCR4 OA
- Table CLSVSCRC (use STS and OPERSCRN from table TOPSDP)
 - 202 OPR3 OA
- Table LCASCRCN (use STS and LCANAME from table TOPSDP)
 - 202 LCA6
- <continue with TOPS equal access translations>

Example 3 Line 3 (owned by CLEC1) makes a call to the TOPS office, originating on ILEC/CLEC1TRK. This example illustrates a combined trunk

UNBN Translations and Routing (continued)

group that serves multiple rate centers. Both the SPID and originating digits refine the translations and screening name.

- Initial translations and screening
 - Table TRKGRP
 - ILEC/CLEC1TRK TOPS 619 PRT1 NLCA NSCR
 - Table STDPRTCT (use PRTNM from table TRKGRP)
 - PRT1
 - Table HNPACONT (use SNPA from table TRKGRP)
 - 619
 - Table TOPSTOPT
 - ILEC/CLEC1TRK QMSCAM N NONE NA N NONE 0 N Y ILECRC2
 - Table SPIDDB
 - CLEC1 N ALL N N Y CLEC1XLA
 - Table XLASPID (use XLAGRP from table TOPTOPT and SPIDGRP from table SPIDDB)
 - ILECRC2 CLEC1XLA CLEC1RC2
 - Table XLAODIGS (use XLAGRP from table XLASPID)
 - CLEC1RC2 619443 CLEC1RC1
 - Table TOPSDP
 - CLEC1RC1 619 SCR3 OPR2 LCA4
 - Table CLSVSCRC (use STS and ORIGSCRN from table TOPSDP)
 - 619 SCR3 OA
 - Table LCASCRCN (use STS and LCANAME from table TOPSDP)
 - 619 LCA4
 - <continue with TOPS equal access translations>
- subsequent translations and screening
 - Table TOPSTOPT
 - ILEC/CLEC1TRK QMSCAM N NONE NA N NONE 0 N Y ILECRC2
 - Table SPIDDB
 - CLEC1 N ALL N N Y CLEC1XLA

UNBN Translations and Routing (continued)

- Table XLASPID (use XLAGRP from table TOPTOPT and SPIDGRP from table SPIDDB)
 - ILECRC2 CLEC1XLA CLEC1RC2
- Table XLAODIGS (use XLAGRP from table XLASPID)
 - CLEC1RC2 619443 CLEC1RC1
- Table TOPSDB
 - CLEC1RC1 619 SCR3 OPR2 LCA4
- Table OPRTRANS
 - OPERATOR 619 OPRS PRT2 NLCA
- Table STDPRTCT (use PRTNM from table OPRTRANS)
 - PRT2
- Table HNPACONT (use STS from table TOPSDP)
 - 619
- Table CLSVSCRC (use STS and ORIGSCRN from table TOPSDP)
 - 619 SCR3 OA
- Table CLSVSCRC (use STS and OPERSCRN from table TOPSDP)
 - 619 OPR2 OA
- Table LCASCRCN (use STS and LCANAME from table TOPSDP)
 - 619 LCA4
- <continue with TOPS equal access translations>

Example 4 Line 4 (owned by CLEC1) makes a call to the TOPS office, originating on ILEC/CLEC1TRK. This example illustrates how combined SPID trunks serving multiple rate centers can be datafilled. The combined trunk defaults to the ILEC but the CLEC can override the translations and

UNBN Translations and Routing (continued)

screening parameters by using table XLASPID. This example shows a way of using default SPID translations and screening on a combined trunk group.

- Initial translations and screening
 - Table TRKGRP
 - ILEC/CLEC1TRK TOPS 619 PRT1 NLCA NSCR
 - Table STDPRTCT (use PRTNM from table TRKGRP)
 - PRT1
 - Table HNPACONT (use SNPA from table TRKGRP)
 - 619
 - Table TOPSTOPT
 - ILEC/CLEC1TRK QMSCAM N NONE NA N NONE 0 N Y ILECRC2
 - Table SPIDDB
 - CLEC1 N ALL N N Y CLEC1XLA
 - Table XLASPID (use XLAGRP from table TOPTOPT and SPIDGRP from table SPIDDB)
 - ILECRC2 CLEC1XLA CLEC1RC2
 - Table XLAODIGS (use XLAGRP from table XLASPID)
 - tuple not found
 - Table TOPSDB
 - CLEC1RC2 619 SCR2 OPR2 LCA3
 - Table CLSVSCRC (use STS and ORIGSCRN from table TOPSDP)
 - 619 SCR2 OA
 - Table LCASCRCN (use STS and LCANAME from table TOPSDP)
 - 619 LCA3
 - <continue with TOPS equal access translations>
- subsequent translations and screening
 - Table TOPSTOPT
 - ILEC/CLEC1TRK QMSCAM N NONE NA N NONE 0 N Y ILECRC2
 - Table SPIDDB
 - CLEC1 N ALL N N Y CLEC1XLA

UNBN Translations and Routing (continued)

- Table XLASPID (use XLAGRP from table TOPTOPT and SPIDGRP from table SPIDDB)
 - ILECRC2 CLEC1XLA CLEC1RC2
- Table XLAODIGS (use XLAGRP from table XLASPID)
 - tuple not found
- Table TOPSDP
 - CLEC1RC2 619 SCR2 OPR2 LCA3
- Table OPRTRANS
 - OPERATOR 619 OPRS PRT2 NLCA
- Table STDPRTCT (use PRTNM from table OPRTRANS)
 - PRT2
- Table HNPACONT (use STS from table TOPSDP)
 - 619
- Table CLSVSCRC (use STS and ORIGSCRN from table TOPSDP)
 - 619 SCR2 OA
- Table CLSVSCRC (use STS and OPERSCRN from table TOPSDP)
 - 619 OPR2 OA
- Table LCASCRCN (use STS and LCANAME from table TOPSDP)
 - 619 LCA3
- <continue with TOPS equal access translations>

Example 5 Line 5 (owned by ILEC) makes a call to the TOPS office, originating on ILEC/CLEC1TRK. This example illustrates how combined

UNBN Translations and Routing (continued)

SPID trunks can be datafilled. The combined trunk defaults to the ILEC which is the only requirement in this condition. Table XLASPID is not used.

- Initial translations and screening
 - Table TRKGRP
 - ILEC/CLEC1TRK TOPS 619 PRT1 NLCA NSCR
 - Table STDPRTCT (use PRTNM from table TRKGRP)
 - PRT1
 - Table HNPACONT (use SNPA from table TRKGRP)
 - 619
 - Table TOPSTOPT
 - ILEC/CLEC1TRK QMSCAM N NONE NA N NONE 0 N Y ILECRC2
 - Table SPIDDB
 - ILEC N ALL N N N
 - Table XLAODIGS (use XLAGRP from table TOPSTOPT)
 - tuple not found
 - Table TOPSDB
 - ILECRC2 619 SCR2 OPR1 LCA2
 - Table CLSVSCRC (use STS and ORIGSCRN from table TOPSDP)
 - 619 SCR2 OA
 - Table LCASCRCN (use STS and LCANAME from table TOPSDP)
 - 619 LCA2
 - <continue with TOPS equal access translations>
- subsequent Translations and Screening
 - Table TOPSTOPT
 - ILEC/CLEC1TRK QMSCAM N NONE NA N NONE 0 N Y ILECRC2
 - Table SPIDDB
 - ILEC N ALL N N N
 - Table XLAODIGS (use XLAGRP from table TOPSTOPT)
 - tuple not found
 - Table TOPSDP

UNBN Translations and Routing (continued)

- ILECRC2 619 SCR2 OPR1 LCA2
- Table OPRTRANS
 - OPERATOR 619 OPRS PRT2 NLCA
- Table STDPRTCT (use PRTNM from table OPRTRANS)
 - PRT2
- Table HNPACONT (use STS from table TOPSDP)
 - 619
- Table CLSVSCRC (use STS and ORIGSCRN from table TOPSDP)
 - 619 SCR2 OA
- Table CLSVSCRC (use STS and OPERSCRN from table TOPSDP)
 - 619 OPR1 OA
- Table LCASCRN (use STS and LCANAME from table TOPSDP)
 - 619 LCA2
- <continue with TOPS equal access translations>

Example 6 Line 6 (owned by ILEC) makes a call to the TOPS office, originating on ILECTRK. This example illustrates a dedicated ILEC trunk group that serves a single rate center. The translations and screening name

UNBN Translations and Routing (continued)

comes from the trunk group level (that is, table TOPSTOPT). And the name does not require any refinement based on SPID or originating digits.

- Initial translations and screening
 - Table TRKGRP
 - ILECTRK TOPS 619 PRT1 NLCA NSCR
 - Table STDPRTCT (use PRTNM from Table TRKGRP)
 - PRT1
 - Table HNPACONT (use SNPA from table TRKGRP)
 - 619
 - Table TOPSTOPT
 - ILECTRK QMSCAM N NONE NA N NONE 0 N Y ILECRC3
 - Table SPIDDB
 - ILEC N ALL N N N
 - Table XLAODIGS (use XLAGRP from table TOPSTOPT)
 - tuple not found
 - Table TOPSDB
 - ILECRC3 619 SCR1 OPR1 LCA1
 - Table CLSVSCRC (use STS and ORIGSCRN from table TOPSDP)
 - 619 SCR1 OA
 - Table LCASCRCN (use STS and LCANAME from table TOPSDP)
 - 619 LCA1
 - <continue with TOPS equal access translations>
- subsequent translations and screening
 - Table TOPSTOPT
 - ILECRK QMSCAM N NONE NA N NONE 0 N Y ILECRC3
 - Table SPIDDB
 - ILEC N ALL N N N
 - Table XLAODIGS (use XLAGRP from table TOPSTOPT)
 - tuple not found
 - Table TOPSDB
 - ILECRC3 619 SCR1 OPR1 LCA1

UNBN Translations and Routing (continued)

- Table OPRTRANS
 - OPERATOR 619 OPRS PRT2 NLCA
- Table STDPRTCT (use PRTNM from table OPRTRANS)
 - PRT2
- Table HNPACONT (use STS from table TOPSDP)
 - 619
- Table CLSVSCRC (use STS and ORIGSCRN from table TOPSDP)
 - 619 SCR1 OA
- Table CLSVSCRC (use STS and OPERSCRN from table TOPSDP)
 - 619 OPR1 OA
- Table LCASCRCN (use STS and LCANAME from table TOPSDP)
 - 619 LCA1
- <continue with TOPS equal access translations>

SOC

Software optionality control (SOC) UNBN0101, Translations and Routing, controls this functionality. This SOC controls only the XLAGRP refinement by SPID using table XLASPID. When SOC is OFF, tables can be datafilled but operational use of these tables is not possible. The SOC state must be ON for full functionality. The other parts of translations and screening (that is, tables TOPSDP and XLAODIGS) are available regardless of the SOC state.

Translations table flow

The UNBN Translations and Routing translations tables are described in the following list, which shows the order of access:

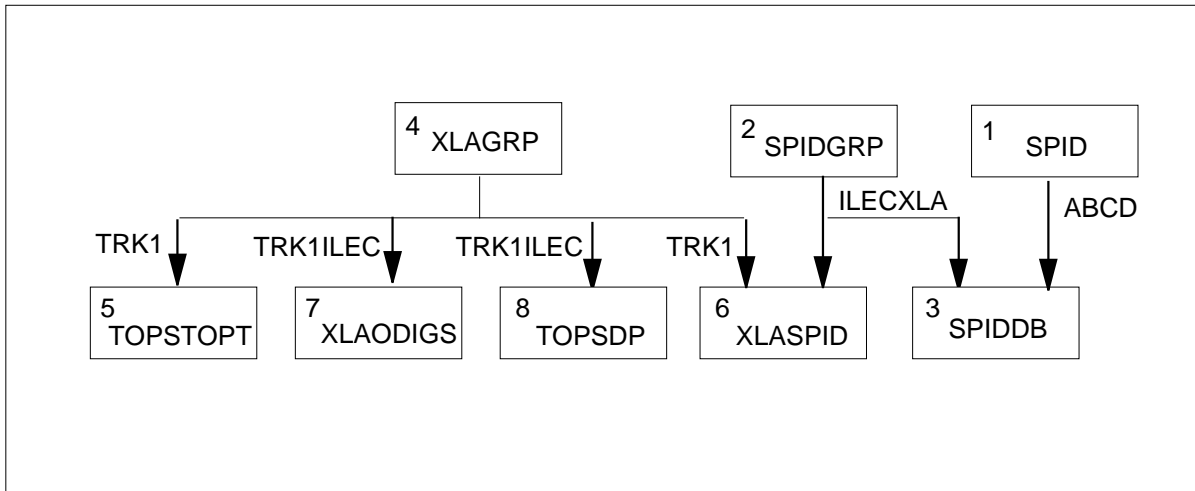
- Table SPID defines 4-character SPID names including assignment of SPIDGRP names.
- Table SPIDGRP defines 32-character TOPS SPID group names for use by the new TOPS translation process.
- Table SPIDDB contains SPID information.
- Table XLAGRP defines TOPS translations group names for use by the new TOPS translation process.
- Table TOPSTOPT contains new fields that activate SPID and the TOPS translations process.
- Table XLASPID assigns a translations group name by SPID.

UNBN Translations and Routing (continued)

- Table XLAODIGS assigns a translations group name by originator NPA-NXX.
- Table TOPSDP defines a dial plan by SPID and, or NPA-NXX.

The UNBN Translations and Routing translation process is shown in the flowchart that follows.

Table flow for UNBN Translations and Routing



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

Datafill example for UNBN Translations and Routing

Datafill table	Example data
SPID	ABCD
SPIDGRP	ILECXLA
SPIDDB	ABCD Y MOMNPOP NONE N N N Y ILECXLA N
XLAGRP	TRK1 TRK1ILEC
TOPSTOPT	TRK1 QMSCAM N NONE NA N NONE 0 N Y TRK1 Y Y 1234
XLASPID	TRK1 ILECXLA TRK1ILEC
XLAODIGS	TRK1ILEC 619320 TRK1ILEC619320
TOPSDP	TRK1ILEC 619 PRTNM1 SCR1 SCR1 PRTNM1 SCR1 LCA1

UNBN Translations and Routing (continued)

The following describes the above datafill:

- Table SPID defines ABCD for use by table SPIDDB
- Table SPIDGRP defines ILECXLA for use by tables XLASPID and SPIDDB.
- Table XLAGRP defines TRK1 for use by tables TOPSTOPT and XLASPID.
- Table XLAGRP defines TRK1ILEC for use by tables XLAODIGS and TOPSDP.

Limitations and restrictions

The following limitations and restrictions apply to UNBN Translations and Routing:

- This activity only uses the calling AO SPID for service processing.
- Bellcore has not defined the appending of SPID information to a Module Code 338. This restriction applies to an AMA record of Structure Code 0001 and Call Code 006. The TOPS system generates this type of AMA record for direct-dial (1+) non-coin TOPS calls that route directly to the destination without presentation to an operator or handling by an automated TOPS system. The TOPS system does not append SPID information for these AMA records.
- Equal Access (EA) translations for carrier calls are not affected by SPID. Translations for carrier calls do NOT use the SPID, but instead use the Carrier Identification Code (CIC). EA translations in the TOPS system occur after standard translations, and thus determine the route.
- The TOPS system can not obtain a SPID and then redirect a call to another Operator Services Switch (OSS) based upon that SPID. If this limitation is not followed, AMA is not correctly generated.

Interactions

The following paragraph describe the interactions between UNBN Translations and Routing and other functionalities.

This functionality interacts with the TRA96 unbundling functionalities as follows:

- UNBN Queueing (UNBN0102) - feature AF7160 (TOPS Unbundling: QMS Queueing)
- External RTRS Interface (ENSV0103) - feature AF7163 (TOPS Unbundling: Real-Time Rating)

UNBN Translations and Routing (continued)

- UNBN Stats (UNBN0101) - feature AF7164 (TOPS Unbundling: QMS MIS Enhancements)
- UNBN Billing Changes (UNBN0101) - feature AF7133 (TOPS Unbundling: Billing)
- UNBN TOPS SPID Branding (UNBN0101) - feature AF6711 (Branding for TOPS via SPID)

Future implications

The translations and screening part of this activity introduces a new translations and screening process for the TOPS system. The old method of translations and screening will be phased out. This change will occur when the new process provides full support and there has been sufficient time to change.

Activation/deactivation by the end user

UNBN Translations and Routing requires no activation or deactivation by the end user.

Billing

This activity does not directly impact AMA, but allows for SPID assignment, which may affect the AMA record. Refer to functionality Billing Changes (UNBN0101) for more details.

Station Message Detail Recording

UNBN Translations and Routing does not affect Station Message Detail Recording.

Datafilling office parameters

UNBN Translations and Routing does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement UNBN Translations and Routing. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for UNBN Translations and Routing

Table	Purpose of table
XLAGRP	Translations Group defines TOPS translations group names for use by the new TOPS translation process.
SPIDGRP	Service Provider Identifier Group defines TOPS SPID group names for use by the new TOPS translation process.

UNBN Translations and Routing (continued)

Datafill tables required for UNBN Translations and Routing

Table	Purpose of table
TOPSTOPT	TOPS Trunk Options contains new fields that activate SPID and the TOPS translations process.
SPID	Service Provider Identifier defines SPID names for use in other tables.
SPIDDB	Service Provider Identifier Database contains SPID information.
XLASPID	Translations Service Provider Identifier assigns a translations group name by SPID.
XLAODIGS	Translations Originator Digits assigns a translations group name by originator NPA-NXX.
TOPSDP	TOPS Dialing Plan defines a dial plan by SPID and, or NPA-NXX.

Datafilling table XLAGRP

Translations Group is a new table that defines TOPS translation group names for use by the new TOPS translations process.

No tables must be datafilled before table XLAGRP.

Table XLAGRP must be datafilled before tables TOPSTOPT, XLAODIGS, XLASPID, and TOPSDP.

The following is a description of the field.

Datafilling table XLAGRP

Field	Subfield or refinement	Entry	Explanation and action
XLAGRP		up to 32 alphanumeric characters	Translations group. Enter a TOPS translation group name for use by TOPS translations.

Datafill example for table XLAGRP

The following example shows sample datafill for table XLAGRP.

UNBN Translations and Routing (continued)

MAP display example for table XLAGRP

```

XLAGRP
-----
TRK1
TRK2
TRK1LEC
TRK1CLEC
TRK1619320
TRK1619322
TRK1ILEC619320
    
```

Datafilling table SPIDGRP

Service Provider Identifier Group is a new table that defines TOPS SPID group names for use by the new TOPS translations scheme.

Table SPIDGRP must be datafilled before tables XLASPID and SPIDDB.

The following is a description of the field.

Datafilling table SPIDGRP

Field	Subfield or refinement	Entry	Explanation and action
SPIDGRP		up to 32 alphanumeric characters	Service Provider Identifier Group. Enter an SPID group name for use by TOPS translations.

Datafill example for table SPIDGRP

The following example shows sample datafill for table SPIDGRP.

MAP display example for table SPIDGRP

```

SPIDGRP
-----
ILECXLA
CLECXLA
    
```

Datafilling table TOPSTOPT

The following table shows the datafill specific to UNBN Translations and Routing for table TOPSTOPT. Only those fields that apply directly to UNBN Translations and Routing are shown. For a description of the other fields, refer to the data schema section of this document.

UNBN Translations and Routing (continued)

Table XLAGRP must be datafilled before table TOPSTOPT.

Datafilling table TOPSTOPT

Field	Subfield or refinement	Entry	Explanation and action
XLASCHEM		see subfield	Translations scheme. This field consists of subfield NEWXLA.
	NEWXLA		New TOPS translations. This field allows this trunk group (field GRPKEY) for use by the new TOPS translations process. Enter Y (enable) or N (disable). For value Y, datafill refinement XLAGRP. The default is N.
	XLAGRP	name from table XLAGRP	Translations group. Datafill this field if field NEWXLA = Y. Enter a translations group name defined in table XLAGRP that is to contain this trunk group (field GRPKEY).
SPIDPRC		Y or N	<p>Service provider identifier processing. This field allows SPID processing for this incoming trunk group. Enter Y (enable) or N (disable). For value N, the earlier method of translations applies for this trunk group. The default is Y. If the entry is N, the TRKSPID field is not used.</p> <p>Note, this field affects all SPID processing in the whole unbundling functionality group.</p>

The following table describes the interaction of fields SPIDPRC and TRKSPID.

Control of SPID processing by fields SPIDPRC and TRKSPID

Field SPIDPRC	Field TRKSPID	Effect on calling AO SPID assignment
N	N	SPID processing is not performed, so no value is assigned to the calling AO SPID. This condition applies even if an attempt is made to assign one. An AO SPID assignment attempt is made from an OLNS query, table DNSCRN, and so forth.
N	Y nnnn	SPID processing is not performed, so no value is assigned to the calling AO SPID. A default SPID value 'nnnn' can be entered, but does not effect SPID assignment.

UNBN Translations and Routing (continued)

Control of SPID processing by fields SPIDPRC and TRKSPID

Field SPIDPRC	Field TRKSPID	Effect on calling AO SPID assignment
Y	N	SPID processing occurs, but the calling AO SPID has no value at this point. SPID assignment may occur later (for example, from an OLNS query, table DNSCRN, and so forth).
Y	Y nnnn	SPID processing occurs, and a default SPID value `nnnn` is assigned to calling AO SPID. This first SPID value may be overridden later (for example, from an OLNS query, and so forth).

Datafill example for table TOPSTOPT

The following example shows sample datafill for table TOPSTOPT.

MAP display example for table TOPSTOPT

GRPKEY	ACDDATA	DISPCLG	ADASERV	ADASANS	ANITOCCLI	OLNSQRY	DCIBIDX
LNPCLGAM	XLASCHEM	SPIDPRC	TRKSPID				
TRK1	QMSCAM	N	NONE	NA	N	NONE	0
N	Y	TRK1	N	N			
TRK2	QMSCAM	N	NONE	NA	N	NONE	0
N	Y	TRK2	N	Y 1234			
TRK3	QMSCAM	N	NONE	NA	N	NONE	0
N	N		Y	N			
TRK4	QMSCAM	N	NONE	NA	N	NONE	0
N	N		Y	Y A12B			

For the example above:

- TRK1 indicates no service provider processing (SPIDPRC = `N') and no default SPID (TRKSPID = `N'). The traffic on TRK1 is probably from an office(s) where TRA96 is not deployed or does not apply. Field XLASCHEM is set to Y to enable the new translations for this trunk.
- TRK2 indicates no service provider processing (SPIDPRC = `N'), but there is a default SPID for the trunk group (TRKSPID = `Y 1234'). The `1234' corresponds to entry in table SPID (four alpha-numeric characters). The traffic on TRK2 is not yet performing SPID processing, but datafill is being established, probably in anticipation of activating SPID processing. Field XLASCHEM is set to Y to enable the new translations for this trunk.
- TRK3 indicates service provider processing (SPIDPRC = `Y'), but there is no default SPID (TRKSPID = `N') for the trunk group. This datafill would

UNBN Translations and Routing (continued)

be used for shared facilities, since it is meant to identify trunk groups which carry traffic from multiple SPIDs. The actual calling AO SPID would be identified later from a source other than the trunk group (for example, from an OLSN query, table DNSCRN, and so forth). Field XLASCHEM is set to N selecting the old translations for this trunk.

- TRK4 indicates service provider processing (SPIDPRC = `Y') and there is a default SPID (TRKSPID = `Y A12B'). This datafill would be used with single facilities-based ownership (that is, traffic from only one ILEC or CLEC on the trunk group). It could also be used to indicate the primary SPID for traffic on the trunk group. And then only exceptions would need to be entered in table DNSCRN (thus reducing the datafill required in table DNSCRN) which would override the default trunk SPID. For further details on this hierarchy, refer to functionality SPID Assignment, UNBN0001. Field XLASCHEM is set to N selecting the old translations for this trunk.

Datafilling table SPID

The following table shows the datafill specific to UNBN Translations and Routing for table SPID. Only those fields that apply directly to UNBN Translations and Routing are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table SPID

Field	Subfield or refinement	Entry	Explanation and action
SPID		exactly 4 alphanumeric characters	Service provider identifier. Enter 4 alphanumeric characters. This value is used in tables SPIDDB, DNSCRN, and TOPSPARM (parameter DEFAULT_SPID). This table is not changed. Enter any new SPIDs.

Datafill example for table SPID

The following example shows sample datafill for table SPID.

MAP display example for table SPID

SPID	-----
ILEC	
ABCD	
A12B	

UNBN Translations and Routing (continued)

Datafilling table SPIDDB

The following table shows the datafill specific to UNBN Translations and Routing for table SPIDDB. Only those fields that apply directly to UNBN Translations and Routing are shown. For a description of the other fields, refer to the data schema section of this document.

Tables SPID and SPIDGRP must be datafilled before table SPIDDB.

Datafilling table SPIDDB

Field	Subfield or refinement	Entry	Explanation and action
XLA		see subfield	Translations. This field consists of subfields USEXLGRP and refinement.
	USEXLGRP	Y or N	Use translations group. This field enables use of the SPID (field SPID) in the new TOPS translations plan. Enter Y (enable) or N (disable). For value Y, datafill refinement SPIDGRP. The default is N.
	SPIDGRP	name from table SPIDGRP	SPID group. Datafill this field if field USEXLGRP = Y. Enter a SPID group name defined in table SPIDGRP that contains this SPID (field SPID). This group supports the new TOPS translation and screening plan. The group can contain one or more SPIDs.

Datafill example for table SPIDDB

The following example shows sample datafill for table SPIDDB.

MAP display example for table SPIDDB

SPID	SCRNDISP	OPERSYS	TAANN	DAANN	ACTSANN	XLA
SPIDCRIT						
I L E C	N	NONE	Y DRAMTRK1	Y DRAMTRK2	N	N
N						
A B C D	Y ATEL	NONE	N	N	N	Y GRP1
N						
A 1 2 B	Y BCOM	NONE	N	N	N	Y GRP1
N						

UNBN Translations and Routing (continued)

Datafilling table XLASPID

Translations Service Provider Identifier is a new table that refines a translations group by the originator AO SPID into a new group. That is, table XLASPID takes an XLAGRP and creates a new XLAGRP. Table TOPSTOPT defines the starting group. The new group is based on the SPID group of the originator as set in table SPIDDB against the SPID.

Tables XLAGRP and SPIDGRP must be datafilled before table XLASPID.

The following is a description of the fields.

Datafilling table XLASPID

Field	Subfield or refinement	Entry	Explanation and action
GRPKEY		see subfields	Group key. This field is the key field and consists of subfields XLAGRP and SPIDGRP.
	XLAGRP	name from table XLAGRP	Translations group. Enter a translations group name defined in table XLAGRP.
	SPIDGRP	name from table SPIDGRP	Translations group. Enter a SPID group name defined in table SPIDGRP. Translation and screening uses this group.
NEWXLGRP		name from table XLAGRP	New translations group. Enter a translations group name defined in table XLAGRP. This new group is a part of the XLAGRP that contains only SPIDs in the SPIDGRP.

Datafill example for table XLASPID

The following example shows sample datafill for table XLASPID.

MAP display example for table XLASPID

GRPKEY		NEWXLGRP
TRK1	IIECXLA	TRK1IIEC
TRK1	CIECXLA	TRK1CIEC
TRK2	IIECXLA	TRK2IIEC

UNBN Translations and Routing (continued)

Datafilling table XLAODIGS

Translation Originator Digits is a new table that refines a translation group by the originating NPA-NXX into a new group. Table TOPSTOPT defines the starting XLAGRP.

Translation Originator Digits is a new table that refines a translation group by the originating NPA-NXX into a new group. That is, table XLAODIGS starts with the XLAGRP as set in table TOPSTOPT. Then, the XLAGRP can have refinement in table XLASPID by the SPID. The result is XLAGRP which is input to XLAODIGS for refinement by the originator NPA-NXX.

Table XLAGRP must be datafilled before table XLAODIGS.

The following is a description of the fields.

Datafilling table XLAODIGS

Field	Subfield or refinement	Entry	Explanation and action
GRPKEY		see subfields	Group key. This field is the key field and consists of subfields XLAGRP and SPIDGRP.
	XLAGRP	name from table XLAGRP	Translations group. Enter a translations group name defined in table XLAGRP.
	ORIGDIGS	6 digits	Originating digits. Enter the originating NPA-NXX. The MAP display indicates 18 digits maximum; however, exactly 6 digits is the requirement.
NEWXLGRP		name from table XLAGRP	New translations group. Enter a translations group name defined in table XLAGRP. This new group is part of the XLAGRP that contains only the originating NPA-NXX.

Datafill example for table XLAODIGS

The following example shows sample datafill for table XLAODIGS.

MAP display example for table XLAODIGS

GRPKEY		NEWXLGRP
TRK1ILEC	619320	TRK1ILEC619320
TRK1CKEC	919720	TRK1CLEC919720
TRK2ILEC	619320	TRK2ILEC619320

UNBN Translations and Routing (continued)

Datafilling table TOPSDP

TOPS Dial Plan is a new table that defines the TOPS dial plan by SPID and, or NPA-NXX. This table is for use by the TOPS translations and routing system.

Table XLAGRP must be datafilled before table TOPSDP.

The following is a description of the fields.

Datafilling table TOPSDP

Field	Subfield or refinement	Entry	Explanation and action
XLAGRP		name from table XLAGRP	Translations group. This field is the key field. Enter a translations group name defined in table XLAGRP. This value is an index into table XLAGRP.
STS		value from table HNPACONT	Serving translation scheme. Enter the serving home numbering plan area code (SNPA) with an entry in table HNPACONT . subsequent translations uses this value; whereas, initial translations uses the SNPA field in table TRKGRP. Field STS is an index into table HAPACONT.
OPERPRTN		name from table STDPRTCT or NPRT	Operator pretranslator name. Enter the operator pretranslator subtable name defined in table STDPRTCT for pretranslations from the operator position. This value is an index into table STDPRTCT. Enter NPRT for no pretranslation.
ORIGSCRN		name from table CLSVSCRC or NSCR	Originating number screening class. Enter the class of service screening subtable name defined in table CLSVSCRC for screening based on the location of the originator. This value is an index into table CLSVSCRC. Enter NSCR (no screening) if this type of screening does not apply or for no screening.

UNBN Translations and Routing (continued)

Datafilling table TOPSDP

Field	Subfield or refinement	Entry	Explanation and action
OPERSCRN		name from table CLSVSCRC or NSCR	Operator screening class. Enter the class of service screening subtable name defined in table CLSVSCRC. This value serves for call screening at an operator position or service node. This value is an index into table CLSVSCRC. Enter NSCR (no screening) if this type of screening does not apply or for no screening.
MCCSPRTN		name from table STDPRTCT or NPRT	Mechanized calling card service (MCCS) pretranslator name. Enter the pretranslator subtable name defined in table STDPRTCT for pretranslations of MCCS sequence calls. This value is an index into table STDPRTCT. Enter NPRT for no pretranslation.
MCCSSCRN		name from table CLSVSCRC or NSCR	MCCS screening class. Enter the class of service screening subtable name defined in table CLSVSCRC for call screening of MCCS sequence calls. This value is an index into table CLSVSCRC. Enter NSCR (no screening) if this type of screening does not apply or for no screening.
LCANAME		name from table LCASCRCN or NLCA	Local calling area screening name. Enter the local calling area screening subtable name defined in table LCASCRCN for translations. This name determines if the call is local. This value is an index into table LCASCRCN. This field applies when field XLAGRP associates to a calling AO SPID. Then, field LCANAME in table TRKGRP does not apply. This association occurs in table TOPSTOPT (fields XLASCHEM and TRKSPID for an SPID on a trunk). And, or the association occurs in table XLASPID (for an SPID group). Enter NSCR (no screening) if this type of screening does not apply or for no screening.

Datafill example for table TOPSDP

The following example shows sample datafill for table TOPSDP.

UNBN Translations and Routing (end)

MAP display example for table TOPSDP

XLAGRP	STS	OPERPRTN	ORIGSCRN	OPERSCRN	MCCSPRTN	MCCSSCRN
LCANAME						
TRK1ILEC	ILEC	PRTNM1	SCR1	OPR1	PRTNM1	MCCS1
LCA1						
TRK1CLEC919720	ILEC	PRTNM2	SCR2	OPR2	PRTNM2	MCCS2
LCA2						

Translation verification tools

UNBN Translations and Routing does not use translation verification tools.

SERVORD

UNBN Translations and Routing does not use SERVORD.

DMS-100 Family

North American DMS-100

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Groups OSEA, OSI, TPC, and UNBN

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