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DMS-100 Family

TOPS Unbundling

User's Guide

TOPS17 and up Standard 06.01 April 2002

NORTEL NETWORKS™

DMS-100 Family

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User's Guide

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Version 06.01 Standard release for TOPS17, with the following changes:

- new SOC UNBN0104 -enabling LIDB query by CIC
- new tables LDBIDXNM, CCVPROV, BNSPROV, and ISOCCPRV
- changes to fields or functionality in these tables:
  - TOPEACAR
  - TOPSFTR

March 2001

Version 05.01 Standard release for TOPS15, with the following changes:

- changes to option code references based on SOC consolidation:
  - new SOC UNBN0101 includes former SOC codes UNBN0001, UNBN0003, UNBN0004, UNBN0006, and UNBN0007
  - new SOC UNBN0102 includes former SOC code UNBN0002
  - new SOC UNBN0103 includes former SOC code UNBN0005
- new SOC-enabling table TOPSFTR
- changes to fields or functionality in these tables:
  - TOPSTOPT
  - OPENANI
  - BELLCAT

August 2000

Version 04.01 Standard release for TOPS14, with the following changes:

- changes to fields or functionality in these tables:
  - SPIDDB
  - RESTBIL

Note: As of this release, all designations are labeled as TOPSxx instead of LETxxxx. Previous references remain as their former LETxxxx designations.

March 2000

Version 03.01 Standard release for LET0013, with the following changes:

- new chapter on Unbundling wholesaling
- new SOC UNBN0007
- new tables BAGNAME, CCVAGRMT, and BNSAGRMT
- new logs TOPS611 and TOPS612
- changes to fields or functionality in these tables:
  - SPIDDB
  - TOPEACAR
  - TOPTOPT
  - TOPSPARM
- call restrictions for wholesaling
- screening for billing agreement

November 1999

Version 02.01 Standard release for LET0012, with minor non-technical changes

August 1999

Version 02.01 Standard release for LET0012, with the following changes:

- new arrangement of chapters to align with the seven Service Implementation Guide (SIG) parts:
  - Introduction
  - Functional description
  - Interactions
  - Planning and engineering
  - Provisioning
  - Billing
  - Operation, administration, and maintenance (OA&M)
- new SOC UNBN0006
- new tables WSALEOPT, OPRINFO, XLACIC, XLAEAREG, CICGRP, and EAREGN
- changes to fields or functionality in these tables:

  - — TOPSTOPT
  - — TOPEATRK
  - — OPRTRANS
  - — SPIDDB
  - — TOPEACAR
- XLAGRP refinement of EA calls based on CIC, REGION, SPID, and originating digits
- XLAGRP screening and translations method allowed for special call types
- translation and screening parameters obtained from table TOPSDP
- fields STS and ORIGSCRN used for TOPS EA translations

March 1999

Version 01.03 Standard release for LET0009, with minor non-technical changes.

August 1998

Version 01.02 Standard release for LET0009, with the following changes:

- updated call processing flows
- added index

June 1999

Version 01.01 Standard release for LET0009.

About this document

TOPS Unbundling User's Guide accompanies the Traffic Operator Position System (TOPS) unbundling software product. This book describes the TOPS unbundling capability and how it changes the way TOPS translates, routes, screens, and bills calls. It provides the reader with an overview of the product, a detailed description of the functional components, and supplementary information on datafill, interactions, restrictions, protocols, and tools.

This book is intended for readers who are familiar with TOPS processing, including queuing, branding, external rating, the Queue Management System Management Information System (QMS MIS), and Automated Message Accounting (AMA) billing.

Chapters in this book

Following is a summary of each chapter.

Chapter 1: Unbundling overview

This chapter provides an introduction to the unbundling capability.

Chapter 2: Unbundling functional components

This chapter gives a description of each functional component of the TOPS unbundling capability. It also lists the restrictions and limitations of TOPS unbundling for each functional component.

Chapter 3: Unbundling wholesaling

This chapter details the wholesaling options available with unbundling.

Chapter 4: Unbundling call processing

This chapter describes the way calls are processed using the Service Provider Identifier (SPID).

Chapter 5: Unbundling feature impact

This chapter describes the interactions and restrictions of the unbundling features.

Chapter 6: Unbundling protocols

This chapter describes how TOPS unbundling extends various TOPS protocols.

Chapter 7: Unbundling data schema

This chapter provides details on the datafill needed for TOPS unbundling. It gives information on each field and shows example datafill.

Chapter 8: Unbundling SOC

This chapter discusses software optionality control (SOC) for TOPS unbundling.

Chapter 9: Unbundling billing

This chapter describes billing and AMA for unbundling.

Chapter 10: Unbundling tools

This chapter describes how TOPS unbundling changes various command interpreter (CI) tools.

Chapter 11: Unbundling logs

This chapter provides information on logs related to unbundling.

List of terms

This chapter lists TOPS unbundling terms and definitions.

Feature activity

The features listed in the following table provide the TOPS unbundling product.

Feature name	Activity ID	Release
Branding for TOPS via SPID	AF6711	LET0009
Unbundling Billing Changes	AF7133	LET0009
Unbundling SPID Processing, Translations, and Routing	AF7159	LET0009
Unbundling QMS SPID Refinement	AF7160	LET0009
Unbundling Rater Protocol Changes	AF7163	LET0009
Unbundling QMS MIS Support	AF7164	LET0009
OPRTRANS and EA Unbundling	A59006822	LET0012
Call Restrictions for Wholesaling	A59005832	LET0012
Screening for Billing Agreement	A59011929	LET0013
LDIB query routing based on Carrier Identification code (CIC)	A59032520	TOPS17

References in this book

Following are the DMS-100 documents referred to in this book. The middle section of the document number is represented by *nnnn* because the NTP version is determined by the PCL to which it belongs.

- Translations Guide, 297-*nnnn*-350
- Customer Data Schema Reference Manual, 297-*nnnn*-351

Following are the other documents referred to in this book:

- *Bellcore Format Automatic Message Accounting Reference Guide,* 297-1001-830
- 297-8021-351
- *TOPS Call Detail Recording (TDR) User's Guide,* 297-8403-904
- *TOPS Translations and Screening User's Guide*, 297-8403-905
- *Software Optionality Control User's Manual*, 297-8991-901
- *Standard Nortel DMS/DAS Protocol*, Q210-1
- *Open Position Protocol Specification*, Q214-1
- *TOPS QMS MIS Protocol*, Q220-1
- *Northern Telecom Real-Time Rating System Protocol*, Q234-1
- *OSSAIN Open Automated Protocol Specification*, Q235-1
- *Special Report SR-3895*, Issue 1, June 1996 (Bellcore document)
- *Special Report SR-3974*, Issue 1, September 1996 (Bellcore document)
- *Bellcore GR-1149*, Issue 2, Revision 2, June 1994 (Bellcore document)

Contents

Part 1: Introduction

Part 1: Introduction includes the following chapter:

Chapter 1: Unbundling overview

Unbundling is the process of reselling various aspects of operator services to competitive local exchange carriers (CLECs) by the incumbent LECs (ILECs). The key concept of the TOPS unbundling capability is how the service provider identifier (SPID) is used in TOPS processing.

TOPS unbundling consists of several functional components that use the SPID. These components work independently but can be combined to provide services tailored to individual networks.

Readers should be familiar with the basic TOPS environment and functions. The *TOPS Unbundling User's Guide* describes how the unbundling capability enhances TOPS processing.

This chapter focuses on the following information:

- a background on the Telecom Reform Act of 1996
- a definition of SPID
- a list of TOPS unbundling functional components
- an information road map

Telecom Reform Act of 1996

The Telecom Reform Act of 1996 (TRA96) introduces new rules that radically change the telecommunications industry, including operator services. The United States Congress and the Federal Communications Commission (FCC) had the following objectives when developing TRA96:

- open local exchange networks to competition
- maintain universal accessibility to telecommunication services
- move to a cost based pricing for telecommunications services
- phase out the 1984 Modified Final Judgement (MFJ) restrictions

TRA96 covers many facets of the telecommunications industry, which include introducing competition into the local and long distance markets. The ILEC must unbundle its networks and services to provide access for CLECs. All carriers (ILECs and CLECs) must interconnect. ILECs must offer resale or wholesale to all competitors.

TRA96 requirements

An ILEC must meet the following 14-point checklist prior to its entry into interLATA services:

- provide interconnection with competitor's network
- provide access to individual network elements
- provide access to poles, ducts, conduits, rights-of-way
- unbundle local loop transport from central office (CO) to customer premises
- unbundle trunk transport from CO to customer premises
- unbundle load switching from transport and other services
- provide access to E911, directory assistance, and operators
- provide white pages listing of competitor's numbers
- provide telephone numbers to competitors
- provide access to network databases and signaling
- provide local number portability
- provide number dialing parity
- provide reciprocal compensation for completing calls
- allow resale of ILEC services

Note: The TOPS unbundling capability is available for use only in North America.

SPID definition

In order for TOPS software to unbundle operator services for TRA96, the TOPS switch must be able to identify the provider of the service. This section describes the Bellcore specification for SPIDs.

The SPID is defined as four alphanumeric characters from 0 to 9 and A to Z (uppercase). The SPID is unique for each ILEC or CLEC served by the TOPS switch.

There are two types of SPIDs: account owner (AO) SPID, which identifies the dial tone and local service provider, and billing service provider (BSP) SPID, which identifies the service provider that collects and generates the bill to the subscriber. The AO SPID and the BSP SPID can be the same, but are not required to be so.

Within the AO and BSP types, SPIDs are also grouped into SPID part identifiers:

- calling number (originating party directory number)
- called number (terminating party directory number)
- billed number (billing party directory number)
- requested number (requested party directory number)

Currently, TOPS supports eight varieties of SPIDs:

- calling AO SPID
- calling BSP SPID
- called AO SPID
- called BSP SPID
- billed AO SPID
- billed BSP SPID
- requested AO SPID
- requested BSP SPID

Unbundling functional components

Before any unbundling functional components can be used, SPID processing first must be activated. Activation is done on an incoming trunk group basis. After the SPID is determined, the TOPS switch may use that information in call processing. Operating companies can determine which unbundling functional components apply to their networks.

The following functional components, which perform processing based on the *calling AO SPID*, make up the TOPS unbundling capability.

Note: For details on each functional component, refer to Chapter 2: "Unbundling functional components."

- SPID processing and assignment allows the TOPS switch to provision and process the calling AO SPID.
- Branding provides front-end branding by SPID as well as back-end branding by SPID for Automatic Coin Toll Service (ACTS).
- Queue Management System (QMS) queuing adds a new criterion that segregates traffic by SPID.
- QMS Management Information System (MIS) updates the QMS MIS protocol with additional information fields to enhance TOPS queuing and operator statistics.
- Call presentation allows calling AO SPID information to be provided to the operator position.

- External rater supports the unbundling capability by adding the SPID to query messages sent to the Real-Time Rating System (RTRS). Also, the XRATE command interpreter (CI) tool allows the setting of the calling AO SPID.
- Unbundling billing supports the unbundling capability by adding AO SPID and BSP SPID in the LIDB protocol.
- Unbundling translations and routing provides a capability for translating and screening of calls based on the SPID. Called numbers, calling numbers and third number operator calls (reconnection to a calling party for a third party billing) can be translated.
- Unbundling AMA provides the ability to record the SPID on AMA records.
- Call Restrictions for wholesaling determines what kind of screening is performed on a trunk group and which types of restrictions apply to that call.
- Screening for billing agreement allows each service provider to use their own billing agreements or the billing agreements established by the operator services wholesaler.

Mapping of functional components to SPID variety

The following table shows which unbundling functional components are available for each variety of SPID.

Table 1 Mapping of functional components to SPID variety

SPID variety	Assign -ment	Brand -ing	Queu -ing	QMS MIS	Rating	Billing (LIDB)	XLA & routing	AMA record	Call Re- striction	Billing Agrmt
Calling AO SPID	X	X	X	X	X	X	X	X	X	X
Calling BSP SPID								X		
Called AO SPID								X		
Called BSP SPID								X		
Billed AO SPID						X		X		X
Billed BSP SPID						X		X		X
Requested AO SPID								X		
Requested BSP SPID								X		

Unbundling information road map

The following road map is a guide to the location of specific information in the *TOPS Unbundling User's Guide*:

- Chapter 2 provides details on the unbundling functional components. To fully understand the TOPS unbundling capability, users should read this chapter *before* proceeding to the rest of the book.
- Chapter 3 describes the wholesaling options available with unbundling.
- Chapter 4 discusses various call processing scenarios that involve unbundling components.
- Chapter 5 describes the interactions and restrictions of the unbundling features.
- Chapter 6 describes the protocols that have been extended to support the unbundling capability.
- Chapter 7 describes the tables and parameters that need to be datafilled for the unbundling capability.
- Chapter 8 discusses unbundling software optionality control (SOC) dependencies.
- Chapter 9 describes billing and AMA for unbundling.
- Chapter 10 discusses various CI tools that support the unbundling capability.
- Chapter 11 describes unbundling logs.
- The list of terms defines TOPS unbundling concepts and abbreviations.

Part 2: Functional description

Part 2: Functional description includes the following chapters:

Chapter 2: Unbundling functional components

The following functional components make up the TOPS unbundling capability:

- SPID processing and assignment (page 35)
- branding (page 40)
- QMS queuing (page 45)
- QMS MIS protocol (page 47)
- call presentation at the operator position (page 48)
- external rater protocol (page 50)
- billing validation (page 50)
- translations and routing (page 51)
- call restrictions (page 59)
- screening for billing agreement (page 59)
- LDIB query routing based on Carrier Identification code (CIC) (page 59)

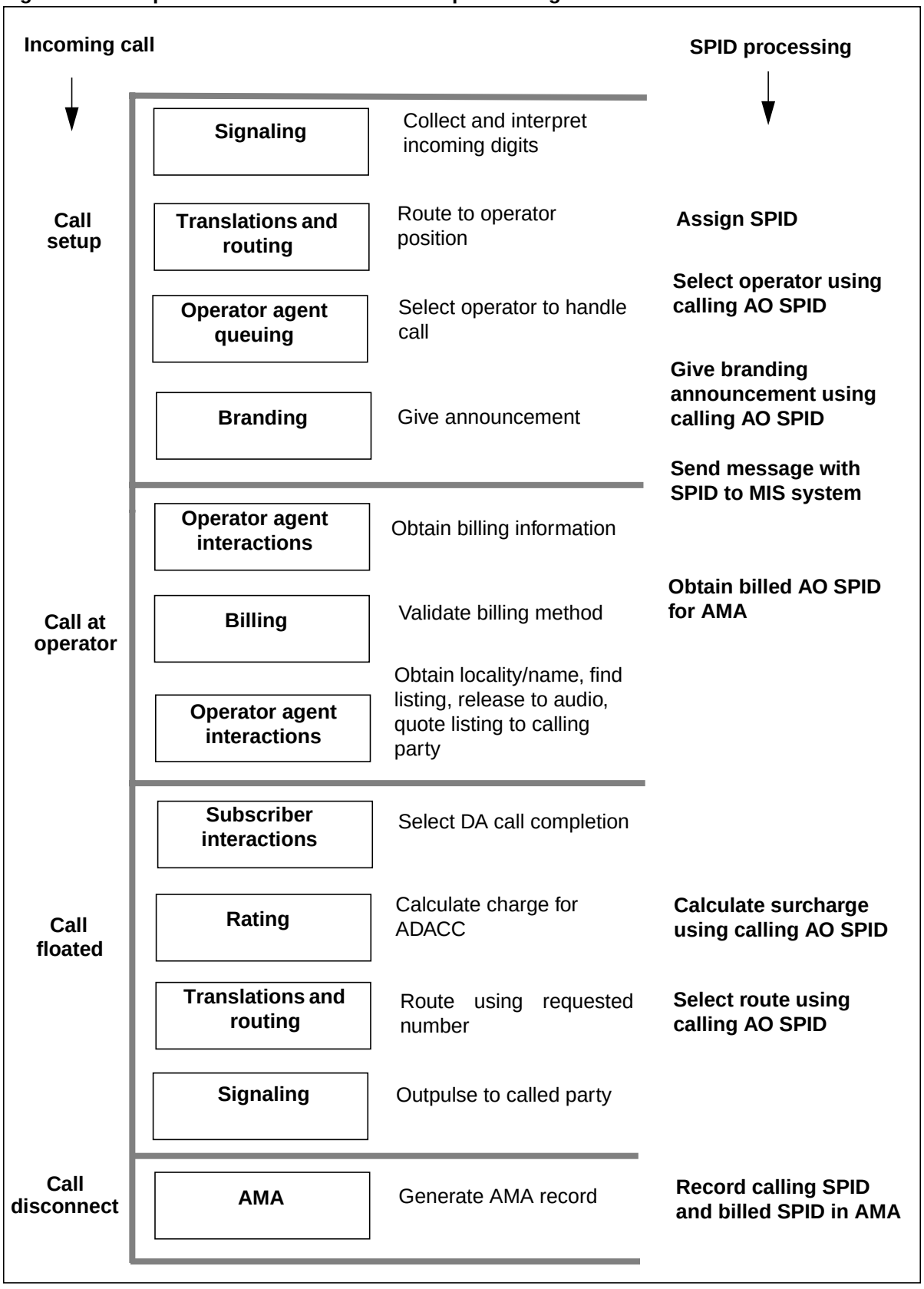
This chapter describes each functional component and shows examples of related datafill. Any restrictions or interactions with existing TOPS functions are listed in Chapter 5: “Unbundling feature impact.”

Note: Functional component AMA is contained in Chapter 9: “Unbundling billing.”

Unbundling call flow overview

The following call flow is an example of an automated DA call completion call (ADACC). This example includes all of the unbundling functional components and illustrates points in the call where SPID processing occurs. (The sections that describe each functional component follow the call flow figure.)

Figure 1 Example ADACC call flow with SPID processing



SPID processing and assignment

To implement TOPS unbundling, the TOPS switch must be able to identify the provider of the service. Datafill at the switch associates a *unique* SPID with each service provider.

After the TOPS switch identifies the service provider, it can use SPID information in a variety of ways during call processing. However, SPID assignment is *not* used by TOPS call processing until SPID processing is activated, which is done on a trunk group basis in table TOPSTOPT.

This section discusses how TOPS performs SPID processing and assignment.

Determining the calling AO SPID

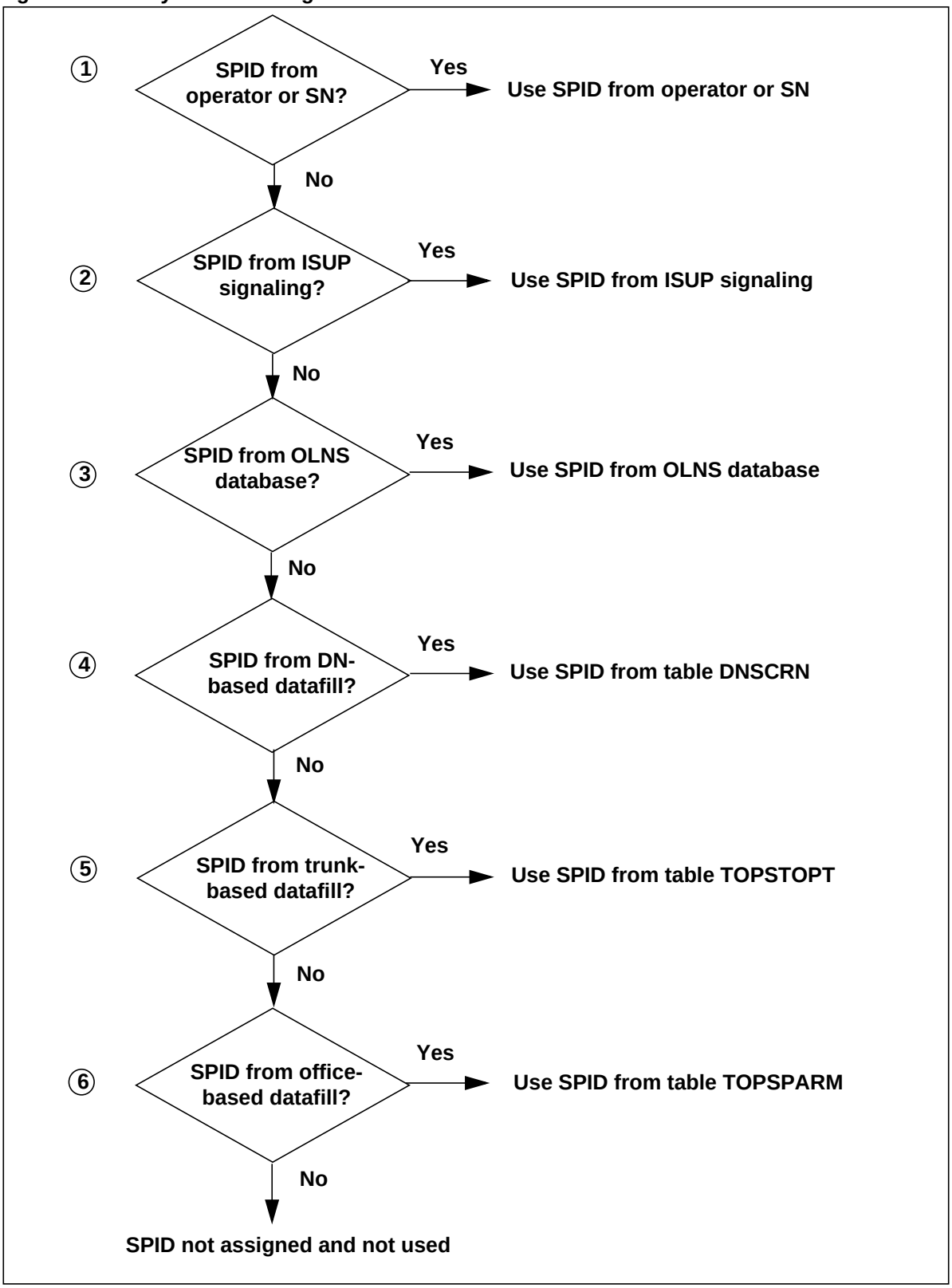
Unbundling allows the incumbent LEC (ILEC) to provision and process SPIDs. When a call on an incoming trunk is presented to the TOPS switch, the switch must determine the SPID of the calling party.

The TOPS switch relies on either an external database query, input by an operator or service node, signaling, or on switch-based datafill to obtain the calling AO SPID information. So, data for the calling AO SPID may be available from any of the following sources:

- input from an operator position or an Operator Services System Advanced Intelligent Network (OSSAIN) service node (SN)
- signaling from ISDN user part (ISUP) trunks
- an originating line number screening (OLNS) database query
- datafill for the DN in table DNSCRN
- datafill for the trunk group in table TOPSTOPT
- datafill for the office in table TOPSPARM

Because all of these sources may provide a SPID, the TOPS switch uses a priority scheme to determine which calling AO SPID to assign. The following figure shows the priority scheme. The steps are described after the figure.

Figure 2 Priority of SPID assignment



Note: SPID assignment is separate from branding.

The steps in SPID assignment are as follows:

1 Determine if the operator or SN has provided a SPID. Because a CLEC can handle traffic for a single calling AO SPID (the service provider) or for multiple calling AO SPIDs (lines served by the CLEC, plus resold lines), the calling AO SPID determination must be on a calling DN basis, or trunk group or office-wide basis.

   For SN-handled calls, the SN can optionally assign SPIDs to the call using the Open Automated Protocol (OAP). If an AO or BSP SPID for the calling party is assigned by an OAP message, it takes precedence over SPIDs obtained from the OLNS database or from switch datafill.

2 If the operator or SN has not provided a SPID, determine if ISUP signaling has provided the SPID.

3 If ISUP signaling has not provided a SPID, determine if the OLNS database has provided a SPID. For calls that are eligible for OLNS, the switch launches an OLNS query. The response to the query can include the calling AO SPID and the calling BSP SPID.

4 If the OLNS database has not provided a SPID, determine if table DNSCRN has provided a DN-based SPID.

5 If table DNSCRN has not provided a SPID, determine if table TOPSTOPT has provided a trunk group-based SPID.

6 If table TOPSTOPT has not provided a SPID, determine if table TOPSPARM has provided an office-based SPID.

If a SPID cannot be determined from the previous sources, a calling AO SPID is not assigned to the call. All further TOPS processing depends on whether a calling AO SPID is assigned. After it is assigned, the other unbundling functional components can use the SPID.

Related SPID assignment datafill

This section provides an overview of the switch datafill for SPID processing and assignment. It discusses the following tables:

- SPID, which defines a SPID for each service provider
- DNSCRN, which assigns a SPID to a calling DN
- TOPSTOPT, which assigns a default SPID for the trunk group
- TOPSPARM, which assigns a default SPID for the TOPS office

For details on how to datafill all the tables for unbundling, refer to Chapter 7: “Unbundling data schema.”

Table SPID

Table SPID associates a SPID for each service provider. The SPID field contains exactly four alphanumeric characters. The following figure shows example datafill. In the example, two service providers are datafilled, 1234 and ABCD.

Figure 3 MAP display example for table SPID

```
SPID
----------------------------------------------------------------
1234
ABCD
```

Table DNSCRN

Table DNSCRN assigns the SPID to a calling DN. The calling digits must be present in table DNSCRN to assign a calling AO SPID to the call. For calls signaled with automatic number identification (ANI) digits, the calling AO SPID is looked up during call setup (after the last stage of digits are received but before connecting to an operator or automated system).

The following figure shows example datafill. In the example, two calling AO SPIDs are assigned. SPID 1234 is assigned to calling DN 6202817011, and SPID ABCD is assigned to calling DN 6202817012.

Figure 4 MAP display example for table DNSCRN

```
DN              ATTROPTS
----------------------------------------------------------------
6202817011      (SPID 1234) $
6202817012      (SPID ABCD) $
```

Table TOPSTOPT

Table TOPSTOPT contains options for trunk groups that originate traffic to a TOPS switch. The SPIDPRC field specifies whether to use SPID processing for traffic arriving on the trunk. The following figure shows example datafill. In the example, trunk group TRK2 has SPID processing enabled (activated).

Figure 5 MAP display example for table TOPSTOPT

```
GRPKEY              ORGAREA                DISPCLG  ADASERV    ADASANS
ANITOCLI   OLNSQRY DCIBIDX  LNPCLGAM      XLASCHEM  SPIDPRC   TRKSPID
    BILLSCRN     ANIFSPL     MAXCONNS    DISPSPID
----------------------------------------------------------------------
TRK2       Y      OSSAIN_ROC1_ORIG            Y     NONE         NA
Y N        NONE       0        N             N        Y         Y 1234
          N            N        0           N
```

The TRKSPID field specifies whether a default SPID is assigned to the trunk group. If set to Y, the default SPID from table SPID is also datafilled in table TOPSTOPT. The following figure shows example datafill. In the example, trunk group TRK2 has a default trunk group SPID of 1234 assigned.

Figure 6 MAP display example for table TOPSTOPT

```
GRPKEY              ORGAREA                DISPCLG  ADASERV    ADASANS
ANITOCLI  OLNSQRY  DCIBIDX  LNPCLGAM        XLASCHEM SPIDPRC    TRKSPID
    BILLSCRN     ANIFSPL    MAXCONNS    DISPSPID
-------------------------------------------------------------------------
TRK2               Y OSSAIN_ROC1_ORIG       Y       NONE         NA
Y N        NONE     0        N                N         Y         Y 1234
     N               N         0            N
```

The setting for the SPIDPRC field is independent of the setting for the TRKSPID field. For example, the operating company can datafill a default SPID for a trunk group in TRKSPID, and yet defer activating SPID processing by datafilling SPIDPRC as N.

Refer to Table 2 for a description of the four possible settings for these two fields.

Table 2 SPID assignment in table TOPSTOPT

SPIDPRC	TRKSPID	Effect on calling AO SPID assignment
N	N	No SPID processing is performed, so no value is assigned to a calling AO SPID, even if an attempt to assign one is made (such as from an OLNS query or table DNSCRN).
N	Y <nnnn>	No SPID processing is performed, so no value is assigned to a calling AO SPID. A default SPID value (nnnn) can be datafilled, but it does not affect SPID assignment.
Y	N	SPID processing is performed, but no value is assigned to a calling AO SPID at this point. A SPID value may be assigned later (such as from an OLNS query or table DNSCRN).
Y	Y <nnnn>	SPID processing is performed, and a default SPID value (nnnn) is assigned to the calling AO SPID. This initial SPID value may be overridden later (such as from an OLNS query or table DNSCRN).

Table TOPSPARM

Table TOPSPARM contains parameters that are unique to a TOPS office. The DEFAULT_SPID parameter specifies the default calling AO SPID for the office. This SPID is assigned to the call if a SPID was not obtained by an operator or SN, OLNS query, calling or ANI digits, table DNSCRN, or table TOPSTOPT.

Note 1: Using this parameter allows calls that are segregated by the serving CLEC over distinct trunk groups to receive the appropriate SPID assignment without accompanying DNSCRN datafill.

Note 2: If DEFAULT_SPID is not datafilled or is set to N, a default SPID is not assigned for the office.

The following figure shows example datafill. In the example, the office-wide default SPID is 1234.

Figure 7 MAP display example for table TOPSPARM

```
PARMNAME                                  PARMVAL
-------------------------------------------------------------------
DEFAULT_SPID                              Y 1234
```

Branding

This section discusses how TOPS unbundling supports front-end and back-end branding of calls based on the calling AO SPID.

Front-end branding

In branding logic, the carrier status is checked first, followed by the eligibility. For carrier calls, the eligibility checks examine the office parameter and trunk group data. A CIC is determined and the call is branded accordingly.

For non-carrier calls, a check is added to determine if the calling AO SPID is present. If it is present, SPID branding applies. Table SPIDDB contains the eligibility criterion and announcement CLLIs.

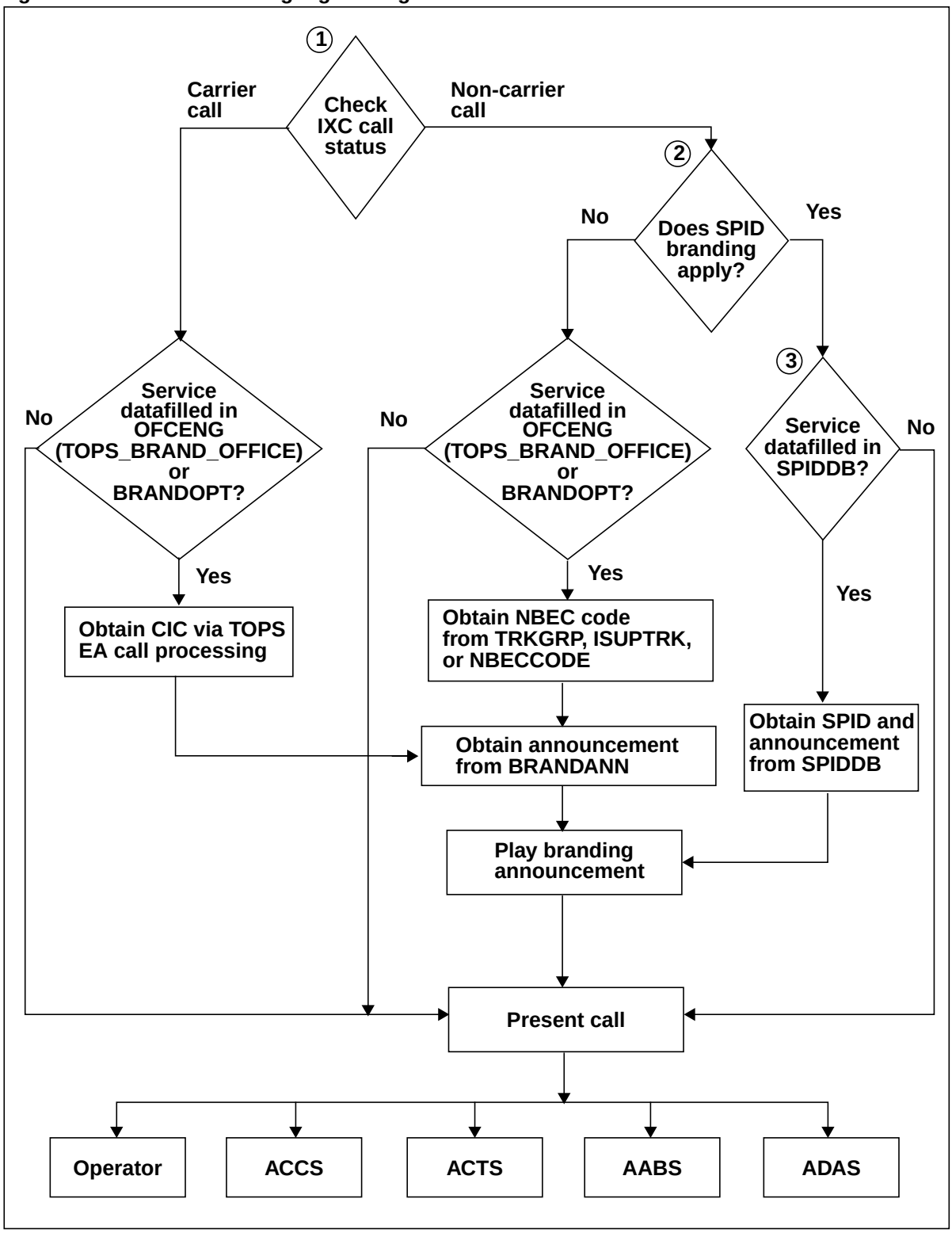
If a SPID is not present, NBEC branding applies. For NBEC branding, eligibility checks examine the office parameter and trunk group data. The NBEC is determined using existing tables and the call is branded accordingly.

Note 1: The TOPS_BRAND_OFFICE parameter is not considered for SPID branding. Branding information for the calling AO SPID is obtained from table SPIDDB.

Note 2: This section does not provide details on processing the CIC and NBEC.

The following figure shows how branding is determined using the SPID assigned to the call. The steps in the branding logic using SPID are described following the figure.

Figure 8 Front-end branding logic using SPID



Note: All references to ACCS in this document also apply to MCCS.

Front-end branding logic using SPID

The branding logic using SPID is described in the following steps. For details on the datafill discussed, refer to page 43.

1 Is the call a carrier call? If it is, CIC branding may apply. If the call is not a carrier call, go to step 2.

2 Does SPID branding apply? SPID branding applies if *all* the following conditions are met:

— The branding SOC code UNBN0103 is ON and the parameter UNBUNDLING_BRANDING_VIA_SPID in table TOPSFTR is set to N.

— A calling AO SPID is assigned to the call.

— The calling AO SPID is not the DEFAULT_SPID in table TOPSPARM, *or* the calling AO SPID is the DEFAULT_SPID and the BRAND_USING_DEFAULT_SPID is set to Y.

When all these conditions are met, SPID branding applies. Go to step 3. If any condition is *not* met, SPID branding does not apply. NBEC branding may apply.

3 Is the service datafilled in table SPIDDB? The call is branded if *all* the following SPIDDB checks pass:

— The SPID is datafilled in table SPIDDB.

— The service is datafilled in the OPERSYS field.

— For TA calls, the TAANN field is enabled to brand the call. For DA calls, the DAANN field is enabled to brand the call.

When all these checks pass, the call receives front-end branding using the SPID. If any check does *not* pass, the call is not branded using the SPID, and NBEC branding is *not* provided.

Back-end branding

This subsection discusses back-end branding using the SPID for ACTS, DAS, and OSSAIN SNs.

ACTS

Back-end branding is provided during a call instead of before a service begins. TOPS unbundling supports back-end branding for ACTS using SPID. Carrier calls are still branded using their CICs. However, for non-carrier calls, if a SPID is datafilled, it is used regardless of whether an NBEC is datafilled.

The logic for back-end branding is similar to the logic for front-end branding (page 41), except for a check for the ACTS service datafilled in table SPIDDB. Back-end branding is provided if ACTS is datafilled in the OPERSYS field and if announcements are datafilled in the ACTSANN field.

If no datafill exists in table SPIDDB, table ACTSNBEC is checked. If branding information is datafilled against the NBEC, that information is used. If no datafill exists in table ACTSNBEC, the general non-carrier-call branding announcement (if any) is played.

Note: TOPS unbundling does not support ACCS back-end branding using SPIDs. NBECs and CICs are used with ACCS. For more information on NBEC and CIC, please refer to the *Translations Guide*.

DAS

To provide back-end branding, the switch passes the calling AO SPID to the DAS for DA calls.

Note: For DA calls, only the NT Standard DA protocol supports the calling AO SPID.

OSSAIN SNs

To provide back-end branding, the switch passes the calling AO SPID to the SNs for OSSAIN calls. For OSSAIN calls, the SN (for example, an AABS replacement node) may brand the back-end of a call using the calling AO SPID passed in the OAP (or obtained in a lookup, depending on the configuration).

Related branding datafill

This section provides an overview of the switch datafill for branding by SPID. It discusses the following tables:

- SPIDDB, which defines branding announcements for TA, DA, and ACTS calls
- TOPSPARM, which determines whether a default SPID is used for front-end branding of non-carrier calls

Note: For details on how to datafill all the tables for unbundling, refer to Chapter 7: “Unbundling data schema.”

Table SPIDDB

Table SPIDDB contains calling AO SPID information, including the CLLIs of branding announcements for TA, DA, and ACTS. The following figure shows example datafill. In the example, service provider ILEC has different front-end branding announcements enabled for TA (TABRAND) and DA (DABRAND) calls. It also has ACTS back-end branding announcements enabled for correct deposit (ACTSTOPS 41) and over deposit (ACTSTOPS 42).

Figure 9 MAP display example for table SPIDDB

```
SPID   SCRNDISP                                  OPERSYS       TAANN
   DAANN              ACTSANN                                 XLA
SPIDCRIT          SCRNIDX    BILAGRMT               DACICOVR
------------------------------------------------------------------------
ILEC   Y ILECSPID                                   ALL          Y TABRAND
   Y DABRAND          Y ACTSTOPS 41  ACTSTOPS 42          Y ILECGRP
Y ILEC_CRIT       100          NONE                        N
```

Table TOPSPARM

Table TOPSPARM contains parameters that are unique to a TOPS office. Two related parameters determine branding by SPID, as follows:

- DEFAULT_SPID specifies a default SPID for the TOPS office.
- BRAND_USING_DEFAULT_SPID allows the default SPID to be used for front-end branding of non-carrier calls.

If BRAND_USING_DEFAULT_SPID is set to Y, and no SPID is datafilled in table DNSCRN for the calling DN, the default SPID datafilled in DEFAULT_SPID is used for branding of non-carrier calls.

If BRAND_USING_DEFAULT_SPID is set to N, or if no SPID is assigned to the calling DN, the NBEC code is used for branding non-carrier calls.

Note 1: Refer to “Front-end branding logic using SPID” on page 42 for details on branding logic.

Note 2: For front-end branding using SPIDs to take place, the service must first be enabled in table SPIDDB. This table provides information used in branding. If the branding service is disabled, branding is not provided, (even using the NBEC code).

A calling AO SPID is *not* assigned if all the following conditions are met:

- no SPID is provided by an operator position or SN
- no SPID is provided in an OLNS query response
- no SPID is datafilled in table DNSCRN
- no SPID is datafilled in table TOPSTOPT
- no SPID is datafilled in table TOPSPARM

The following figure shows example datafill. In the example, front-end branding of non-carrier calls is enabled and uses the default SPID of 1234.

Figure 10 MAP display example for table TOPSPARM

```
PARMNAME                                PARMVAL
-------------------------------------------------------------------
BRAND_USING_DEFAULT_SPID                Y
DEFAULT_SPID                            Y 1234
```

QMS queuing

TOPS unbundling supports QMS queuing by adding options for directing incoming calls based on the SPID. The SPID can be used as a call-routing criterion, which allows network providers to segregate traffic by SPID and send all traffic for a particular service provider to a specific set of operators or SNs. The system can also use the SPID to send various service provider's traffic to specific queues during high traffic times, and combine them during periods of light traffic.

Note: The operating company must be using TOPS QMS in order to segregate traffic based on SPID. Users should be familiar with QMS processing.

Related QMS queuing datafill

This section provides an overview of the switch datafill for queuing by SPID. It discusses the following tables:

- CT4QNAMS, which defines CT4Q names used by other QMS tables
- TQSPIDNM, which defines group names for SPIDs
- SPIDDB, which enables the SPID criteria used in queuing
- CT4QSPID, which associates new CT4Qs by SPID groups
- TQORDERA and TQORDERB, which indicate the order of access for the CT4Q refinement tables

Note 1: For details on how to datafill all the tables for unbundling, refer to Chapter 7: "Unbundling data schema."

Note 2: For complete details on the datafill for TOPS QMS queuing, please refer to the *Customer Data Schema Reference Manual.*

Table CT4QNAMS

Table CT4QNAMS contains the names of CT4Qs used in QMS refinement. Any new CT4Qs for SPIDs must be datafilled first in table CT4QNAMS. The following figure shows example datafill. In the example, four new CT4Qs are datafilled (and later associated with SPID criteria in table CT4QSPID).

Figure 11 MAP display example for table CT4QNAMS

```
CT4QNUM    CT4QNAME        NOAMA   ITRIGIDX SYSAREA
-------------------------------------------------------------------------
8          0_MINUS_GRP1      N         N     TOPSOPR  Y 0-_SPID N   N   N
9          0_MINUS_GRP2      N         N     TOPSOPR  Y 0-_SPID N   N   N
15         0_PLUS_GRP1       N         N     TOPSOPR  Y 0+_SPID N   N   N
16         0_PLUS_GRP1       N         N     TOPSOPR  Y 0+_SPID N   N   N
```

Table TQSPIDNM

Table TQSPIDNM defines SPID criteria used in QMS refinement. This table associates a code with the name of the SPID criteria (field SPIDCRIT). The SPIDCRIT value is used in table CT4QSPID to assign a new CT4Q based on the SPID. SPIDCRIT is also enabled against the SPID in table SPIDDB.

The following figure shows example datafill. In the example, three different criteria names are defined.

Note: SPIDCODE 0 is permanently assigned with the value UNKNOWN_SPIDCRIT.

Figure 12 MAP display example for table TQSPIDNM

```
SPIDCODE          SPIDCRIT
-----------------------------------------------------------------
0                  UNKNOWN_SPIDCRIT
1                  CLEC1
2                  CLEC2
```

Table SPIDDB

Table SPIDDB enables QMS refinement by SPID and specifies the SPID criteria name. The SPIDCRIT field contains the queuing criteria datafill. The following figure shows example datafill. In the example, service provider WXYZ uses the CLEC1 SPID group for QMS refinement.

Figure 13 MAP display example for table SPIDDB

```
SPID     SCRNDISP      OPERSYS                TAANN       DAANN
ACTSANN      XLA        SPIDCRIT    SCRNIDX   BILAGRMT      DACICOVR
-------------------------------------------------------------------------
WXYZ      Y ZCOM        NONE                 Y ZBRAND     Y ZBRAND
N             N         Y CLEC1      100      NONE               N
```

Table CT4QSPID

Table CT4QSPID refines the call type by a single SPID or group of SPIDs defined in table TQSPIDNM. A new CT4Q is associated with a SPID criteria name and mapped to the old CT4Q.

Figure 14 MAP display example for table CT4QSPID

```
OLDCT4Q           SPIDCRIT      NEWCT4Q
-------------------------------------------------------------------
0_MINUS           CLEC1         0_MINUS_GRP1
0_MINUS           CLEC2         0_MINUS_GRP2
0_PLUS            CLEC1         0_PLUS_GRP1
0_PLUS_COIN       CLEC2         0_PLUS_GRP1
```

Tables TQORDERA and TQORDERB

Tables TQORDERA and TQORDERB define the order of access for the CT4Q refinement tables. The CT4QTABL field specifies order for refinement of table CT4QSPID. (The default values are zeros.) The following figure shows example datafill. In the example, table CT4QSPID defines the PREOPR field as 3.

Note: Only one of these tables is active, based on the value of the QMS_ACTIVE_CQA_ORDER_TABLE parameter in table TQMSOPT.

Figure 15 MAP display example for tables TQORDERA and TQORDERB

```
CT4QTABL      PREOPR     POSTAUTO     RECALL      ASST
-------------------------------------------------------------------
CT4QSPID       3          0           0            0
```

QMS MIS protocol

TOPS unbundling extends the information fields in the QMS MIS protocol to enable enhanced reporting of queuing and operator statistics by calling AO SPID, with carrier and CT4Q criteria as optional further refinements. The following fields are added to the QMS MIS protocol messages:

- The Service Provider ID field (indicating the specific calling AO SPID) and the Access Indicator field (identifying the call as a carrier call or operating company call) are added to both Call Queue Event and Position Event messages.
- The Carrier Access Code field (which only applies when the Access Indicator field is set to carrier) is added to Call Queue Event messages.
- The Call Type for Queuing field (CT4Q) is added to Position Event messages.

With the addition of these information fields, existing QMS MIS call peggings (such as position seizures, operator work volumes, queuing times, and calls abandoned or deflected) can be further refined by these criteria and reported in a variety of ways, depending on the capabilities of the MIS system and the needs of the service provider.

Chapter 6: “Unbundling protocols,” provides details on how TOPS unbundling extends the QMS MIS protocol. Chapter 10: “Unbundling tools,” provides information on the TQMIST CI tool.

Related QMS MIS datafill

Please refer to the *Customer Data Schema Reference Manual*, for information on how to enable QMS MIS messaging.

Call presentation at the operator position

This section discusses how TOPS unbundling affects the screen display on operator positions. Calling AO SPID information is sent to the operator position at call presentation and at a request for call details.

When a calling AO SPID has been assigned to the call and a display has been specified in table SPIDDB, TOPS unbundling supports sending SPID information to the operator position. It is sent as follows:

- For OPP-compatible positions, both the trunk group display and the calling AO SPID are sent to the position.
- For ASCII-based MP positions, only the trunk group display associated with the calling AO SPID is sent to the position. The SPID is not sent. The SPID display overrides the trunk group display in table TRKGRP.

The SPID display occupies the same area as the trunk group display. The switch must determine which display is appropriate when both displays are applicable. This decision is based on the carrier status of the call, the availability of a valid trunk or SPID display, and the value of the parameter OPP_ALWAYS_SEND_SPID_INFO in table TOPSPARM.

Related operator position display datafill

This section provides an overview of the switch datafill for operator position display of the SPID. It discusses the following tables:

- SPIDDB, which enables the screen display and specifies the characters
- TOPSPARM, which enables the SPID display when both trunk group and SPID information are present (OPP_ALWAYS_SEND_SPID_INFO)

Note: For details on how to datafill all the tables for unbundling, refer to Chapter 7: “Unbundling data schema.”

Table SPIDDB

Table SPIDDB contains the SCRNDISP field, which specifies whether or not to display the calling AO SPID at the operator position. The alphanumeric characters are also datafilled in this table. The following figure shows example datafill. In the example, the screen display of service provider 1234 is enabled and shows the name ATEL.

Figure 16 MAP display example for table SPIDDB

```
SPID   SCRNDISP   OPERSYS                      TAANN          DAANN
ACTSANN       XLA          SPIDCRIT    SCRNIDX    BILAGRMT       DACICOVR
-------------------------------------------------------------------------
1234   Y ATEL (OPERATOR)(MCCS)(ACTS)(ADAS)$  Y ATABRAND   Y ADABRANDN
N             N            N           100        NONE               N
```

Table TOPSPARM

Table TOPSPARM contains parameters that are unique to a TOPS office. The OPP_ALWAYS_SEND_SPID_INFO parameter specifies whether both trunk group display and SPID display information are sent to the OPP-compatible position when both are applicable.

For carrier calls, only the trunk group display is applicable. However, for non-carrier calls, the SPID display overrides the trunk group display when both are present. Table 3 shows which display is used if OPP_ALWAYS_SEND_SPID_INFO is set to N or not datafilled. The default is N.

Table 3 Display when parameter is set to N

Carrier status	Trunk group display applicable?	SPID display applicable?	Display used
Carrier call	Yes	Yes	Trunk group
	Yes	No	Trunk group
	No	Yes	Neither
	No	No	Neither
Non-carrier call	Yes	Yes	SPID
	Yes	No	Trunk group
	No	Yes	SPID
	No	No	Neither

Table 4 shows which display is used if OPP_ALWAYS_SEND_SPID_INFO is set to Y. The distinction between carrier and non-carrier calls is ignored, because the SPID display is *always* sent to the position if available.

Table 4 Display when parameter is set to Y

Carrier status	Trunk group display applicable?	SPID display applicable?	Display used
Carrier or non-carrier call	Yes	Yes	Both
	Yes	No	Trunk group
	No	Yes	SPID
	No	No	Neither

The following figure shows example datafill. In the example, OPP_ALWAYS_SEND_SPID_INFO is set to Y.

Figure 17 MAP display example for table TOPSPARM

```
PARMNAME                                PARMVAL
------------------------------------------------------------------------
OPP_ALWAYS_SEND_SPID_INFO               Y
```

External rater protocol

TOPS unbundling extends the external rater protocol to allow the switch to send the calling AO SPID in query messages to the TOPS Real-time Rating System (RTRS).

Chapter 6: “Unbundling protocols,” provides details on how TOPS unbundling extends the external rater protocol. Chapter 10: “Unbundling tools,” provides information on using the XRATE CI tool.

Billing validation

TOPS unbundling extends the line information database (LIDB) protocol to allow the LIDB database to send billed AO SPID and billed BSP SPID information in query response messages to the switch. This SPID information is used in the AMA record. (See “Unbundling billing” on page 255 for details on the AMA record.)

Chapter 6: “Unbundling protocols,” provides details on how TOPS unbundling extends the LIDB protocol. Chapter 10: “Unbundling tools,” provides information on using the ACCSVER CI tool.

Translations and routing

With unbundling, the TOPS office can support service provider traffic on both combined and dedicated trunks. Unbundling implements the TOPS Translations Group (XLAGRP) translations scheme, which provides additional flexibility for call routing and screening. One of its capabilities is the definition of translations and screening groups in table XLAGRP.

The functionality provided by the XLAGRP translations scheme is equivalent to that of existing translations. The XLAGRP translations scheme performs all phases of translations and screening, and the two steps of initial and subsequent translations, just as the existing translations scheme does. The XLAGRP translations scheme creates a new dialing plan capability based on SPID.

Related translations and routing datafill

This section provides an overview of the translations and routing datafill necessary for EA and non-EA calls. An overview of the special call types is also provided.

Non-equal access calls

This section provides an overview of the switch datafill for the XLAGRP translations scheme for non-equal access (non-carrier) calls. It discusses the following tables:

- TOPSTOPT, which activates the XLAGRP translations scheme for trunks that originate traffic to the TOPS switch
- XLAGRP, which defines the names of translations and screening groups
- SPIDGRP, which defines the names of SPID groups
- SPIDDB, which associates a SPIDGRP name with a SPID
- XLASPID, which allows the XLAGRP to be refined based on the calling AO SPID
- XLAODIGS, which allows the XLAGRP to be refined based on the calling NPA-NXX
- TOPSDP, which contains all the translations and screening parameters (dialing plans) for each XLAGRP

Note: For details on how to datafill all the tables for unbundling, refer to Chapter 7: “Unbundling data schema.”

Equal access calls

This section provides a similar overview of the switch datafill for the XLAGRP translations scheme, with additions needed for equal access (carrier) calls.

Note: Calls must first successfully pass through the translation scheme discussed in the previous section before proceeding to further refinements.

Once the call is determined to be an EA call, it continues through the following tables:

- TOPEATRK, which activates the XLAGRP translations scheme for EA calls based on the incoming trunk group
- XLAGRP, which defines the names of translations and screening groups
- SPIDGRP, which defines the names of SPID groups
- SPIDDB, which associates a SPIDGRP name with a SPID
- XLASPID, which allows the XLAGRP to be refined based on the calling AO SPID
- XLAODIGS, which allows the XLAGRP to be refined based on the calling NPA-NXX
- CICGRP, which allows the operating company to refine the XLAGRP based on the carrier
- TOPEACAR, which provides the optionality to assign a carrier group to a carrier, and to refine the XLAGRP based upon that carrier
- XLACIC, which allows the XLAGRP to be refined based upon the CIC (Carrier Identification Code)
- EAREGN, which specifies the REGION destination identifiers to be used with LATA screening
- XLAEAREG, which allows the XLAGRP to be refined based on the REGION
- TOPSDP, which contains all the translations and screening parameters (dialing plans) for each XLAGRP

Note: For details on how to datafill all the tables for unbundling, refer to Chapter 7: "Unbundling data schema."

Special call types

There are several call types that do not follow the previously discussed switch datafill requirements. These special call types include third number, busy line verify, overseas, and calling numbers, which use the following tables:

- OPRINFO, which determines whether the XLAGRP method is used for certain special call types

  Note: When the XLAGRP translations scheme is not used, table OPRTRANS is used instead for these calls.

- TOPSDP, which contains all the translations and screening parameters (dialing plans) for each defined XLAGRP

  Note: For additional information, please refer to Chapter 7: "Unbundling data schema."

Table TOPSTOPT

Table TOPSTOPT contains the XLASCHEM field. This field specifies whether the XLAGRP translations scheme applies for calls arriving on the given trunk. If set to Y, a translations group name (XLAGRP field) is also datafilled. The XLAGRP name is the translations group for all traffic originating on the trunk group, if no further refinements are needed.

When further refinements based on the calling AO SPID (table XLASPID) or the calling NPA-NXX (table XLAODIGS) are needed, the XLAGRP name also serves as the *initial* translations group name.

Note: If the operating company sets the XLASCHEM area in table TOPSTOPT to N, the translations scheme that existed prior to the unbundling capability is used for the given trunk.

The following figure shows example datafill. In the example, trunk group TRK1 uses the XLAGRP translations scheme with an XLAGRP name of TRK1.

Figure 18 MAP display example for table TOPSTOPT

```
GRPKEY            ORGAREA                  DISPCLG  ADASERV    ADASANS
ANITOCLI  OLNSQRY   DCIBIDX  LNPCLGAM     XLASCHEM   SPIDPRC     TRKSPID
    BILLSCRN     ANIFSPL     MAXCONNS       DISPSPID
-------------------------------------------------------------------------
TRK1              Y OSSAIN_ROC1_ORIG        Y       NONE       NA
Y N         NONE        0        N          Y TRK1     Y          N
     N              N           0               N
```

Note: Field XLASCHEM in table TOPEATRK determines if the XLAGRP method of translation is used for EA calls. If set to Y, then the XLAGRP method of translations is used and the XLAGRP is obtained from table TOPEATRK to determine the outgoing route for the call. If XLASCHEM is set to N in table TOPEATRK, then traditional translations are used for EA calls. To set XLASCHEM to Y in table TOPEATRK, table TOPSTOPT, must also have XLASCHEM set to Y for the incoming trunk group. Otherwise, setting XLASCHEM to Y in table TOPEATRK is disallowed.

Table TOPEATRK

Table TOPEATRK contains options for trunk groups that originate EA traffic to a TOPS switch. Selector field XLASCHEM is used to determine if the call uses a different initial XLAGRP than the one in table TOPSTOPT.

Note: If field XLASCHEM in table TOPEATRK is set to N, the call is routed to class of service screening.

The initial XLAGRP for EA calls is obtained from table TOPEATRK. The operating company can further refine the XLAGRP based on the calling AO SPID, the originator's NPA-NXX, the CIC, and the REGION. If the XLAGRP method is used, calls on the same trunk can use a different STS for routing.

Through these refinements, the operating company changes the final XLAGRP assigned. This final assignment serves as the index into table TOPSDP.

Figure 19 MAP display example for table TOPEATRK

```
TRUNKGRP   ENDOFFCE   CARRIER                          SCRNFLDS
           XLASCHEM                  DNLOOK   DFLTPIC           BYPASS
-------------------------------------------------------------------------
TOSSIC     CONFORM    0501                          LATA L123
           N STRA STER SOVS 619      N        N                $
TEAUNBNIC CONFORM    0111                          LATA L123
           Y EAUNBN                  N        N                $
```

Table XLAGRP

Table XLAGRP contains a list of all the user-defined translations and screening groups. The following figure shows example datafill. In the example, seven XLAGRPs are datafilled.

Figure 20 MAP display example for table XLAGRP

```
XLAGRP
-----------------------------------------------------------------
TRK1
TRK2
TRK1ILEC
TRK1CLEC
TRK1619320
TRK1619322
TRK1ILEC619320
```

Table SPIDGRP

Table SPIDGRP contains a list of all the user-defined SPID groups used in translations and screening based on the calling AO SPID. The following figure shows example datafill. In the example, two SPIDGRPs are datafilled.

Figure 21 MAP display example for table SPIDGRP

```
SPIDGRP
-----------------------------------------------------------------
ILECXLA
CLECXLA
```

Table SPIDDB

Table SPIDDB associates a SPIDGRP name with a specific SPID. The following figure shows example datafill. In the example, the SPIDGRP name associated with service provider 1234 is CLECXLA.

Figure 22 MAP display example for table SPIDDB

```
SPID   SCRNDISP   OPERSYS                    TAANN         DAANN
   ACTSANN      XLA          SPIDCRIT    SCRINDX   BILAGRMT       DACICOVR
-------------------------------------------------------------------------
1234   Y ATEL (OPERATOR)(MCCS)(ACTS)(ADAS)$  Y ATABRAND    Y ADABRANDN
       N        Y CLECXLA    N           100      NONE             N
```

Table XLASPID

Table XLASPID allows the XLAGRP to be refined based on the calling AO SPID. This table defines a translations group name that associates the XLAGRP with the SPIDGRP.

The following figure shows example datafill. In the example, TRK1 defines two new XLAGRPs based on the SPIDGRPs ILECXLA and CLECXLA.

Figure 23 MAP display example for table XLASPID

```
GRPKEY                  NEWXLGRP
-------------------------------------------------------------------
TRK1 ILECXLA            TRK1ILEC
TRK1 CLECXLA            TRK1CLEC
```

Table XLAODIGS

Table XLAODIGS allows the XLAGRP to be refined based on the calling NPA-NXX. This table defines a translations group name that associates the XLAGRP with the calling digits of the NPA-NXX.

The following figure shows example datafill. In the example, TRK1 defines two new XLAGRPs based on the calling digits 619320 and 619322. TRK1ILEC also defines a new XLAGRP based on the calling digits 619320.

Figure 24 MAP display example for table XLAODIGS

```
GRPKEY               NEWXLGRP
-------------------------------------------------------------------
TRK1 619320          TRK1619320
TRK1 619322          TRK1619322
TRK1ILEC 619320      TRK1ILEC619320
```

Table TOPSDP

Table TOPSDP specifies the translations and screening parameters that are unique to each translations group defined in table XLAGRP. These parameters include the serving translations scheme (STS), pretranslator names, screening names for initial and subsequent translations, and a local call area name (LCANAME).

The following figure shows example datafill. In the example, the dialing plan for each XLAGRP is datafilled.

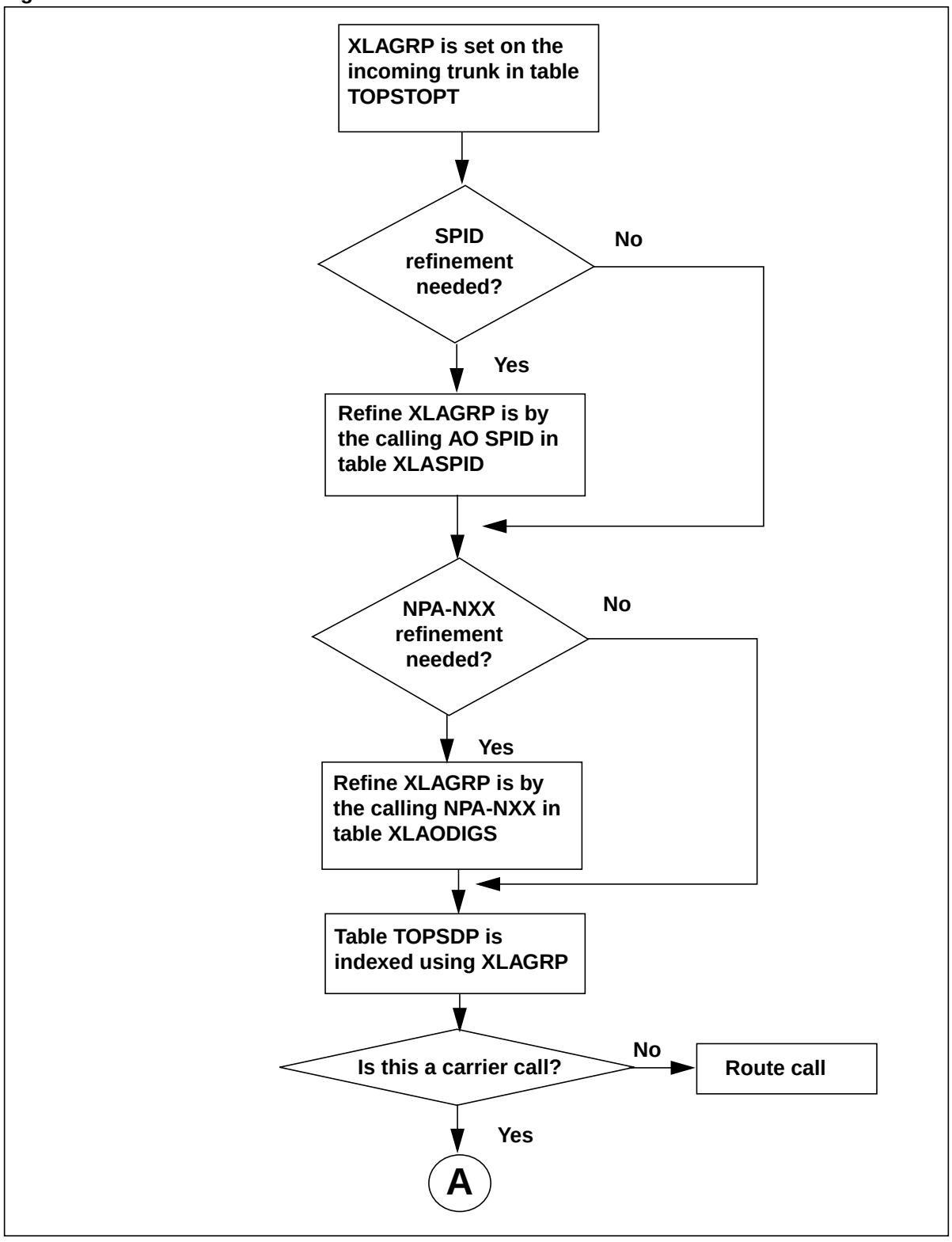
Figure 25 MAP display example for table TOPSDP

```
XLAGRP        STS OPERPRTN  ORIGSCRN  OPERSCRN  MCCSPRTN MCCSSCRN LCANAME
-------------------------------------------------------------------------
TRK1           619  OPR1    ORS1    OPS1       MCP1     NSCR     LCA1
TRK2           202  OPR2    ORS2    OPS2       MCP1     NSCR     LCA2
TRK1ILEC       619  OPR1    ORS1    OPS3       MCP1     NSCR     LCA3
TRK1CLEC       619  OPR2    ORS1    OPS2       MCP1     NSCR     LCA4
TRK1619320     619  OPR1    ORS1    OPS1       MCP1     NSCR     LCA5
TRK1619322     619  OPR2    ORS1    OPS1       MCP1     NSCR     LCA6
TRK1ILEC61932  619  OPR1    ORS1    OPS1       MCP1     NSCR     LCA7
```

Translations group refinement flow

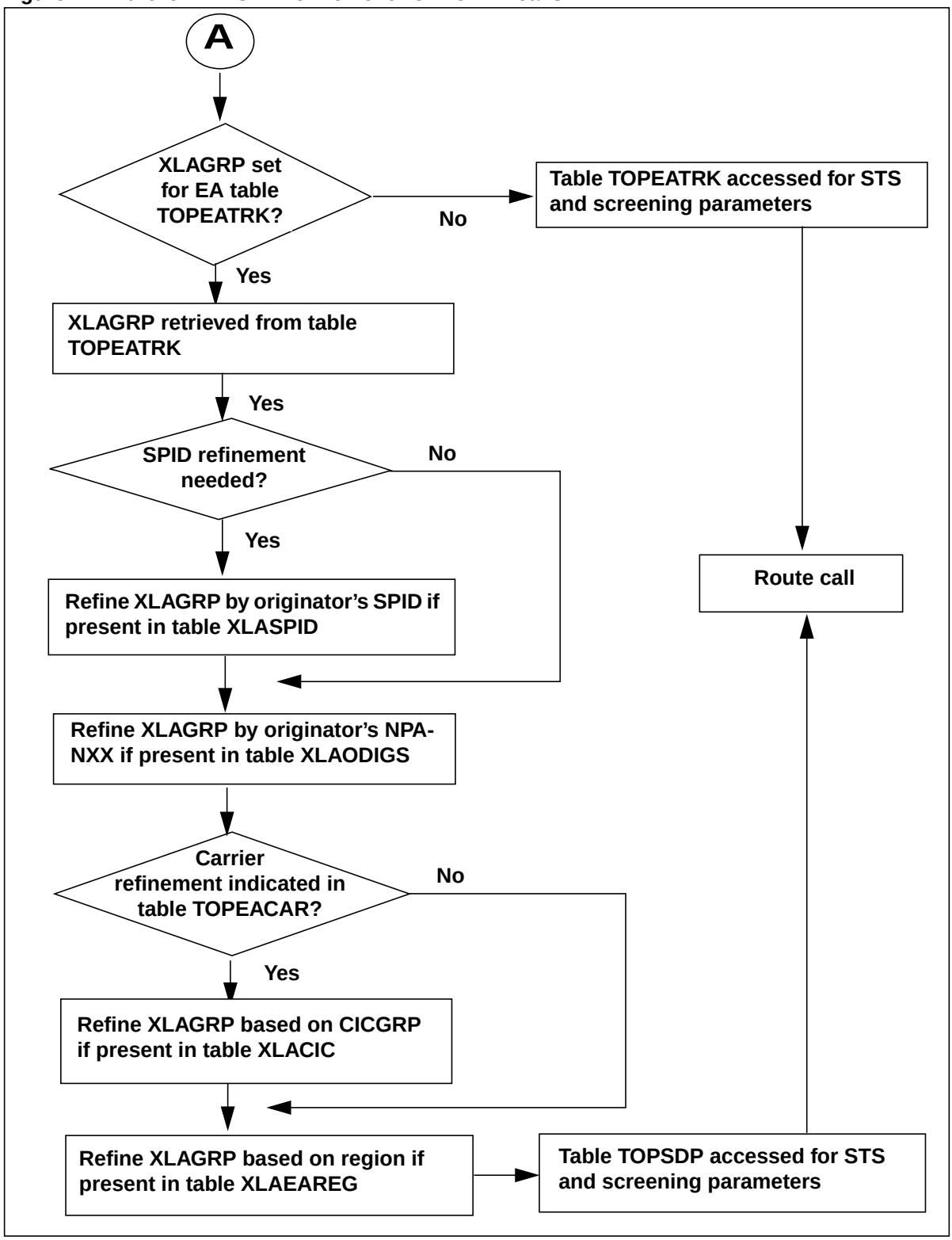
The following figure shows the flow used in XLAGRP refinement.

Figure 26 XLAGRP refinement flow for non-EA calls



The following figure shows further XLAGRP refinements specific to carrier (EA) calls.

Figure 27 Further XLAGRP refinement flow for EA calls



Call restrictions for wholesaling

TOPS unbundling allows for call restriction based on the incoming trunk group, the carrier assigned to the call (CIC), or the service provider identifier (SPID) associated with the call.

The screening for these billing restrictions is discussed in Chapter 3: "Unbundling wholesaling."

Screening for billing agreement

TOPS unbundling allows each service provider to use their own billing agreements or the billing agreements established by the operator services (OS) wholesaler. If a billing agreement exists, the call is allowed to complete. If no agreement exists, the user can hang up or use a different billing method.

This screening method for billing agreements is discussed in Chapter 3: "Unbundling wholesaling."

LIDB query routing based on Carrier Identification Code (CIC)

Alternately billed calls (collect, third, and calling card) result in a query to a Line Information Data Base (LIDB) for billing validation. Without this capability, the LIDB to query for the information is based on the billing number (the called in the collect case, the third, or the calling card). Existing tables are indexed with the billing number to obtain the route to the LIDB. This capability determines which LIDB to query based on the Carrier Identification Code (CIC) and billing number associated with the call. This functionality is activated on a per-CIC basis via table TOPEACAR, and only applies to calls originated from a carrier.

Activation

The LIDB portion of this capability is controlled through SOC UNBN0104 and Table TOPSFTR parameter UNBUNDLING_LIDB_QUERY_ROUTING.

Additionally, the LIDB functionality described is activated through field LIDBYCIC (LIDB Query by CIC) in table TOPEACAR on a per carrier basis. When this field is active, the LIDB to query will be determined based on the CIC and the billing number.

Related LIDB query datafill

Without this capability, LIDB queries are not able to determine a route for the query based on the service provider (whether a carrier as identified by a CIC or a local exchange service provider as identified by a SPID). Everything is based on the calling card or billed number digits via tables CCVINFO, INTCCFMT, or BNSINFO.

Note: This capability provides LIDB query routing based on CIC only. SPIDs are not covered.

The tables used by the LIDB query (Tables CCVPROV, ISOCCPRV, and BNSPROV) parallel tables CCVINFO, INTCCFMT, and BNSINFO in functionality; however, they also take into account the service provider associated with the call (the CIC in this case) such that a call billed to the same number but placed over different carriers could query different LIDBs depending on the type of agreement in place for the carrier handling the call.

In the discussion that follows, the following assumptions are made:

- UNBN0104 is SOCed ON and table TOPSFTR parameter UNBUNDLING_LIDB_QUERY_ROUTING is set to Y.
- LIDBYCIC field in table TOPEACAR is set to Y for the carrier and a LIDB index in datafilled.
- the calls are incoming from a carrier and have a valid carrier associated with the them.

Note: If any of the above conditions are not met, the billing validation is done via the existing tables (i.e., CCVINFO, BNSINFO, or INTCCFMT).

When an alternately billed carrier call is received, one of the following tables will be indexed with the index obtained from table TOPEACAR and the billing number:

- Table CCVPROV will be indexed for domestic calling cards
- Table BNSPROV will be indexed for collect and third numbers
- Table ISOCCPRV will be indexed for commercial credit cards and ITU calling cards.

The index into table CCVPARMS or BNSPARMS will be retrieved from one of the above tables (field PARMSIDX). Once the PARMSIDX is obtained, tables CCVPARMS or BNSPARMS are indexed to obtain the GTTNAME used to route the query to the appropriate LIDB. All processing from the point of CCVPARMS or BNSPARMS is the same as done today. No changes are made. If the query results in an error response or a time-out or anything other than a successful response, then existing handling via table ACCSERR is applied. The index into table ACCSERR is obtained from tables CCVPARMS or BNSPARMS.

In the following datafill examples you will see datafill for the following two carriers:

- Carrier 0111
- Carrier 0222

Both carriers are routing LIDB queries based on CIC as shown in table TOPEACAR; however, carrier 0111 is using index CAR111 while carrier 0222 is using index CAR222. Carrier 0457 makes no use of this feature.

The LIDB index becomes the first part of the key when indexing table CCVPROV, BNSPROV, and ISOCCPRV. The indices must first be defined in table LDBIDXNM before they can be used in table TOPEACAR as illustrated below:

Figure 28 Table LDBIDXNM

```
TABLE: LDBIDXNM
>list all
TOP
 LIDBIDX
--------
  CAR111
  CAR222
  CAR333
  CAR311
  CAR112
  CAR113
BOTTOM
```

Figure 29 Table TOPEACAR

```
TABLE: TOPEACAR
>list
TOP
CARDIG CARNAME          ALTDISP OPLSCLD CAMABILL ALTCARR     NATERM
    INTERM                                                        OPSERV
TDBIDX CICSCHEM  LIDBYCIC
-------------------------------------------------------------------------
  0111    C111             C111       Y        Y    0111    UNREST
   UNREST              SERV NOQUERY Y NOQUERY Y NOQUERY Y Y Y Y 100   NONE
     0       N      Y  CAR111


  0222    C222             C222       Y        Y    0113    UNREST
   UNREST              SERV NOQUERY Y NOQUERY Y NOQUERY Y Y Y Y 100   NONE
     0       N      Y  CAR222


  0457    CILP             CILP       Y        Y    0457    UNREST
   UNREST              SERV NOQUERY Y NOQUERY Y NOQUERY Y Y Y Y 100   NONE
     0       N      N
```

Datafill in table CCVPROV shows that calls over carrier 0111 billed to a calling card beginning with 20 or 314 will use entry 0 in table CCVPARMS. Calls over carrier 0222 billed to a calling card beginning with 2 or 302 will use entry 10 in table CCVPARMS.

Figure 30 Table CCVPROV

```
TABLE: CCVPROV
>list 4
TOP
                CCVKEY  PARMSIDX
-----------------------------
         CAR111   20          0
         CAR111  314          0
         CAR222    2         10
         CAR222  302         10
```

The datafill in table BNSPROV shows that calls over carrier 0111 billed either third or collect to a number beginning with 212 will use index 0 in table BNSPARMS while calls billed to a number beginning with 301 will use index 20 in table BNSPARMS. Calls over carrier 0222 will use indices 30 and 10 depending on the billed number.

Figure 31 Table BNSPROV

```
TABLE: BNSPROV
>list 4
TOP
               BNSKEY  PARMSIDX
-----------------------------
         CAR111  212          0
         CAR111  301         20
         CAR222    2         30
         CAR222    3         10
```

The datafill in table ISOCCPRV shows calls over carrier 0111 billed to commercial credit card beginning with 4251 using index 0 into table CCVPARMS while calls billed to a ITU card beginning with 891222 using index 40 in table CCVPARMS.

Also note that ISO card validation will be done via table ISOCCPRV when this feature is activate for the call. Card validation includes the card number being datafilled in the table and the digit count must add up to what is datafilled in the table. For example, a card beginning with 4251 must add up to 18 digits in order to pass the digit length check (4251 + 11 (ACCSIDSIZ) + 4 (PIN)) based on the datafill example below.

Figure 32 Table ISOCCPRV

```
TABLE: ISOCCPRV
>list
TOP
          ISOKEY ACCIDSIZ PINSIZE LUHNCHK     CARDBRND
PARMSIDX
-------------------------------------------------------------
      CAR111 4251       10       4       Y  DEFAULTNAME
        0

    CAR111 891222       11       0       Y  DEFAULTNAME
       40
```

The following two tables show the different entries pointing to different GTTNAMES which results in queries being sent to different LIDBs. The $sign implies default ACCSGT.

Figure 33 Table CCVPARMS

```
TABLE: CCVPARMS
>list all
TOP
IDX                                    VALAREA
-----------------------------------------------
  0   LIDB                 $ N   2 N   0   0
 10   LIDB                 $ N   2 N   0  10
 20   LIDB          LIDB1GT N   2 N   0   0
 30   LIDB          LIDB2GT N   2 N   0   0
 40   LIDB          LIDB3GT N   2 N   0   0

298                                     SDB
299                                     BLK
300                                   MANUAL
BOTTOM
```

Figure 34 Table BNSPARMS

```
TABLE: BNSPARMS
>list all
TOP
IDX                                        VALAREA
-------------------------------------------------
  0   LIDB                 $   2   1   1   1   1
 10   LIDB                 $  10  11  11  11  11
 20   LIDB          LIDB1GT   2   2   1   1   1
 30   LIDB          LIDB2GT  10  11  11  11  11
 40   LIDB          LIDB3GT   2   2   1   1   1
298                                       SDB
299                                       BLK
300                                     MANUAL
```

Call flow example

0+ call originates on an ISUP IT trunk datafilled as an IEC type trunk in table ISUPTRK. The call signals carrier 222. Call is routed to an operator (or AABS) for billing.

Figure 35 Determining if query by CIC applies

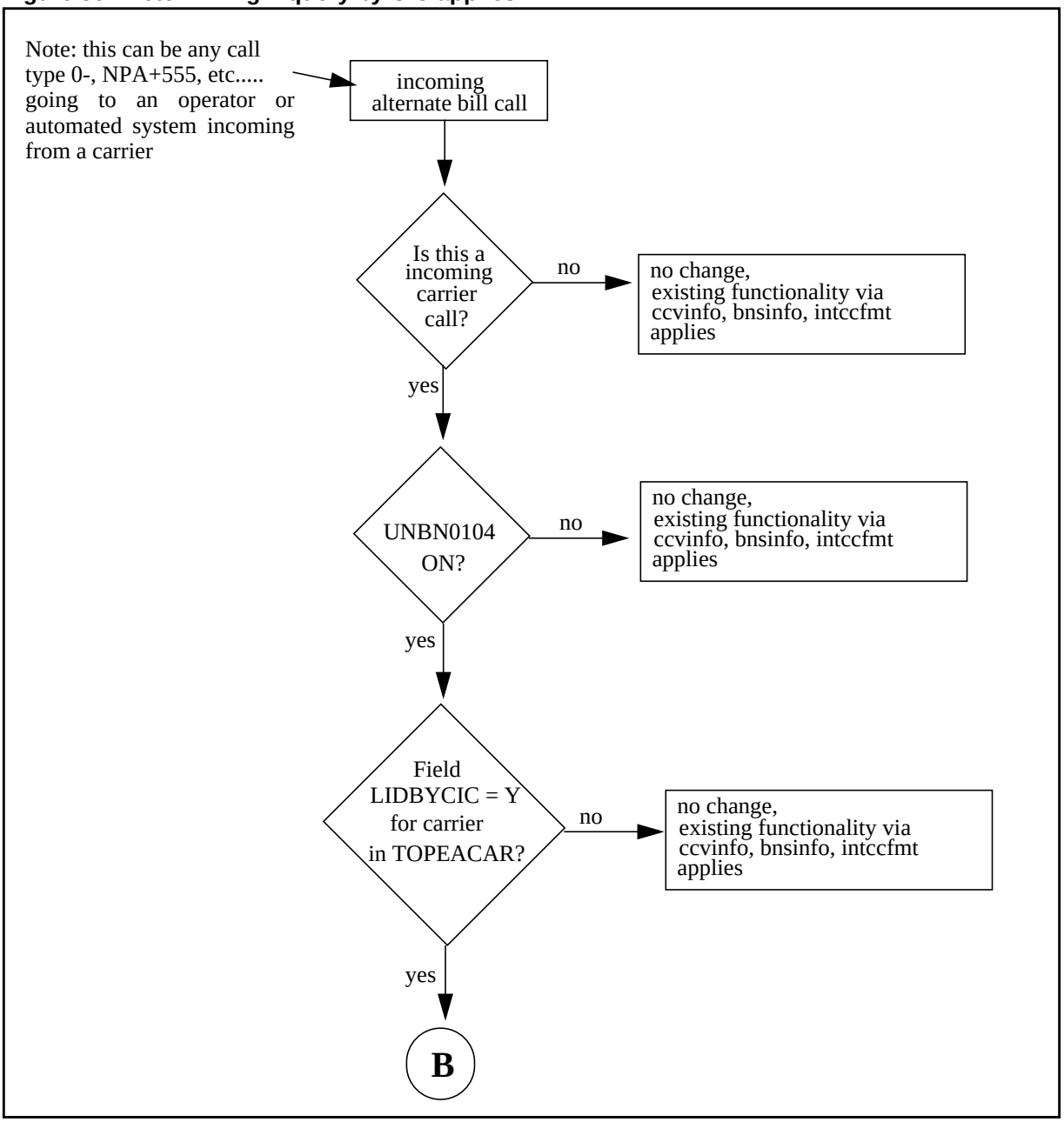


Figure 36 Determining route to LIDB

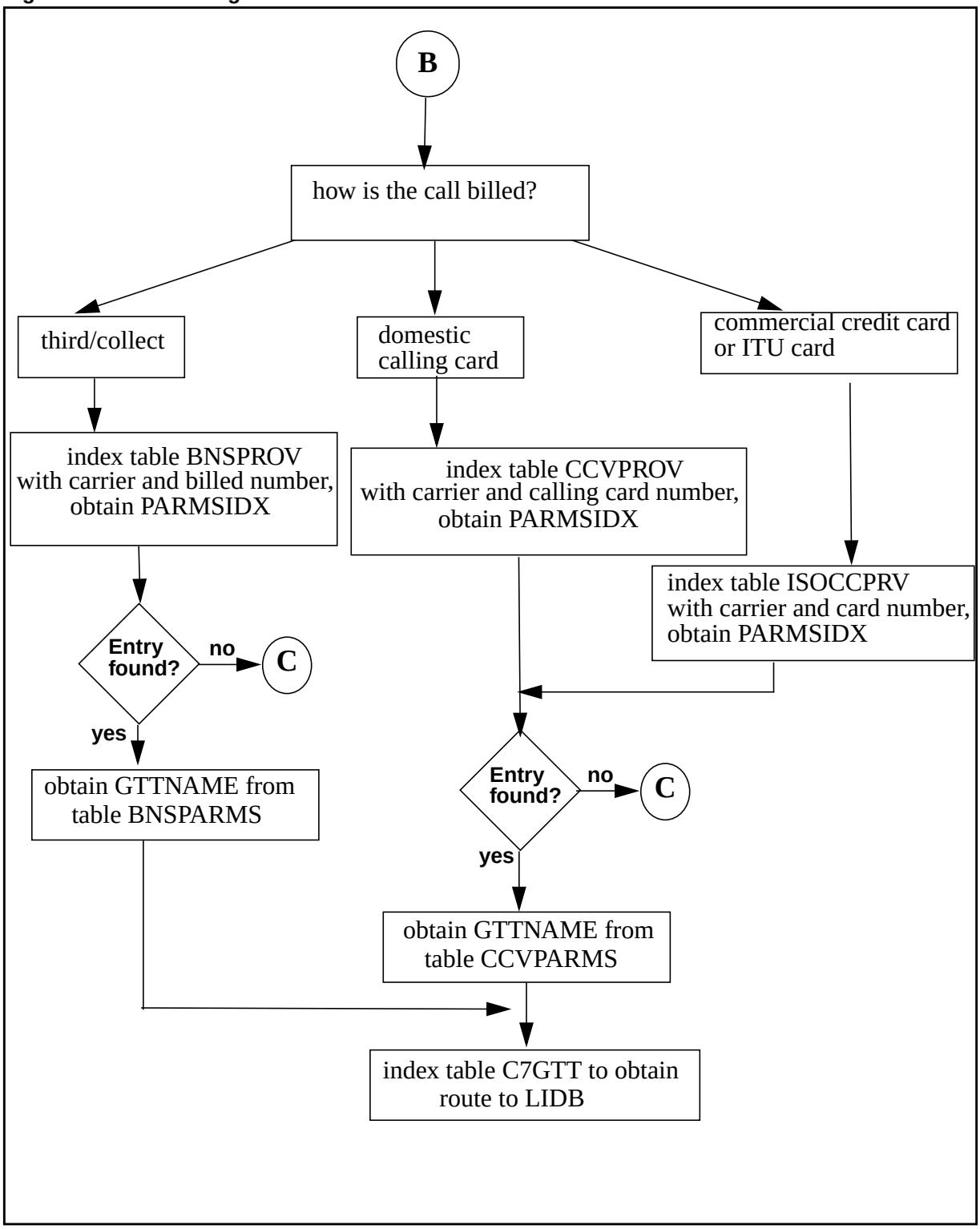
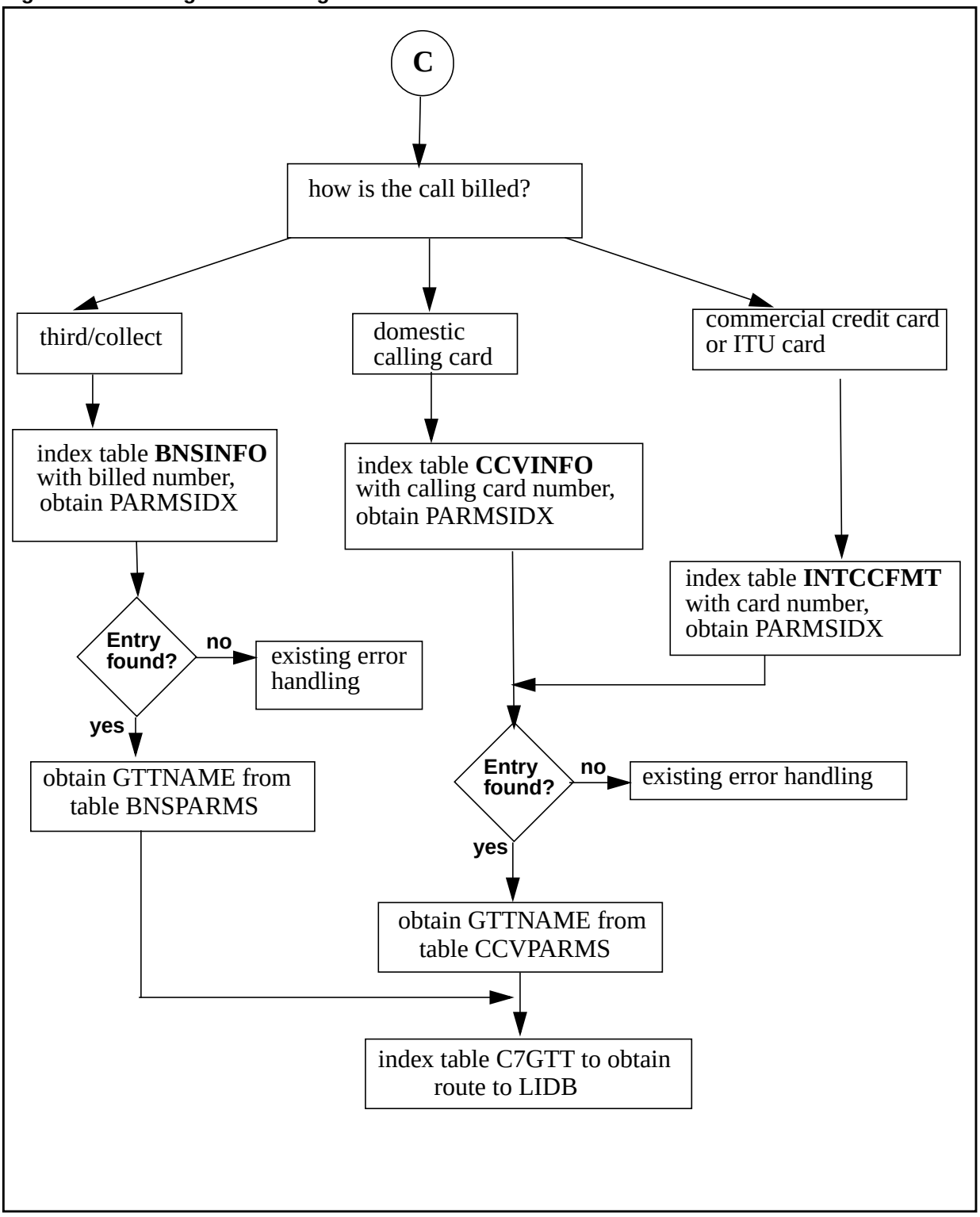


Figure 37 Existing LIDB routing



Call Error Handling

If SOC UNBN0104 is ON, and LIDBYCIC = Y, but no datafill exists in the required tables, then error handling applies.

Ideally, if LIDBYCIC is activated for the carrier, then the new tables should be datafilled to route the queries based on carrier; however, if the field is active and no datafill is found for the carrier, then the existing method of routing the query based on the billing number via CCVINFO, BNSINFO, or INTCCFMT is used. If no entries are found in these tables, then existing error handling applies.

Chapter 3: Unbundling wholesaling

Wholesaling is a generic term that is used when talking about service options that one LEC purchases from another LEC. These options can include leasing lines, providing services like LIDB, and providing operator services. Many of these wholesaling options are inter-related and are discussed throughout this document.

This chapter describes the independent wholesaling options available through unbundling. These options are available through specific SOC codes and tuples in table TOPSFTR as discussed in Chapter 8: “Unbundling SOC.”

Note 1: Any restrictions that apply to these options or to any unbundling functionality are discussed in Chapter 5: “Unbundling feature impact.”

Note 2: For complete information on all the fields and values in these tables, please refer to the *Customer Data Schema Reference Manual*.

TOPS unbundling wholesaling options

The following table lists each option according to the product computing module load (PCL) where it was introduced.

Table 5 Wholesaling options

Option name	PCL	SOC option	Page number
Call restrictions for wholesaling	LET0012	UNBN0101	page 69
Screening for billing agreement	LET0013	UNBN0101	page 81

Call restrictions for wholesaling

This section discusses how TOPS unbundling provides the capability to screen DN and non-DN based calls on the bill type when routed through TOPS offices.

Call restrictions for wholesaling overview

Billing restriction screening is based on the incoming trunk group, the carrier assigned to the call (CIC), or the service provider identifier (SPID) associated with the call. A datafillable hierarchy is assigned to this group of possible screening factors, with only one factor determining the screening on a given call.

Without this option, screening methods are based upon DN screening where the tables are indexed based on the calling DN. This option allows billing restrictions to be applied to the call without having to datafill the calling DN.

If call processing determines that DN based restrictions apply, those restrictions take precedence and no additional screening is applied. If a call progresses through the DN screening without applied billing restrictions, additional checks introduced in this option determine if billing restrictions should apply to the call based on the incoming trunk group, CIC, SPID, or the ANI ID digits.

DN based screening

One method of entering the screening process is by examining the ANI ID of a call and referencing the ANI ID lookup tables, including OSSCAT, BELLCAT, and OPENANI. These table used depends on the incoming trunk group signaling, but each can signify an ANI ID as special. When marked as a special call, these tables are referenced to determine whether that calling number should have restricted billing. If so, the allowable set of billing types is then determined.

Additionally, if a trunk group is marked with particular ‘station classes’, the DN based restriction process begins. Station classes such as RESTBIL and DNLOOKUP trigger the billing restriction process.

ANI handling

This option handles the way certain calls are presented to the operator. When a call arrives with an ANI ID marked as special, and the calling directory number is not found in tables SPLDNID or DNSCRN, the call is presented to the operator as an ANI failure. This option introduces a parameter to optionally allow these calls to be presented to the operator as an ANI success, regardless of the calling number’s presence in these tables. TOPSPARM parameter OVERRIDE_ANIFSPL_HANDLING allows the ANI to be presented on a call when it is marked as special, and the calling number is not found in either table SPLDNID or DNSCRN. When set to Y, the ANI is presented regardless of datafill in tables SPLDNID or DNSCRN. When set to the default, N, these calls continue to be presented as an ANI failure as prior to the existence of this parameter.

When parameter OVERRIDE_ANIFSPL_HANDLING is set to N, field ANIFSPL in table TOPSPARM allows this same functionality as described above on a trunk group basis. Field ANIFSPL in table TOPSTOPT is used for this purpose. If this field is set to Y for a particular trunk, the ANI is presented to the operator position for calls arriving marked as special, but without the calling number found in SPLDNID or DNSCRN. If this field is set to the default, N, these calls continue to be presented as an ANI failure.

It is important to note is that when a call arrives with an ANI ID marked as special, the screening tables are used to identify the calling service, which can include coin and restricted. When there is no data in these tables for a call marked as special, and if the datafill does not mark this as ANI failure, then the calling service is marked as station.

Restriction screening

Screening introduced by this option takes place only if no DN based restrictions are found to be applicable to the call. When it is determined there are no restrictions based on the calling number, this option, when active, applies additional billing restriction checks based on datafillable parameters. Figure 38 on page 73 is a high level chart of how this functionality relates to the DN based screening.

Once it is determined that no DN base restrictions apply to the call, a check is done to verify that SOC UNBN0101 is ON, and TOPSFTR parameter CALL_REST_FOR_WSALE is set to Y. If it is, then table TOPSTOPT is accessed to determine what additional screening is available. Different screening criteria can be used for intraLATA and interLATA calls, on a given trunk group through table TOPSTOPT. Once the screening criteria is established, a set of allowable billing types for the call is determined. This set is the same type of billing options available to the DN screening process. Once restrictions are determined, the call is handled the same as with DN based screening.

This additional screening is performed any time restrictions are checked for DN based screening, for example, before routing to an automated system, or DA call completion. Additionally, screening is initiated any time the disposition of the call changes, for example, the call arrives as a 0- call and the operator enters a DN that causes the call to become a carrier call, or if the operator changes the carrier for a call.

DA call completion (DACC) calls present a special case for wholesale screening. DACC billing screening is a composite set of restrictions based on any restrictions on the DN itself and restrictions set in tables DACCOPT and DABILL. The set of allowable billing types for a DACC call is a result of considering the DN restrictions and these two tables. Once this set is determined, wholesale screening is applied to the call and any further restrictions found as a result of the wholesale screening process is applied. This differs from non-DACC calls in that the wholesale restriction process is applied only if no other DN based restrictions apply to the call.

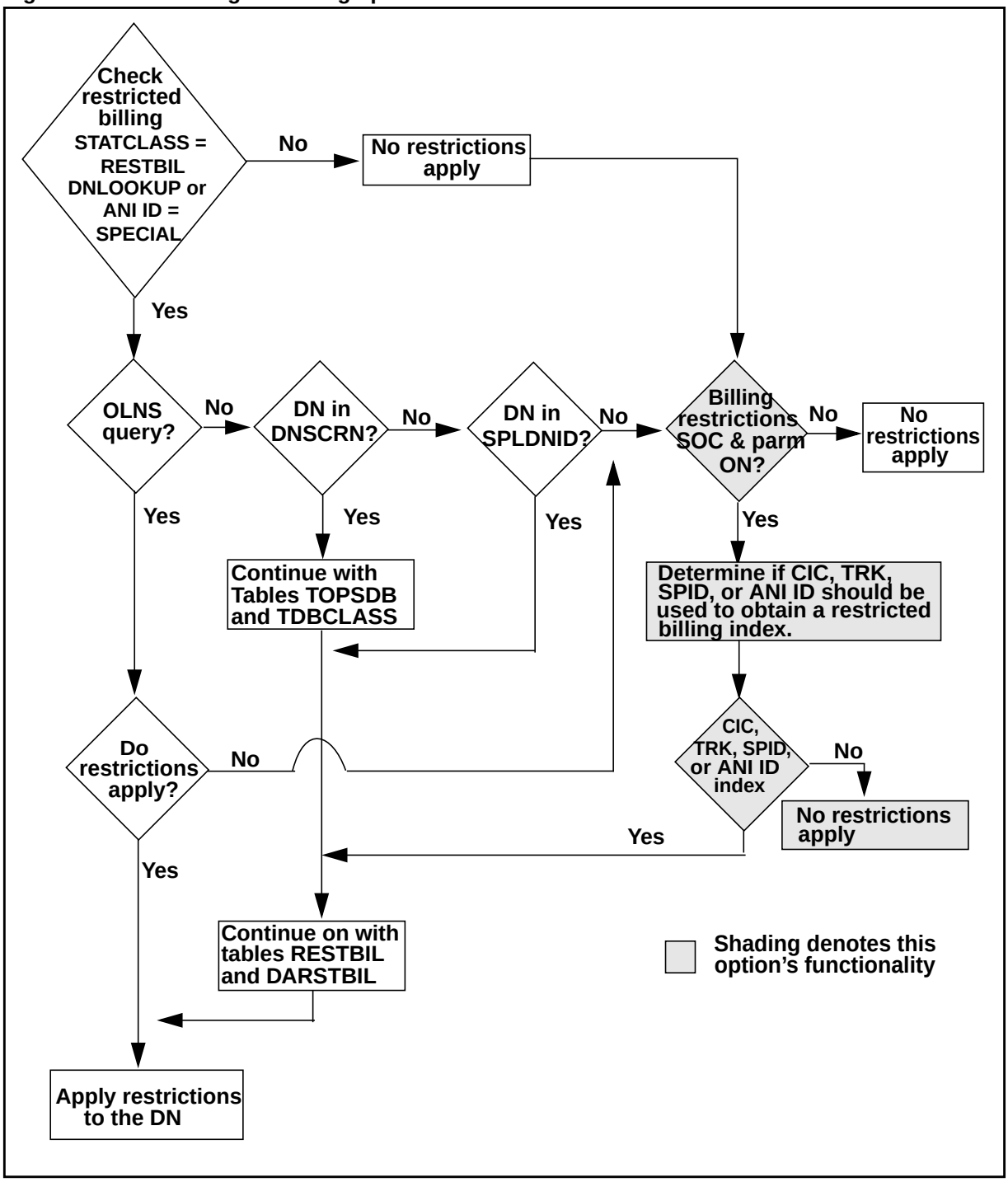
SOC requirements

Call restrictions for wholesaling is available under SOC option UNBN0101. Once the SOC is on, the option can be activated on an individual trunk group basis through table TOPSTOPT. The type of screening to be performed on the trunk is then specified by datafill in table WSALEOPT. If SPID based screening is to be used, SPID processing for the trunk group must be enabled through field SPIDPRC in table TOPSTOPT, as well as activating the SPID SOC option UNBN0101.

Every individual TOPS SOC feature is controlled by both its parent SOC option and its TOPSFTR entry. For a given TOPS feature to be functional, the parent SOC option must be ON and the corresponding FTRENABL setting in table TOPSFTR must be set to Y. For wholesaling, that tuple is CALL_REST_FOR_WSALE.

The optional handling of calls marked as special, but not found in the DN screening tables, is not controlled through any SOC. Table TOPSTOPT field ANIFSPL and parameter OVERRIDE_ANIFSPL_HANDLING from table TOPSPARM control this behavior independent of the SOC UNBN0101.

Figure 38 Unbundling screening option



Screening details

When this option is activated through the SOC utility and table TOPSFTR, and no DN based screening is applicable to a call, selector field BILLSCRN in table TOPSTOPT is referenced to determine if further screening should be done. If TOPSTOPT indicates further screening applies for calls on this trunk, table WSALEOPT is referenced.

Note: Calls are segregated by LATA in table WSALEOPT. If it is desirable, intraLATA calls can be datafilled to use a different set of screening criteria than interLATA calls.

IntraLATA calls

The available entries for the WSALEOPT INTRA field are TRK and AOSPID**.** If TRK is selected, the field SCRNIDX out of table TOPSTOPT is used as the index for the restricted billing tables. If AOSPID is selected, table SPIDDB is referenced for the SPID associated with the call. Field SCRNIDX in table SPIDDB is then used to access the restricted billing tables.

Note: Although there are other SPID types, the calling AO SPID is the only type supported by this option.

If both TRK and AOSPID are selected, the selections are examined in the order of entry. The last selection entered is the last examined. If there is an index associated with the last selection entered, that is the index used to enter tables RESTBIL/DARSTBIL. For example, if the selections are entered in the order of TRK, then AOSPID, the action follows:

- the SCRNIDX out of table TOPSTOPT is obtained
- if a SPID is associated with the call, table SPIDDB is indexed with the SPID, and the SCRNIDX is obtained
- if there is a non nil entry for the SCRNIDX for that SPID, then that entry is used to index the restricted billing tables

The same methodology is used if the entries were reversed. First, the SPIDDB SCRNIDX is obtained, then the TOPSTOPT SCRNIDX is obtained, and used.

Note: SPIDs do not apply to global loads.

A nil index of 100 can be datafilled in the SCRNIDX field of the tables this option utilizes.

InterLATA calls

The selectors in table WSALEOPT for the INTER field are TRK and CIC. If TRK is entered, the SCRNIDX out of table TOPSTOPT is used. If CIC is entered, the SCRNIDX out of table TOPEACAR is used.

If both selectors are entered, the order of entry determines the screening used. The last entry always take precedence if a non nil SCRNIDX is obtained for it. If a nil index is obtained for the last entry, then the index obtained for the first entry is used, if an index was found for it. If both selector choices result in a nil index, then no screening applies to the call.

Figure 39 on page 76 shows the flow for the different choices of screening selection out of table WSALEOPT. For the purpose of this figure, it is assumed the selector BILLSCRN is set to Y in table TOPSTOPT for the trunk on which the call is arriving, and that the call indexes into table WSALEOPT to obtain the screening information.

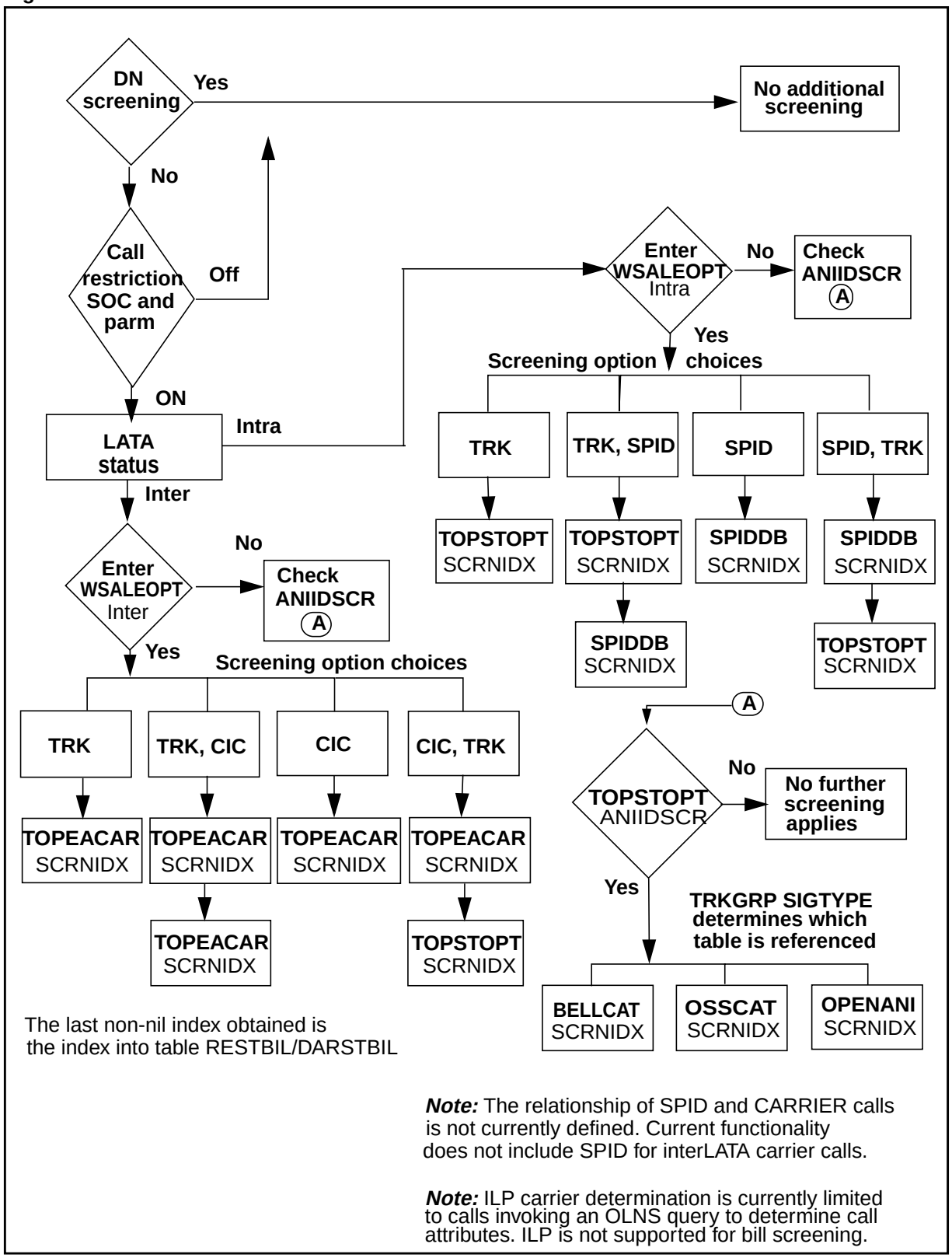
Note: The TRK option for both interLATA and intraLATA use the same SCRNIDX of the trunk group; therefore, if using the TRK screening for both interLATA and intraLATA, then both get the same set of billing restrictions.

ANI ID screening

If no additional screening is applicable after checking WSALEOPT for screening criteria, field ANIIDSCR in table TOPSTOPT is checked. If this field is set to Y, the ANI ID digits of the calling number is examined. Depending on the SIGTYPE of the incoming trunk, one of the ANI ID tables (BELLCAT, OSSCAT, OPENANI) is referenced, indexed by the ANI ID digits. SCRNIDX field in the ANI ID tables allows a screening index to be assigned to a call based on the ANI ID digits. If a screening index is assigned to the ANI ID digits of the call, this is the index that is used to enter the billing screening tables.

The ANI ID screening is the last examined, and applies only if no other restrictions were assigned by previous screening methods, and if ANI IDSCR is activated for the trunk group.

Figure 39 Wholesale Restriction



Call restrictions for wholesaling datafill

This section details the tables or portions of tables specific to this option. For additional information on these tables, please refer to Chapter 7: "Unbundling data schema."

Table WSALEOPT

Table WSALEOPT indicates the criteria to be used for billing screening. This table consists of an index, and the fields INTRA and INTER. For each of the two available fields, data indicating the screening criteria may be entered.

For the INTRA field, either TRK, SPID, or TRK and SPID may be entered. If TRK is entered, the restricted billing index out of TOPSTOPT is used to index tables RESTBIL and DARSTBIL and obtain billing restrictions. If SPID is entered, SCRNIDX field out of table SPIDDB is used as the index into RESTBIL/DARSTBIL. If both TRK and SPID are entered, the order of entry determines which index is used for the call. The last entry with a non-nil restricted billing index is used to index the restricted billing tables.

For the INTER field, TRK, CIC, or TRK and CIC may be entered in either order. For TRK, the index obtained from TOPSTOPT is used. CIC indicates the SCRNIDX out of TOPEACAR is to be used as the RESTBIL/DARSTBIL index. As with the intraLATA calls, the entry order of these fields determines the overriding entry. The last entry with an associated non-nil index determines the index into the restricted billing table.

Note: The SCRNIDX discussed above is an index into RESTBIL for TA calls, or DARSTBIL for DA calls.

For both the INTRA and INTER fields, an entry of TRK indicates the SCRNIDX out of table TOPSTOPT is to be used as screening criteria.

Figure 40 MAP display example for table WSALEOPT

```
IDX              INTRA           INTER
-------------------------------------------------------------------
1                AOSPID $         CIC $
2                TRK AOSPID $     CIC $
3                $                TRK $
4                TRK $            $
```

Table RESTBIL

Table RESTBIL specifies the Restricted Billing Class to be recorded on AMA for Toll and Assist (TA) and Directory Assistance (DA) calls. DA and TA calls have different tariff rules, and this table allows for the independent assignment of billing restrictions for TA calls based upon the Restricted Billing Class. Table RESTBIL provides the index to specify the allowed methods of billing for TA calls.

Figure 41 MAP display example for table RESTBIL

```
BILCLASS   AMARBC   SCRNDISP     BILTYPES        CCPDTYPS
-------------------------------------------------------------------
 31           74    31PRISON       (COL)           NONE
```

Table DARSTBIL

Table DARSTBIL specifies the Restricted Billing Class to be recorded on AMA for Toll and Assist (TA) and Directory Assistance (DA) calls. DA and TA calls have different tariff rules, and this table allows for the independent assignment of billing restrictions for DA calls based upon the Restricted Billing Class. Table DARSTBIL provides the index to specify the allowed methods of billing for DA calls.

Figure 42 MAP display example for table DARSTBIL

```
BILCLASS   AMARBC   SCRNDISP     BILTYPES
-------------------------------------------------------------------
 31           74    31DAPPRSN        (CC)
```

Table OSSCAT

Table OSSACT, Operator services signaling category, uses field SCRNIDX in this option. This field is a restricted billing index into the restricted billing tables. When table TOPSTOPT field ANIIDSCR is set to Y, and the signaling type on the trunk dictates that the OSSCAT table should be used for ANI ID information, the SCRNIDX is obtained as an index into the billing restriction tables.

Note: The default dump and restore value for the SCRNIDX field is 100. This is the nil restricted billing index.

Figure 43 MAP display example for table OSSCAT

```
ANI    FORMAT    CLGSERV  REST    ROUTE   SCRNIDX
-------------------------------------------------------------------
  0       ANI    STATION  NONE        N        10
```

Table OPENANI

Table OPENANI, Open numbering ANI, uses field SCRNIDX in this option. This field is a restricted billing index into the restricted billing tables. When table TOPSTOPT field ANIIDSCR, and the signalling type on the trunk dictates that the OPENANI table should be used for ANI ID information, the SCRNIDX is obtained to be used as an index into the billing restriction tables.

Figure 44 MAP display example for table OPENANI

```
ANI    FORMAT  CLGSERV  SCRNIDX
------------------------------------------------------------------------
  0       ANI  STATION      10
```

Table BELLCAT

Table BELLCAT, Bell category, uses field SCRNIDX in this option. This field is a restricted billing index into the restricted billing tables. When table TOPSTOPT field ANIIDSCR, and the signalling type on the trunk dictates that the BELLCAT table should be used for ANI ID information, the SCRNIDX is obtained to be used as an index into the billing restriction tables.

Figure 45 MAP display example for table BELLCAT

```
ID    FORMAT  CLGSERV  ANIROUTE  SCRNIDX
------------------------------------------------------------------------
  0       ANI  STATION     N        10
```

Table TOPSTOPT

Table TOPSTOPT has two fields specifically related to this option. The first is a Y/N selector field BILLSCRN. If set to N, no further refinements are available for this entry. When set to Y, subfields WSIDX, SCRNIDX, DACCSCR**,** and ANIDSCR are available. Field WSIDX is an index into table WSALEOPT. Field SCRNIDX is a restricted billing index, which is an index into the restricted billing tables. DACCSCR is a Y/N field, used to indicate whether restrictions resultant of this option applies to DACC calls over this trunk. ANIDSCR is a Y/N field and is used to determine if the ANI ID digit of the call should be used for billing screening. This screening can occur only if no other restrictions were found to apply to the call.

The second field specific to this option is field ANIFSPL, which is independent of the BILLSCRN selector. The ANIFSPL field is used to determine the screening of calls that were marked as special, but where the calling number is not datafilled in tables SPLDNID or DNSCRN.

Figure 46 MAP display example for table TOPSTOPT

```
GRPKEY                  ORGAREA         DISPCLG  ADASERV    ADASANS
ANITOCLI OLNSQRY DCIBIDX LNPCLGAM    XLASCHEM        SPIDPRC     TRKSPID
        BILLSCRN                  ANIFSPL     MAXCONNS       DISPSPID
------------------------------------------------------------------------
 ISUP2WITALT   QMSCAM CORECAM N               N     NONE         NA
      N     NONE       0       N          N                Y         N
      Y 97 97 Y Y                      Y         0              N
```

Table TOPSPARM

Parameter OVERRIDE_ANIFSPL_HANDLING in table TOPSPARM performs the same function as the TOPSTOPT field ANIFSPL, except on an office-wide basis rather than a trunk basis. When this parameter is set to the default N, the call is presented at the operator position as an ANI fail if that call arrived with an ANI ID marked as special, and with the calling number is not datafilled in table SPLDNID or DNSCRN. When this parameter is set to Y, a call meeting this criteria is presented as an ANI success. The TOPSTOPT field ANIFSPL behaves exactly the same as the parameter above, with the exception that it controls calls on a trunk group basis.

Figure 47 MAP display example for table TOPSPARM

```
PARMNAME                                                PARMVAL
-------------------------------------------------------------------
OVERRIDE_ANIFSPL_HANDLING                                N
```

Screening for billing agreement

This section discusses how TOPS unbundling allows each service provider to use their own billing agreements or the billing agreements established by the operator services (OS) wholesaler. If a billing agreement exists, the call is allowed to complete. If no agreement exists, the user can hang up or use a different billing method.

Billing agreement overview

Screening for billing agreement checks for a billing agreement between the service provider of the originator (the calling party or OS wholesaler) and the service provider of the billed-to party or entity. The billed-to party or entity can be either a DN (in the case of a collect or third number) or a calling card.

This option applies to call originations that route either to an operator or an automated system, like ACCS, AABS, or OSSAIN, for alternate billing. These calls can be billed either collect, to a third party, or to a calling card. In addition, screening is performed only on calls handled by the LEC, an Inter-eXchange Carrier (IXC) served by the LEC, or cellular calls.

For LEC calls, the SPID of the originator, or CIC for carrier calls, is determined through switch datafill or a database query. The SPID or CIC is compared with the SPID of the billed-to party returned from the LIDB.

This option uses the SPID information returned from the database to screen calls during call setup to determined if the SPID returned from the database has a billing agreement with the originator providing the service. The SPID may be the SPID 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.

Billing agreements are tracked separately for Calling Card Validation (CCV) and Billing Number Screening (BNS). Screening can be performed on the billed party Account Owner (AO) SPID and the Billing Service Provider (BSP) SPID. An alternately billed call results in either a BNS query or a CCV query to a LIDB. The LIDB may return one or both of the following pieces of information associated with the billed-to party or entity:

- AO SPID
- BSP SPID

Using the AO or BSP SPID returned from the LIDB, TOPS checks for a billing agreement between the service provider of the originating subscriber and the service provider of the collect or third DN, or of the calling card. If a billing agreement does exist, 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, and generates Log TOPS 612 No Billing Agreement. There are three possible reasons for generating this log and each has a separate action. Refer to Chapter 11: “Unbundling logs” for more information.

If billing is blocked due to lack of a billing agreement, the only action the operator can take is to ask the subscriber for some other method of payment. From an automated services perspective, if billing is blocked due to lack of a billing agreement, the subscriber is prompted for some other method of payment.

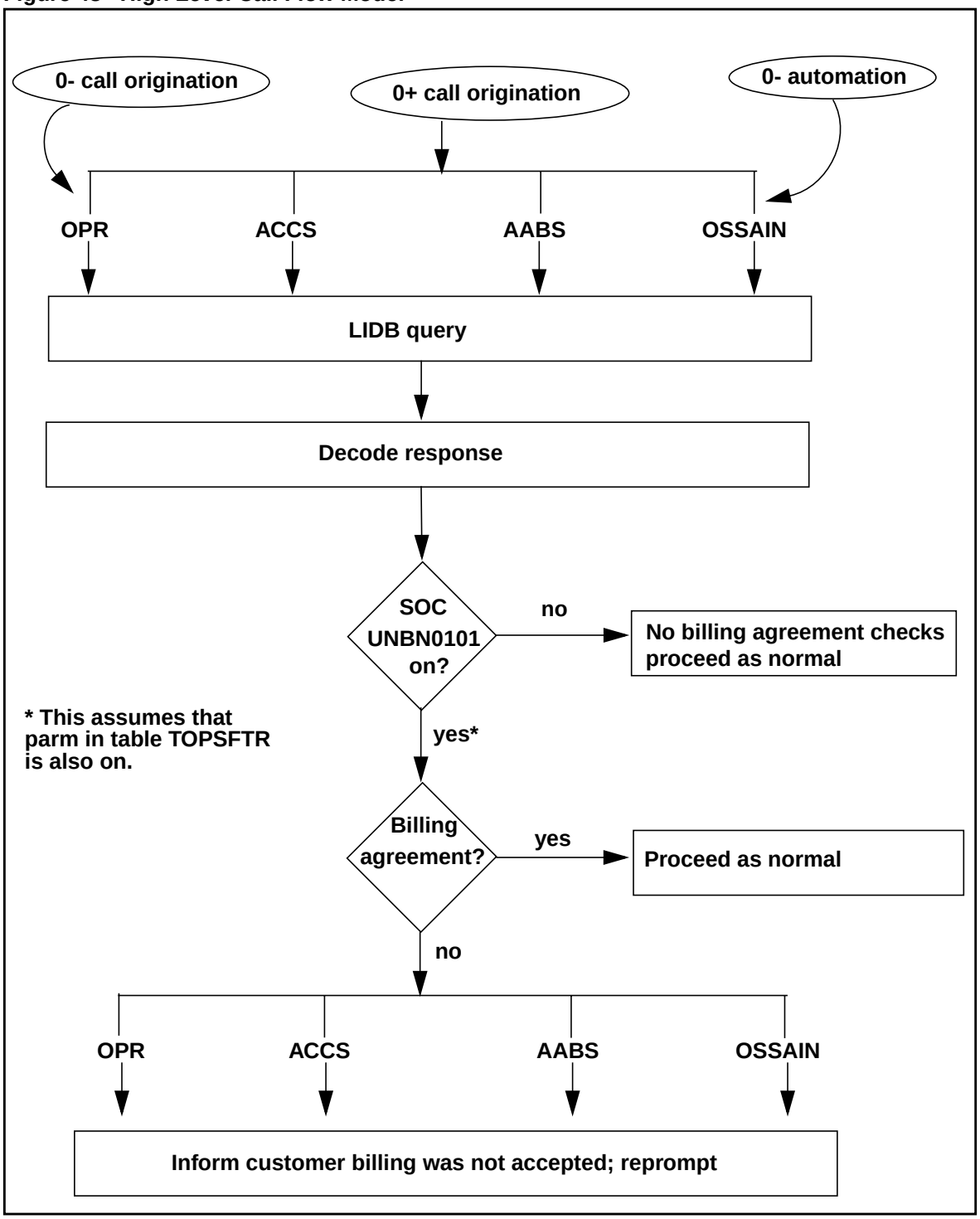
SOC requirements

Screening for billing agreement is available under SOC option UNBN0101. In addition to the SOC, parm SCREEN_FOR_BILLING_AGREEMENT also needs to be activated in table TOPSFTR. If this SOC and parm are not active, no screening for billing agreement is performed. Refer to Chapter 8: "Unbundling SOC" for additional information.

Call Processing

The following sections describe the call processing portion of this feature. Refer to Figure 48 for a high level view of the call flow of this feature.

Figure 48 High Level Call Flow Model



Billed Party AO and BSP SPID Screening

The LIDB can return both an AO SPID and a BSP SPID. This option 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 parameter CHECK_BILL_AGRMT_USING_BSP_SPID in table TOPSPARM.

If the ability to screen by BSP SPID is activated and both an AO and a BSP SPID are returned by the LIDB, then screening is done based on the AO SPID first. If an agreement is not found based on the AO SPID, then the BSP SPID is used to screen. However, if an agreement is found based on the AO SPID, then no further screening is done based on the BSP SPID.

If no AO or BSP SPID is returned from the LIDB, the default behavior is defined by field NOSPDERR in Tables SPIDDB and TOPEACAR. Refer to page 94 for additional information.

Billing agreement groups

Billing agreement groups are a way to arrange SPIDs 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 billing agreement tables CCVAGRMT and BNSAGRMT.

Prior to checking for a billing agreement, the billing agreement group of the originating party must be determined. Refer to Figure 49 for a flowchart describing the steps taken to determine the billing agreement group of the originating party. This flowchart assumes that SOC UNBN0101 is ON and the parm in table TOPSFTR is enabled.

Operator service agreements

Operator service providers can wholesale their billing agreements to CLECs that do not want to secure their own agreements. Two parameters in table TOPSPARM are used to designate this:

- ALL_CALLS_USE_OPR_SVC_AGRMTS

  This parameter is set to Y (Yes) when all calls incoming on TOPS/ISUP trunks are to use the operator services billing agreements to do the checks. Parameter OPR_SVC_AGRMTS provides the agreement groups.

  If the ALL_CALLS_USE_OPR_SVC_AGRMTS parameter is set to N (No), then whether to use the operator services agreements is determined on an individual basis through field BILAGRMT in tables TOPEACAR or SPIDDB.

- OPR_SVC_AGRMTS

This parameter identifies the billing agreement groups with which the Operator Services wholesaler has billing agreements. Fields CCVAGRMT and BNSAGRMT provide an index into tables CCVAGRMT and BNSAGRMT respectively. This parameter allows CLECs to use their own billing agreements or use the billing agreements already established by the Operator Services wholesaler.

Field NOSPDERR, which shows up as a refinement field when parameter OPR_SVC_AGRMTS is datafilled as Y, allows the Operator Services wholesaler to define a default handling when the LIDB does not return an AO or BSP SPID in the query response. This field has three possible values:

- ACCPT - accept the call
- BLOCK - block the call
- OPER - send the call to an operator if not at one (at an automated system), or if at an operator, block that billing method and allow operator to prompt for another method of payment.

Since parameter ALL_CALLS_USE_OPR_SVC_AGRMTS is dependent upon parameter OPR_SVC_AGRMTS, checks are made to ensure that OPR_SVC_AGRMTS has valid groups datafilled in fields CCVAGRMT and BNSAGRMT before ALL_CALLS_USE_OPR_SVC_AGRMTS can be set to Y. Conversely, parameter OPR_SVC_AGRMTS cannot be set to N if ALL_CALLS_USE_OPR_SVC_AGRMTS is set to Y or if any SPID in Table SPIDDB or CIC in Table TOPEACAR is using the operator services billing agreements.

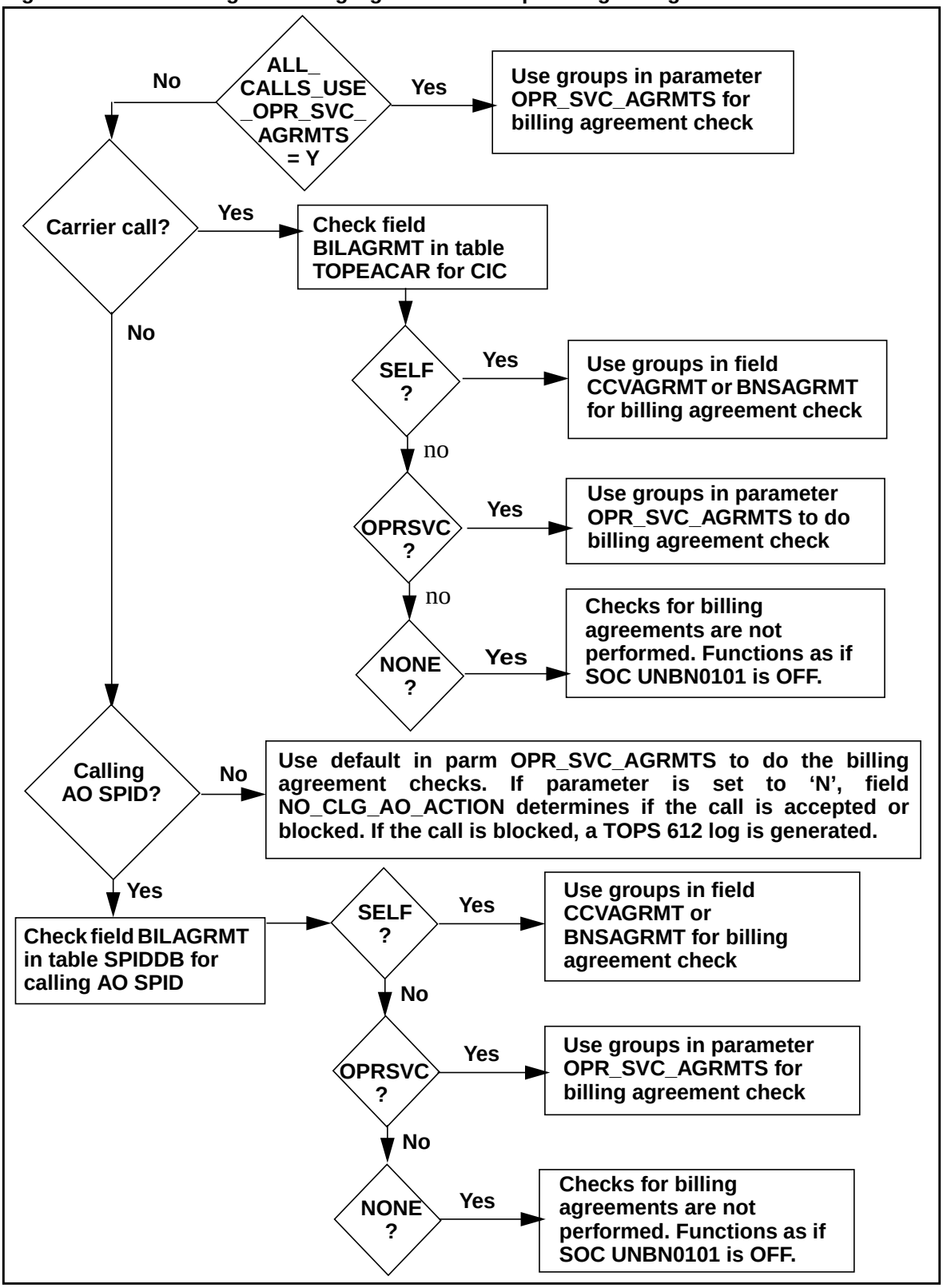
Field NO_CLG_AO_ACTION, which shows up as a refinement field when parameter OPR_SVC_AGRMTS is datafilled as N, allows the Operator Services wholesaler to define a default handling when there is no Calling AO SPID associated with the call (for LEC calls only) and no Operator Services Agreements are datafilled. This field has two possible values:

- ACCPT - accept the call
- BLOCK - block the call

The default behavior when no Calling AO SPID is associated with the call is to use the OPR_SVC_AGRMTS. If none are datafilled, the call can either be accepted or blocked. The default value of this field is ACCPT. This allows the feature to be activated through SOC (and parm in table TOPSFTR) and screening for billing agreements to be done on a per SPID basis. After all necessary datafill is in place for the all SPIDs in table SPIDDB, this field can be changes to BLOCK if desired.

Refer to page 93 for additional information on these parameters.

Figure 49 Determining the Billing Agreement Group of Originating SPID or CIC



LEC calls

A LEC call is any call that originates and terminates within a LEC's network. For these 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 is determined, field BILAGRMT in table SPIDDB is checked to see which group (SELF, OPRSVC, 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 if an agreement exists.

If the AO SPID of the calling party cannot be determined, operator service agreements are used. If parameter OPR_SVC_AGRMTS is set to 'N', 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' and the call is blocked.

Note: Billing agreement checks may become invalid if the OSSAIN Service Node changes the AO SPID after the LIDB query is launched. If this is the case, the node is notified that billing is 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 document, a carrier call is any call handled by an IXC.

Note: If the parameter ALL_CALLS_USE_OPR_SVC_AGRMTS is on, it automatically take precedence.

A call is determined to be a carrier call based on the calling and called numbers. Tables TOPEATRK, LATAXLA, and EASCRN are used to determine the call type 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, field BILAGRMT in table TOPEACAR is checked to see which group (SELF, OPRSVC, 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 if an agreement exists.

Note 1: Billing agreement checks may become invalid if the CIC is changed at the operator position after the LIDB query is launched. If this is the case, the operator needs to prompt the user for another billing method.

Note 2: As with LEC calls, billing agreement checks may become invalid if the OSSAIN Service Node changes the CIC after the LIDB query was launched. If this is the case, the node is notified that billing is denied.

Non-signaled carrier calls

If a call is not signaled as a carrier call, then both the calling and the called numbers are used to determine if it 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, either the calling party or the OS 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 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 option is 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. This also applies to LEC calls as well as carrier calls.

Note: This option changes the behavior for all LIDB queries.

Once the CIC is determined as described above, table TOPEACAR is checked to see if 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.

Cellular calls

This option provides no special handling for cellular calls. If the operating company provides operator services for a cellular carrier and wishes this option to apply, then it functions as described for non-cellular calls. For the LEC cases, if calling AO SPID information is not provided on a per-DN 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.

Figure 50 Billing agreement processing

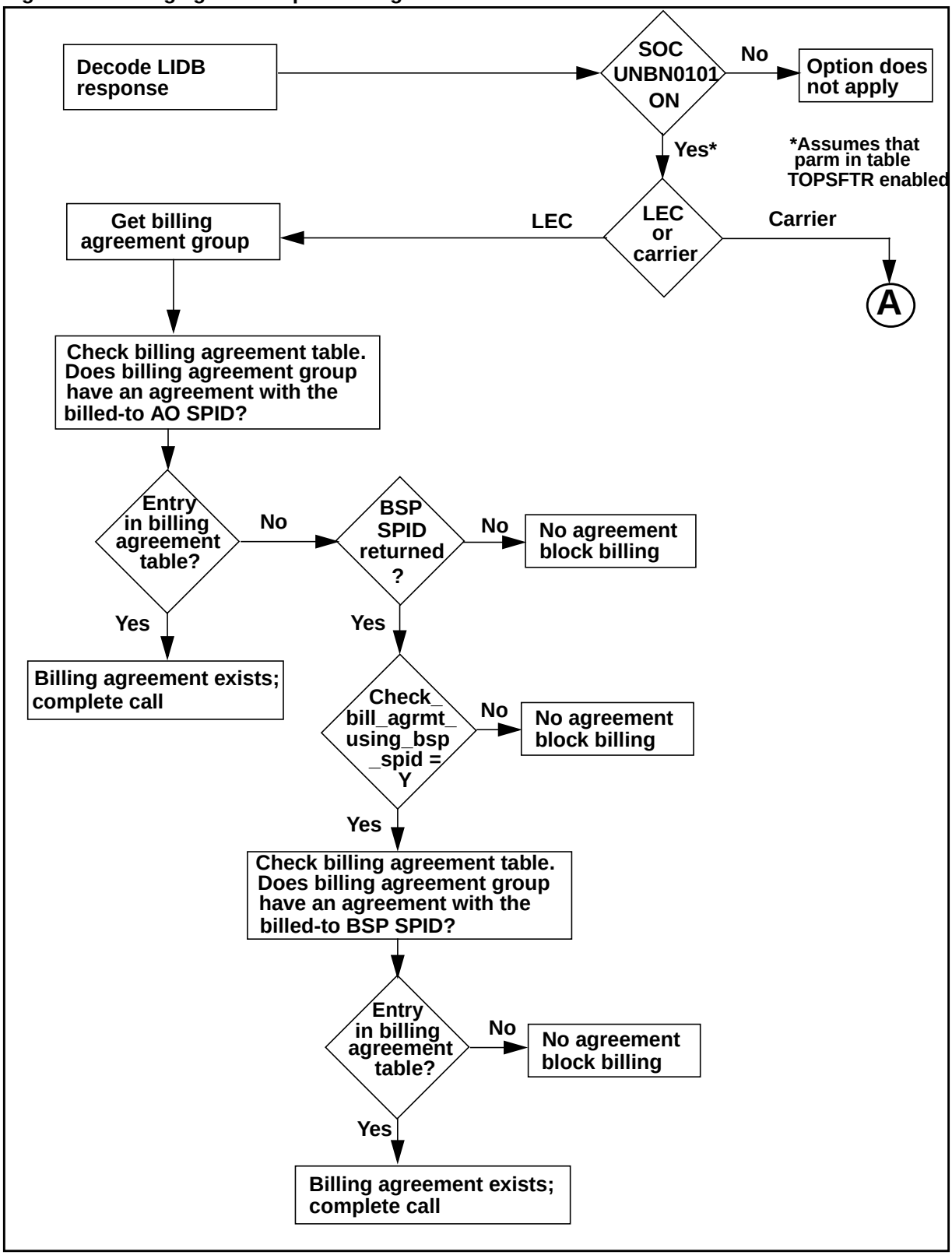
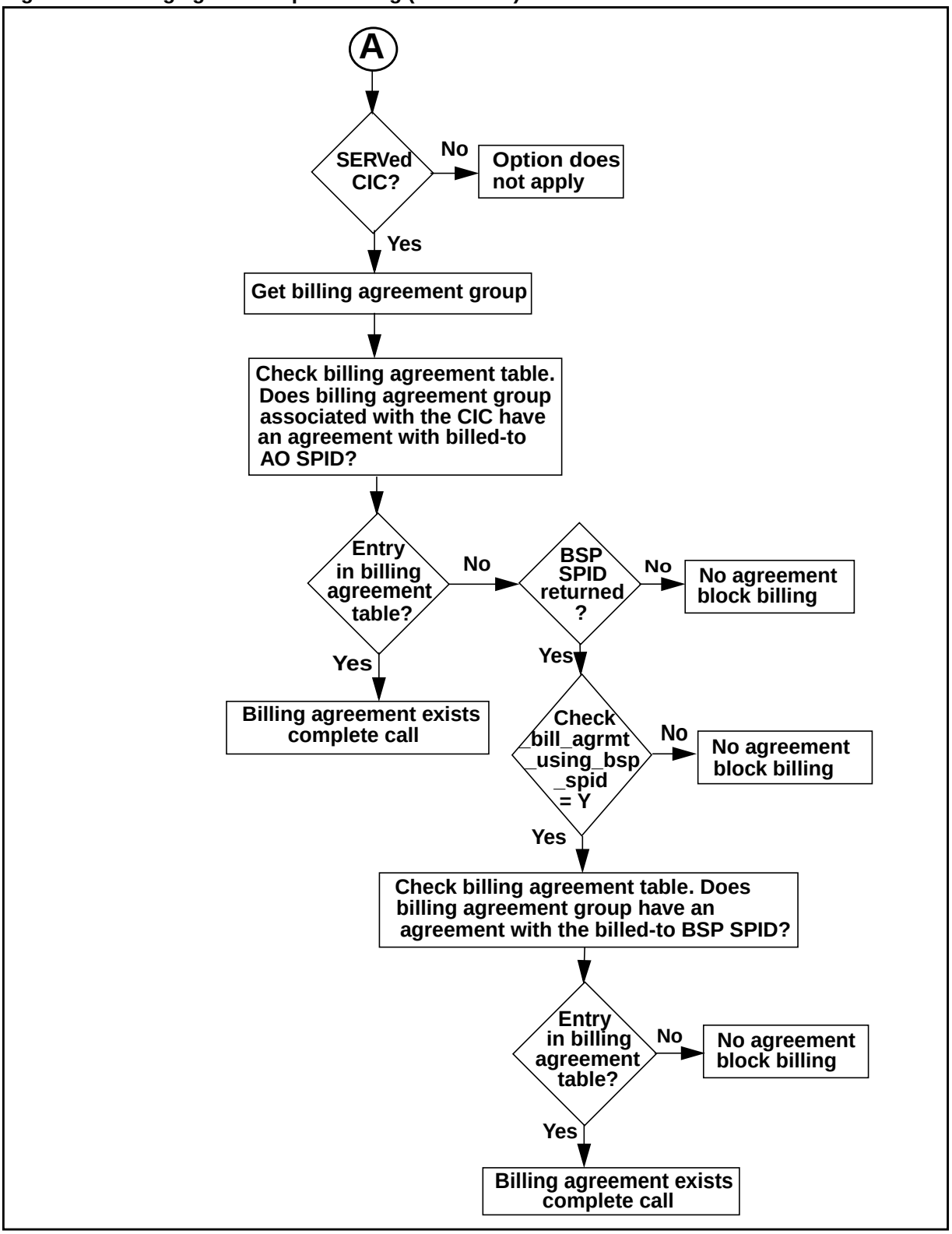


Figure 51 Billing agreement processing (continued)



Billing agreement datafill

This section details the tables or portions of tables specific to this option. For additional information, please refer to Chapter 7: "Unbundling data schema."

Each service provider may have different billing agreements with a given service provider based on the billing method. This option provides the ability to track billing agreements separately based on Calling Card Validation (CCV) and Billed Number Screening (BNS).

Table BAGNAME

Before a billing agreement group can be used in any of the tables, it must be datafilled in table BAGNAME. This table contains one field, BAGNAME, which is the character string name of a billing agreement group in the TOPS switch. Each name may contain up to sixteen characters.

Figure 52 MAP display example for table BAGNAME

```
BAGNAME
------------------------------------------------------------------------
OPRSVCBNS
OPRSVCCCV
SPIDBNS
SPIDCCV
CARBNS
CARCCV
```

Table BAGNAME must be datafilled before a billing agreement group can be datafilled in any of the following tables:

- BNSAGRMT
- CCVAGRMT
- SPIDDB
- TOPEACAR
- TOPSPARM

Table CCVAGRMT

Billing agreements based on CCV are tracked in table CCVAGRMT. This table consists of two fields, ORIGGRP and BILLSPID. These two fields make up the key to a tuple in this table which indicates an agreement exists between the billing agreement group of the originator and the billed-to SPID.

Field ORIGGRP associates a group name with the SPID (in the case of a LEC call) or the CIC (in the case of a carrier call) of the originating party for the purpose of screening for billing agreements. The group name is obtained from either table SPIDDB or TOPEACAR. The group name must first be datafilled in table BAGNAME before it can be used in this table.

Field BILLSPID is the SPID of the billed-to party. The SPID returned from the LIDB query is used to screen for billing agreements. Before a SPID can be added to this field, it must first be datafilled in table SPID.

Figure 53 MAP display example for table CCVAGRMT

```
CCVKEY
------------------------------------------------------------------------
OPRSVCCCV ILEC
OPRSVCCCV CLEC
SPIDCCV ILEC
SPIDCCV CLEC
CARCCV ILEC
CARCCV CLEC
```

Table CCVAGRMT must be datafilled in the following sequence:

- SPID
- BAGNAME
- CCVAGRMT

Table BNSAGRMT

Billing agreements based on BNS are tracked in table BNSAGRMT. This table consists of two fields, ORIGGRP and BILLSPID. These two fields make up the key to a tuple in this table which indicates an agreement exists between the billing agreement group of the originator and the billed-to SPID.

Field ORIGGRP associates a group name with the SPID (in the case of a LEC call) or the CIC (in the case of a carrier call) of the originating party for the purpose of screening for billing agreements. The group name is obtained from either table SPIDDB or TOPEACAR. The group name must first be datafilled in Table BAGNAME before it can be used in this table.

Field BILLSPID s the SPID of the billed-to party. The SPID returned from the LIDB query is used to screen for billing agreements. Before a SPID can be added to this field, it must first be datafilled in table SPID.

Figure 54 MAP display example for table BNSAGRMT

```
BNSKEY
------------------------------------------------------------------------
OPRSVCBNS ILEC
OPRSVCBNS CLEC
SPIDBNS ILEC
SPIDBNS CLEC
CARBNS ILEC
CARBNS CLEC
```

Tables must be datafilled in the following sequence:

- SPID
- BAGNAME
- BNSAGRMT

Table TOPSPARM

Three parameters are used in table TOPSPARM to allow the OS provider to wholesale their billing agreements in cases where CLECs do not want to secure their own agreements. These parameters are CHECK_BILL_AGRMT_USING_BSP_SPID, ALL_CALLS_USE_OPR_SVC_AGRMTS, and OPR_SVC_AGRMTS.

Parameter CHECK_BILL_AGRMT_USING_BSP_SPID allows optional screening on the BSP SPID.

Parameter ALL_CALLS_USE_OPR_SVC_AGRMTS determines how to use the OS billing agreements. If set to Y, the agreement groups obtained from parameter OPR_SVC_AGRMTS are used to check all calls incoming on TOPS/ISUP trunks. If this parameter is set to N, the use of these agreements is determined on an individual basis through field BILAGRMT in table TOPEACAR or SPIDDB.

Parameter OPR_SVC_AGRMTS identifies the billing agreement groups with which the OS wholesaler has agreements. Fields CCVAGRMT and BNSAGRMT provide an index into tables CCVAGRMT and BNSAGRMT respectively. This parameter allows CLECs to use their own billing agreements or use the billing agreements already established by the OS wholesaler.Field NOSPDERR allows the Operator Services wholesaler to define a default handling when the LIDB does not return an AO or BSP SPID in the query response.

Since parameter ALL_CALLS_USE_OPR_SVC_AGRMTS is dependent upon parameter OPR_SVC_AGRMTS, it is checked to ensure that valid groups are datafilled in fields CCVAGRMT and BNSAGRMT before ALL_CALLS_USE_OPR_SVC_AGRMTS can be set to Y. Conversely, parameter OPR_SVC_AGRMTS cannot be set to N if any SPID in table SPIDDB or CIC in table TOPEACAR is using the OS billing agreements or if ALL_CALLS_USE_OPR_SVC_AGRMTS is set to Y.

For additional table information, please refer to Chapter 7: “Unbundling data schema.”

Figure 55 MAP display example for table TOPSPARM

```
PARMNAME                                    PARMVAL
-------------------------------------------------------------------------
ALL_CALLS_USE_OPR_SVC_AGRMTS                N
CHECK_BILL_AGRMT_USING_BSP_SPID             N
OPR_SVC_AGRMTS                              Y OPRSVCCCV OPRSVCBNS OPER
```

Table TOPEACAR

Table TOPEACAR provides information on IXC-type providers. Field OPSERV has four subfields that define the agreements and the groupings. These subfields are BILAGRMT, AGRMTYPE, CCVAGRMT, and BNSAGRMNT.

Subfield BILAGRMT is examined to determine the type of billing agreement that is in place for the provider. This field is checked when TOPSPARM parameter ALL_CALLS_USE_OPR_SVC_AGRMTS is set to N. For additional table information, please refer to Chapter 7: "Unbundling data schema."

Subfield AGRMTYPE has three possible values for the agreement type:

- SELF - datafilled when the service provider has their own billing agreements in place. When SELF is datafilled, subfields CCVAGRMT, BNSAGRMT, NOSPDERR must also be datafilled.
- OPRSVC - datafilled when the service provider is using the operator service wholesaler's billing agreement. When OPRSVC is datafilled, the billing agreement groups used to index tables CCVAGRMT and BNSAGRMT are obtained from parameter OPR_SVC_AGRMTS in Table TOPSPARM.
- NONE - this value allows for:
  - — a default for ONPs from a pre-TOP13 load,
  - — a default datafill when the feature is not On,
  - — default datafill when individual agreements are irrelevant because parameter ALL_CALLS_USE_OPR_SVC_AGRMTS is set to Y
  - — screening for billing agreement to be activated on a per SPID or CIC basis

With NONE as an option, the following combination becomes possible: SOC is ON, tuple in table TOPSFTR is enabled, ALL_CALLS_USE_OPR_SVC_AGRMTS is set to N, and AGRMTYPE is set to NONE. In this case, checks for billing agreements are not performed and the call is handled as if SOC code UNBN0101 in OFF.

Figure 56 MAP display example for table TOPEACAR

```
CARDIG CARNAME    ALTDISP OPLSCLD CAMABILL ALTCARR     NATERM   INTERM
                                                                 OPSERV
TDBIDX CICSCHEM         LIDBYCIC
-------------------------------------------------------------------------
0803    C803       C803       Y        Y    0803    UNREST      UNREST
SERV NOQUERY Y NOQUERY Y NOQUERY Y Y Y Y 100       SELF CARCCV CARBNS BLOCK
0       N                   N
0113    ACI113     ACI113     Y        Y    0113    UNREST      UNREST
SERV NOQUERY Y NOQUERY Y NOQUERY Y Y Y Y 100                          NONE
0      Y 0113SERV           N
```

Table SPIDDB

SPIDDB provide details on CLEC-type providers. As in table TOPEACAR, field BILAGRMT is examined to determine the type of billing agreement that is in place for the given providers. This field is checked when TOPSPARM parameter ALL_CALLS_USE_OPR_SVC_AGRMTS is set to N.

There are four subfields in table SPIDDB relating to billing agreements. These are AGRMTYPE, CCVAGRMT, BNSAGRMT, and NOSPDERR.

Note: The properties of subfield AGRMTYPE listed under table TOPEACAR on page 94, also apply to table SPIDDB.

Figure 57 MAP display example for table SPIDDB

```
SPID   SCRNDISP                                  OPERSYS              TAANN
            DAANN                                        ACTSANN           XLA
         SPIDCRIT SCRNIDX                              BILAGRMT      DACICOVR
-------------------------------------------------------------------------------
ILEC Y ILECSPID                                     ALL Y        TOPSBRND1
Y       TOPSBRND1 Y         ACTSTOPS  25           ACTSTOPS  26            N
Y       ILEC_CRIT     100                               NONE          N
CLEC Y  DNSCDSP                                     ALL Y        DNSCBRAND
Y       DNSCBRAND Y         ACTSTOPS  27           ACTSTOPS  28 Y  DNSCRNSPID
               N      100   SELF   SPIDCCV   SPIDBNS ACCPT          N
```

Chapter 4: Unbundling call processing

This chapter describes how several of the unbundling functional components use the calling AO SPID in TOPS call processing. Call processing differs between non-equal access (non-EA) and EA calls.

This discussion focuses on the following call types:

- 411 station paid call (page 98)
- 0- bill to third party call (page 108)
- 0+ calling card call (page 121)
- 1+ ACTS coin call (page 138)
- 0+ EA screening call (page 146)
- 0+ billing agreement screening call (page 160)

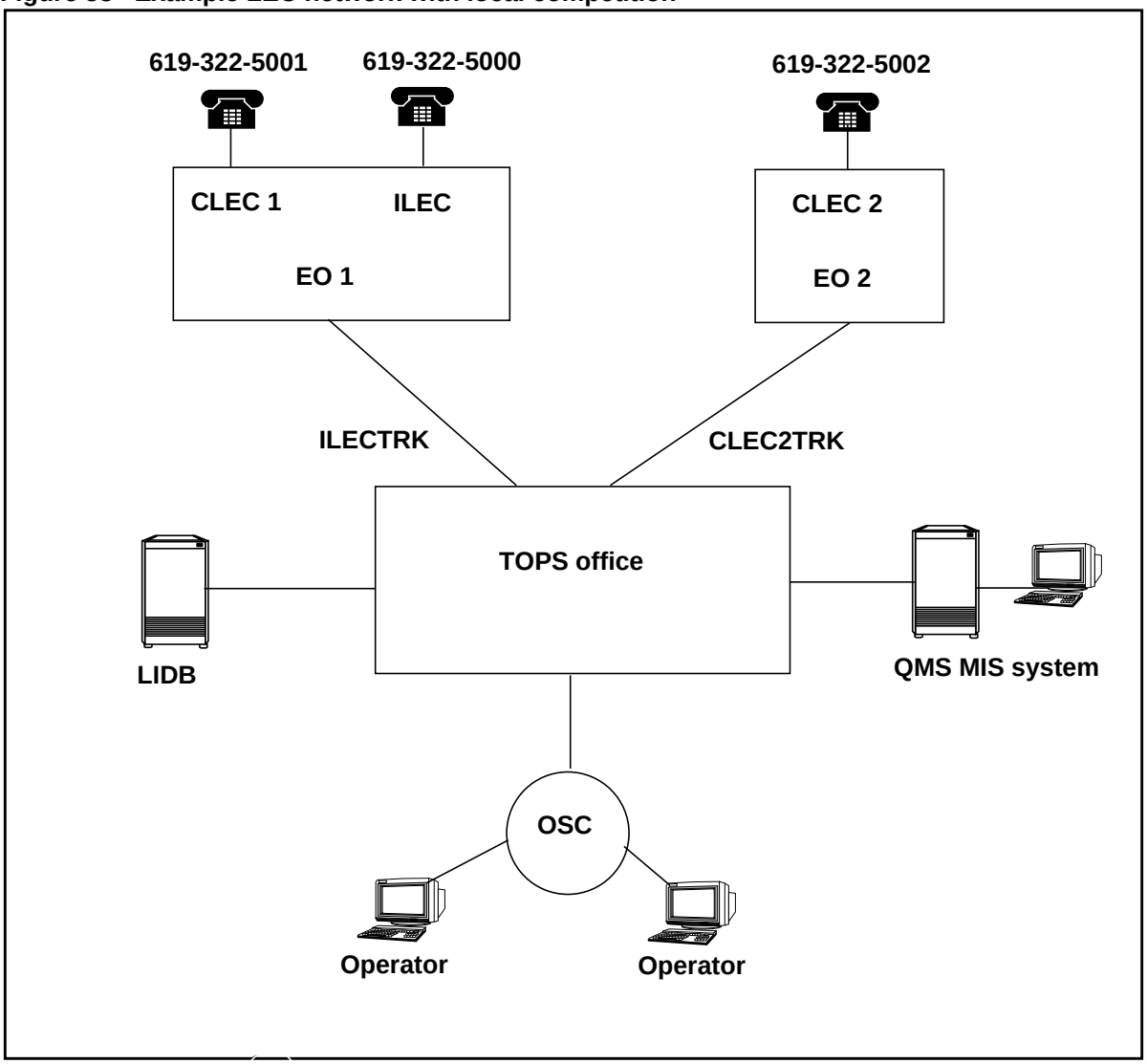
For each call type, the following information is provided:

- a sample network configuration
- a sample call flow
- examples of related datafill
- a detailed description of several scenarios

411 station paid call flow example

The following figure shows a sample network used in the call flow.

Figure 58 Example LEC network with local competition



In this example network configuration, the ILEC owns one EO (EO 1) and CLEC2 owns one EO (EO 2). CLEC 1 does not have its own EO, but has chosen the ILEC to resell subscriber lines to CLEC 1.

A subscriber with a DN of 619-322-5001 uses CLEC 1 as its service provider. A subscriber with a DN of 619-322-5000 uses the ILEC as its service provider. A subscriber with a DN of 619-322-5002 uses CLEC 2 as its service provider.

Trunking between the EOs and the TOPS office consists of both dedicated and combined facilities. A dedicated trunk group (CLEC2TRK) carries CLEC 2 traffic between EO 2 and the TOPS office. A combined trunk group (ILECTRK) carries both ILEC and CLEC 1 traffic between EO 1 and the TOPS office.

A single TOPS office, owned by the ILEC, provides operator services for all three service providers. One Operator Service Center (OSC), or operator team, handles all calls, whether from ILEC subscribers, CLEC 1 subscribers, or CLEC 2 subscribers.

The example network also includes a line information database (LIDB) for OLNS queries, and a QMS MIS system for reporting call queue and position event messages.

Call flow assumptions

This example call flow has the following assumptions:

- The calls are intraLATA calls, not carrier calls.
- The RECORD_AO_SPID_INFO parameter for the calling AO SPID in table TOPAMAOP is enabled. If a SPID is assigned to the call, this SPID is recorded in the AMA record by appending a module code 338.
- The BRAND_USING_DEFAULT_SPID parameter in table TOPSPARM is enabled.
- UNBUNDLING_BRANDING_VIA_SPID parameter in table TOPSFTR is enabled.
- The various QMS MIS messages are enabled for call queue events and position events.

Call flow description

The call flow example in this section is for a 411 station paid call. The example is simplified to illustrate the following key points:

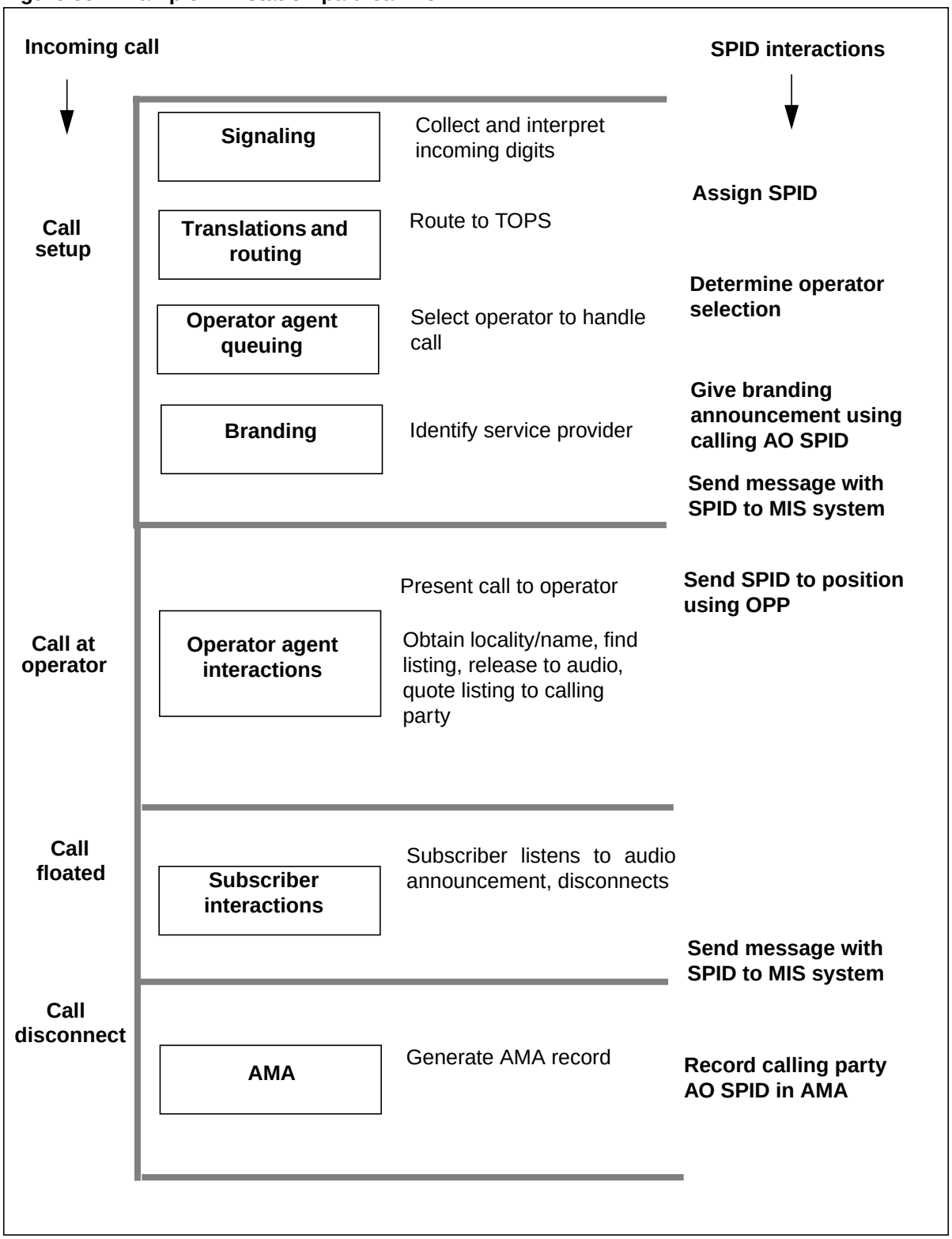
- the ability to provide different branding for both CLEC and ILEC calls
- the ability to provide a single operator team to handle calls for both CLEC and ILEC calls
- the ability to provide different screen displays to the operator position

The following functional components are shown in this example:

- SPID assignment
- branding announcement given to the call based on SPID
- call presentation to a single operator team
- QMS MIS messaging
- AMA record generated on call completion

The following call flow shows the SPID processing in the 411 station paid call.

Figure 59 Example 411 station paid call flow



Related call flow datafill

This section shows sample datafill for the 411 station paid call. The data shown is specific to TOPS unbundling.

Note: For details on how to datafill all the tables for unbundling, refer to Chapter 7: "Unbundling data schema."

Table SPID

Calling AO SPIDs are defined for the ILEC, CLEC 1, and CLEC 2. Because entries in table SPID are limited to four alphanumeric characters, the entry LEC1 in table SPID is for CLEC 1, and the entry LEC2 in table SPID is for CLEC 2. The following figure shows example datafill.

Figure 60 MAP display example for table SPID

```
SPID
----------------------------------------------------------------------
ILEC
LEC1
LEC2
```

Table TOPSTOPT

SPID processing must be activated for each trunk group that carries SPID traffic. For each trunk group, an entry in table TOPSTOPT must be present with the SPIDPRC field set to Y. Trunk groups that do *not* carry SPID traffic should have SPIDPRC set to N.

The TRKSPID field defines a default calling AO SPID for the entire trunk group. For trunk group ILECTRK, which is a combined trunk group for ILEC and CLEC 1 traffic, the default SPID is set to ILEC. This shows that the *primary* traffic on trunk group ILECTRK is from ILEC subscribers, not CLEC 1. For trunk group CLEC2TRK, which is a dedicated trunk group for CLEC 2 traffic, the default SPID is set to LEC2.

The OLNSQRY field determines whether or not an OLNS query is sent to a LIDB database. In this example, an OLNS query can be performed for an ILECTRK call, but not for a CLEC2TRK call.

The following figure shows example datafill.

Figure 61 MAP display example for table TOPSTOPT

```
GRPKEY           ORGAREA                    DISPCLG  ADASERV    ADASANS
ANITOCLI  OLNSQRY  DCIBIDX  LNPCLGAM         XLASCHEM    SPIDPRC  TRKSPID
    BILLSCRN        ANIFSPL       MAXCONNS        DISPSPID
-------------------------------------------------------------------------
ILECTRK           Y OSSAIN_ROC1_ORIG        N        NONE          NA
N N        ALL       0        N                 N        Y      Y ILEC
          N            N             0               N
CLEC2TRK                 N                 N        NONE          NA
N N        NONE      0        N                 N        Y      Y LEC2
          N            N             0               N
```

Table SPIDDB

In table SPIDDB, the SCRNDISP field defines an operator screen display. For CLEC 1, the screen display is ATEL; and for CLEC 2, the display is BCOM. There is no special display defined for ILEC subscribers.

The TAANN field defines branding announcements (if any) for TA calls. The DAANN field defines branding announcements for DA calls.The ILEC has assigned different branding announcements for TA (ATABRAND) and DA (ADABRAND) calls. CLEC 1 has assigned the *same* announcement (BBRAND) for both TA and DA calls. CLEC 2 has chosen not to have announcements for either TA or DA calls.

The following figure shows example datafill.

Figure 62 MAP display example for table SPIDDB

```
SPID   SCRNDISP   OPERSYS                  TAANN      DAANN
   ACTSANN    XLA           SPIDCRIT  SCRNIDX     BILAGRMT      DACICOVR
-------------------------------------------------------------------------
ILEC    N           ALL                     Y ATABRAND Y ADABRAND
     N         N              N        100        NONE             N
LEC1    Y ATEL      ALL                     Y BBRAND   Y BBRAND
     N         N              N        100        NONE             N
LEC2    Y BCOM      ALL                     N          N
     N         N              N        100        NONE             N
```

Call flow scenarios

The following three scenarios show variations in the 411 station paid call flow.

- Scenario 1 has the following elements:
  - — The subscriber is ILEC.
  - — An OLNS query is performed.

- — The branding announcement for the DA call is ADABRAND.
- — No screen display is presented to the operator.

- Scenario 2 has the following elements:
  - — The subscriber is CLEC 1.
  - — An OLNS query is performed.
  - — The branding announcement for the DA call is BBRAND.
  - — The screen display ATEL is presented to the operator.
- Scenario 3 has the following elements:
  - — The subscriber is CLEC 2.
  - — No OLNS query is performed.
  - — No branding announcement is used for the DA call.
  - — The screen display BCOM is presented to the operator.

Scenario 1

In Scenario 1, the ILEC subscriber 619-322-5000 places a 411 call billed as station paid.

1 Subscriber 619-322-5000 dials 411. EO 1 performs translations on the dialed digits, selects an outgoing trunk group to the TOPS office, and outpulses the called digits (411).

2 The call arrives at the TOPS office over incoming trunk group ILECTRK. The TOPS office receives the called digits (411), and a coded start signal to mark the call as direct dialed (DD).

3 TOPS performs translations on the called digits (411). The call type is set as a DA call, and the billing for this DA call is set as station paid (based on the call being DD).

4 The ANI digits to identify the calling subscriber (619-322-5000) are received from EO 1.

5 Because an OLNS query is enabled for ILECTRK in table TOPSTOPT, TOPS sends an OLNS query to the LIDB using the ANI digits. The OLNS response identifies subscriber 619-322-5000 as having a calling AO SPID of ILEC.

6 TOPS determines that SPID processing is enabled, because the SPIDPRC field in table TOPSTOPT is set to Y for trunk group ILECTRK.

7 TOPS sets the calling AO SPID for the call to ILEC based on the OLNS response, which takes precedence over the default AO SPID assigned to the TRKSPID field in table TOPSTOPT for trunk group ILECTRK (even though the default SPID is also set to ILEC).

8 The TOPS branding SOC UNBN0101 is enabled, as is TOPSFTR parameter UNBUNDLING_BRANDING_VIA_SPID. TOPS checks table SPIDDB for the ILEC SPID and determines that the DAANN field specifies a branding announcement for a DA call. The announcement corresponding to the CLLI name of ADABRAND is played to subscriber 619-322-5000.

9 TOPS determines the OSC (operator team) to receive the call, which is based on QMS datafill. In this example, QMS does not use SPID criteria, so the details of QMS are not presented here.

10 The TOPS QMS MIS SOC UNBN0101 is enabled, as well as TOPSFTR parameter UNBUNDLING_SPID_IN_MIS_STREAM. A call queue event message that includes the calling AO SPID (ILEC) for subscriber 619-322-5000 is sent to the MIS system (even though SPID was *not* used for QMS).

11 The call is routed to an available idle operator position in the single OSC team, so no queuing is required.

12 TOPS checks the SCRNDISP field in table SPIDDB and determines that a screen display has *not* been specified for the ILEC service provider. The call is presented to the operator position without a screen display indicating the ILEC as service provider.

13 A QMS MIS position event message that includes the calling AO SPID (ILEC) for subscriber 619-322-5000 is sent to the MIS system when the call is presented to the operator position.

14 The operator asks the subscriber for locality and name, and performs a DA search to obtain the number required. The operator then releases the call to an audio announcement, which quotes the number back to the subscriber.

15 A QMS MIS position event message that includes the calling AO SPID (ILEC) for subscriber 619-322-5000 is sent to the MIS system when the call is released from the operator position.

16 Subscriber 619-322-5000 listens to the announcement, writes down the quoted number, and then releases the call.

17 An AMA record is produced for the call. Due to the presence of a calling AO SPID (ILEC) in the TOPS data, a module code 338 that identifies the calling AO SPID is appended to the AMA record.

Scenario 2

In Scenario 2, the CLEC 1 subscriber 619-322-5001 places a 411 call billed as station paid. The steps in **bold** show the key differences from those in Scenario 1 for the ILEC subscriber. These include steps 5, 7, 8, and 12.

1 Subscriber 619-322-5001 dials 411. EO 1 performs translations on the dialed digits, selects an outgoing trunk group to the TOPS office, and outpulses the called digits (411).

2 The call arrives at the TOPS office over incoming trunk group ILECTRK. The TOPS office receives the called digits (411), and a coded start signal to mark the call as DD.

3 TOPS performs translations on the called digits (411). The call type is set as a DA call, and the billing for this DA call is set as station paid (based on the call being DD).

4 The ANI digits to identify the calling subscriber (619-322-5001) are received from EO 1.

5 Because an OLNS query is enabled for ILECTRK in table TOPSTOPT, TOPS sends an OLNS query to the LIDB using the ANI digits. An OLNS response identifies subscriber 619-322-5001 as having a calling AO SPID of LEC1.

6 TOPS determines that SPID processing is enabled, because the SPIDPRC field in table TOPSTOPT is set to Y for trunk group ILECTRK.

7 TOPS sets the calling AO SPID for the call to LEC1 based on the OLNS response, which takes precedence over the default AO SPID of ILEC assigned to the TRKSPID field in table TOPSTOPT for trunk group ILECTRK.

8 The TOPS branding SOC UNBN0103 is enabled as is TOPSFTR parameter. TOPS checks table SPIDDB for the LEC1 SPID and determines that the DAANN field specifies a branding announcement for a DA call. The announcement corresponding to the CLLI name of BBRAND is played to subscriber 619-322-5001.

9 TOPS determines the OSC to receive the call, which is based on QMS datafill. In this example, QMS does not use SPID criteria, so the details of QMS are not presented here.

10 The TOPS QMS MIS SOC UNBN0101 is enabled, as is TOPSFTR parameter. A call queue event message that includes the calling AO SPID (LEC1) for subscriber 619-322-5001 is sent to the MIS system (even though SPID was *not* used for QMS).

11 The call is routed to an available idle operator position in the single OSC team, so no queuing is required.

12 TOPS checks the SCRNDISP field in table SPIDDB and determines that a screen display is specified for the LEC1 service provider. The call is presented to the operator position with a screen display of ATEL.

13 A QMS MIS position event message that includes the calling AO SPID (LEC1) for subscriber 619-322-5001 is sent to the MIS system when the call is presented to the operator position.

14 The operator asks the subscriber for locality and name, and performs a DA search to obtain the number required. The operator then releases the call to an audio announcement, which quotes the number back to the subscriber.

15 A QMS MIS position event message that includes the calling AO SPID (LEC1) for subscriber 619-322-5001 is sent to the MIS system when the call is released from the operator position.

16 Subscriber 619-322-5001 listens to the announcement, writes down the quoted number, and then releases the call.

17 An AMA record is produced for the call. Due to the presence of a calling AO SPID (LEC1) in the TOPS data, a module code 338 that identifies the calling AO SPID is appended to the AMA record.

Scenario 3

In Scenario 3, the CLEC 2 subscriber 619-322-5002 places a 411 call billed as station paid. The steps in **bold** show the key differences from those in Scenario 1 for the ILEC subscriber. These include steps 5, 7, 8, and 12.

1 Subscriber 619-322-5002 dials 411. EO 2 performs translations on the dialed digits, selects an outgoing trunk group to the TOPS office, and outpulses the called digits (411).

2 The call arrives at the TOPS office over incoming trunk group CLEC2TRK. The TOPS office receives the called digits (411), and a coded start signal to mark the call as DD.

3 TOPS performs translations on the called digits (411). The call type is set as a DA call, and the billing for this DA call is set as station paid (based on the call being DD).

4 The ANI digits to identify the calling subscriber (619-322-5002) are received from EO 2.

5 TOPS does *not* perform an OLNS query, because it is not enabled for CLEC2TRK in table TOPSTOPT.

6 TOPS determines that SPID processing is enabled, because the SPIDPRC field in table TOPSTOPT is set to Y for trunk group CLEC2TRK.

7 No OLNS query was made in step 5, so no response identifying the calling AO SPID is received. TOPS sets the calling AO SPID for the subscriber 619-322-5002 to LEC2 based on the default AO SPID of LEC2 assigned to the TRKSPID field in table TOPSTOPT for trunk group CLEC2TRK.

8 The TOPS branding SOC UNBN0103 is enabled, as is the TOPSFTR parameter. TOPS checks table SPIDDB for the LEC2 SPID and determines that the DAANN field specifies no branding announcement for a DA call.

9 TOPS determines the OSC to receive the call, which is based on QMS datafill. In this example, QMS does not use SPID criteria, so the details of QMS are not presented here.

10 The TOPS QMS MIS SOC UNBN0101 is enabled, as is the TOPSFTR parameter. A call queue event message that includes the calling AO SPID (LEC2) for subscriber 619-322-5002 is sent to the MIS system (even though SPID was *not* used for QMS).

11 The call is routed to an available idle operator position in the single OSC team, so no queuing is required.

12 TOPS checks SCRNDISP in table SPIDDB and determines that a screen display is specified for the LEC2 service provider. The call is presented to the operator position with a screen display of BCOM.

13 A QMS MIS position event message that includes the calling AO SPID (LEC2) for subscriber 619-322-5002 is sent to the MIS system when the call is presented to the operator position.

14 The operator asks the subscriber for locality and name, and performs a DA search to obtain the number required. The operator then releases the call to an audio announcement, which quotes the number back to the subscriber.

15 A QMS MIS position event message that includes the calling AO SPID (LEC2) for subscriber 619-322-5002 is sent to the MIS system when the call is released from the operator position.

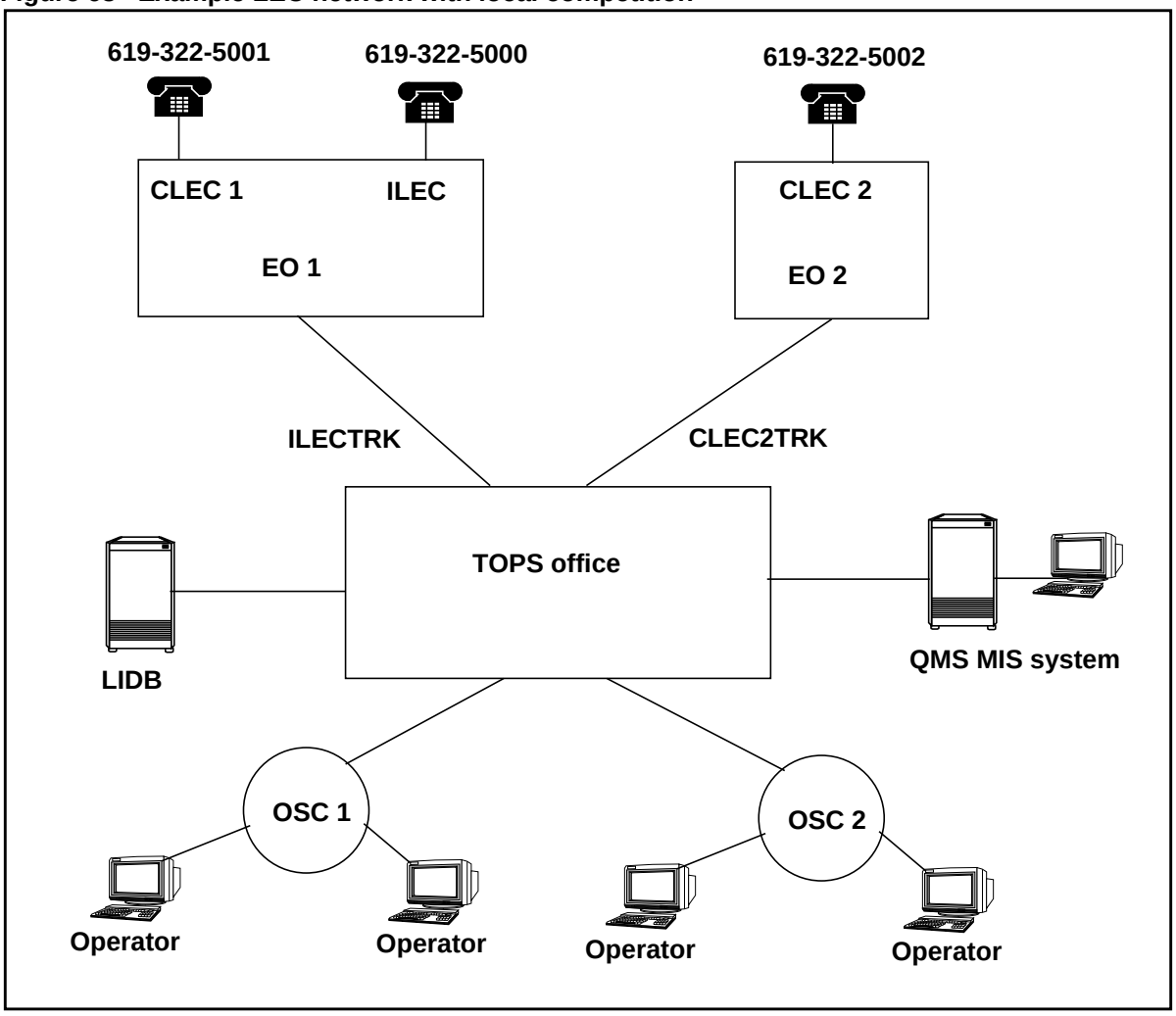
16 Subscriber 619-322-5002 listens to the announcement, writes down the quoted number, and then releases the call.

17 An AMA record is produced for the call. Due to the presence of a calling AO SPID (LEC2) in the TOPS data, a module code 338 that identifies the calling AO SPID is appended to the AMA record.

0- bill to third party call flow example

The following figure shows a sample network used in the call flow.

Figure 63 Example LEC network with local competition



In this example network configuration, the ILEC owns EO 1 and CLEC2 owns EO 2. CLEC 1 does not have its own EO, but has chosen the ILEC to resell subscriber lines to CLEC 1.

A subscriber with a DN of 619-322-5001 uses CLEC 1 as its service provider. A subscriber with a DN of 619-322-5000 uses the ILEC as its service provider. A subscriber with a DN of 619-322-5002 uses CLEC 2 as its service provider.

Trunking between the EOs and the TOPS office consists of both dedicated and combined facilities. A dedicated trunk group (CLEC2TRK) is between EO 2 and the TOPS office, and carries the CLEC 2 traffic. A combined trunk group (ILECTRK) is between EO 1 and the TOPS office, and carries both ILEC and CLEC 1 traffic.

A single TOPS office, owned by the ILEC, provides operator services for all three service providers. Two OSCs, or operator teams, are established. OSC 1 handles calls from ILEC and CLEC 1 subscribers, and OSC 2 handles calls from CLEC 2 subscribers.

The example network also includes a LIDB for OLNS queries and billed number screening (BNS) queries (for third party validation), and a QMS MIS system for reporting call queue event and position even messages.

Call flow assumptions

This example call flow has the following assumptions:

- The calls are intraLATA calls, not carrier calls.
- The RECORD_AO_SPID_INFO parameter for the calling AO SPID in table TOPAMAOP is enabled. If a SPID is assigned to the call, this SPID is recorded in the AMA record by appending a module code 338.
- The BRAND_USING_DEFAULT_SPID parameter in table TOPSPARM is enabled.
- UNBUNDLING_BRANDING_VIA_SPID parameter in table TOPSFTR is enabled.
- The various QMS MIS messages are enabled for call queue events and position events.

Call flow description

The call flow example in this section is for a 0- bill to third party call. The example is simplified to illustrate the following key points:

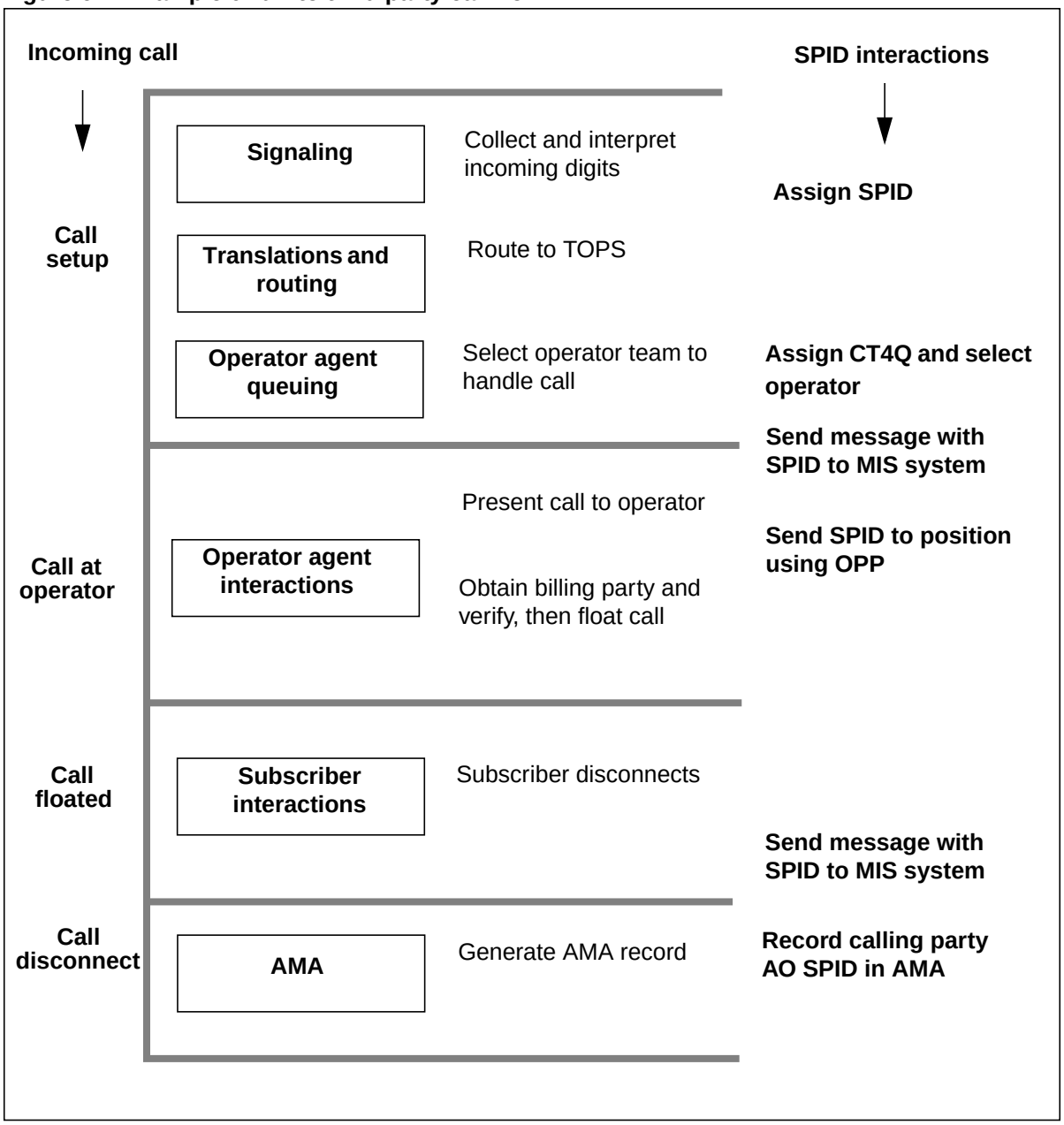
- the ability to use separate operator teams to handle calls based on the SPID of the subscriber
- the ability to collect MIS statistics based on SPID, independent of whether the operator teams are shared or separate

The following functional components are shown in this example:

- SPID assignment
- call queuing to an operator team based on SPID
- QMS MIS messaging
- AMA record generated on call completion

The following call flow shows the SPID processing in the 0- bill to third party call.

Figure 64 Example 0- bill to third party call flow



Related call flow datafill

This section shows sample datafill for the 0- bill to third party call. The data shown is specific to TOPS unbundling.

Note: For details on how to datafill all the tables for unbundling, refer to Chapter 7: "Unbundling data schema."

Table SPID

SPIDs are defined for the ILEC, CLEC 1, and CLEC 2. The following figure shows example datafill.

Figure 65 MAP display example for table SPID

```
SPID
----------------------------------------------------------------
ILEC
LEC1
LEC2
```

Table TOPSTOPT

SPID processing must be activated for each trunk group that carries SPID traffic. For each trunk group, an entry in table TOPSTOPT must be present with the SPIDPRC field set to Y. Trunk groups that do *not* carry SPID traffic should have SPIDPRC set to N.

The TRKSPID field defines a default calling AO SPID for the entire trunk group. For trunk group ILECTRK, which is a combined trunk group for ILEC and CLEC 1 traffic, there is *no* default SPID specified. For trunk group CLEC2TRK, which is a dedicated trunk group for CLEC 2 traffic, the default SPID is set to LEC2.

The OLNSQRY field determines whether or not an OLNS query is sent to a LIDB database. In this example, an OLNS query can be performed for both ILECTRK calls and CLEC2TRK calls.

The following figure shows example datafill.

Figure 66 MAP display example for table TOPSTOPT

```
GRPKEY                  ORGAREA              DISPCLG  ADASERV    ADASANS
ANITOCLI OLNSQRY DCIBIDX  LNPCLGAM        XLASCHEM   SPIDPRC   TRKSPID
    BILLSCRN     ANIFSPL       MAXCONNS      DISPSPID
-------------------------------------------------------------------------
ILECTRK Y          OSSAIN_ROC1_ORIG             N     NONE         NA
N N       ALL       0        N              N           Y        N
          N            N          0             N
CLEC2TRK                     N                      N     NONE         NA
N N       NONE      0        N              N           Y        Y  LEC2
          N            N          0             N
```

Tables TQORDERA and TQORDERB

TOPS QMS uses a series of Call Type for Queuing (CT4Q) tables to decide how to distribute calls. Each CT4Q table uses a call characteristic (or *criterion*) such as class of service, language, or SPID, to help refine the determination of which queue a call is assigned. Operator profile datafill defines (indirectly) which queues may be serviced by an operator. An OSC is the team of operators whose profile data allows them to service a queue.

Tables TQORDERA and TQORDERB define the order in which the CT4Q tables are used to determine final call queue assignment. Only one ordering table is *active* at a time, and is used by QMS. Before a specific CT4Q table can be datafilled, non-zero values must be entered for that CT4Q entry. There are many steps involved in this process, which are not described here.

The PREOPR field is used for processing calls on presentation to TOPS. Only the CT4QORIG and CT4QSPID have non-zero values for this example.

The following figure shows example datafill.

Figure 67 MAP display example for tables TQORDERA and TQORDERB

```
CT4QTABL     PREOPR      POSTAUTO      RECALL      ASST
-------------------------------------------------------------------------
CT4QCLAS       0             0           0         0
CT4QREST       0             0           0         0
CT4QPFXT       0             0           0         0
 CT4QCAR       0             0           0         0
 CT4QCLD       0             0           0         0
CT4QORIG       1             0           0         0
CT4QTIME       0             0           0         0
CT4QLANG       0             2           2         0
CT4QAUTO       0             1           1         0
CT4QSPID       4             3           3         1
CT4QBLST       0             0           0         0
CT4QCALT       0             0           0         0
CT4QSLRN       0             0           0         0
```

Table QMSTOPS

QMS uses table QMSTOPS to map calls to an initial CT4Q. Based on the call origination (CO) type assigned during translations, the CT4Q field specifies the initial CT4Q. Table CT4QNAMS (not shown here) defines the CT4Q names. The following figure shows example datafill.

Figure 68 MAP display example for table QMSTOPS

```
CO          CT4Q
-------------------------------------------------------------------
UNSPEC      UNSPEC
OH          0_MINUS
OA          O_PLUS
DD          1_PLUS
CAMA        CAMA
```

Table SPIDDB

The SPIDCRIT field indicates whether to use SPID as a criterion for QMS. If SPIDCRIT is set to Y, then a SPID criterion name for that SPID is specified. SPIDCRIT names are defined in table TQSPIDNM (not shown here).

The following figure shows example datafill. For ILEC, the SPID is not used as a criterion. For LEC1, the SPID is used as a criterion and the SPIDCRIT name is set to CLEC1_CRIT. For LEC2, the SPID is used as a criterion and the SPIDCRIT name is set to CLEC2_CRIT.

Figure 69 MAP display example for table SPIDDB

```
SPID   SCRNDISP   OPERSYS                    TAANN        DAANN
   ACTSANN   XLA      SPIDCRIT        SCRINDX    BILAGRMT      DACICOVR
-------------------------------------------------------------------------
ILEC    N        ALL                          N            N
   N          N        N                  100      NONE              N
LEC1    N        ALL                          N            N
   N          N        Y CLEC1_CRIT       100      NONE              N
LEC2    N        ALL            N             N            N
   N          N        Y CLEC2_CRIT       100      NONE              N
```

Table CT4QSPID

Table CT4QSPID is the CT4Q table that uses a SPIDCRIT name to refine a CT4Q name given as input (OLDCT4Q field) into a new CT4Q name (NEWCT4Q field). CT4Q names are defined in table CT4QNAMS (not shown here). The following figure shows example datafill.

Figure 70 MAP display example for table CT4QSPID

```
OLDCT4Q          SPIDCRIT        NEWCT4Q
-------------------------------------------------------------------
0_MINUS          CLEC1_CRIT      0_MINUS_CLEC1
0_MINUS          CLEC2_CRIT      0_MINUS_CLEC2
0_PLUS           CLEC1_CRIT      0_PLUS_CLEC1
0_PLUS           CLEC2_CRIT      0_PLUS_CLEC2
```

Table TQMSFCQA

After all CT4Q refinements are performed, the call is assigned a final call queue (CALLQ field) from datafill in table TQMSFCQA based on the final CT4Q name. The following figure shows example datafill.

Figure 71 MAP display example for table TQMSFCQA

```
CT4Q             CALLQ       RECALLQ     ASSTAREA
-------------------------------------------------------------------
0_MINUS          CQ0         CQ70         SA
0_MINUS_CLEC1    CQ1         CQ71         SA
0_MINUS_CLEC2    CQ2         CQ72         SA
0_PLUS           CQ0         CQ73         SA
0_PLUS_CLEC1     CQ3         CQ73         SA
0_PLUS_CLEC2     CQ4         CQ74         SA
```

Table TQMSSERV

Table TQMSSERV defines a list of services that each operator can provide. The following figure shows an example.

Figure 72 MAP display example for table TQMSSERV

```
 SERVNUM                    QMSSERV              BASESERV
                IMPLCT4Q                    SERVTYPE
-------------------------------------------------------------------
      0                    TOPS_TA              TASERV
               0_MINUS                      BASE Y
      1                    CLEC_TA              TASERV
               0_MINUS                      BASE Y
      2                    CLEC1_TA             TASERV
               0_MINUS_CLEC1                BASE Y
      3                    CLEC2_TA             TASERV
               0_MINUS_CLEC2                BASE Y
```

Table TQCQINFO

Table TQCQINFO marks a service name for a call (QMSSERV field) based on the CALLQ assigned in table TQMSFCQA.

The following figure shows example datafill. Based on operator profile datafill (not shown here), the call is served by an operator that matches the service name assigned in table TQCQINFO.

Figure 73 MAP display example for table TQCQINFO

```
CALLQ       QMSSERV      CWOFF       CWON        TREAT     ALRTAREA
-------------------------------------------------------------------
CQ0         TOPS_TA        10         25          EMR3       N
CQ1         TOPS_TA        10         25          EMR4       N
CQ2         CLEC_TA        10         25          EMR5       N
CQ3         CLEC1_TA       10         25          EMR        N
CQ4         CLEC2_TA       10         25          EMR5       N
```

Reporting of QMS MIS messages occurs when certain call events and operator position actions occur. This example only details the reporting of SPID information in the MIS messages.

Call flow scenarios

The following three scenarios show variations in the 0- billed to third party call flow.

- Scenario 1 has the following elements:
  - The subscriber is CLEC 1.
  - An OLNS query is performed.
  - SPIDCRIT is used in QMS refinement. The initial CT4Q name is 0_MINUS, which is refined to 0_MINUS_CLEC1.
  - The billed AO SPID is set to ILEC.
- Scenario 2 has the following elements:
  - The subscriber is ILEC.
  - An OLNS query is performed.
  - SPIDCRIT is not used in QMS refinement.
  - The billed AO SPID is set to LEC1.
- Scenario 3 has the following elements:
  - The subscriber is CLEC 2.
  - An OLNS query is performed.
  - SPIDCRIT is used in QMS refinement. The initial CT4Q name is 0_MINUS, which is refined to 0_MINUS_CLEC2.
  - QMS obtains a CALLQ of CQ2 for 0_MINUS_CLEC2.
  - The billed AO SPID is set to ILEC.

Scenario 1

In Scenario 1, the CLEC 1 subscriber 619-322-5001 places a 0- bill to third party call.

1 Subscriber 619-322-5001 dials 0. EO 1 selects an outgoing trunk group to the TOPS office. The 0- call arrives at TOPS over the incoming trunk group ILECTRK, and the call type is set as operator handled (OH).

2 The ANI digits to identify the calling subscriber (619-322-5001) are received from EO 1.

3 Because an OLNS query is enabled for ILECTRK in table TOPSTOPT, TOPS sends an OLNS query to the LIDB using the ANI digits. The OLNS response identifies subscriber 619-322-5001 as having a calling AO SPID of LEC1.

4 TOPS determines that SPID processing is enabled, because the SPIDPRC field in table TOPSTOPT is set to Y for trunk group ILECTRK.

5 Based on the call type of OH, TOPS checks table QMSTOPS and sets an initial CT4Q name of 0_MINUS.

6 The TOPS queuing SOC UNBN0102 is enabled, as is TOPSFTR parameter. QMS checks table CT4QSPID, which is the only CT4Q table that contains datafill affecting the initial CT4Q assignment. Table SPIDDB specifies a SPIDCRIT of CLEC1_CRIT for the CLEC 1 subscriber. So QMS takes the initial CT4Q name of 0_MINUS, refines it in table CT4QSPID using CLEC1_CRIT, and obtains a *new* CT4Q name of 0_MINUS_CLEC1.

7 QMS performs final CT4Q assignment, and using table TQMSFCQA for the entry 0_MINUS_CLEC1, obtains a CALLQ of CQ1.

8 Using table TQMSSERV, QMS determines that the QMSSERV name of TOPS_TA corresponds to a CALLQ of CQ1.

9 Operators in OSC 1 have operator profile datafill to handle QMSSERV TOPS_TA and calls from CALLQ CQ1. There are no idle operators available in OSC 1 to handle the call, so it is placed in the CQ1 queue to wait for an idle operator.

10 The TOPS QMS MIS SOC UNBN0101 is enabled, as is the parameter in table TOPSFTR. A call queue event message that includes the CT4Q assignment (0_MINUS_CLEC1) and the calling AO SPID (LEC1) for subscriber 619-322-5001 is sent to the MIS system when the call is placed in queue.

11 An operator that serves TOPS_TA and CQ1 becomes available, and the call is presented to the operator position.

12 A QMS MIS call queue event message that includes the CT4Q assignment (0_MINUS_CLEC1) and the calling AO SPID (LEC1) is sent to the MIS system when the call is removed from queue.

13 A QMS MIS position event message that includes the CT4Q assignment (0_MINUS_CLEC1) and the calling AO SPID (LEC1) is sent to the MIS system when the call is presented to the operator position.

14 Subscriber 619-322-5001 requests the operator to place a call to 201-220-1234, and to bill the call to 619-322-5000. The operator first enters the called number, then the billing number.

15 TOPS sends a BNS query to the LIDB. The BNS response identifies subscriber 619-322-5000 as having a billed AO SPID of ILEC. This SPID is recorded later in the AMA record as the billed AO SPID (ILEC) for the call.

16 The operator verifies the billing number as valid, then connects to the called number and floats the call.

17 A QMS MIS position event message that includes the CT4Q assignment (0_MINUS_CLEC1) and the calling AO SPID (LEC1) is sent to the MIS system when the call is released from the operator position.

18 Subscriber 619-322-5001 talks to the called party 201-220-1234 for a period of time and then disconnects.

19 An AMA record is produced for the call. Due to the presence of SPID information in the TOPS data, a module code 338 is appended to the AMA record. It identifies both the calling AO SPID (LEC1) and the billed AO SPID (ILEC).

Scenario 2

In Scenario 2, the ILEC subscriber 619-322-5000 places a 0- bill to third party call. The steps in **bold** show the key differences from those in Scenario 1 for the CLEC 1 subscriber. These include steps 3, 7, 8, 16, and 20.

1 Subscriber 619-322-5000 dials 0. EO 1 selects an outgoing trunk group to the TOPS office. The 0- call arrives at TOPS over the incoming trunk group ILECTRK, and the call type is set as OH.

2 The ANI digits to identify the calling subscriber (619-322-5000) are received from EO 1.

3 Because an OLNS query is enabled for ILECTRK in table TOPSTOPT, TOPS sends an OLNS query to the LIDB using the ANI digits. The OLNS response identifies subscriber 619-322-5000 as having a calling AO SPID of ILEC.

4 TOPS determines that SPID processing is enabled, because the SPIDPRC field in table TOPSTOPT is set to Y for trunk group ILECTRK.

5 Based on the call type of OH, TOPS checks table QMSTOPS and sets an initial CT4Q name of 0_MINUS.

6 Table SPIDDB does not have a SPIDCRIT specified for the ILEC subscriber. So table CT4QSPID is *not* used to refine the initial CT4Q assignment of 0_MINUS.

7 QMS performs final CT4Q assignment, and using table TQMSFCQA for the entry 0_MINUS, obtains a CALLQ of CQ0.

8 Using table TQMSSERV, QMS determines that the QMSSERV name of TOPS_TA corresponds to a CALLQ of CQ0.

9 Operators in OSC 1 have operator profile datafill to handle QMSSERV TOPS_TA and calls from CALLQ CQ0. There are no idle operators available in OSC 1 to handle the call, so it is placed in the CQ0 queue to wait for an idle operator.

10 The TOPS QMS MIS SOC UNBN0101 is enabled, as is the parameter in table TOPSFTR. A call queue event message that includes the CT4Q assignment (0_MINUS) and the calling AO SPID (ILEC) for subscriber 619-322-5000 is sent to the MIS system when the call is placed in queue.

11 An operator that serves TOPS_TA and CQ0 becomes available, and the call is presented to the operator position.

12 A QMS MIS call queue event message that includes the CT4Q assignment (0_MINUS) and the calling AO SPID (ILEC) is sent to the MIS system when the call is removed from queue.

13 A QMS MIS position event message that includes the CT4Q assignment (0_MINUS) and the calling AO SPID (ILEC) is sent to the MIS system when the call is presented to the operator position.

14 Subscriber 619-322-5000 requests the operator to place a call to 201-220-1234, and to bill the call to 619-322-5001. The operator first enters the called number, then the billing number.

15 TOPS sends a BNS query to the LIDB. The BNS response identifies subscriber 619-322-5001 as having a billed AO SPID of LEC1. This SPID is recorded later in the AMA record as the billed AO SPID (LEC1) for the call.

16 The operator verifies the billing number as valid, then connects to the called number and floats the call.

17 A QMS MIS position event message that includes the CT4Q assignment (0_MINUS) and the calling AO SPID (ILEC) is sent to the MIS system when the call is released from the operator position.

18 Subscriber 619-322-5000 talks to the called party 201-220-1234 for a period of time and then disconnects.

19 An AMA record is produced for the call. Due to the presence of SPID information in the TOPS data, a module code 338 is appended to the AMA record. It identifies both the calling AO SPID (ILEC) and the billed AO SPID (LEC1).

Scenario 3

In Scenario 3, the CLEC 2 subscriber 619-322-5002 places a 0- bill to third party call. The steps in **bold** show the key differences from those in Scenario 1 for the CLEC 1 subscriber. These include steps 1, 3, 7, 8, 9, 10, and 20.

1 Subscriber 619-322-5002 dials 0. EO 2 selects an outgoing trunk group to the TOPS office, The 0- call arrives at TOPS over the incoming trunk group CLEC2TRK, and the call type is set as OH.

2 The ANI digits to identify the calling subscriber (619-322-5002) are received from EO 2.

3 Because an OLNS query is enabled for CLEC2TRK in table TOPSTOPT, TOPS sends an OLNS query to the LIDB using the ANI digits. The OLNS response identifies subscriber 619-322-5002 as having a calling AO SPID of LEC2.

4 TOPS determines that SPID processing is enabled, because the SPIDPRC field in table TOPSTOPT is set to Y for trunk group CLEC2TRK.

5 Based on the call type of OH, TOPS checks table QMSTOPS and sets an initial CT4Q name of 0_MINUS.

6 The TOPS queuing SOC UNBN0102 is enabled, as is the parameter in table TOPSFTR. QMS checks table CT4QSPID, which is the only CT4Q table that contains datafill affecting the initial CT4Q assignment. Table SPIDDB specifies a SPIDCRIT of CLEC2_CRIT for the CLEC 2 subscriber. So QMS takes the initial CT4Q name of 0_MINUS, refines it in table CT4QSPID using CLEC2_CRIT, and obtains a *new* CT4Q name of 0_MINUS_CLEC2.

7 QMS performs final CT4Q assignment, and using table TQMSFCQA for the entry 0_MINUS_CLEC2 obtains a CALLQ of CQ2.

8 Using table TQMSSERV, QMS determines that the QMSSERV name of CLEC2_TA corresponds to a CALLQ of CQ2.

9 Operators in OSC 2 have operator profile datafill to handle QMSSERV CLEC2_TA and calls from CALLQ CQ2. There are no idle operators available in OSC 2 to handle the call, so it is placed in the CQ2 queue to wait for an idle operator.

10 The TOPS QMS MIS SOC UNBN0101 is enabled, as is the parameter in table TOPSFTR. A call queue event message that includes the CT4Q assignment (0_MINUS_CLEC2) and the calling AO SPID (LEC2) for subscriber 619-322-5002 is sent to the MIS system when the call is placed in queue.

11 An operator that serves CLEC2_TA and CQ2 becomes available, and the call is presented to the operator position.

12 A QMS MIS call queue event message that includes the CT4Q assignment (0_MINUS_CLEC2) and the calling AO SPID (LEC2) is sent to the MIS system when the call is removed from queue.

13 A QMS MIS position event message that includes the CT4Q assignment (0_MINUS_CLEC2) and the calling AO SPID (LEC2) is sent to the MIS system when the call is presented to the operator position.

14 Subscriber 619-322-5002 requests the operator to place a call to 201-220-1234, and to bill the call to 619-322-5000. The operator first enters the called number, then the billing number.

15 TOPS sends a BNS query to the LIDB. The BNS response identifies subscriber 619-322-5000 as having a billed AO SPID of ILEC. This SPID is recorded later in the AMA record as the billed AO SPID (ILEC) for the call.

16 The operator verifies the billing number as valid, then connects to the called number and floats the call.

17 A QMS MIS position event message that includes the CT4Q assignment (0_MINUS_CLEC2) and the calling AO SPID (LEC2) is sent to the MIS system when the call is released from the operator position.

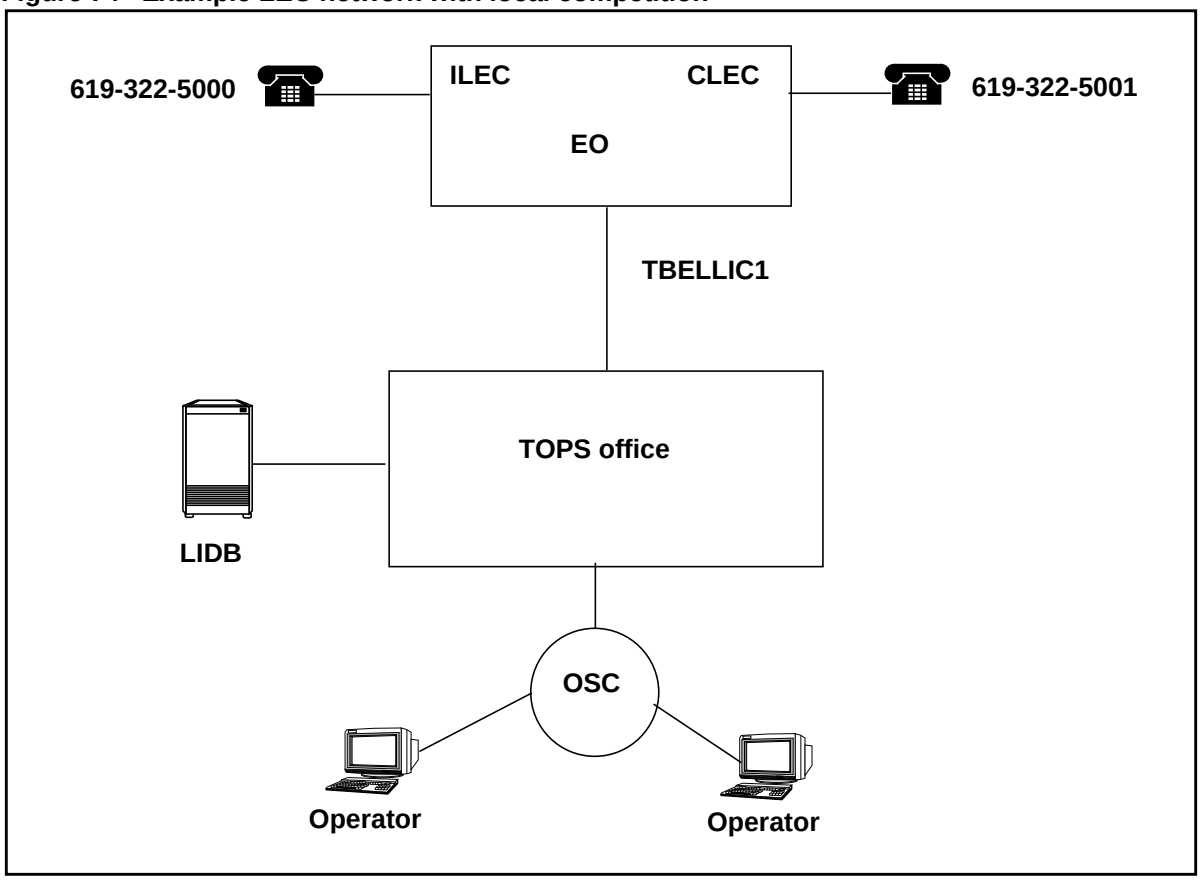
18 Subscriber 619-322-5002 talks to the called party 201-220-1234 for a period of time and then disconnects.

19 An AMA record is produced for the call. Due to the presence of SPID information in the TOPS data, module code 338 is appended to the AMA record. It identifies the calling AO SPID (LEC2) and the billed AO SPID (ILEC).

0+ calling card call flow example

The following figure shows a sample network used in the call flow.

Figure 74 Example LEC network with local competition



In this example network, the ILEC owns the EO. This EO supports subscribers for both the ILEC and a CLEC. A subscriber with a DN of 619-322-5000 uses the ILEC as its service provider. A subscriber with a DN of 619-322-5001 uses the CLEC as its service provider.

Trunking between the EO and the TOPS office consists of a combined trunk group TBELLIC1, which carries both ILEC and CLEC traffic.

A single TOPS office, owned by the ILEC, provides operator services for both service providers. One OSC, or operator team, handles calls from ILEC and CLEC subscribers.

The example network also includes a LIDB for OLNS queries and calling card validation (CCV) queries.

Call flow assumptions

This example call flow has the following assumptions:

- The calls are intraLATA calls, not carrier calls.
- The RECORD_AO_SPID_INFO parameter for the calling AO SPID in table TOPAMAOP is enabled. If a SPID is assigned to the call, this SPID is recorded in the AMA record by appending a module code 338.
- The BRAND_USING_DEFAULT_SPID parameter in table TOPSPARM is enabled.
- The various QMS MIS messages are enabled for call queue events and position events.

Call flow description

The call flow example in this section is for a 0+ calling card call. The example is simplified to illustrate the following key points:

- the ability to define separate local calling areas based on the service provider
- the ability to route outgoing calls on separate facilities based on the service provider

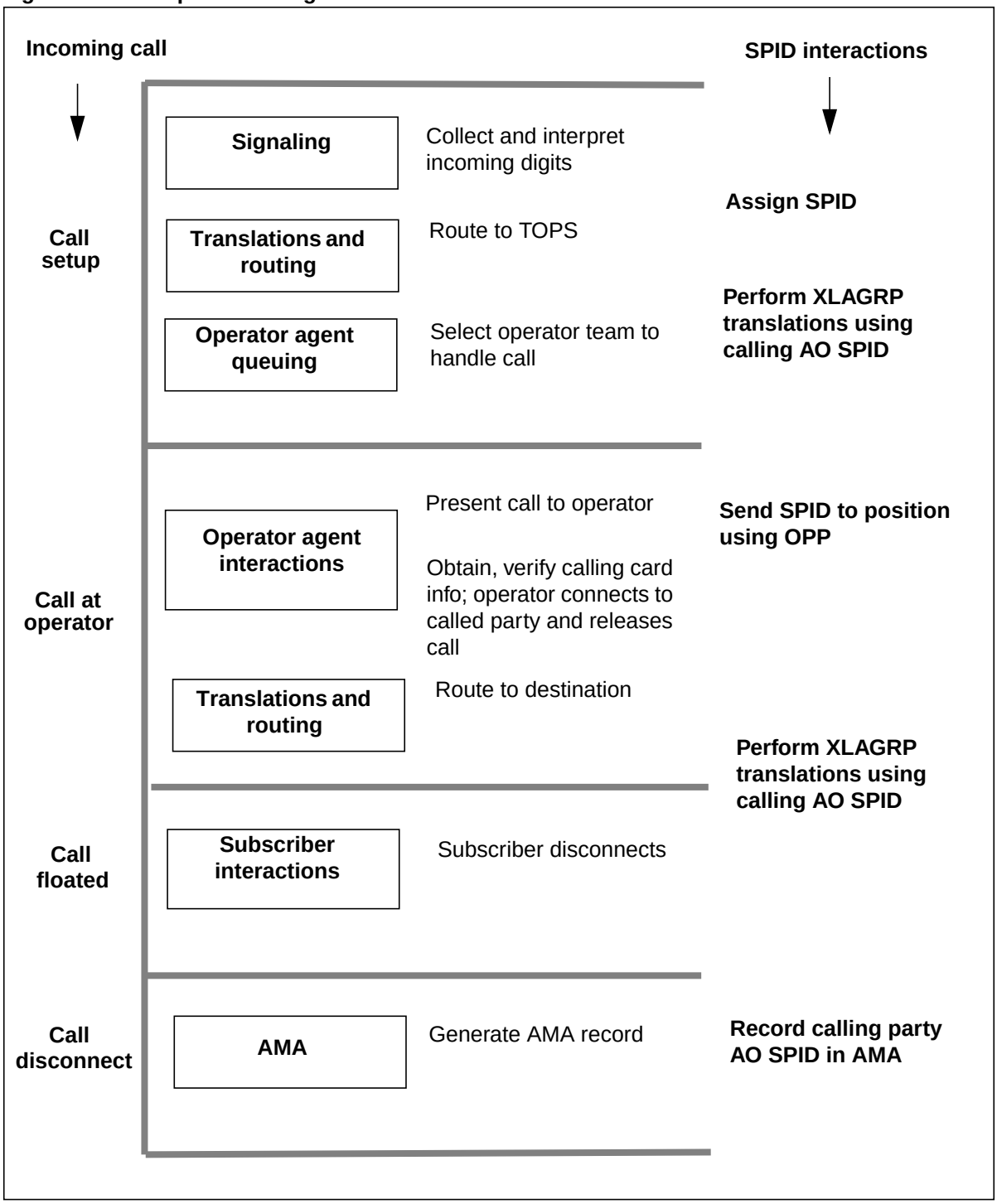
The following functional components are shown in this example:

- SPID assignment
- translations and routing based on service provider
- AMA record generated on call completion

The following call flow shows the SPID processing in a 0+ calling card call.

Note: For simplicity, QMS and QMS MIS are not covered in this example.

Figure 75 Example 0+ calling card call flow



Related call flow datafill

This section shows sample datafill for the 0+ calling card call. The data shown is specific to TOPS unbundling.

Note: For details on how to datafill all the tables for unbundling, refer to Chapter 7: "Unbundling data schema."

Table SPID

Calling AO SPIDs are defined for ILEC and CLEC. The following figure shows example datafill.

Figure 76 MAP display example for table SPID

```
SPID
------------------------------------------------------------------
ILEC
CLEC
```

Table XLAGRP

The translations group (XLAGRP) translations scheme defines the names of translations and screening groups in table XLAGRP. The following figure shows example datafill.

Figure 77 MAP display example for table XLAGRP

```
XLAGRP
------------------------------------------------------------------
TBELLXLA
ILECXLA
CLECXLA
TBELLXLA322
ILECXLA322
CLECXLA322
```

Table TOPSTOPT

The XLAGRP translations scheme is activated by setting the XLASCHEM field in table TOPSTOPT to Y for the originating trunk group. When XLASCHEM is set to Y, then a translations group name from table XLAGRP must be specified.

The XLAGRP translations scheme allows the calling AO SPID to be used as a criterion to refine the trunk group XLAGRP name, as follows:

- enabling SPID processing for the trunk group by setting the field SPIDPRC to Y in table TOPSTOPT

  Note: Trunk groups that do *not* carry SPID traffic should have field SPIDPRC set to N.

- enabling SOC code UNBN0101 and parameter in table TOPSFTR to allow XLAGRP translations refined based on SPID

The OLNSQRY field determines whether or not an OLNS query is sent to a LIDB database. In this example, an OLNS query can be performed for a TBELLIC1 call.

The following figure shows example datafill. In the example, the XLAGRP name of TBELLXLA for trunk group TBELLIC1 is used to define translations and screening parameters.

Figure 78 MAP display example for table TOPSTOPT

```
GRPKEY              ORGAREA                DISPCLG  ADASERV    ADASANS
ANITOCLI OLNSQRY DCIBIDX    LNPCLGAM       XLASCHEM    SPIDPRC   TRKSPID
    BILLSCRN     ANIFSPL      MAXCONNS     DISPSPID
-------------------------------------------------------------------------
TBELLIC1   Y    OSSAIN_ROC1_ORIG             Y     NONE          NA
Y N         ALL        0         N             Y TBELLXLA     Y       N
          N             N          0            N
```

Table SPIDGRP

To refine based on SPID, a SPID group name must be assigned in table SPIDGRP. The following figure shows example datafill.

Figure 79 MAP display example for table SPIDGRP

```
SPIDGRP
-----------------------------------------------------------------------
ILECGRP
CLECGRP
```

Table SPIDDB

Table SPIDDB associates a SPIDGRP name with a specific SPID. The XLA field in table SPIDDB is set to Y when using XLAGRP translations for a specific SPID. When field XLA is set to Y, then a SPIDGRP name for that SPID must be specified.

The following figure shows example datafill. In the example, the SPIDGRP name for ILEC is ILECGRP, and the SPIDGRP name for CLEC is CLECGRP.

Figure 80 MAP display example for table SPIDDB

```
SPID   SCRNDISP   OPERSYS                    TAANN      DAANN
   ACTSANN     XLA         SPIDCRIT    SCRNIDX    BILAGRMT      DACICOVR
-------------------------------------------------------------------------
ILEC    N           ALL                      N           N
     N        Y ILECGRP          N    100         NONE               N
CLEC    N           ALL                      N           N
     N        Y CLECGRP          N    100         NONE               N
```

Table XLASPID

Table XLASPID refines the trunk group XLAGRP name from table TOPSTOPT by the SPIDGRP of the calling party from table SPIDDB. If a match for this combination of XLAGRP name and SPIDGRP name is found in table XLASPID, then the result is a new refined XLAGRP used by XLAGRP translations.

Note: Refinement by SPID in table XLASPID or by NPA-NXX in table XLAODIGS is optional.

In the call flow example, the XLAGRP of TBELLXLA is refined by the SPIDGRP of ILECGRP to be a new XLAGRP name of ILECXLA. The XLAGRP of TBELLIC1 is refined by the SPIDGRP of CLECGRP to be a new XLAGRP name of CLECXLA.

The following figure shows example datafill.

Figure 81 MAP display example for table XLASPID

```
GRPKEY   SPIDGRP              NEWXLGRP
-----------------------------------------------------------------
TBELLXLA ILECGRP              ILECXLA
TBELLXLA CLECGRP              CLECXLA
```

Table XLAODIGS

Table XLAODIGS refines an XLAGRP name by the NPA-NXX digits of the calling subscriber's DN. The XLAGRP name refined by XLAODIGS can either be the trunk group based XLAGRP from table TOPSTOPT, or a refined XLAGRP name from table XLASPID. If a match for this combination of XLAGRP name and NPA-NXX digits is found in table XLAODIGS, then the result is a new refined XLAGRP name used by XLAGRP translations.

Note: Refinement by SPID in table XLASPID or by NPA-NXX in table XLAODIGS is optional.

In the call flow example, the NPA-NXX digits of both the ILEC and CLEC subscribers is 619322, so there is no refinement performed for the XLAGRPs of ILECXLA or CLECXLA.

The following figure shows example datafill.

Figure 82 MAP display example for table XLAODIGS

```
GRPKEY                    NEWXLGRP
-------------------------------------------------------------------
TBELLXLA 619320           TBELLXLA320
TBELLXLA 619322           TBELLXLA322
ILECXLA  619320           ILECXLA320
CLECXLA  619320           CLECXLA320
```

Table TOPSDP

The XLAGRP name resulting after all refinements have been performed is the final XLAGRP name. Table TOPSDP is accessed using this final XLAGRP. Table TOPSDP defines the TOPS translations and screening parameters for each XLAGRP used by the XLAGRP translations scheme.

The following figure shows example datafill.

Figure 83 MAP display example for table TOPSDP

```
XLAGRP          STS  OPERPRTN ORIGSCRN OPERSCRN MCCSPRTN MCCSSCRN LCANAME
-------------------------------------------------------------------------
TRK1            000  PRTNM1   SCR1     OPS1      PRTNM1   MCCS1    LCA1
TRK2            000  PRTNM2   SCR2     OPS2      PRTNM2   MCCS2    LCA2
ILECXLA         619  OPER     NSCR     NSCR      MCCS     SCR1     L32X
CLECXLA         619  OPER     STER     NSCR      MCCS     SCR1     CLEC32X
TRK1619320      000  PRTNM4   SCR5     OPS5      PRTNM4   MCCS5    LCA1
TRK1619322      000  PRTNM4   SCR5     OPS5      PRTNM4   MCCS5    LCA1
TRK1CLEC919720  000  PRTNM6   SCR7     OPS7      PRTNM6   MCCS7    LCA1
```

Table TRKGRP

When a call is initially presented to TOPS, prior to calling party ANI digits being received from the EO, some initial translations are performed using data from table TRKGRP for the originating trunk group.

The PRTNM field defines the pretranslator name used in the pretranslations step, and the Serving Numbering Plan Area (SNPA) used in code translations is defined by the STS field.

The following figure shows example datafill. For trunk group TBELLIC1, the STS assigned is 619 and the pretranslator name assigned is PTOP.

Note: The example below is a subset of table TRKGRP. The remaining fields were omitted for clarity.

Figure 84 MAP display example for table TRKGRP

```
GRPKEY  GRPTYP          SNPA  STS   PRTNM  LCANAME  SCRNCL
-------------------------------------------------------------------
TBELLIC1 TOPS           619   619   PTOP   NLCA     NSCR
```

Table STDPRTCT

The pretranslator name from table TRKGRP (PTOP) is used to index into table Standard Pretranslator (STDPRTCT). Subtable STDPRT of STDPRTCT is accessed with digits dialed by the subscriber (minus prefix digits) to determine the translations system to be used and the initial call type assignment. The following figures show example datafill.

Figure 85 MAP display example for table STDPRTCT

```
EXTPRTNM  STDPRT          AMAPRT
-------------------------------------------------------------------
PTOP       ( 1)          (65021)
```

The entry in subtable STDPRT where FROMDIGS is digit 2 is the match for the digit string in the call flow example.

Figure 86 MAP display example for subtable STDPRT

```
FROMDIGS  TODIGS          PRETRTE
-------------------------------------------------------------------
  0        0              N OA 0 NA
  12       19             N NL 1 IN
  2        4000           N NL 0 NA
  4001     0              N NL 0 NA
```

Table HNPACONT

The STS from table TRKGRP (619) is used as a Serving Translation Scheme (STS) to index table Home Numbering Plan Area Control (HNPACONT). Subtable HNPACODE is accessed with digits dialed by the subscriber (minus prefix digits) to determine a code type for the call.

If the code type specified is a route, subtable RTEREF specifies the route list to be used for the outgoing (terminating) route for the call. The route list can also specify any digit manipulation (adding or deleting) to be performed on the called digits.

Note: For a description of the allowed code types, please refer to the *Customer Data Schema Reference Manual*.

The following figures show example datafill.

Figure 87 MAP display example for table HNPACONT

```
STS SNPA NORTREFS NOAMBIGC  RTEREF HNPACODE  ATTRIB  RTEMAP   OPTIONS
-------------------------------------------------------------------------
619    Y      813        8 (   57)  (    1) (    0) (    0)     $
```

Figure 88 MAP display example for subtable HNPACODE

```
FROMDIGS  TODIGS           CDRRTMT
-------------------------------------------------------------------
  103      103             OPC3  8
  201      201             FRTD  801
  230260   230260          FRTE  16
```

In this example, the code type is defined as a Foreign Route (FRTD) with an index 801. This 801 is used as the index into subtable RTEREF.

Figure 89 MAP display example for subtable RTEREF

```
RTE         FTELST
-------------------------------------------------------------------
801         (           S   D     TITOGA1) $
802         (           N   D     TITOGB1  3         N N)$
```

Once a call receives ANI digits from the EO, and or the call is presented to an operator position, translations are performed using data from table TOPSDP, if the XLAGRP translations scheme has been selected.

Table STDPRTCT

The pretranslator name from field OPERPRTN (OPER) from table TOPSDP is used to index into table STDPRTCT. Subtable STDPRT of STDPRTCT is accessed with digits dialed by the subscriber (minus prefix digits) to determine the translations system to be used and the initial call type assignment. The following figures show example datafill.

Figure 90 MAP display example for table STDPRTCT

```
EXTPRTNM   STDPRT           AMAPRT
-------------------------------------------------------------------
OPER       ( 1)           (65021)
```

The entry in table STDPRT where FROMDIGS is digit 2 is the match for the digit string in the call flow example.

Figure 91 MAP display example for subtable STDPRT

```
FROMDIGS  TODIGS           PRETRTE
------------------------------------------------------------
  0       0                N OA 0 NA
  12      19               N NL 1 IN
  2       4000             N OA 0 NA
  4001    9                N NL 0 NA
```

The STS value from field STS (619) is used to index table HNPACONT. Subtable HNPACODE is accessed with digits dialed by the subscriber (minus prefix digits) to determine a code type for the call.

If the code type specified is a route, subtable RTEREF specifies the route list to be used for the outgoing (terminating) route for the call. The route list can also specify any digit manipulation (adding or deleting) to be performed on the called digits.

In this example, the STS value 619 from table TOPSDP is the same as the STS from the STS field in table TRKGRP. Thus the entry in table HNPACONT is the same as the example shown previously.

Class of service screening is performed either once or twice, depending on the stage of the call. If the call is not yet at an operator position (or automated TOPS system), then screening is performed once using the screen class name (STER) obtained from field ORIGSCRN in table TOPSDP.

If the call is at an operator position, then screening is performed up to two times, first using the screen class name (if any) obtained from field ORIGSCRN and then using the screen class name (if any) obtained from field OPERSCRN.

In this example, the screen name from ORIGSCRN is STER, and there is no screen name from field OPERSCRN (NSCR). Thus screening here is performed only *once*.

Table CLSVSCRC

A screen class name is used to index into table Class of Service Screening (CLSVSCRC) which can (if desired) provide a route that replaces the route selected during the code translations step. The following figures show example datafill.

Figure 92 MAP display example for table CLSVSCRC

```
NPASCTYP     NORSLTS         TMTOFRT     CLSVSCR
------------------------------------------------------------------
 619 STER OA    2           N  NONE         ( 1)
```

Figure 93 MAP display example for subtable CLSVSCR

```
FROMDIGS  TODIGS           PRETRIE
-------------------------------------------------------------
  0111     0111             T OFRT   806
  201220   201220           T OFRT   804
```

Table OFRT

In this example, the result from table CLSVSCRC is an index into table Office Routing (OFRT), which provides the actual trunk group (or groups) to be used for routing.

The following figure shows example datafill. In this example, the original trunk group TITOGA1 selected during the code translations step as the route is *replaced* with trunk group TITOGB1 during the screening phase.

Figure 94 Map display example for table OFRT

```
RTE         RTELIST
-------------------------------------------------------------------------
804         (           S   D     TITOGB1) (S D T120) $
806         (           s   D     TITOGB1) (S D T120) $
```

Table LCASCRCN

Local Calling Area (LCA) screening uses the NXX of the subscriber and the NXX digits of the DN dialed by the subscriber to determine if a call is local. For an ILEC subscriber, the LCA screen name L32X from field LCANAME for the ILECXLA entry in table TOPSDP is used to index table Local Call Area Screening (LCASCRCN). Subtable LCASCR of LCASCRCN is accessed with the NXX of the originator and the NXX of the called number. If a match for this combination is found in subtable LCASCR, then the call is marked as local.

Note: TOPS does *not* determine a route from LCA screening.

The following figures show example datafill.

Figure 95 MAP display example for table LCASCRCN

```
NPALOCNM    LCASCR     PFXSELEC      PFXFOR10     LOCALOVR
-----------------------------------------------------------------
 619 L32X    (  1)      OPTL          N              N
```

Figure 96 MAP display example for subtable LCASCR

```
FROMDIGS  TODIGS
------------------------------------------------------------------
  520      520
  522      522
```

For a CLEC subscriber, the LCA screen name CLEC32X from field LCANAME for the CLECXLA entry in table TOPSDP is used to index table LCASCRCN to determine if the call is local. The following figures show example datafill.

Note: For more information on LCA six digit expansion, please refer to the *Translations Guide.*

Figure 97 MAP display example for table LCASCRCN

```
NPALOCNM    LCASCR     PFXSELEC      PFXFOR10     LOCALOVR
-------------------------------------------------------------------
 619 CLEC32X (  1)      OPTL          N              N
```

Figure 98 MAP display example for subtable LCASCR

```
FROMDIGS  TODIGS
------------------------------------------------------------------
  320      320
  322      322
  322      220
```

Call flow scenarios

The following two scenarios show variations in the 0+ calling card call.

- Scenario 1 has the following elements:
  - The subscriber is ILEC.
  - The AO SPID is set as ILEC.
  - The new XLAGRP is set as ILECXLA.
  - No class of service screening performed.
  - The call is marked and billed as a toll call.
- Scenario 2 has the following elements:
  - The subscriber is CLEC.
  - The AO SPID is set as CLEC.
  - The new XLAGRP is set as CLECXLA.

— Class of service screening is performed.

— The call is marked and billed as a local call.

Scenario 1

In Scenario 1, the ILEC subscriber 619-322-5000 places a 0+ calling card call.

1 Subscriber 619-322-5000 dials 0-201-220-1234. The EO selects an outgoing trunk group to the TOPS office. The call arrives at TOPS over incoming trunk group TBELLIC1.

2 TOPS obtains the pretranslator name PTOP for trunk group TBELLIC1 from the PRTNM field in table TRKGRP. TOPS performs initial pretranslations using the PTOP entry in table STDPRTCT, and based on the called address digits of 201-220-1234, TOPS sets the translations system to North American (NA) and the call type as nil (NL).

3 TOPS obtains an STS of 619 for trunk group TBELLIC1 from the STS field in table TRKGRP. TOPS performs initial code translations using the 619 entry in table HNPACONT, and based on the called address digits 201-220-1234, TOPS selects an outgoing route of trunk group TITOGA1.

4 The ANI digits to identify the calling subscriber (619-322-5000) are received from the EO.

5 Because an OLNS query is enabled for TBELLIC1 in table TOPSTOPT, TOPS sends an OLNS query to the LIDB using the ANI digits. The OLNS response identifies subscriber 619-322-5000 as having a calling AO SPID of ILEC.

6 The XLAGRP translations scheme is enabled for TBELLIC1, because the XLASCHEM field is set to Y with an initial XLAGRP of TBELLXLA in table TOPSTOPT.

7 TOPS determines that SPID processing is enabled, because the SPIDPRC field in table TOPSTOPT is set to Y for trunk group TBELLIC1. The TOPS translations and routing SOC UNBN0101 and the parameter in table TOPSFTR are enabled, so XLAGRP refinement based on SPID is allowed.

8 TOPS assigns a SPID group of ILECGRP from the SPIDGRP subfield in table SPIDDB. TOPS uses table XLASPID to refine the initial XLAGRP of TBELLXLA by the SPIDGRP of ILECGRP to obtain a *new* XLAGRP of ILECXLA.

9 TOPS attempts to refine XLAGRP ILECXLA using table XLAODIGS and the NPA-NXX digits 619-322 of the subscriber DN. No matching entry is found in table XLAODIGS, so the XLAGRP assignment of ILECXLA is unchanged.

10 TOPS obtains translations and screening parameters for the ILECXLA entry in table TOPSDP. These include an STS of 619, an operator pretranslator of OPER, an originating screening name of NSCR, and a local call area screening name of L32X.

11 TOPS does *not* perform class of service screening here, because the entry in the ORIGSCRN field in table TOPSDP is set to NSCR. The outgoing route of trunk group TITOGA1 set from code translations is unchanged.

12 TOPS performs local call area screening using the L32X entry (from LCANAME in TOPSDP) in table LCASCRCN. Based on 322 as the NXX digits of the subscriber's DN, and on 220 as the NXX digits of the called number, the call is marked as a toll, *not* a local, call.

13 Table AABSOST does not have an entry for trunk group TBELLIC1, so there is no automated service provided to collect calling card information.

14 TOPS determines the OSC to receive the call, which is based on QMS datafill. In this example QMS does not use SPID criteria, so the details of QMS are not presented here.

15 The call is routed to an available idle operator position in the single OSC team, so no queuing is required.

16 The operator asks the subscriber for billing information; the subscriber provides a calling card number. TOPS sends a CCV query to the LIDB, and a successful response is received.

17 The operator outpulses to connect to the called number 201-220-1234.

18 Pretranslations are performed again, this time using the OPER entry (from OPERPRTN in TOPSDP) in table STDPRTCT. Based on the called address digits 201-220-1234, TOPS sets the translations system (again) to NA and the call type as OA.

19 Code translations are performed again using the 619 entry (from STS in TOPSDP) in table HNPACONT. Based on the called address digits 201-220-1234, the result is (again) an outgoing route of trunk group TITOGA1.

20 TOPS does *not* perform class of service screening here, because the entries for both ORIGSCRN and OPERSCRN in table TOPSDP are set to NSCR. The outgoing route of trunk group TITOGA1 set from code translations is unchanged.

21 Local call area screening is performed again using the L32X entry (from LCANAME in TOPSDP) in table LCASCRCN. Based on the NXX digits 322 of the subscribers DN, and on the NXX digits 220 from the called number, the call is marked as a toll, *not* a local, call.

22 The operator floats the call. Subscriber 619-322-5000 talks to the called party 201-220-1234 for a period of time, and then disconnects.

23 An AMA record is produced for the call. Due to the presence of a calling AO SPID (ILEC) in the TOPS data, a module code 338 that identifies the calling AO SPID is appended to the AMA record. The call is billed as a toll call.

Scenario 2

In Scenario 2, the CLEC subscriber 619-322-5001 places a 0+ calling card call. The steps in **bold** show the key differences from those in Scenario 1 for the ILEC subscriber. These include steps 5, 8, 11, 12, 20, and 21.

1 Subscriber 619-322-5001 dials 0-201-220-1234. The EO selects an outgoing trunk group to the TOPS office. The call arrives at TOPS over incoming trunk group TBELLIC1.

2 TOPS obtains the pretranslator name PTOP for trunk group TBELLIC1 from the PRTNM field in table TRKGRP. TOPS performs initial pretranslations using the PTOP entry in table STDPRTCT, and based on the called address digits of 201-220-1234, TOPS sets the translations system NA and the call type as NL.

3 TOPS obtains an STS of 619 for trunk group TBELLIC1 from the STS field in table TRKGRP. TOPS performs initial code translations using the 619 entry in table HNPACONT, and based on the called address digits 201-220-1234, TOPS selects an outgoing route of trunk group TITOGA1.

4 The ANI digits to identify the calling subscriber (619-322-5001) are received from the EO.

5 Because an OLNS query is enabled for TBELLIC1 in table TOPSTOPT, TOPS sends an OLNS query to the LIDB using the ANI digits. The OLNS response identifies subscriber 619-322-5001 as having a calling AO SPID of CLEC.

6 The XLAGRP translations scheme is enabled for TBELLIC1, because the XLASCHEM field is set to Y with an initial XLAGRP of TBELLXLA in table TOPSTOPT.

7 TOPS determines that SPID processing is enabled, because the SPIDPRC field in table TOPSTOPT is set to Y for trunk group TBELLIC1. The TOPS translations and routing SOC UNBN0101is enabled, as is the parameter in table TOPSFTR, so XLAGRP refinement based on SPID is allowed.

8 **TOPS assigns a SPID group of CLECGRP from the SPIDGRP subfield in table SPIDDB. TOPS uses table XLASPID to refine the initial XLAGRP of TBELLXLA by the SPIDGRP of CLECGRP to arrive at a *new* XLAGRP of CLECXLA.**

9 TOPS attempts to refine XLAGRP CLECXLA using table XLAODIGS and the NPA-NXX digits 619-322 of the subscriber DN. No matching entry is found in table XLAODIGS, so the XLAGRP assignment of CLECXLA is unchanged.

10 TOPS obtains translations and screening parameters for the CLECXLA entry in table TOPSDP. These include an STS of 619, an operator pretranslator of OPER, an originating screening name of STER, and a local call area screening name of CLEC32X.

11 TOPS performs class of service screening using the STER entry (from ORIGSCRN in TOPSDP) in table CLSVSCRC. Based on the digits 201-220-1234, TOPS selects an outgoing route of trunk group TITOGB1 (replacing the route of TITOGA1 selected during code translations).

12 TOPS performs local call area screening using the CLEC32X entry (from LCANAME in TOPSDP) in table LCASCRCN. Based on 322 as the NXX digits of the subscriber's DN, and on 220 as the NXX digits of the called number, the call is marked as a local call.

13 Table AABSOST does not have an entry for trunk group TBELLIC1, so there is no automated service provided to collect calling card information.

14 TOPS determines the OSC to receive the call, which is based on QMS datafill. In this example QMS does not use SPID criteria, so the details of QMS are not presented here.

15 The call is routed to an available idle operator position in the single OSC team, so no queuing is required.

16 The operator asks the subscriber for billing information. The subscriber provides a calling card number. TOPS sends a CCV query to the LIDB, and a successful response is received.

17 The operator outpulses to connect to the called number 201-220-1234.

18 Pretranslations are performed again, this time using the OPER entry (from OPERPRTN in TOPSDP) in table STDPRTCT. Based on the called address digits 201-220-1234, TOPS sets the translations system (again) to NA and the call type as OA.

19 Code translations are performed again using the 619 entry (from STS in TOPSDP) in table HNPACONT. Based on the called address digits 201-220-1234, the result is (again) an outgoing route of trunk group TITOGA1.

20 TOPS performs class of service screening once in this case. The entry for OPERSCRN in table TOPSDP is set to NSCR, so screening is not performed. However, the entry for field ORIGSCRN from table TOPSDP is set to STER, which is used to index table CLSVSCRC. Based on the called address digits 201-220-1234, the result is (again) an outgoing route of trunk group TITOGB1 (replacing route TITOGA1 selected during code translations).

21 TOPS performs local call area screening again using the CLEC32X entry (from LCANAME in TOPSDP) in table LCASCRCN. Based on the NXX digits 322 of the subscribers DN, and on the NXX digits 220 from the called number, the call is marked as a local call.

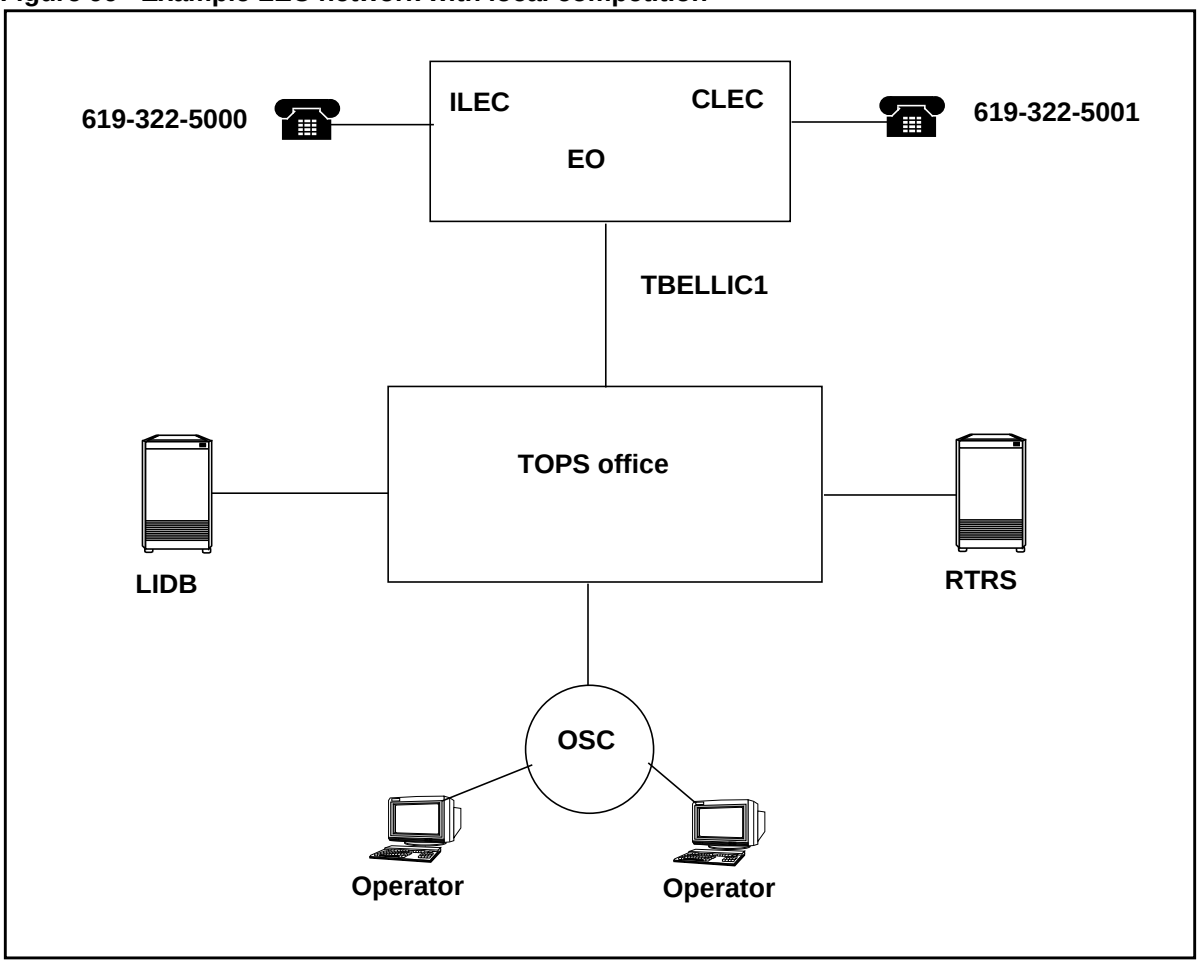
22 The operator floats the call. Subscriber 619-322-5001 talks to the called party 201-220-1234 for a period of time, and then disconnects.

23 An AMA record is produced for the call. Due to the presence of a calling AO SPID (CLEC) in the TOPS data, a module code 338 that identifies the calling AO SPID is appended to the AMA record. The call is billed as a local call.

1+ ACTS coin call flow example

The following figure shows a sample network used in the call flow.

Figure 99 Example LEC network with local competition



In this example network, the ILEC owns the EO. This EO supports subscribers for both the ILEC and a CLEC. Station 619-322-5000 is a coin phone owned by the ILEC. Station 619-322-5001 is a coin phone owned by the CLEC.

Trunking between the EO and the TOPS office consists of a combined trunk group TBELLIC1, which carries both ILEC and CLEC traffic.

A single TOPS office, owned by the ILEC, provides operator services for both service providers. One OSC, or operator team, handles calls from ILEC and CLEC subscribers.

The example network also includes a LIDB for OLNS queries, and a Real-time Rating System (RTRS) for external rating information.

Call flow assumptions

This example call flow has the following assumptions:

- The calls are intraLATA calls, not carrier calls.
- The RECORD_AO_SPID_INFO parameter for the calling AO SPID in table TOPAMAOP is enabled. If a SPID is assigned to the call, this SPID is recorded in the AMA record by appending a module code 338.
- The BRAND_USING_DEFAULT_SPID parameter in table TOPSPARM is enabled.
- The various QMS MIS messages are enabled for call queue events and position events.

Call flow description

The call flow example in this section is for a 1+ ACTS coin call. The example is simplified to illustrate the following key points:

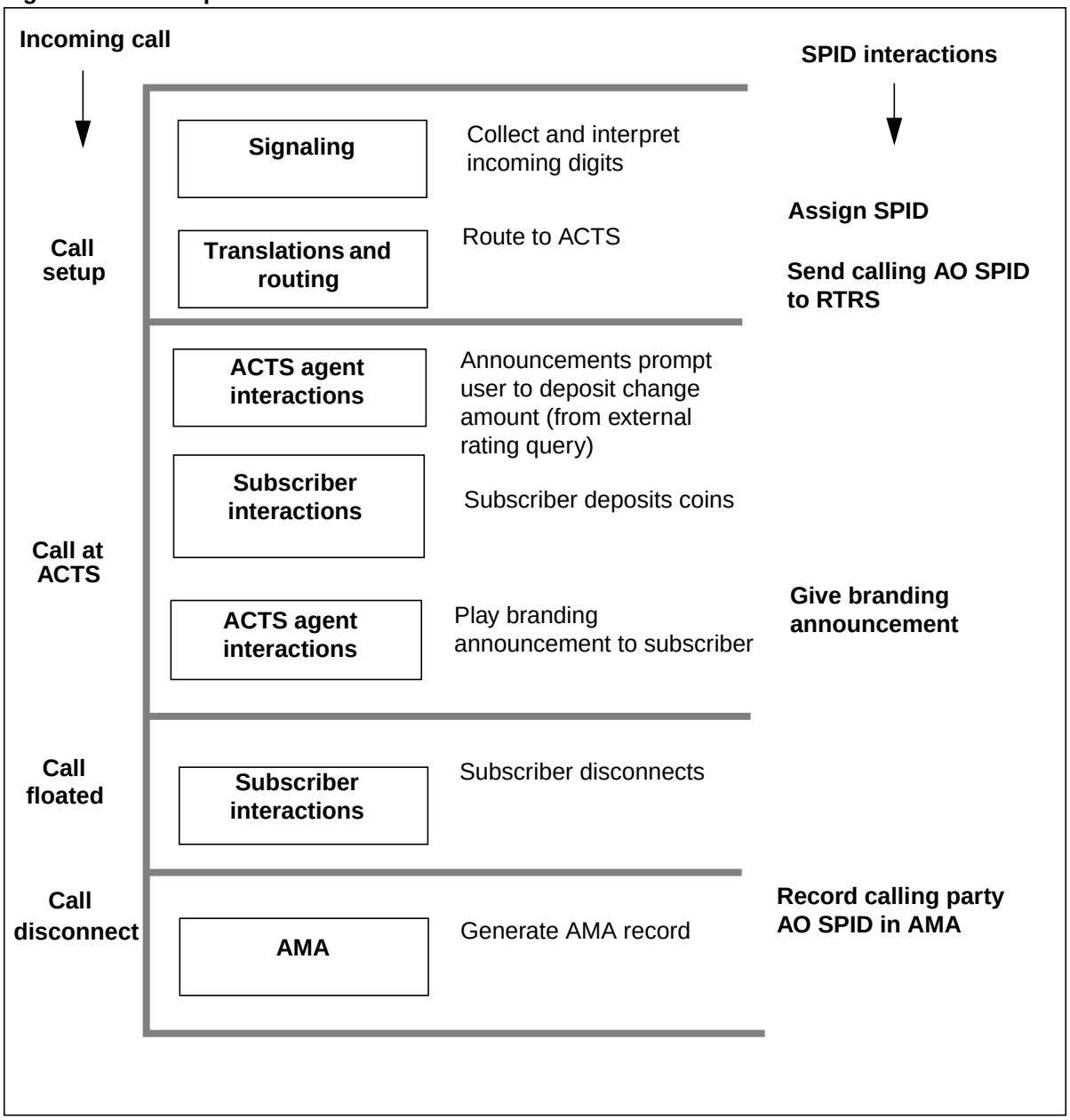
- the ability to provide different call ratings based on the service provider
- the ability to give an ACTS back-end branding announcement based on the service provider

The following functional components which are shown in this example:

- SPID assignment
- external call rating
- ACTS automated service (no live operator required)
- ACTS back-end branding announcement
- AMA record generated on call completion

The following call flow shows the SPID processing in the 1+ ACTS coin call.

Figure 100 Example 1+ ACTS coin call flow



Related call flow datafill

This section shows sample datafill for the 1+ ACTS coin call. The data shown is specific to TOPS unbundling.

Note: For details on how to datafill all the tables for unbundling, refer to Chapter 7: "Unbundling data schema."

Table SPID

Calling AO SPIDs are defined for ILEC and CLEC. The following figure shows example datafill.

Figure 101 MAP display example for table SPID

```
SPID
----------------------------------------------------------------
ILEC
CLEC
```

Table TOPSTOPT

SPID processing must be activated for each trunk group which carries SPID traffic. For each trunk group, an entry in table TOPSTOPT must be present with field SPIDPRC set to Y. Trunk groups that do *not* carry SPID traffic should have field SPIDPRC set to N.

The OLNSQRY field determines whether or not an OLNS query is sent to a LIDB database. The following figure shows example datafill. In the example, trunk group TBELLIC1 has field SPIDPRC set to Y, so the SPID information received in the LIDB response from OLNS is used in further processing.

Figure 102 MAP display example for table TOPSTOPT

```
GRPKEY              ORGAREA                 DISPCLG  ADASERV    ADASANS
ANITOCLI OLNSQRY DCIBIDX    LNPCLGAM       XLASCHEM     SPIDPRC  TRKSPID
    BILLSCRN     ANIFSPL     MAXCONNS     DISPSPID
-----------------------------------------------------------------------
TBELLIC1   Y        QMSCAN                   N       NONE         NA
Y N        ALL       0        N             Y TBELLXLA    Y         N
          N            N        0             N
```

Table TOPSACTS

The ACTSSERV field determines whether or not ACTS is provided to coin calls for a trunk group. The following figure shows example datafill. In the example, trunk group TBELLIC1 has field ACTSSERV set to SERV, which allows ACTS service for eligible coin traffic.

Figure 103 MAP display example for table TOPSACTS

```
CLLI            ACTSSERV      LARGECHG
-------------------------------------------------------------------------
TBELLIC1        SERV           200
```

Table COMPCODE

The XRATESRV field specifies whether or not to apply external rating to calls from a particular calling NPA-NXX on a trunk group. The following figure shows example datafill. In the example, trunk group TBELLIC1 for calling stations with an NPA-NXX of 619-322 has field XRATESRV set to Y, so that external rating queries are used for rating of those calls.

Figure 104 MAP display example for table COMPCODE

```
GRPKEY             CCODESEL        COMPNAME      XRATESRV
-------------------------------------------------------------------------
TBELLIC1619322        Y             ATEL          Y
```

Table SPIDDB

The ACTSANN field determines whether or not to play an ACTS back-end branding announcement. If branding is enabled, an announcement CLLI (datafilled in table ANNS) and two announcement numbers must be specified: one for deposit of the correct amount, and one for over deposit.

The following figure shows example datafill. In the example, the announcement CLLI for ILEC is IBRND, and the announcement CLLI for CLEC is CBRND.

Figure 105 MAP display example for table SPIDDB

```
SPID   SCRNDISP   OPERSYS                    TAANN      DAANN
ACTSANN                XLA   SPIDCRIT   SCRNIDX   BILARGMT      DACICOVR
-------------------------------------------------------------------------
ILEC    N           ALL                      N          N
Y IBRND 5   IBRND 6     N     N           100     NONE                N
CLEC    N           ALL                      N          N
Y CBRND 123 CBRND 124   N     N           100     NONE                N
```

Call flow scenarios

The following two scenarios show variations in the ACTS coin call flow.

- Scenario 1 has the following elements:
  - The subscriber places a call from the ILEC coin station.
  - The AO SPID is set as ILEC.
  - RTRS is used to determine the cost of the call.
  - ACTS plays an announcement for the cost of the call (IBRND).
- Scenario 2 has the following elements:
  - The subscriber places a call from the CLEC coin station.
  - The AO SPID is set as CLEC.
  - RTRS is used to determine the cost of the call.
  - ACTS plays an announcement for the cost of the call (CBRND).

Scenario 1

The subscriber places a coin call from ILEC station 619-322-5000.

1 Subscriber 619-322-5000 dials 1-201-220-1234. The EO selects an outgoing trunk group to the TOPS office. The call arrives at TOPS over incoming trunk group TBELLIC1. The call type is set as direct dialed (DD) Coin.

2 The ANI digits to identify the calling subscriber (619-322-5000) are received from the EO.

3 Because an OLNS query is enabled for TBELLIC1 in table TOPSTOPT, TOPS sends an OLNS query to the LIDB using the ANI digits. An OLNS response identifies subscriber 619-322-5000 as having a calling AO SPID of ILEC.

4 TOPS determines that SPID processing is enabled, because the SPIDPRC field in table TOPSTOPT is set to Y for trunk group TBELLIC1.

5 Table TOPSACTS has an entry for trunk group TBELLIC1, so ACTS is provided for the call.

6 For trunk group TBELLIC1, the XRATE field in table COMPCODE is set to Y, so ACTS sends a query to the external RTRS database. The protocol to communicate to the RTRS database includes the ability to provide SPID information for the ILEC.

7 The RTRS database has been configured to distinguish rate information based on SPID. For a SPID of ILEC, the RTRS database (for this example) returns a charge of $0.75 for the first 3 minutes.

Note: There is no front-end branding because the TAANN field is set to N in table SPIDDB.

8 ACTS plays an announcement to the subscriber to deposit $0.75 for the first 3 minutes.

9 ACTS uses a Coin Detection Circuit (CDC) to verify that the subscriber has deposited the correct amount at the coin station.

10 Table SPIDDB has an entry for the ILEC, and the ACTSANN field specifies an ACTS back-end branding announcement of IBRND 5. ACTS plays this announcement to the subscriber.

11 TOPS connects to the called number of 201-220-1234.

12 Subscriber 619-322-5000 talks to the called party 201-220-1234 for a period of time, and then disconnects.

13 An AMA record is produced for the call. Due to the presence of a calling AO SPID (ILEC) in the TOPS data, a module code 338 that identifies the calling AO SPID is appended to the AMA record.

Scenario 2

The subscriber places a coin call from CLEC station 619-322-5001. The steps in **bold** show the key differences from those in Scenario 1 for the ILEC coin station. These include steps 3, 7, 8, and 10.

1 Subscriber 619-322-5001 dials 1-201-220-1234. The EO selects an outgoing trunk group to the TOPS office. The call arrives at TOPS over incoming trunk group TBELLIC1. The call type is set as DD Coin.

2 The ANI digits to identify the calling subscriber (619-322-5001) are received from the EO.

3 Because an OLNS query is enabled for TBELLIC1 in table TOPSTOPT, TOPS sends an OLNS query to the LIDB using the ANI digits. An OLNS response identifies subscriber 619-322-5001 as having a calling AO SPID of CLEC.

4 TOPS determines that SPID processing is enabled, because the SPIDPRC field in table TOPSTOPT is set to Y for trunk group TBELLIC1.

5 Table TOPSACTS has an entry for trunk group TBELLIC1, so ACTS is provided for the call.

6 For trunk group TBELLIC1, the XRATE field in table COMPCODE is set to Y, so ACTS sends a query to the external RTRS database. The protocol to communicate to the RTRS database includes the ability to provide SPID information for the CLEC.

7 The RTRS database has been configured to distinguish rate information based on SPID. For a SPID of CLEC, the RTRS database (for this example) returns a charge of $0.55 for the first 3 minutes.

Note: There is no front-end branding because TAANN is set to N.

8 ACTS plays an announcement to the subscriber to deposit $0.55 for the first 3 minutes.

9 ACTS uses a CDC to verify that the subscriber has deposited the correct amount at the coin station.

10 Table SPIDDB has an entry for the CLEC, and the ACTSANN field specifies an ACTS branding announcement of CBRND. ACTS plays this announcement to the subscriber.

11 TOPS connects to the called number of 201-220-1234.

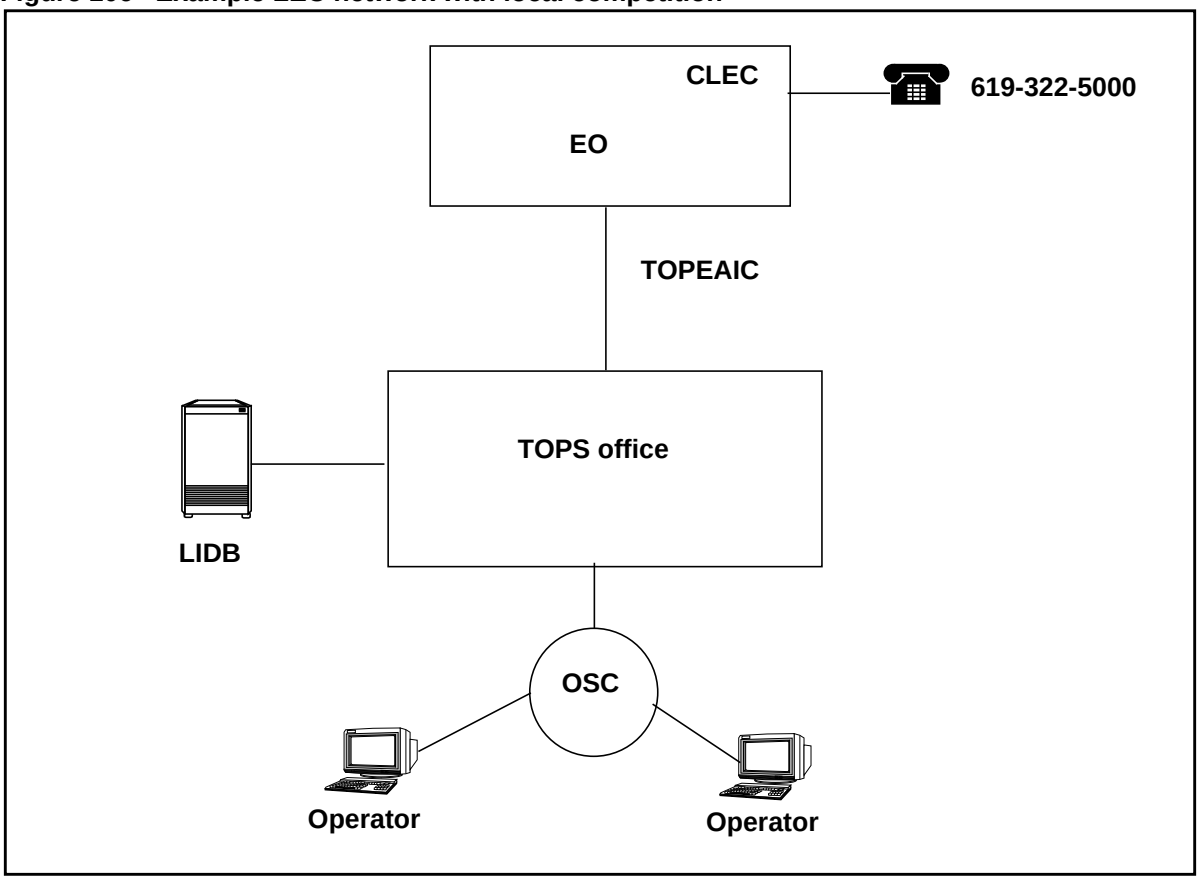
12 Subscriber 619-322-5001 talks to the called party 201-220-1234 for a period of time, and then disconnects.

13 An AMA record is produced for the call. Due to the presence of a calling AO SPID (CLEC) in the TOPS data, a module code 338 that identifies the calling AO SPID is appended to the AMA record.

0+ EA screening call example

The following figure shows a sample network used in the call flow.

Figure 106 Example LEC network with local competition



In this example network, the EO supports subscribers for a CLEC. A subscriber with a DN of 619-322-5000 uses the CLEC as its service provider.

Trunking between the EO and the TOPS office consists of a combined trunk group TOPEAIC, which carries Equal Access traffic.

A single TOPS office provides operator services and one OSC, or operator team, handles calls from the CLEC subscribers.

The example network also includes a LIDB for OLNS queries and calling card validation (CCV) queries.

Call flow assumptions

This example call flow has the following assumptions:

- The calls are interLATA, carrier calls.
- XLAGRP data is obtained using equal access refinements.
- The RECORD_AO_SPID_INFO parameter for the calling AO SPID in table TOPAMAOP is enabled. If a SPID is assigned to the call, this SPID is recorded in the AMA record by appending a module code 338.

This example shows routing out of table HNPACONT with the XLAGRP screening method used for an equal access call.

Call flow description

The call flow example in this section is for a 0+ equal access screening call. The example is simplified to illustrate the following key points:

- call routing out of table HNPCONT with the XLAGRP method for an EA call
- XLAGRP data obtained using EA refinements

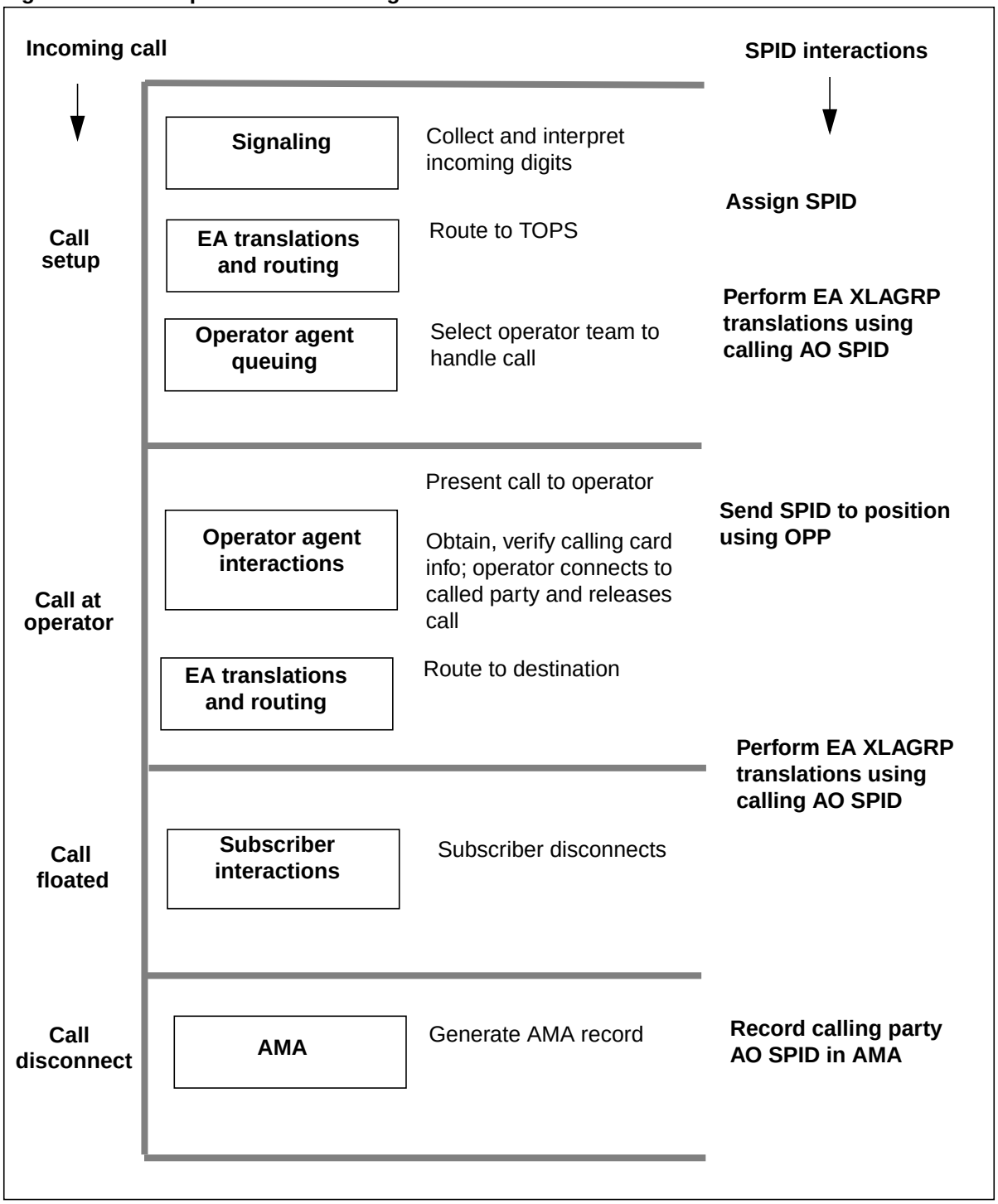
The following functional components are shown in this example:

- SPID assignment
- EA translations and routing based on SPID
- AMA record generated on call completion

The following call flow shows the SPID processing in a 0+ EA screening call.

Note: For simplicity, QMS and QMS MIS are not covered in this example.

Figure 107 Example 0+ EA screening call flow



Related call flow datafill

This section shows sample datafill for the 0+ EA screening calls. The data shown is specific to TOPS unbundling.

Note: For details on how to datafill all the tables for unbundling, refer to Chapter 7: "Unbundling data schema."

Table SPID

The calling AO SPID is defined for CLEC. The following figure shows example datafill.

Figure 108 MAP display example for table SPID

```
SPID
----------------------------------------------------------------
CLEC
```

Table XLAGRP

The translations group (XLAGRP) translations scheme defines the names of translations and screening groups in table XLAGRP. The following figure shows example datafill.

Figure 109 MAP display example for table XLAGRP

```
XLAGRP
----------------------------------------------------------------
TRKGRP
CLECGRP
TRKGRP1
EAXLA
```

Table TRKGRP

Table TRKGRP provides the pretranslator name (A1IC) which is used to index into table STDPRTCT. It also provides the STS (619) which is used to index into table HNPACONT.

Note: The example below is a subset of table TRKGRP. The remaining fields were omitted for clarity.

Figure 110 MAP display example for table TRKGRP

```
GRPKEY   GRPINFO          SNPA  STS   PRTNM  LCANAME  SCRNCL
----------------------------------------------------------------
TOPEAIC  TOPS             619   619   A1IC   NLCA     NSCR
```

Table STDPRTCT

The pretranslator name from table TRKGRP (A1IC) is used to index into table Standard Pretranslator (STDPRTCT). Subtable STDPRT of STDPRTCT is accessed with digits dialed by the subscriber (minus prefix digits) to determine the translations system to be used and the initial call type assignment. The following figures show example datafill.

Figure 111 MAP display example for table STDPRTCT

```
EXTPRTNM  STDPRT          AMAPRT
-------------------------------------------------------------------
A1IC       ( 1)          (65021)
```

The entry in subtable STDPRT where FROMDIGS is digit 2 is the match for the digit string in the call flow example.

Figure 112 MAP display example for subtable STDPRT

```
FROMDIGS  TODIGS          PRETRTE
-------------------------------------------------------------------
  2        41             N NL 0 NA
```

Table HNPACONT

The STS from table TRKGRP (619) is used to index into table Home Numbering Plan Area Control (HNPACONT). Subtable HNPACODE is accessed with digits dialed by the subscriber (minus prefix digits) to determine a code type for the call.

If the code type specified is a route, subtable RTEREF specifies the route list to be used for the outgoing (terminating) route for the call. The route list can also specify any digit manipulation (adding or deleting) to be performed on the called digits.

Note: For a description of the allowed code types, please refer to the *Customer Data Schema Reference Manual*.

The following figures show example datafill.

Figure 113 MAP display example for table HNPACONT

```
STS SNPA NORTREFS NOAMBIGC  RTEREF HNPACODE  ATTRIB  RTEMAP   OPTIONS
-------------------------------------------------------------------
619    Y      813        8 (   57)  (    1) (    0) (    0)     $
```

Figure 114 MAP display example for subtable HNPACODE

```
FROMDIGS    TODIGS         CDRRTMT
-------------------------------------------------------------
212220      212222         FRTD  801
```

Figure 115 MAP display example for subtable RTEREF

```
RTE                                          RTELIST
-------------------------------------------------------------
801         (          N   D     TITOGA1  0  N  N) $
```

After a call receives ANI digits from the EO, or the call is presented to an operator position, translations are performed using data from table TOPSDP, if the XLAGRP translations scheme has been selected.

Table TOPSTOPT

The XLAGRP translations scheme is activated by setting the XLASCHEM field in table TOPSTOPT to Y for the originating trunk group. When XLASCHEM is set to Y, the translations group name from table XLAGRP must be specified.

The OLNS field determines whether or not an ONLS query is set to a LIDB database. In this example, an ONLS query can be performed for a TRKSGRP1 call.

The following figure shows example datafill. In the example, the XLAGRP name of TRKGRP1 for trunk group TOPEAIC is used to define translations and screening parameters.

Figure 116 MAP display example for table TOPSTOPT

```
GRPKEY              ORGAREA                DISPCLG  ADASERV    ADASANS
ANITOCLI OLNSQRY DCIBIDX    LNPCLGAM        XLASCHEM   SPIDPRC   TRKSPID
    BILLSCRN     ANIFSPL        MAXCONNS       DISPSPID
-------------------------------------------------------------------------
TOPEAIC              N                          N       NONE         NA
Y N        ALL       0        N             Y TRKGRP1      Y          N
       N            N              0             N
```

Table SPIDGRP

To refine based on SPID, a SPID group name must be assigned in table SPIDGRP. The following figure shows example datafill.

Figure 117 MAP display example for table SPIDGRP

```
SPIDGRP
----------------------------------------------------------------
CLECGRP
```

Table SPIDDB

Table SPIDDB associates a SPIDGRP name with a specific SPID. The XLA field in table SPIDDB is set to Y when using XLAGRP translations for a specific SPID. When field XLA is set to Y, then a SPIDGRP name for that SPID must be specified.

The following figure shows example datafill. In the example, the SPIDGRP name for BTEL is CLECGRP.

Figure 118 MAP display example for table SPIDDB

```
SPID   SCRNDISP   OPERSYS                  TAANN       DAANN
ACTSANN      XLA        SPIDCRIT   SCRNIDX   BILAGRMT      DACICOVR
-------------------------------------------------------------------
BTEL    Y BTEL    ALL                     Y BBRAND    Y BBRAND
N           Y CLECGRP   N           100      NONE           N
```

Table XLASPID

Table XLASPID refines the trunk group XLAGRP name from table TOPSTOPT by the SPIDGRP of the calling party from table SPIDDB. If a match for this combination of XLAGRP name and SPIDGRP name is found in table XLASPID, then the result is a new refined XLAGRP used by XLAGRP translations.

Note: Refinement by SPID in table XLASPID or by NPA-NXX in table XLAODIGS is optional.

In the call flow example, the XLAGRP of TRKGRP1 is refined by the SPIDGRP of CLECGRP to be a new XLAGRP name of TG1CLEC. The XLAGRP of EAGRP1 is refined by the SPIDGRP of CLECGRP to be a new XLAGRP name of TG1CLEC.

The following figure shows example datafill.

Figure 119 MAP display example for table XLASPID

```
GRPKEY                  NEWXLGRP
-----------------------------------------------------------------
TRKGRP1 CLECGRP          TG1CLEC
EAGRP1  CLECGRP          TG1CLEC
```

Table XLAODIGS

Table XLAODIGS refines an XLAGRP name by the NPA-NXX digits of the calling subscriber's DN. The XLAGRP name refined by XLAODIGS can either be the trunk group based XLAGRP from table TOPSTOPT, or a refined XLAGRP name from table XLASPID. If a match for this combination of XLAGRP name and NPA-NXX digits is found in table XLAODIGS, then the result is a new refined XLAGRP name used by XLAGRP translations.

Note: Refinement by SPID in table XLASPID or by NPA-NXX in table XLAODIGS is optional.

In the call flow example, the NPA-NXX digits of both the TRKGRP1 and EAGRP1 subscribers is 407355, so there is no refinement performed for the XLAGRPs of TG1355 or EAG1355.

Figure 120 MAP display example for table XLAODIGS

```
GRPKEY                NEWXLGRP
-----------------------------------------------------------------------
TRKGRP1  407355       TG1355
EAGRP1   407355       EAG1355
```

Table TOPEATRK

Table TOPEATRK is utilized at three different points in the call flow. The first is when field SCRNFLDS in table TOPEATRK indicates that LATA screening is being performed, and specifies an originating LATA name of L123 for trunk group TOPEAIC. Further screening is performed by table LATAXLA.

The second time table TOPEATRK is utilized, it is accessed for the trunk group to obtain the initial EA XLAGRP from field XLASCHEM. In the call flow example, TOPEATRK is accessed for trunk group TOPEAIC, and the initial EA XLAGRP of EAGRP1 is obtained from field XLASCHEM.

The third time table TOPEATRK is accessed, field CARRIER in table TOPEATRK specifies the digits for the trunk group. In the call flow example, field CARRIER specifies carrier digits of 0803 for trunk group TRKGRP1.

Figure 121 MAP display example for table TOPEATRK

```
TRUNKGRP   ENDOFFCE   CARRIER                    SCRNFLDS
            XLASCHEM                 DNLOOK   DFLTPIC          BYPASS
-----------------------------------------------------------------------
TRKGRP1    CONFORM    0803                       LATA L123
            Y EAGRP1                   Y         Y                $
```

Table LATAXLA

LATA screening is performed by indexing table LATAXLA using field SCRNFLDS from table TOPEATRK. Additional screening is performed on the dialed digits that indicate the LATA and STATE values for routing.

In the call flow example, the LATACODE value of L123 is the indexed SCRNFLDS from table TOPEATRK. Screening is also performed on the dialed address digits of 212-220-1234. Field LATA specifies this as an interLATA call requiring an interexchange carrier for routing.

Later in the call after it has accessed table TOPEACAR, field STATE in table LATAXLA is refined and indicates that this call is interstate and the field is marked as INTER.

Figure 122 MAP display example for table LATAXLA

```
LATACODE          LATA     STATE    EATYPE
------------------------------------------------------------------------
L123  212         INTER    INTER       STD
```

Table TOPEACAR

Table TOPEACAR assigns a CICGRP for each carrier number which is used in XLAGRP translations. In the call flow example, for a carrier number of 0803, the CICGRP assigned is CIC803.

Figure 123 MAP display example for table TOPEACAR

```
CARDIG CARNAME       ALTDISP   OPLSCLD  CAMABILL  ALTCARR           NATERM
 INTERM   OPSERV                                                   TDBIDX
CICSCHEM            LIDBYCIC
------------------------------------------------------------------------
0803     C803        C803      Y        Y        0803             UNREST
 UNREST    SERV NOQUERY Y NOQUERY Y NOQUERY Y Y Y Y 100 NONE          0
Y CIC803             N
```

Table XLACIC

There is a matching entry in table XLACIC for the CICGRP assigned in table TOPEACAR. The initial XLAGRP is refined and is replaced by the new XLAGRP.

In the call flow example, the XLAGRP of EAGRP1 is replaced with a new XLAGRP of 803XLA.

Figure 124 MAP display example for table XLACIC

```
GRPKEY               NEWXLGRP
------------------------------------------------------------------------
TG1CLEC    CIC803     803XLA
```

Table XLAEAREG

Following the STATE refinement in table LATAXLA, table XLAEAREG is accessed to refine for region.

In the call flow example, there is no matching entry in table XLAEAREG for a region of INTER. Therefore, refinement of XLAGRP by EA region is not performed for this call. The final XLAGRP refinement of 803XLA is used to access TOPSDP.

Figure 125 MAP display example for table XLAEAREG

```
GRPKEY                        NEWXLAGRP
-------------------------------------------------------------------
803XLA            INTRA       TG1355
```

Table TOPSDP

The XLAGRP name resulting after all refinements have been performed is the final XLAGRP name. Table TOPSDP is accessed using this final XLAGRP. Table TOPSDP defines the TOPS translations and screening parameters for each XLAGRP used by the XLAGRP translations scheme.

The following figure shows example datafill. For the XLAGRP of 803XLA in table TOPSDP, the field ORIGSCRN specifies a screen class name of STER and an STS of 619.

Figure 126 MAP display example for table TOPSDP

```
XLAGRP       STS OPERPRTN  ORIGSCRN  OPERSCRN  MCCSPRTN MCCSSCRN LCANAME
-------------------------------------------------------------------------
803XLA        619   OPER    STER       NCSR      MCCS     NSCR     NCLA
```

Table CLSVSCRC

A screen class name is used to index into table Class of Service Screening (CLSVSCRC) which can (if desired) provide a route that replaces the route selected during the code translations step. In this example, table CLSVSCRC is indexed with an STS from table TOPSDP.

Figure 127 MAP display example for table CLSVSCRC

```
NPASCTYP NORSLTS     TMTOFRT CLSVSCR
-------------------------------------------------------------------------
619 STER OA       2   N    NONE (    1)
```

Subtable CLSVSCR

In this example, subtable CLSVSCR is indexed with the digits of 0803212, which specifies an index of 300 into table OFRT for routing information.
MAP display example for subtable CLSVSCR

```
FROMDIGS              TODIGS                                SUB_TMTOFRT
-------------------------------------------------------------------------
0803212                0803212                               T  OFRT   300
```

Table OFRT

In this example, the result from table CLSVSCRC is an index into table Office Routing (OFRT), which provides the actual trunk group (or groups) to be used for routing. Table OFRT is indexed with 300 to identify the outgoing trunk group of TITOGB1 to route the call, replacing trunk group TITOGA1.

The following figure shows example datafill. In this example, the original trunk group TITOGA1 selected during the code translations step as the route is *replaced* with trunk group TITOGB1 during the screening phase

Figure 128 MAP display example for table OFRT

```
RTE           RTELIST
-------------------------------------------------------------------------
300           (            N       D      TITOGB1  0            N N)
```

Call flow scenario

The following scenario is only used for equal access calls. This scenario has the following elements:

- The call is an EA call.
- The subscriber is CLEC.
- The AO SPID is set as CLEC.

Scenario

In this scenario, the CLEC subscriber (619-322-5000) places an EA carrier call.

1 Subscriber 619-322-5000 dials 0+212-220-1234. The EO selects an outgoing trunk group to the TOPS office. The call arrives at TOPS over incoming trunk group TOPEAIC.

2 TOPS obtains the pretranslator name A1IC for trunk group TOPEAIC from the PRTNM field in table TRKGRP. TOPS performs initial translations using the A1IC entry in table STDPRTCT, and based on the called address digits of 221-220-1234, TOPS sets the translations system to North American (NA) and the call type as nil (NL).

3 TOPS obtains an STS of 619 for trunk group TOPEAIC from the STS field in table TRKGRP. TOPS performs initial code translations using the 619 entry in table HNPACONT, and based on the called address digits 212-220-1234, TOPS selects an outgoing route of trunk group TITOGA1.

4 The ANI digits to identify the calling subscriber (619-322-5000) are received from the EO.

5 Because an OLNS query is enabled for TOPEAIC in table TOPSTOPT, TOPS sends an OLNS query to the LIDB using the ANI digits. The OLNS response identifies subscriber 619-322-5000 as being served by a CLEC with a SPID of BTEL.

6 The XLAGRP translations scheme is enabled for TOPEAIC, because the XLASCHEM field is set to Y with an initial XLAGRP of TRKGRP1 in table TOPSTOPT.

7 TOPS determines that SPID processing is enabled, because the SPIDPRC field in table TOPSTOPT is set to Y for trunk group TOPEAIC. The TOPS translations and routing SOC UNBN0101 is enabled, as is the parameter in table TOPDFTR, so XLAGRP refinement based on SPID is allowed.

8 TOPS assigns a SPID group of CLECGRP from the SPIDGRP subfield in table SPIDDB. TOPS uses table XLASPID to refine the initial XLAGRP of TRKGRP1 by the SPIDGRP of CLECGRP to obtain a *new* XLAGRP of TG1CLEC.

9 TOPS attempts to refine XLAGRP TG1CLEC using table XLAODIGS and the NPA-NXX digits 619-322 of the subscriber DN. No matching entry is found in table XLAODIGS, so the XLAGRP assignment of TG1CLEC is unchanged.

10 TOPS obtains translations and screening parameters for the TG1CLEC entry in table TOPSDP. These include an STS of 619, an operator pretranslator of OPER, an originating screening name of NSCR, and a local call area screening name of NCLA (no local call area name).

11 TOPS does *not* perform class of service screening here, because the entry in the ORIGSCRN field in table TOPSDP is set to NSCR. The outgoing route of trunk group TITOGA1 set from code translations is unchanged.

12 NCLA is specified for field LCANAME in table TOPSDP for the XLAGRP of TRKGRP1, so LCA screening is not done. The call is marked as a toll, not a local, call.

13 Field SCRNFLDS in table TOPEATRK indicates that LATA screening is being performed, and specifies an originating LATA name of L132 for trunk group TOPEAIC.

14 LATA screening is performed by indexing table LATAXLA using L132 and the dialed address digits of 212-220-1234. Field LATA specifies this as an interLATA call requiring an interexchange carrier for routing.

15 Table TOPEATRK is accessed for trunk group TOPEAIC, and the initial EA XLAGRP of EAGRP1 is obtained from field XLASCHEM.

16 The XLAGRP of EAGRP1 and the SPIDGRP of CLECGRP are propagated as an entry in table XLASPID. The XLAGRP of EAGRP1 is replaced with a new refined XLAGRP of TG1CLEC.

17 TOPS again attempts to refine XLAGRP TG1CLEC using table XLAODIGS and the NPA-NXX digits 619-322 of the subscriber DN. No matching entry is found in table XLAODIGS, so the XLAGRP assignment of TG1CLEC is unchanged.

18 In table TOPEATRK, field CARRIER specifies carrier digits of 0803 for trunk group TOPEAIC. Table TOPEACAR assigns a CICGRP for each carrier number which is used in XLAGRP translations. For a carrier number of 0803, CICGRP assigned is CIC803. There is a matching entry in table XLACIC for a CICGRP of CIC803. The XLAGRP of TG1CLEC is replaced with the new XLAGRP of 803XLA.

19 Field STATE in table LATAXLA indicates that this call is interstate. Thus the region destination is marked an INTER. Since there is no matching entry in table XLAEAREG for a region of INTER, refinement of the XLAGRP by EA region is not performed for this call.

20 The final XLAGRP refinement of 803XLA is used to access TOPSDP.

21 In table TOPSDP, the XLAGRP of 803XLA specifies the screen class name of STER for field ORIGSCN and an STS of 619. Table CLSVSCRC is indexed with an STS of 619, a screen class name of STER, and a call type of OA.

22 The carrier digits of 0803 are appended prior to the dialed address digits. Subtable CLSVSCR is indexed with the digits of 0803-212-220-1234, which specifies an index of 300 into table OFRT for routing information. Table OFRT is indexed with 300 to identify the outgoing trunk group of TITOGB1 to route the call, replacing trunk group TITOGA1.

Note: For subsequent translations and screening for the call, go to step 48.

23 Table AABSOST does not have an entry for trunk group TOPEAIC, so there is no automated service provided to collect calling card information.

24 TOPS determines the OSC to receive the call, which is based on QMS datafill. In this example QMS does not use SPID criteria, so the details of QMS are not presented here.

25 The call is routed to an available idle operator position in the single OSC team, so no queuing is required.

26 The operator asks the subscriber for billing information. The subscriber provides a calling card number. TOPS sends a CCV query to the LIDB, and a successful response is received.

27 The operator outpulses to connect to the called number 212-220-1234.

28 through 47 TOPS translations and screening is performed again, including EA. **Repeat steps 2 through 22, then skip to step 48.**

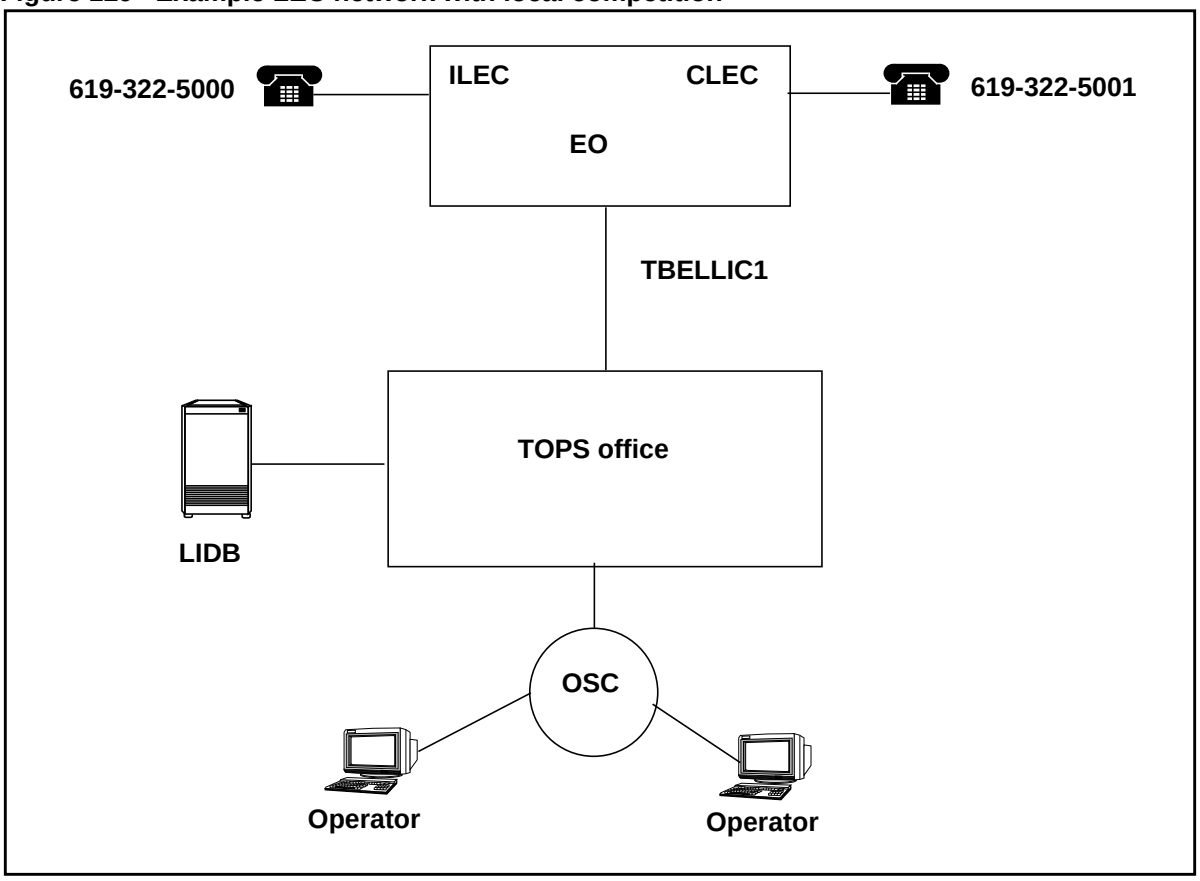
48 The TOPS translation and screenings are complete, and the call is routed to its final destination over trunk group TITOGB1 as an interLATA call.

49 An AMA record is produced for the call. Due to the presence of a calling AO SPID (BTEL) in the TOPS data, a module code 338 that identifies the calling AO SPID is appended to the AMA record. The call is billed as a toll call.

0+ billing agreement screening call flow example

The following figure shows a sample network used in the call flow.

Figure 129 Example LEC network with local competition



In this example network, the ILEC owns the EO. This EO supports subscribers for both the ILEC and a CLEC. A subscriber with a DN of 619-322-5000 uses the ILEC as its service provider. A subscriber with a DN of 619-322-5001 uses the CLEC as its service provider.

Trunking between the EO and the TOPS office consists of a combined trunk group TBELLIC1, which carries both ILEC and CLEC traffic.

A single TOPS office, owned by the ILEC, provides operator services for both service providers. One OSC, or operator team, handles calls from ILEC and CLEC subscribers.

The example network also includes a LIDB for OLNS queries and calling card validation (CCV) queries.

Call flow assumptions

This example call flow has the following assumptions:

- The calls are intraLATA calls, not carrier calls
- The OPR_SVC_AGRMTS parameter in table TOPSPARM is enabled.
- The ALL_CALLS_USE_OPR_SVC_AGRMTS parameter in table TOPSPARM is enabled.

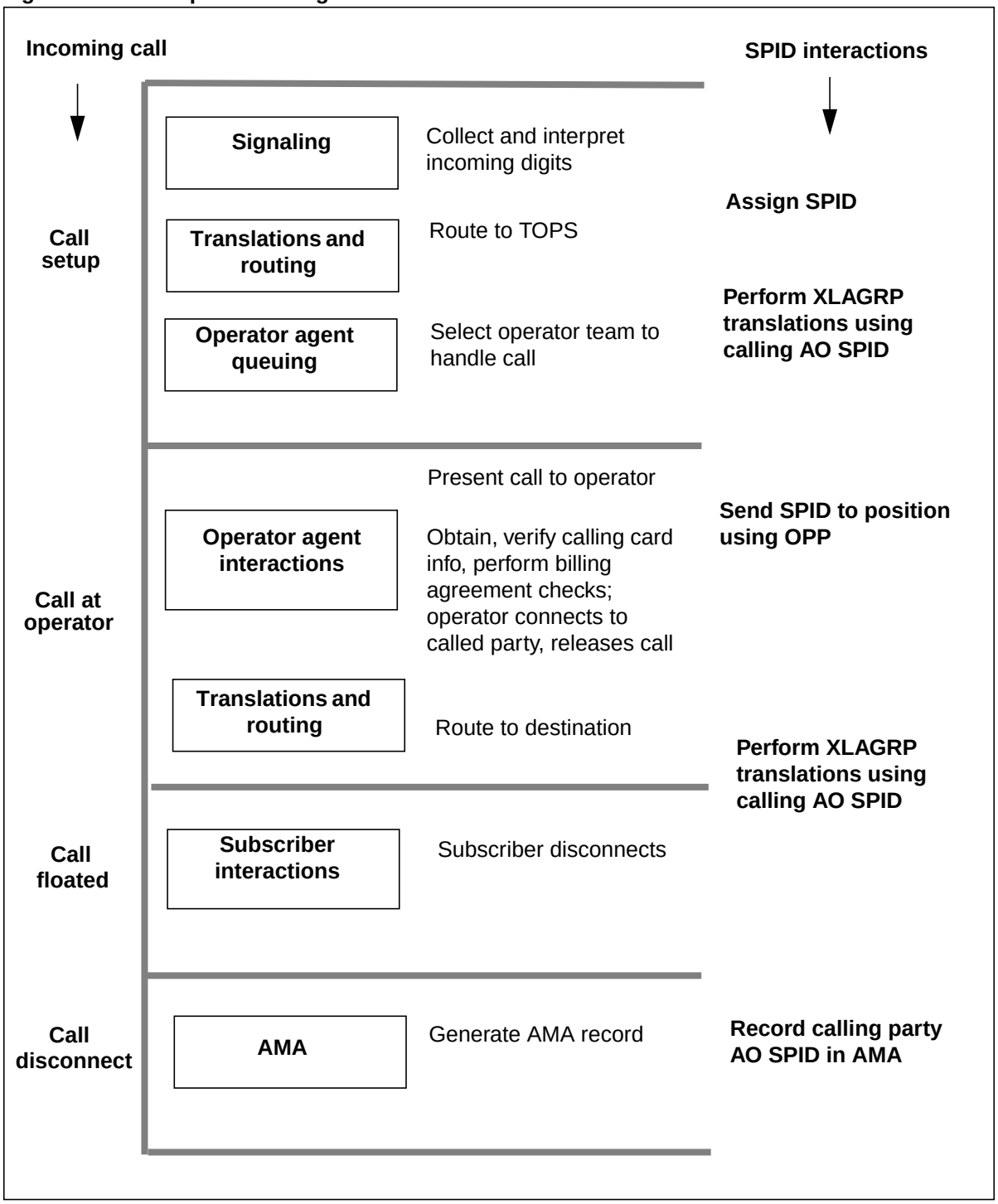
  Note: Table control prevents ALL_CALLS_USE_OPR_SVC_AGRMTS from being set to 'Y' if OPR_SVC_AGRMTS is not datafilled with valid billing agreement groups.
- The CHECK_BILL_AGRMT_USING_BSP_SPID parameter in table TOPSPARM is enabled.
- Field BILAGRMT in table TOPEACAR is set to NONE.
- SOC UNBN0101 is enabled.
- SCREEN_FOR_BILLING_AGREEMENT parameter in table TOPSFTR is enabled.

Call flow description

The call flow example in this section is for a 0+ call to an operator call. The example is simplified to illustrate the following key points:

- the ability to determine what billing agreement groups are available to that call
- the ability to handle calls based on the AO SPID or BSP SPID of the billed-to party
- AMA record generated on call completion

Figure 130 Example 0+ calling card call flow



Related call flow datafill

This section shows sample datafill for the 0+ calling card call. The data shown is specific to TOPS unbundling.

Note: For details on how to datafill all the tables for unbundling, refer to Chapter 7: "Unbundling data schema."

Table SPID

Calling AO SPIDs are defined for ILEC and CLEC. The following figure shows example datafill.

Figure 131 MAP display example for table SPID

```
SPID
----------------------------------------------------------------
ILEC
CLEC
```

Table XLAGRP

The translations group (XLAGRP) translations scheme defines the names of translations and screening groups in table XLAGRP. The following figure shows example datafill.

Figure 132 MAP display example for table XLAGRP

```
XLAGRP
----------------------------------------------------------------
TBELLXLA
ILECXLA
CLECXLA
TBELLXLA322
ILECXLA322
CLECXLA322
```

Table TOPSTOPT

The XLAGRP translations scheme is activated by setting the XLASCHEM field in table TOPSTOPT to Y for the originating trunk group. When XLASCHEM is set to Y, then a translations group name from table XLAGRP must be specified.

The XLAGRP translations scheme allows the calling AO SPID to be used as a criterion to refine the trunk group XLAGRP name, as follows:

- enabling SPID processing for the trunk group by setting the field SPIDPRC to Y in table TOPSTOPT

  Note: Trunk groups that do *not* carry SPID traffic should have field SPIDPRC set to N.

- enabling SOC code UNBN0101 and parameter in table TOPSFTR to allow XLAGRP translations refined based on SPID

The OLNSQRY field determines whether or not an OLNS query is sent to a LIDB database. In this example, an OLNS query can be performed for a TBELLIC1 call.

The BILLSCRN field determines whether or not call restrictions for wholesaling screening applies to this call. In this example, BILLSCRN is set to Y and four additional subfields are available for further refinements.

The following figure shows example datafill. In the example, the XLAGRP name of TBELLXLA for trunk group TBELLIC1 is used to define translations and screening parameters.

Figure 133 MAP display example for table TOPSTOPT

```
GRPKEY              ORGAREA                  DISPCLG  ADASERV    ADASANS
ANITOCLI OLNSQRY DCIBIDX    LNPCLGAM       XLASCHEM    SPIDPRC   TRKSPID
            BILLSCRN      ANIFSPL        MAXCONNS       DISPSPID
-------------------------------------------------------------------------
TBELLIC1   Y    OSSAIN_ROC1_ORIG             Y     NONE          NA
Y N        ALL       0        N             Y TBELLXLA    Y       N
         Y 97 97 Y Y            N            0             N
```

Table WSALEOPT

If field BILSCRN in table TOPSTOPT is set to Y, table WSALEOPT is accessed to indicate the criteria to be used for billing screening. This table consists of an index, and the fields INTRA and INTER. For each of the two available fields, data indicating the screening criteria may be entered.

In this example, TRK is entered. The SCRINDX of 97 out of TOPSTOPT is used to index table RESTBIL and obtain billing restrictions. In this case, an intraLATA call can be completed using the restrictions datafilled in table RESTBIL. These restriction indicate that the caller can use only a sent paid or a calling card for payment.

Note: The SCRNIDX discussed above is an index into RESTBIL for TA calls, or DARSTBIL for DA calls.

Figure 134 MAP display example for table WSALEOPT

```
IDX              INTRA          INTER
-------------------------------------------------------------------
97                TRK $          CIC $
```

Table RESTBIL

Table RESTBIL specifies the Restricted Billing Class to be recorded on AMA for Toll and Assist (TA) and Directory Assistance (DA) calls. DA and TA calls have different tariff rules, and this table allows for the independent assignment of billing restrictions for TA calls based upon the Restricted Billing Class. Table RESTBIL provides the index to specify the allowed methods of billing for TA calls.

Figure 135 MAP display example for table RESTBIL

```
BILCLASS   AMARBC   SCRNDISP     BILTYPES          CCPDTYPS
-------------------------------------------------------------------
 31           74    31PRISON       (COL)             NONE
```

Table SPIDGRP

To refine based on SPID, a SPID group name must be assigned in table SPIDGRP. The following figure shows example datafill.

Figure 136 MAP display example for table SPIDGRP

```
SPIDGRP
-------------------------------------------------------------------
ILECGRP
CLECGRP
```

Table BAGNAME

Before a billing agreement group can be used in any of the tables, it must be datafilled in table BAGNAME. This table contains one field, BAGNAME, which is the character string name of a billing agreement group in the TOPS switch. Each name may contain up to sixteen characters.

Figure 137 MAP display example for table BAGNAME

```
BAGNAME
-------------------------------------------------------------------
OPRSVCBNS
OPRSVCCCV
SPIDBNS
SPIDCCV
CARBNS
CARCCV
```

Table BNSAGRMT

Billing agreements based on BNS are tracked in table BNSAGRMT. This table consists of two fields, ORIGGRP and BILLSPID. These two fields make up the key to a tuple in this table which indicates an agreement exists between the billing agreement group of the originator and the billed-to SPID.

Field ORIGGRP associates a group name with the SPID (in the case of a LEC call) or the CIC (in the case of a carrier call) of the originating party for the purpose of screening for billing agreements. The group name is obtained from either table SPIDDB or TOPEACAR. The group name must first be datafilled in Table BAGNAME before it can be used in this table.

Field BILLSPID is the SPID of the billed-to party. The SPID returned from the LIDB query is used to screen for billing agreements. Before a SPID can be added to this field, it must first be datafilled in table SPID.

Figure 138 MAP display example for table BNSAGRMT

```
BNSKEY
------------------------------------------------------------------------
OPRSVCBNS ILEC
OPRSVCBNS CLEC
SPIDBNS ILEC
SPIDBNS CLEC
CARBNS ILEC
CARBNS CLEC
```

Table CCVAGRMT

Billing agreements based on CCV are tracked in table CCVAGRMT. This table consists of two fields, ORIGGRP and BILLSPID. These two fields make up the key to a tuple in this table which indicates an agreement exists between the billing agreement group of the originator and the billed-to SPID.

Field ORIGGRP associates a group name with the SPID (in the case of a LEC call) or the CIC (in the case of a carrier call) of the originating party for the purpose of screening for billing agreements. The group name is obtained from either table SPIDDB or TOPEACAR. The group name must first be datafilled in table BAGNAME before it can be used in this table.

Field BILLSPID is the SPID of the billed-to party. The SPID returned from the LIDB query is used to screen for billing agreements. Before a SPID can be added to this field, it must first be datafilled in table SPID.

Figure 139 MAP display example for table CCVAGRMT

```
ORRIGGRP         BILLSPID
-------------------------------------------------------------------------
OPRSVCCCV          C111
OPRSVCCCV          LECB
SPIDCCV            LECA
CARCCV             C222
CARCCV             LECB
```

Table SPIDDB

Table SPIDDB associates a SPIDGRP name with a specific SPID. SPIDDB provide details on CLEC-type providers. Field BILAGRMT is examined to determine the type of billing agreement that is in place for the given providers. This field is checked when TOPSPARM parameter ALL_CALLS_USE_OPR_SVC_AGRMTS is set to N.

There are four subfields in table SPIDDB relating to billing agreements. These are AGRMTYPE, CCVAGRMT, BNSAGRMT, and NOSPDERR.

The following figure shows example datafill.

Figure 140 MAP display example for table SPIDDB

```
SPID   SCRNDISP   OPERSYS                  TAANN      DAANN
ACTSANN XLA       SPIDCRIT SCRNIDX  BILAGRMT                    DACICOVR
-------------------------------------------------------------------------
ILEC    N          ALL                      N            N
N        Y ILECGRP   N      100      NONE                           N
CLEC    N          ALL                      N            N
 N       Y CLECGRP   N      100      SELF SPIDCCV SPIDBNS ACCPT     N
```

Table TOPEACAR

Table TOPEACAR provides information on IXC-type providers. Field OPSERV has four subfields that define the agreements and the groupings. These subfields are BILAGRMT, AGRMTYPE, CCVAGRMT, and BNSAGRMNT. In the call flow example, for a carrier number of 0111, the BILAGRMT assigned is NONE.

Figure 141 MAP display example for table TOPEACAR

```
CARDIG CARNAME  ALTDISP  OPLSCLD CAMABILL  ALTCARR NATERM   INTERM
OPSERV                                          TDBIDX CICSCHEM
 LIDBYCIC
-------------------------------------------------------------------------
0111    C111     C111      Y        Y        0111   UNREST   UNREST
SERV NOQUERY Y NOQUERY Y NOQUERY Y Y Y Y 100 NONE    0      N
    N
```

Table XLASPID

Table XLASPID refines the trunk group XLAGRP name from table TOPSTOPT by the SPIDGRP of the calling party from table SPIDDB. If a match for this combination of XLAGRP name and SPIDGRP name is found in table XLASPID, then the result is a new refined XLAGRP used by XLAGRP translations.

Note: Refinement by SPID in table XLASPID or by NPA-NXX in table XLAODIGS is optional.

In the call flow example, the XLAGRP of TBELLXLA is refined by the SPIDGRP of ILECGRP to be a new XLAGRP name of ILECXLA. The XLAGRP of TBELLIC1 is refined by the SPIDGRP of CLECGRP to be a new XLAGRP name of CLECXLA.

The following figure shows example datafill.

Figure 142 MAP display example for table XLASPID

```
GRPKEY   SPIDGRP               NEWXLGRP
-------------------------------------------------------------------
TBELLXLA ILECGRP               ILECXLA
TBELLXLA CLECGRP               CLECXLA
```

Table XLAODIGS

Table XLAODIGS refines an XLAGRP name by the NPA-NXX digits of the calling subscriber's DN. The XLAGRP name refined by XLAODIGS can either be the trunk group based XLAGRP from table TOPSTOPT, or a refined XLAGRP name from table XLASPID. If a match for this combination of XLAGRP name and NPA-NXX digits is found in table XLAODIGS, then the result is a new refined XLAGRP name used by XLAGRP translations.

Note: Refinement by SPID in table XLASPID or by NPA-NXX in table XLAODIGS is optional.

In the call flow example, the NPA-NXX digits of both the ILEC and CLEC subscribers is 619322, so there is no refinement performed for the XLAGRPs of ILECXLA or CLECXLA.

The following figure shows example datafill.

Figure 143 MAP display example for table XLAODIGS

```
GRPKEY                    NEWXLGRP
-------------------------------------------------------------------
TBELLXLA 619320           TBELLXLA320
TBELLXLA 619322           TBELLXLA322
ILECXLA  619320           ILECXLA320
CLECXLA  619320           CLECXLA320
```

Table TOPSDP

The XLAGRP name resulting after all refinements have been performed is the final XLAGRP name. Table TOPSDP is accessed using this final XLAGRP. Table TOPSDP defines the TOPS translations and screening parameters for each XLAGRP used by the XLAGRP translations scheme.

The following figure shows example datafill.

Figure 144 MAP display example for table TOPSDP

```
XLAGRP          STS  OPERPRTN ORIGSCRN OPERSCRN MCCSPRTN MCCSSCRN LCANAME
-------------------------------------------------------------------------
TRK1            000  PRTNM1   SCR1     OPS1      PRTNM1   MCCS1    LCA1
TRK2            000  PRTNM2   SCR2     OPS2      PRTNM2   MCCS2    LCA2
ILECXLA         619  OPER     NSCR     NSCR      MCCS     SCR1     L32X
CLECXLA         619  OPER     STER     NSCR      MCCS     SCR1     CLEC32X
TRK1619320      000  PRTNM4   SCR5     OPS5      PRTNM4   MCCS5    LCA1
TRK1619322      000  PRTNM4   SCR5     OPS5      PRTNM4   MCCS5    LCA1
TRK1CLEC919720  000  PRTNM6   SCR7     OPS7      PRTNM6   MCCS7    LCA1
```

Table TRKGRP

When a call is initially presented to TOPS, prior to calling party ANI digits being received from the EO, some initial translations are performed using data from table TRKGRP for the originating trunk group.

The PRTNM field defines the pretranslator name used in the pretranslations step, and the Serving Numbering Plan Area (SNPA) used in code translations is defined by the STS field.

The following figure shows example datafill. For trunk group TBELLIC1, the STS assigned is 619 and the pretranslator name assigned is PTOP.

Note: The example below is a subset of table TRKGRP. The remaining fields were omitted for clarity.

Figure 145 MAP display example for table TRKGRP

```
GRPKEY   GRPTYP          SNPA  STS   PRTNM  LCANAME  SCRNCL
-------------------------------------------------------------
TBELLIC1 TOPS           619   619   PTOP   NLCA     NSCR
```

Table STDPRTCT

The pretranslator name from table TRKGRP (PTOP) is used to index into table Standard Pretranslator (STDPRTCT). Subtable STDPRT of STDPRTCT is accessed with digits dialed by the subscriber (minus prefix digits) to determine the translations system to be used and the initial call type assignment. The following figures show example datafill.

Figure 146 MAP display example for table STDPRTCT

```
EXTPRTNM  STDPRT          AMAPRT
-------------------------------------------------------------------
PTOP       ( 1)          (65021)
```

The entry in subtable STDPRT where FROMDIGS is digit 2 is the match for the digit string in the call flow example.

Figure 147 MAP display example for subtable STDPRT

```
FROMDIGS  TODIGS          PRETRTE
-------------------------------------------------------------------
  0        0              N OA 0 NA
  12       19             N NL 1 IN
  2        4000           N NL 0 NA
  4001     0              N NL 0 NA
```

Table HNPACONT

The STS from table TRKGRP (619) is used as a Serving Translation Scheme (STS) to index table Home Numbering Plan Area Control (HNPACONT). Subtable HNPACODE is accessed with digits dialed by the subscriber (minus prefix digits) to determine a code type for the call.

If the code type specified is a route, subtable RTEREF specifies the route list to be used for the outgoing (terminating) route for the call. The route list can also specify any digit manipulation (adding or deleting) to be performed on the called digits.

Note: For a description of the allowed code types, please refer to the *Customer Data Schema Reference Manual*.

The following figures show example datafill.

Figure 148 MAP display example for table HNPACONT

```
STS SNPA NORTREFS NOAMBIGC  RTEREF HNPACODE  ATTRIB  RTEMAP   OPTIONS
-------------------------------------------------------------------
619    Y      813        8 (   57)  (    1) (    0) (    0)     $
```

Figure 149 MAP display example for subtable HNPACODE

```
FROMDIGS  TODIGS          CDRRTMT
-------------------------------------------------------------------
  103      103            OPC3  8
  201      201            FRTD  801
  230260   230260         FRTE  16
```

In this example, the code type is defined as a Foreign Route (FRTD) with an index 801. This 801 is used as the index into subtable RTEREF.

Figure 150 MAP display example for subtable RTEREF

```
RTE          FTELST
-------------------------------------------------------------------
801          (           S   D     TITOGA1) $
802          (           N   D     TITOGB1  3         N N)$
```

Once a call receives ANI digits from the EO, and or the call is presented to an operator position, translations are performed using data from table TOPSDP, if the XLAGRP translations scheme has been selected.

Table STDPRTCT

The pretranslator name from field OPERPRTN (OPER) from table TOPSDP is used to index into table STDPRTCT. Subtable STDPRT of STDPRTCT is accessed with digits dialed by the subscriber (minus prefix digits) to determine the translations system to be used and the initial call type assignment. The following figures show example datafill.

Figure 151 MAP display example for table STDPRTCT

```
EXTPRTNM    STDPRT           AMAPRT
-------------------------------------------------------------------
OPER        ( 1)           (65021)
```

The entry in table STDPRT where FROMDIGS is digit 2 is the match for the digit string in the call flow example.

Figure 152 MAP display example for subtable STDPRT

```
FROMDIGS  TODIGS           PRETRTE
-----------------------------------------------------------------
  0         0              N OA 0 NA
  12        19             N NL 1 IN
  2         4000           N OA 0 NA
  4001      9              N NL 0 NA
```

The STS value from field STS (619) from table TOPSDP is used to index table HNPACONT. Subtable HNPACODE is accessed with digits dialed by the subscriber (minus prefix digits) to determine a code type for the call.

If the code type specified is a route, subtable RTEREF specifies the route list to be used for the outgoing (terminating) route for the call. The route list can also specify any digit manipulation (adding or deleting) to be performed on the called digits.

In this example, the STS value 619 from table TOPSDP is the same as the STS from the STS field in table TRKGRP. Thus the entry in table HNPACONT is the same as the example shown previously.

Class of service screening is performed either once or twice, depending on the stage of the call. If the call is not yet at an operator position (or automated TOPS system), then screening is performed once using the screen class name (STER) obtained from field ORIGSCRN in table TOPSDP.

If the call is at an operator position, then screening is performed up to two times, first using the screen class name (if any) obtained from field ORIGSCRN and then using the screen class name (if any) obtained from field OPERSCRN.

In this example, the screen name from ORIGSCRN is STER, and there is no screen name from field OPERSCRN (NSCR). Thus screening here is performed only *once*.

Table CLSVSCRC

A screen class name is used to index into table Class of Service Screening (CLSVSCRC) which can (if desired) provide a route that replaces the route selected during the code translations step. The following figures show example datafill.

Figure 153 MAP display example for table CLSVSCRC

```
NPASCTYP     NORSLTS          TMTOFRT     CLSVSCR
-------------------------------------------------------------------
 619 STER OA    2           N  NONE          ( 1)
```

Figure 154 MAP display example for subtable CLSVSCR

```
FROMDIGS  TODIGS           PRETRIE
-------------------------------------------------------------------
  0111     0111             T OFRT   806
  201220   201220           T OFRT   804
```

Table OFRT

In this example, the result from table CLSVSCRC is an index into table Office Routing (OFRT), which provides the actual trunk group (or groups) to be used for routing.

The following figure shows example datafill. In this example, the original trunk group TITOGA1 selected during the code translations step as the route is *replaced* with trunk group TITOGB1 during the screening phase.

Figure 155 Map display example for table OFRT

```
RTE         RTELIST
-------------------------------------------------------------------------
804         (           S   D     TITOGB1) (S D T120) $
806         (           S   D     TITOGB1) (S D T120) $
```

Table LCASCRCN

Local Calling Area (LCA) screening uses the NXX of the subscriber and the NXX digits of the DN dialed by the subscriber to determine if a call is local. For an ILEC subscriber, the LCA screen name L32X from field LCANAME for the ILECXLA entry in table TOPSDP is used to index table Local Call Area Screening (LCASCRCN). Subtable LCASCR of LCASCRCN is accessed with the NXX of the originator and the NXX of the called number. If a match for this combination is found in subtable LCASCR, then the call is marked as local.

Note: TOPS does *not* determine a route from LCA screening.

The following figures show example datafill.

Figure 156 MAP display example for table LCASCRCN

```
NPALOCNM    LCASCR     PFXSELEC      PFXFOR10     LOCALOVR
-------------------------------------------------------------------
 619 L32X    (  1)      OPTL          N              N
```

Figure 157 MAP display example for subtable LCASCR

```
FROMDIGS  TODIGS
-------------------------------------------------------------------
  520      520
  522      522
```

For a CLEC subscriber, the LCA screen name CLEC32X from field LCANAME for the CLECXLA entry in table TOPSDP is used to index table LCAINFO to determine if the call is local. The following figures show example datafill.

Note: For more information on LCA six digit expansion, please refer to the *Translations Guide.*

Figure 158 MAP display example for table LCAINFO

```
LCANAME  PFXSELEC  LOCALOVR  DPCTNAME
-----------------------------------------------------------------
CLEC32X      OPTL         N       NONE
```

Figure 159 MAP display example for subtable LCA6SCR

```
LCA6SCRN           TOOFC   TENDLOC
-------------------------------------------------------------------
CLEC32X 619 320     322         N
```

Call flow scenarios

The following scenario has the following elements:

- The subscriber is ILEC dialing 0+201-220-1234
- The call routes to an operator
- No AO SPID returned, but BSP SPID returned

Scenario

In this scenario, the ILEC subscriber 619-322-5000 places a 0+ call to the operator to be billed to a calling card.

1 Subscriber 619-322-5000 dials 0+201-220-1234. The EO selects an outgoing trunk group to the TOPS office. The call arrives at TOPS over incoming trunk group TBELLIC1.

2 TOPS obtains the pretranslator name PTOP for trunk group TBELLIC1 from the PRTNM field in table TRKGRP. TOPS performs initial pretranslations using the PTOP entry in table STDPRTCT, and based on the called address digits of 201-220-1234, TOPS sets the translations system to North American (NA) and the call type as nil (NL).

3 TOPS obtains an STS of 619 for trunk group TBELLIC1 from the STS field in table TRKGRP. TOPS performs initial code translations using the 619 entry in table HNPACONT, and based on the called address digits 201-220-1234, TOPS selects an outgoing route of trunk group TITOGA1.

4 The ANI digits to identify the calling subscriber (619-322-5000) are received from the EO.

5 Because an OLNS query is enabled for TBELLIC1 in table TOPSTOPT, TOPS sends an OLNS query to the LIDB using the ANI digits. The OLNS response identifies subscriber 619-322-5000 as having a calling AO SPID of ILEC.

6 The XLAGRP translations scheme is enabled for TBELLIC1, because the XLASCHEM field is set to Y with an initial XLAGRP of TBELLXLA in table TOPSTOPT.

7 TOPS determines that SPID processing is enabled, because the SPIDPRC field in table TOPSTOPT is set to Y for trunk group TBELLIC1. The TOPS translations and routing SOC UNBN0101 is enabled, as is the parameter in table TOPSFTR, so XLAGRP refinement based on SPID is allowed.

8 TOPS assigns a SPID group of ILECGRP from the SPIDGRP subfield in table SPIDDB. TOPS uses table XLASPID to refine the initial XLAGRP of TBELLXLA by the SPIDGRP of ILECGRP to obtain a *new* XLAGRP of ILECXLA.

9 TOPS attempts to refine XLAGRP ILECXLA using table XLAODIGS and the NPA-NXX digits 619-322 of the subscriber DN. No matching entry is found in table XLAODIGS, so the XLAGRP assignment of ILECXLA is unchanged.

10 TOPS obtains translations and screening parameters for the ILECXLA entry in table TOPSDP. These include an STS of 619, an operator pretranslator of OPER, an originating screening name of NSCR, and a local call area screening name of L32X.

11 TOPS does *not* perform class of service screening here, because the entry in the ORIGSCRN field in table TOPSDP is set to NSCR. The outgoing route of trunk group TITOGA1 set from code translations is unchanged.

12 TOPS performs local call area screening using the L32X entry (from LCANAME in TOPSDP) in table LCASCRCN. Based on 322 as the NXX digits of the subscriber's DN, and on 220 as the NXX digits of the called number, the call is marked as a toll, *not* a local, call.

13 Table AABSOST does not have an entry for trunk group TBELLIC1, so there is no automated service provided to collect calling card information.

14 TOPS determines the OSC to receive the call, which is based on QMS datafill. In this example QMS does not use SPID criteria, so the details of QMS are not presented here.

15 The call is routed to an available idle operator position in the single OSC team, so no queuing is required.

16 The operator asks the subscriber for billing information; the subscriber provides a credit card number. TOPS sends a CCV query to the LIDB. An AO SPID for the billed-to party is not returned; however, a BSP SPID of C111 is returned.

17 Table TOPSPARM parameter ALL_CALLS_USE_OPR_SVC_AGRMTS is checked to determine what agreement group to use to perform billing agreement checks. Since ALL_CALLS_USE_OPR_SVC_AGRMTS is set to Y, the operator services agreements is used.

18 Parameter OPR_SVC_AGRMTS is referenced to obtain the index into table CCVAGRMT; OPRSVCCCV in this case.

19 Since a billed-to BSP SPID was returned instead of a billed-to AO SPID, parameter CHECK_BILL_AGRMT_USING_BSP_SPID is checked to see if the BSP SPID should be used to check for a billing agreement. The parameter is set to Y so the BSP SPID (C111) is used to check for billing agreement. Table CCVAGRMT is indexed with OPRSVCCCV and C111 and since an entry is found, the call is allowed to complete.

20 The operator outpulses to connect to the called number 201-220-1234.

21 Pretranslations are performed again, this time using the OPER entry (from OPERPRTN in TOPSDP) in table STDPRTCT. Based on the called address digits 201-220-1234, TOPS sets the translations system (again) to NA and the call type as OA.

22 Code translations are performed again using the 619 entry (from STS in TOPSDP) in table HNPACONT. Based on the called address digits 201-220-1234, the result is (again) an outgoing route of trunk group TITOGA1.

23 TOPS does *not* perform class of service screening here, because the entries for both ORIGSCRN and OPERSCRN in table TOPSDP are set to NSCR. The outgoing route of trunk group TITOGA1 set from code translations is unchanged.

24 Local call area screening is performed again using the L32X entry (from LCANAME in TOPSDP) in table LCASCRCN. Based on the NXX digits 322 of the subscribers DN, and on the NXX digits 220 from the called number, the call is marked as a toll, *not* a local, call.

25 The operator floats the call. Subscriber 619-322-5000 talks to the called party 201-220-1234 for a period of time, and then disconnects.

26 An AMA record is produced for the call. Due to the presence of a calling AO SPID (ILEC) in the TOPS data, a module code 338 that identifies the calling AO SPID is appended to the AMA record. Since a BSP SPID was returned, C111 will also be on the AMA record. The call is billed as a toll call.

Part 3: Interactions

Part 3: Interactions includes the following chapters:

Chapter 5: Unbundling feature impact

This chapter consolidates the interactions and restrictions for TOPS unbundling. The following table lists the features and the page in this chapter where its description begins.

Table 6 Unbundling restrictions and interactions

Feature	Page number
Unbundling SPID processing and assignment	page 179
Unbundling branding	page 180
Unbundling QMS queuing	page 181
Unbundling QMS MIS	page 182
Operator position displays	page 182
Unbundling translations and routing	page 183
Call restrictions for wholesaling	page 183
Screening for billing agreement	page 184
LIDB query routing based on CIC	page 185

Impact of unbundling SPID processing and assignment

This section lists the interactions and restrictions for SPID processing and assignment.

Interactions

The following interactions apply to SPID processing and assignment:

- The OSSAIN functionality is expanded to support SPIDs. The OAP protocol can be used to send and receive SPIDs between the TOPS switch and the SN. In OSSAIN, SPIDs are used in the following cases:
  - — The SN can optionally assign AO and BSP SPIDs to the calling number.
  - — The switch can send the calling AO SPID to the SN to use for front-end and back-end branding.

— The SN can assign or change the SPID and send it to the switch.

- The Nortel Standard DA protocol is expanded to send calling AO SPIDs to the directory assistance system (DAS) from TOPS switch.
- The OLNS functionality is expanded to receive calling AO SPIDs and calling BSP SPIDs in a query to the database.
- SPID functionality is expanded in two areas:
  - — The XLAGRP method of translations can be used for EA calls. EA calls can now be refined based upon SPID, calling digits, CIC and region.
  - — Wholesale billing restrictions can be applied based upon SPID.

Note: For additional information, refer to the *TOPS Translations and Screening Users Guide*, 297-8403-905 or the *Translations Guide*.

Restrictions

The following restrictions apply to SPID processing and assignment:

SPID processing and assignment does *not* support the following functions:

- sending SPIDs to TOPS 04 and MPX positions
- sending SPIDs over the IBM DA protocol
- sending SPIDs over the AABS protocol
- sending SPIDS over the PARS protocol
- back-end branding for ACCS calls
- global operator services

For additional information on SPID processing and assignment, refer to Chapter 2: “Unbundling functional components.”

Note: All references to ACCS in this document also apply to MCCS.

Impact of unbundling branding

The following restrictions apply to branding:

- 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.
- A maximum number of 255 branding announcements can be datafilled. These same announcements are shared between ACTS and ACCS, and among SPIDs, NBECs, and CICs. Care should be taken to conserve the number of announcements.
- TOPS unbundling does not support ACCS back-end branding using SPIDs. NBECs and CICs are used with ACCS.

For additional information on branding, refer to Chapter 2: “Unbundling functional components.”

Impact of unbundling QMS queuing

This section lists the interactions, restrictions, and recommendations for QMS queuing. For additional information on QMS queuing, refer to Chapter 2: “Unbundling functional components.”.

Interactions

The following interactions apply to QMS queuing:

- Before SPIDs can be assigned a SPIDCRIT in table SPIDDB, they must first be datafilled in table SPID.
- SPIDCRITs are used only by QMS queuing, not by the other unbundling functional components.
- CT4Qs used in fields OLDCT4Q and NEWCT4Q in table CT4QSPID must first be datafilled in table CT4QNAMS.
- There are AO and BSP SPIDs associated with the calling, called, and special numbers; however, QMS queuing processes only the calling AO SPID.
- In the event of an unknown SPID, the OPP-compatible position can change the SPID and place the call back into QMS for RECALL (post operator) CT4Q refinement.

Restrictions

The following restrictions apply to QMS queuing:

- The maximum number of SPIDCRITs (table TQSPIDNM) that QMS can handle is 255.
- The maximum number of CT4Qs (table CT4QNAMS) is 2047. This means that if *every* CT4Q is paired with *every* SPIDCRIT, the worst case scenario is as follows:

  (QMS SPIDCRITS + 1) * pre-SPID CT4Qs <= 2047
- The maximum number of call queues is 255.
- If multiple SPIDs are combined into one SPIDCRIT group, QMS force management statistics cannot be used to provide statistics on a per-SPID basis.

Recommendations

Due to the limitation of 255 call queues, it is recommended that operating companies group *similar* CLECs together for queuing refinements. For example, if service providers ABCD and EFGH both have traffic handled by the ILEC operators, and they receive basically the same traffic flow, the operating company could route that traffic into the same call queue. Or, if warranted, the operating company could combine the two groups. With unbundling branding, each CLEC gets its name branded when the call reaches the operator. Using this method conserves a call queue.

If an operating company is near the maximum number of SPIDCRITs, certain CLECs could be left out of SPIDCRIT groups by combining their traffic with another SPID. Again, branding is still by SPID.

Impact of unbundling QMS MIS

The following interactions apply to QMS MIS:

- TOPS no longer supports the TOPS ACD system, nor does it support reporting for automated operator systems such as OSSAIN. The basic QMS statistics functionality is unchanged by the TOPS unbundling capability.
- The value, if any, for calling AO SPID is dependent on the value assigned through unbundling call processing (refer to Chapter 4: “Unbundling call processing’). If no value is assigned, the nil field value hexadecimal FFFFFFFF is reported.
- The unbundling fields are only datafilled if SOC option UNBN0101 (MIS Statistics) is enabled. Otherwise, these fields are still transmitted but always set to nil values. (SOC option UNBN0101 does not require SOC option UNBN0102 [Queuing].)
- The external third-party MIS system must be able to categorize the statistics by the unbundling QMS MIS information fields in order for the service provider to fully take advantage of this information.
- Service Provider ID, Carrier Access Code, and Access Indicator may change due to operator action while a call is at position. Call Type for Queuing is the CT4Q value determined at call arrival time, and does not change while the call is at position.

For additional information on QMS MIS, refer to Chapter 2: “Unbundling functional components.”

Impact of operator position displays

The following interactions apply to Operator position displays:

- For OPP-compatible positions, both the trunk group display and the calling AO SPID are sent to the position.
- For ASCII-based MP positions, only the trunk group display associated with the calling AO SPID is sent to the position. The SPID is not sent. The SPID display overrides the trunk group display in table TRKGRP.
- TOPS MPX positions are not sent SPID information or the associated screen display.

Impact of unbundling translations and routing

This section lists the interactions and restrictions for translations and routing.

Interactions

Nortel Networks plans to phase out the existing method of translations and screening, after operating companies have a sufficient time to transition to the new functionality. Details on the phase-out will be provided by Nortel Networks.

For additional interactions for specific call types, please refer to the *TOPS Translations and Screening User's Guide*, 297-8403-905.

Restrictions

The following restrictions apply to translations and routing:

- Translations and routing processes only the calling AO SPID.
- TOPS processing cannot be used to obtain a SPID and then redirect a call to another Operator Services Switch based on that SPID. One reason for this restriction is that an AMA record cannot be properly generated.

Impact of call restrictions for wholesaling

This section lists the interactions and restrictions of call restrictions for wholesaling.

Interactions

The following interactions apply to call restrictions for wholesaling:

- DN based screening takes precedence over this option. If it is determined that billing restrictions apply based on the existing DN screening methods, those restrictions are applied to the call, and no further screening associated with this option is performed for that call.
- During datafill, the restricted billing index entered in tables TOPSTOPT, TOPEACAR, SPIDDB, OSSCAT, BELLCAT, and OPENANI are not checked against table RESTBIL/DARSTBIL to verify the index entered is datafilled in table RESTBIL/DARSTBIL This means a restricted billing index not contained in the RESTBIL/DARSTBIL tables may be entered into the above tables. However, if a call is assigned a restricted billing index as a result of the screening introduced by this option, and during call processing it is found the resultant restricted billing index is not datafilled in the restricted billing tables, then a log indicating this is output. Additionally, no billing restrictions are assigned to the call. Any DN based restricted call 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, including tables OSSCAT and BELLCAT, 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 option can allow these calls to be presented with the ANI intact, rather than an ANI ID failure. The TOPSPARM parameter, OVERRIDE_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 through TOPSTOPT field ANIFSPL. The calling service for these calls are usually determined by the screening tables. If no data is found in these table and data indicates the call is to be marked as an ANI success, the calling service is marked as station.
- MF-to-ISUP calling number block (SOC option OSEA0102) must be active for ISUP calls to be restricted by this option.

Restrictions

The following restrictions apply to call restrictions for wholesaling:

- Screening based on SPID is not currently supported on interLATA inter-zone calls.
- CIC based screening is not supported for intraLATA calls. ILP and resultant carrier information is not supported in screening of intraLATA/ intraZONE calls.
- Calls arriving with an ANI ID indicating hotel that are screened and restricted by this option are marked as restricted. Hotel calls and restricted calls are mutually exclusive.

Impact of screening for billing agreement

This section lists the interactions and restrictions of screening for billing agreement.

Interactions

The following interactions apply to screening for billing agreement:

- If SOC UNBN0101 is ON, and parameter SCREEN_FOR_BILLING_AGREEMENT is enabled in table TOPSFTR, 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. When 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.

Restrictions

The following restrictions apply to screening for billing agreement:

- Any SPID datafilled in tables BNSAGRMT or 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.
- Requires OAP version 7 or higher to function with OSSAIN calls.
- Screening is performed for billing agreements between the Calling AO SPID or CIC of the origination party and the billed-to entity. No screening is performed between the AO SPID of the called party and the billed-to entity if the call is initially billed collect, and the person accepting the charges chooses to bill them to a calling card.
- The operating company must ensure that the proper datafill is in place before turning on SOC UNBN0101 or enabling parameter SCREEN_FOR_BILLING_AGREEMENT in table TOPSFTR for this feature. Changing the default datafill and turning on this feature may cause some alternately billed calls to be blocked.

Impact of LIDB query routing based on CIC

This section lists the interactions and restrictions of LIDB query routing based on CIC.

Interactions

The following interactions apply to LIDB query based on CIC:

- This feature requires the following SOC be active
  - ABS00101 - Alternate Billing Service
  - OSEA0101 - TOPS Equal Access
- The following parameters must be turned on in table TOPSFTR:
  - COMMERCIAL_CREDIT_CARD_SUPPORT
  - UNBUNDLING_LIDB_QUERY_ROUTING

Restrictions

The following restrictions apply to LIDB query routing based on CIC:

- This only applies to CICs; functionality based on SPID is not supported.
- Only calls incoming from a carrier are supported. This means only the following types of trunks are supported:
  - ISUP trunks datafilled as IEC type trunk groups, and
  - COMFGD trunks

  In addition, valid carrier digits must be associated with the call; therefore, the carrier digits must be signalled with the call or obtained through trunk datafill.

- Changing the carrier on a call will result in another query to the LIDB; thus, it is possible that a billing number previously entered and successfully validated could become invalid with the new carrier.
- If using OSSAIN, this feature will require Open Application Protocol (OAP) Version 7 if the carrier will be allowed to be changed on the call. If no carrier change is allowed on the call, then there are no limits to the OAP version used.
- This enhancement **does not** change the number of GTTNAMEs that can be datafilled in table C7GTTYPE. Table C7GTTYPE allows up to 32 GTTNAMEs to be datafilled.
- Cards datafilled in table ISOCCPRV will peg OM group TOPSINCC.
- The CARRIDX functionality from table CCVINFO and INTCCFMT are not supported.
- The CARRSEL functionality from table INTCCFMT is not supported.
- Transitional 14 digits ISO type cards are not supported.

Chapter 6: Unbundling protocols

This chapter describes how TOPS unbundling extends the following message protocols:

- Nortel Standard Directory Assistance (DA) protocol
- Open Automated Protocol (OAP)
- Open Position Protocol (OPP)
- Originating Line Numbering Screening (OLNS) protocol
- External rater protocol
- QMS Management Information System (MIS) protocol
- Line Information Database (LIDB) protocol

Nortel Standard DA protocol

Unbundling extends the Nortel Standard DA protocol to send the calling AO SPID to the Directory Assistance System (DAS) from the switch.

Audio Response Unit

The ARU Connect message adds a calling AO SPID field to facilitate back-end branding for DA calls. The ARU Request and Extended ARU Request messages add the calling AO SPID field.

Table SERVICES

Table SERVICES specifies the DA protocol version on a link set basis. This allows upgrading the DAS protocol version independently of upgrading the TOPS switch software.

The VERSION parameter in table SERVICES must be set to four to send the calling AO SPID to the DAS. The VERSION parameter in table SERVICES must be set to five to receive the requested AO SPID.

Note: The IBM protocol is not updated to include calling AO SPID information.

The following examples show sample datafill for table SERVICES.

Figure 160 MAP display example for table SERVICES - sending

```
INDEX     PROTOCOL     LSDBID   SWITCHED VERSION
-------------------------------------------------------------------
TOPSVR1  0 CCI N        1234     14         4
```

Figure 161 MAP display example for table SERVICES - receiving

```
INDEX     PROTOCOL     LSDBID   SWITCHED  VERSION
-------------------------------------------------------------------
TOPSVR1  0 CCI N        1234     14         5
```

DA protocol reference information

Please refer to *Standard Nortel DMS/DAS Protocol,* Q210, for details on the NT Standard DA protocol.

OAP

Unbundling extends the OAP to allow the calling AO SPID to be sent to and received from an OSSAIN SN. When a session is established between the switch and SN by the switch, the switch sends calling AO SPID information, if available, to the SN. The switch also sends the calling AO SPID, if available, when the SN requests call details. When the SN initiates a session with the switch, it can send calling AO SPID information, if available.

The Call Information Data Block adds a SPID processing field to inform an SN whether or not SPID processing is available. This data block is sent to the SN for the following operations:

- accept control
- call details
- session begin
- trigger event

An operation is also implemented that allows the SN to send the calling AO SPID to the switch any time during a session.

OAP reference information

Please refer to *OSSAIN Open Automated Protocol Specification,* Q235-1, for more details on the OAP.

Note: Open Automated Protocol (OAP) is a licensed interface. To receive the specification document, please contact Nortel Directory and Operator Services Marketing.

OPP

Unbundling extends the OPP protocol to include sending the calling AO SPID, if available, to the operator position or a call details request.

SPID information has been added to the OPP protocol to allow the setting of the billing and calling AO and BSP SPIDs by OPP-compatible positions. Positions can get this SPID from external databases. The SPID is saved for later use in AMA records. The billing or calling SPID returned by the OPP position takes precedence over any billing SPID returned by the LIDB or calling SPID returned by OLNS queries.

In the OPP protocol, unbundling defines one of the unused bits (bit 4) in the existing Routing Indicators field of the Directory Number DID as a Service Provider Processing indicator. This bit is used to inform an OPP position whether or not calling AO SPID processing is available.

As with other indicator bits in this field, a setting of 1 indicates that the attribute applies, and a 0 indicates that the attribute does not apply. So a value of 0 sent to the OPP position indicates that SPID processing is disabled, and that the position should not forward any calling AO SPID related information.

The Service Provider Processing indicator is in the SPIDPRC field in table TOPSTOPT. If there is no entry in table TOPSTOPT, the indicator is 0.

OPP reference information

Please refer to *Open Position Protocol Specification*, Q214-1, for more details on OPP.

Note: Open Position Protocol (OPP) is a licensed interface. To receive the specification document, please contact Nortel Directory and Operator Services Marketing.

OLNS protocol

The unbundling capability extends the OLNS Information Data Block to include the calling AO and BSP SPIDs, if they were obtained from an OLNS query. That is, if the SPID fields were not included in the OLNS response, the fields in the data block will be empty.

OLNS protocol reference information

For details, please refer to the Bellcore document *Special Report SR-3974*, Issue 1, September 1996.

External rater protocol

The external rater protocol has been extended to support adding the calling AO SPID in query messages. The SPID may be included in all external rater queries depending on switch datafill.

Table TOPSPARM

For RTRS protocol versioning, table TOPSPARM contains the parameter RTRS_VERSION. Unbundling adds a VERSION_2 value. This parameter indicates the version of the protocol used in the query from the RSC (Rating System Client). It also indicates which version should be sent in the response from the RTRS.

Note: If the RTRS_VERSION parameter is set to VERSION_1, SPID encoding is *not* performed and the SPID optional parameter is *not* sent in the RTRS query.

The following figure shows example datafill.

Figure 162 MAP display example for table TOPSPARM

```
PARMNAME                  PARMVAL
-------------------------------------------------------------------
RTRS_VERSION              VERSION_2
```

RTRS protocol reference information

Please refer to the *Northern Telecom Real-Time Rating System Protocol,* Q234-1, for a complete description of the RTRS protocol.

QMS MIS protocol

Unbundling extends the QMS MIS protocol as follows:

- It adds a calling AO SPID field (Service Provider ID).
- It adds QMS MIS protocol information (Access Indicator, Carrier Access Code, and CT4Q) to assist in distinguishing interactions between interLATA carriers and local service provider ILECs and CLECs.

The breakout of TOPS QMS queuing and operator statistics by service provider requires that a SPID be provided in QMS MIS Call Queue Event and Position Event messages sent to the MIS system.

Note 1: The QMS MIS unbundling fields are only datafilled if SOC option UNBN0101 and the parameter in table TOPSFTR are enabled. Otherwise, these fields are still transmitted but always set to nil values.

Note 2: Basic QMS statistics are unchanged by TOPS unbundling.

Service Provider ID field

Unbundling adds the current value of the calling AO SPID to the Service Provider ID field in Call Queue Event and Position Event messages. The Service Provider ID values reported correspond to the SPIDs defined in table SPID. Position events unrelated to subscriber calls, such as operator login, have no service provider relationship. These messages contain a nil, non-alphanumeric SPID value (hexadecimal FFFFFFFF).

Access Indicator field

Unbundling also adds an Access Indicator field (Operating Company/ Carrier) to both Call Queue Event and Position Event messages to determine when carrier information is applicable to a call.

If the Access Indicator indicates Operating Company, then the call is not a carrier call, and only the SPID value applies to the call (the Carrier Access Code field is not applicable). If the Access Indicator indicates Carrier, the call is a carrier call, and both the Carrier Access Code and the SPID values apply.

The reporting requirements of the operating company should determine whether carrier calls with both Carrier Access Codes and SPIDs should be accumulated as simply carrier calls, accumulated for both the carrier and service provider, or accumulated for specific cases such as particular service provider/carrier combinations.

Carrier Access Code field

Because the calling number of a carrier call may be associated with a service provider (or alternately, a service provider call may be transferred to a carrier), a carrier and service provider may *both* be associated with a single call. To allow the MIS system to track these combinations, carrier information needs to be accessible in both QMS MIS Call Queue Event and Position Event messages. Unbundling adds the carrier access code field to call queue event messages.

Note: This field is already present in Position Event messages.

CT4Q field

An operating company may choose to identify how their service provider or carrier calls are distributed among operator resources. Calls in TOPS QMS are assigned to particular operator resources through assignment and refinement of an associated CT4Q.

Note: This field is already present in Call Queue Event messages.

Call Queue Event messages

A Call Queue Event message is sent to the MIS for the following queuing events:

- Call Placed in Queue (controlled by parameter)
- Call Abandoned
- Call Presented to Operator
- Call Deflected (due to wait time, overflow, no queuing elements)

Call Queue Event messages contain the following call information:

- queuing event
- call waiting Indicator
- switch ID
- originating trunk CLLI
- originating trunk group member ID
- call type for queuing (CT4Q)
- call queue
- time in queue or predicted wait time
- current call queue size
- position number
- call ID
- tenths of second stamp
- *service provider ID*
- *access indicator*
- *carrier access code*

Unbundling QMS MIS adds Service Provider ID, Access Indicator, and Carrier Access Code fields to the Call Queue Event message information for all queue event messages.

Position Event messages

A Position Event message is sent to the MIS when an event occurs that affects a position, including changes of the position force management (FM) state or when FM information needs to be pegged (when there are no formalized position event types). FM peg types are for the following events:

- Initial, Recall, and Transfer Position Seizures (IPS, RPS, TPS)
- Call Busy and Noncall Work Volume, Idle Time (CBWV, NCWV, IDLT)
- Service Initiations and Work Volume (SI, SWV)

Position Event messages contain the following position/operator/call information:

- reset time flag
- tenths of seconds stamp
- position number
- team number
- FM position state
- position type
- call queue or controlled traffic (CQ/CT) profile identifier
- service profile number
- queue peg indicators
- service peg indicators
- loop number and call disposition indicators
- class charge
- special number type
- call ID
- station class
- prefix type
- called number type
- call origination type
- restricted billing index
- carrier access code
- automated system information
- language
- miscellaneous information
- FM call type
- originating trunk common language location identifier (CLLI)
- originating trunk member ID
- switch ID
- outgoing trunk key
- *service provider ID*
- *access indicator*
- *call type for queuing*

Unbundling QMS MIS adds Service Provider ID, Access Indicator, and Call Type for Queuing fields to the Position Event message information for all position events.

Note: For some position events, such as position state changes that occur when an operator logs in, no call is involved. In these cases, the nil SPID value (hexadecimal FFFFFFFF) is sent.

QMS MIS call pegging

With the addition of the information fields to the QMS MIS protocol messages, existing QMS MIS call peggings (such as position seizures, operator work volumes, queuing times, and calls abandoned or deflected) can be further refined by the MIS system in a variety of ways. The following list includes *examples* of possible report refinements:

- by calling AO SPID (independent of the carrier status of calls)
- by calling AO SPID for non-carrier calls only
- by calling AO SPID for non-carrier calls, and by carrier for carrier calls
- by calling AO SPID for non-carrier calls, and by combination carrier/ SPID for carrier calls
- by calling AO SPID and CT4Q (or call queue or team) for non-carrier calls (for example, to compare handling of SPID calls by different operator groups)
- by carrier and CT4Q (or call queue or team) for carrier calls (for example, to compare handling of carrier calls by different operator groups)
- by calling AO SPID, carrier, and CT4Q for combination carrier/SPID calls (for example, using the CT4Q value to differentiate calls that arrived at position with carrier established, as opposed to calls which were assigned a carrier at position, where calls of both type are handled by the same operators)

Note: Actual reports are dependent on the capabilities of the MIS system and the needs of the service provider.

QMS MIS protocol reference information

Please refer to *TOPS QMS MIS Protocol*, Q220-1, for more information on the QMS MIS protocol.

LIDB protocol

Unbundling extends the LIDB protocol to allow sending the SPID. The LIDB returns the following two messages containing the billed AO SPID and billed BSP SPID to the switch:

- the Calling Card Normal Response, which is received after a calling card query
- the Billed Number Screening Response, which is received after a collect or third number query

When the AO and BSP SPID values are received from the LIDB, they are saved for later use in AMA records. If no SPID is returned by the LIDB, these fields are not included in the LIDB message. In this case, the AMA module is not appended for the billing party.

LIDB protocol reference information

The message format is specified in the Bellcore document *Special Report SR-3895*, Issue 1, June 1996.

Part 4: Planning and engineering

Part 4: Planning and engineering information does not apply to TOPS unbundling.

Part 5: Provisioning

Part 5: Provisioning includes the following chapters:

Chapter 7: Unbundling data schema

This chapter provides information on how to datafill the tables used by the TOPS unbundling capability. It discusses each table and interdependencies among the tables. The datafill information given is specific to TOPS unbundling, with an explanation of fields, valid values, and examples.

Note 1: For an overview on how the functional components use a particular table, refer to Chapter 2: "Unbundling functional components."

Note 2: For complete information on all the fields and values, please refer to the *Customer Data Schema Reference Manual*.

Note 3: Table TOPSFTR, used in conjunction with SOC, is not listed in this chapter. Please refer to Chapter 8: "Unbundling SOC," for details on this table.

TOPS unbundling datafill sequence

The following table lists the data tables used for unbundling, in the order in which they should be datafilled. Each table is described in order beginning on page 205.

Note: For an alphabetical listing of these tables, see page 204.

Table 7 Datafill sequence

Table name	Explanation
SPID	The SPID table defines the SPID for each service provider.
DNSCRN	The Directory Number Screening table assigns the SPID to a directory number.
XLAGRP	The Translations Group table contains the names of user-defined translations and screening groups used for the TOPS XLAGRP translations scheme.
TOPSDP	The TOPS Dialing Plan table defines the TOPS translations and screening parameters for each XLAGRP defined in table XLAGRP.
SPIDGRP	The SPID Group table contains the names of user-defined used in translations and screening based on the calling account owner SPID.
TQSPIDNM	The TOPS Queuing SPID Name table associates a user-defined code with SPID group criteria.

Table 7 Datafill sequence

Table name	Explanation
SPIDDB	The SPID Database table contains TOPS call processing information for the SPIDs defined in table SPID.
TOPSPARM	The TOPS Parameter table contains parameters that are unique to the TOPS switch.
XLASPID	The Translations SPID table refines the XLAGRP based on the calling account owner (AO) SPID.
XLAODIGS	The Translations Originating Digits table refines the XLAGRP based on the NPA-NXX of the originator.
TOPSTOPT	The TOPS Trunk Group Options table specifies options for trunks that originate traffic to the TOPS switch.
CT4QSPID	The Call Type for Queuing SPID table defines a new CT4Q based on the SPID group associated with the calling AO SPID.
TOPAMAOP	The TOPS AMA Options table contains parameters for TOPS AMA records.
CICGRP	The Carrier Identification Code Group table is used for Equal Access calls to allow the operating company to refine the XLAGRP based on the carrier.
LDBIDXNM	The Line Information database (LIDB) Index Name table identifies the valid LIDB index names used for indexing into tables CCVPROV, BNSPROV, and ISOCCPRV.
TOPEACAR	The TOPS Equal Access Carrier table provides the optionality to assign a carrier group to a carrier, and to refine the XLAGRP based upon the carrier.
CCVPROV	The Calling Card Validation by Provider table is used to obtain an index into table CCVPARMS for calls billed to a domestic calling card.
BNSPROV	The Billed Number Screening by Provider is used to obtain an index into table BNSPARMS for calls billed to a third number or collect.
ISOCCPRV	The ISO Calling Card by Provider table is used to index into table CCVPARMS for calls billed to an ISO card.
XLACIC	The Translations Carrier Identification Code (CIC) table refines the XLAGRP based upon the CICGRP associated with the carrier.
EAREGN	The Equal Access Region table specifies the REGION destination identifiers to be used with LATA screening of EA calls.
XLAEAREG	The Translations Equal Access Region table allows the XLAGRP to be refined based upon the REGION.
TOPEATRK	The TOPS Equal Access Trunk table controls the optionality of using the XLAGRP translation scheme for TOPS EA calls.

Note: The following tables included in the scenarios of Chapter 4: "Unbundling call processing," are not described in this chapter.

- TRKGRP
- STDPRTCT
- HNPACONT
- LATAXLA
- CLSVSCRC
- OFRT

For additional information on these table, refer to the *Customer Data Schema Reference Manual*.

Exception table descriptions

The following tables are not specific to the datafill sequence, but are described in this chapter for completeness. These exception tables are used for special call types including third number, busy line verification, overseas calls, called with no originating agent, and calling numbers (delay).

Table 8 Datafill sequence

Table name	Explanation
OPRTRANS	Table OPRTRANS is used to obtain TOPS translation and screening information on operator assisted calls for certain call types.
TOPSDP	The TOPS Dialing Plan table defines the TOPS translations and screening parameters for each XLAGRP defined in table XLAGRP.
OPRINFO	Table OPRINFO provides the ability to use the XLAGRP method of translations and screening scheme for certain call types.

Wholesaling tables

The following tables are used with the wholesaling options noted in Chapter 3: “Unbundling wholesaling.” These tables are not specific to the datafill sequence, but are necessary based upon the wholesaling option used. Please refer to the wholesaling chapter for additional information on the functionality of these options and tables.

Table 9 Wholesaling tables

Table name	Explanation
WSALEOPT	Table WSALEOPT is used to indicate criteria to be used for billing screening.
RESTBIL	Table RESTBIL provides the assignment of billing restrictions for TA calls
DARTSBIL	Table DARSTBIL provides the assignment of billing restrictions for DA calls
OSSCAT	Table OSSCAT provides an index into the billing restrictions.
BELLCAT	Table BELLCAT provides an index into the billing restrictions.
OPENANI	Table OPENANI provides an index into the billing restrictions.

Table name	Explanation
BAGNAME	Table BAGNAME is datafilled with the billing agreement group
CCVAGRMT	Table CCVAGRMT tracks billing agreements based on CCV.
BNSAGRMT	Table BNSAGRMT tracks billing agreements based on BNS.

Alphabetical reference for table descriptions

The following table lists each table in alphabetical order and the page where its description begins.

Table 10 Alphabetical reference for table descriptions

Table name	Page number
BAGNAME	page 245
BELLCAT	page 245
BNSAGRMT	page 247
BNSPROV	page 230
CCVAGRMT	page 246
CCVPROV	page 229
CICGRP	page 226
CT4QSPID	page 221
DARSTBIL	page 243
DNSCRN	page 206
EAREGN	page 234
ISOCCPRV	page 231
LDBIDXNM	page 227
OPENANI	page 244
OPRINFO	page 239
OPRTRANS	page 238
OSSCAT	page 243
RESTBIL	page 242
SPID	page 205
SPIDDB	page 210
SPIDGRP	page 209
TOPAMAOP	page 225
TOPEACAR	page 227

Table 10 Alphabetical reference for table descriptions

Table name	Page number
TOPEATRK	page 235
TOPSDP	page 207
TOPSPARM	page 214
TOPSTOPT	page 221
TQSPIDNM	page 210
WSALEOPT	page 241
XLACIC	page 233
XLAEAREG	page 234
XLAGRP	page 207
XLAODIGS	page 220
XLASPID	page 219

SPID

Both types of SPIDs—AO (account owner) and BSP (billing service provider)—are defined in table SPID. The AO SPID is the company that provides the calling party's service. The BSP SPID is the company that provides billing services for the AO service provider. The following table shows the datafill specific to TOPS unbundling for table SPID.

Table 11 Datafilling table SPID

Field	Subfield or refinement	Entry	Explanation and action
SPID		Exactly 4 alphanumeric characters	Service provider ID. Enter exactly 4 alphanumeric characters. Letters must be all upper case. ***Note:*** Exactly 4 characters must be entered, even though the MAP display indicates that up to 8 characters may be entered.

SPID example

The following figure shows example datafill.

Figure 163 MAP display example for table SPID

```
SPID
----------------------------------------------------------------
ILEC
CLEC
CLC1
```

DNSCRN

Table DNSCRN specifies which AO SPID is associated with the calling DN. The following table shows the datafill specific to TOPS unbundling for table DNSCRN. Only those fields that apply directly to TOPS unbundling are shown. For a description of the other fields, refer to the *Customer Data Schema Reference Manual*.

Table 12 Datafilling table DNSCRN

Field	Subfield or refinement	Entry	Explanation and action
ATTROPTS		SPID	Attribute options. Enter SPID and datafill subfield SPID.
	SPID	SPID from table SPID	SPID. Enter the value from table SPID that is associated with the calling DN.

DNSCRN example

The following figure shows example datafill.

Figure 164 MAP display example for table DNSCRN

```
DN              ATTROPTS
----------------------------------------------------------------
6202817011      (SPID 1234) $
6202817012      (SPID ABCD) $
```

XLAGRP

Table XLAGRP contains the names of user-defined translations and screening groups used for the TOPS XLAGRP translations scheme. These groups include ones that are refined based on the calling AO SPID (in table XLASPID) and the calling NPA-NXX (in table XLAODIGS). The following table shows the datafill specific to TOPS unbundling for table XLAGRP.

Table 13 Datafilling table XLAGRP

Field	Subfield or refinement	Entry	Explanation and action
XLAGRP		Alphanumeric up to 32 characters	Translations group. Enter the name of the translations group.

XLAGRP example

The following figure shows example datafill.

Figure 165 MAP display example for table XLAGRP

```
XLAGRP
------------------------------------------------------------------------
TRK1
TRK2
TRK3
TRK4
TRK1ILEC
TRK1CLEC
TRK1619320
TRK1619322
TRK1ILEC619320
```

TOPSDP

Table TOPSDP specifies the XLA translations and screening parameters that are unique to each translations group defined in table XLAGRP. These parameters include the serving translations scheme (STS), pretranslator names, screening names for initial and subsequent translations, and a local call area name.

Note: Table TOPSDP also references datafill in tables HNPACONT, STDPRTCT, CLSVSCRC, and LCASCRCN. For details on these tables, refer to the *Customer Data Schema Reference Manual*.

The following table shows the datafill specific to TOPS unbundling for table TOPSDP.

Table 14 Datafilling table TOPSDP

Field	Subfield or refinement	Entry	Explanation and action
XLAGRP		XLAGRP name from table XLAGRP	Translations group. Enter the name of the translations group from table XLAGRP.
STS		STS digits from table HNPACONT	Serving translations scheme. Enter the STS digits from table HNPACONT.
OPERPRTN		Pretranslator name from table STDPRTCT	Operator pretranslator name. Enter the name from table STDPRTCT that is used to perform pretranslations from the operator position.
ORIGSCRN		Class of service name from table CLSVSCRC	Originating class of service screening name. Enter the name from table CLSVSCRC that is used for screening based on the location of the originator.
OPERSCRN		Class of service name from table CLSVSCRC	Operator class of service screening name. Enter the name from CLSVSCRC that is used for screening when an operator or SN is associated with the call.
MCCSPRTN		Pretranslator name from table STDPRTCT	MCCS (ACCS) pretranslator name. Enter the name from table STDPRTCT that is used to perform pretranslations for MCCS (ACCS) sequence calls.
MCCSSCRN		Class of service name from table CLSVSCRC	Mechanized Calling Card Service (MCCS) class of service screening name. Enter the name from table CLSVSCRC that is used for screening MCCS (ACCS) sequence calls.
LCANAME		Local call area screening name from table LCASCRCN	Local call area screening name. Enter the name from table LCASCRCN that is used to determine if the call is local.

TOPSDP example

The following figure shows example datafill.

Figure 166 MAP display example for table TOPSDP

```
XLAGRP        STS   OPERPRTN   ORIGSCRN   OPERSCRN   MCCSPRTN MCCSSCRN LCANAME
-------------------------------------------------------------------------------
TRK1            619   OPR1     ORS1       OPS1       MCP1     NSCR     LCA1
TRK2            202   OPR2     ORS2       OPS2       MCP1     NSCR     LCA2
TRK1ILEC        619   OPR1     ORS1       OPS3       MCP1     NSCR     LCA3
TRK1CLEC        619   OPR2     ORS1       OPS2       MCP1     NSCR     LCA4
TRK1619320      619   OPR1     ORS1       OPS1       MCP1     NSCR     LCA5
TRK1619322      619   OPR2     ORS1       OPS1       MCP1     NSCR     LCA6
TRK1ILEC61932   619   OPR1     ORS1       OPS1       MCP1     NSCR     LCA7
```

SPIDGRP

Table SPIDGRP contains the names of user-defined SPID groups used in translations and screening based on the calling AO SPID. The following table shows the datafill specific to TOPS unbundling for table SPIDGRP.

Table 15 Datafilling table SPIDGRP

Field	Subfield or refinement	Entry	Explanation and action
SPIDGRP		Alphanumeric up to 32 characters	SPID group. Enter the name of the SPID group.

SPIDGRP example

The following figure shows example datafill.

Figure 167 MAP display example for table SPIDGRP

```
SPIDGRP
-------------------------------------------------------------------------------
ILECXLA
CLECXLA
```

TQSPIDNM

Table TQSPIDNM defines SPID criteria used in QMS refinement. This table associates a code with the name of the SPID criteria (field SPIDCRIT). The SPIDCRIT value is used in table CT4QSPID to assign a new CT4Q based on the SPID. SPIDCRIT is also enabled against the SPID in table SPIDDB. The following table shows the datafill specific to TOPS unbundling for table TQSPIDNM.

Table 16 Datafilling table TQSPIDNM

Field	Subfield or refinement	Entry	Explanation and action
SPIDCODE		0 to 254 (see Note)	SPID code. Enter the code associated with the SPID criteria.
SPIDCRIT		Alphanumeric up to 32 characters	SPID criteria. Enter the name for a group of SPIDs with similar calling traffic.
Note: SPIDCODE 0 is permanently assigned with the value UNKNOWN_SPIDCRIT.			

TQSPIDNM example

The following figure shows example datafill.

Figure 168 MAP display example for table TQSPIDNM

```
SPIDCODE          SPIDCRIT
-------------------------------------------------------------------
0                 UNKNOWN_SPIDCRIT
1                 CLEC1
2                 CLEC2
```

SPIDDB

Table SPIDDB contains calling AO SPID information, such as the operator screen display and the location of branding announcements for TA, DA, and ACTS. Table SPIDDB also specifies the name of the translations scheme used for the SPID group, and the criteria used in QMS queuing.

Note: TA, DA, and ACTS announcements must first be defined in table ANNS; ACTS announcement numbers are defined in table DRMUSERS. For details on these tables, refer to the *Customer Data Schema Reference Manual*.

The following table shows the datafill specific to TOPS unbundling for table SPIDDB.

Table 17 Datafilling table SPIDDB

Field	Subfield or refinement	Entry	Explanation and action
SPID		SPID from table SPID	Service provider identifier. Enter a SPID defined in table SPID.
SCRNDISP		See subfields	Screen display.This field consists of subfields SPIDDISP and DISPLAY.
	SPIDDISP	Y or N	SPID display. Enter Y or N to specify whether or not to display the calling AO SPID at the operator position. If Y is entered, also datafill subfield DISPLAY. ***Note:*** The screen display applies to TOPS OPP-compatible positions. The SPID display occupies the same area as the trunk group display.
	DISPLAY	Alphanumeric up to 8 characters	Display. Enter the characters that display at the operator position.
OPERSYS		OPERATOR, MCCS, ACTS, AABS, ADAS, ALL, NONE	Operator system. This field specifies which operator systems require calling party branding prior to the call being connected to the system. Valid values are as follows: - OPERATOR is a live TOPS operator. - MCCS is mechanized calling card service. - ACTS is automated coin toll service. - AABS is automated directory assistance service. - ALL is all systems. - NONE is no systems.
TAANN		See subfield	Toll and assist announcement. This field consists of subfield BRAND_TA.
	BRAND_TA	Y or N	Branding toll and assist announcement. Enter Y or N to specify whether TA calls are branded for SPID. If Y is entered, also datafill subfield TACLLI.
	TACLLI	CLLI name from table ANNS	Toll and assist CLLI. Enter the CLLI for the TA announcement.

Table 17 Datafilling table SPIDDB

Field	Subfield or refinement	Entry	Explanation and action
DAANN		See subfield	Directory assistance announcement. This field consists of subfield BRAND_DA.
	BRAND_DA	Y or N	Branding directory assistance announcement. Enter Y or N to specify whether DA calls are branded for SPID. If Y is entered, also datafill subfield DACLLI.
	DACLLI	CLLI name from table ANNS	Directory assistance CLLI. Enter the CLLI for the DA announcement.
ACTSANN		See subfields	Automated Coin Toll Service announcement. This field consists of subfields ACTSBRND, CORRCTDP, and OVERDEP and their refinements.
	ACTSBRND	Y or N	ACTS branding. Enter Y or N to specify whether ACTS calls are branded for SPID. If Y is entered, also datafill subfields CORRCTDP and OVERDP and their refinements. ***Note:*** Both the correct deposit and over deposit refinements must be datafilled together.
	CORRCTDP	See refinements	Correct deposit. This subfield consists of refinements CLLI and ANNNUM
	CLLI	CLLI name from table ANNS	CLLI. Enter the CLLI for the correct deposit announcement.
	ANNNUM	Number from table DRMUSERS	Announcement number. Enter the announcement number for the correct deposit announcement.
	OVERDEP	See refinements	Over deposit. This subfield consists of refinements CLLI and ANNNUM
	CLLI	CLLI name from table ANNS	CLLI. Enter the CLLI for the over deposit announcement.
	ANNNUM	Number from table DRMUSERS	Announcement number. Enter the announcement number for the over deposit announcement.
XLA		See subfields	SPID translations scheme. This field consists of subfields USEXLGRP and SPIDGRP.

Table 17 Datafilling table SPIDDB

Field	Subfield or refinement	Entry	Explanation and action
	USEXLGRP	Y or N	Use translations group. Enter Y or N to specify whether to use the XLA translations scheme. If Y is entered, also datafill subfield SPIDGRP.
	SPIDGRP	SPIDGRP name from table SPIDGRP	SPID group. Enter the name of the group containing SPIDs used in translations and screening.
SPIDCRIT		See subfields	SPID criteria. This field consists of subfields USECRIT and CRIT.
	USECRIT	Y or N	Use criteria. Enter Y or N to specify whether this SPID belongs to a group of SPIDs for use in QMS queuing.
	CRIT	SPIDCRIT name from table TQSPIDNM	Criteria. Enter the SPIDCRIT name from table TQSPIDNM. (See page 210 for details on table TQSPIDNM.)
SCRNIDX		0 to 100	Screen index. This field is an index into the restricted billing tables RESTBILL for TA calls or DARSTBIL for DA calls.
BILLAGRMT		See subfields	Billing agreement. Enter the billing agreement for the provider.
	AGRMTYPE	SELF, OPRSVC, NONE	Agreement type. Enter the type of agreement in place for the provider.
	CCVAGRMT	Billing agreement group name	Calling card validation agreement. Enter the billing agreement group name used to index table CCVAGRMT. Datafilled in Table BAGNAME.
	BNSAGRMT	Billing agreement group name	Billing number screening agreement. Enter the billing agreement group name used to index table BNSAGRMT. Datafilled in Table BAGNAME.
	NOSPDERR	ACCPT, BLOCK, OPER	No operator services. Enter the default handling when the LIDB does not return an AO or BSP SPID in the query response.
DACICOVR		Y or N	DACC IC override. Enter Y or N to specify if the carrier should be overridden for long distance DACC calls. When Y is entered, the user is prompted to specify the carrier number.

Table 17 Datafilling table SPIDDB

Field	Subfield or refinement	Entry	Explanation and action
	CARRNO	0000 to 9999	Carrier number. Enter the carrier number.

SPIDDB example

The following figure shows example datafill, as follows:

- In the first tuple, the screen display of service provider 1234 is enabled and shows the name ATEL. The operator systems for this service provider include a live operator, MCCS, ACTS, and ADAS. Different branding announcements are datafilled for TA and DA calls.
- In the second tuple, service provider ABCD has ACTS back-end branding enabled using the SPID. Different announcements are datafilled for correct deposit and over deposit.
- In the third tuple, service provider 12AB uses the XLA translations scheme for the SPID group called CLECXLA.
- In the fourth tuple, service provider WXYZ uses the XLA translations scheme for the SPID group called ILECXLA, and the SPID criteria CLEC1 for QMS queuing refinement.

Figure 169 MAP display example for table SPIDDB

```
SPID  SCRNDISP OPERSYS                        TAANN      DAANN
ACTSANN                  XLA      SPIDCRIT    SCRNIDX
                 BILAGRMT                          DACICOVR
-------------------------------------------------------------------
1234  Y ATEL  (OPERATOR)(MCCS)(ACTS)(ADAS)$ Y ATABRAND Y ADABRAND
N                        N         N         100
                  NONE                              N
ABCD  Y BCOM  (MCCS) (ACTS) (ADAS) $        Y BBRAND   Y BBRAND
Y ACTSTOPS 41 ACTSTOPS 42 N         N         100
                  NONE                              Y 1234
12AB  Y FONCO ALL                          Y FBRAND    Y FBRAND
N                        Y CLECXLA N         100
                  NONE                              N
WXYZ  Y ZCOM  NONE                         Y ZBRAND    Y ZBRAND
N                        Y ILECXLA Y CLEC1   100
                  SELF SPIDCCV SPIDBNS ACCPT        Y 1234
```

TOPSPARM

Table TOPSPARM specifies parameters that are unique to a TOPS office. The TOPS unbundling capability adds various optional parameters that are used in SPID branding, assignment, and display at the operator position.

The following table shows the datafill specific to TOPS unbundling for table TOPSPARM. Only those fields that apply directly to TOPS unbundling are shown. For a description of the other fields, refer to the *Customer Data Schema Reference Manual*.

Table 18 Datafilling table TOPSPARM

Parameter name	Subfield or refinement	Range of values/units	Default value	Explanation
BRAND_USING_DEFAULT_SPID		Y or N	N	This parameter enables front-end branding for non-carrier calls using the SPID in the DEFAULT_SPID parameter.
DEFAULT_SPID		Y or N; SPID from table SPID	N	This parameter specifies the default AO SPID on an office-wide basis. This parameter is used if no AO SPID is assigned by an SN, OLNS query, calling or ANI digits, table DNSCRN, or table TOPSTOPT.
OPP_ALWAYS_SEND_SPID_INFO		Y or N	N	This parameter specifies whether both trunk group and SPID display information are sent to an OPP-compatible position if both are applicable.
OVERRIDE_ANIFSPL_HANDLING		Y or N	N	This parameter is used with SOC UNBN0101 to control the handling of ANI information when the ANI ID is marked as special and no calling number information is available in table SPLDNID or DNSCRN.
ALL_CALLS_USE_OPR_SVC_AGRMTS		Y or N	N	This parameter is used with SOC UNBN0101 to determine the use of operator services billing agreements established in OPR_SVC_AGRMTS parm.
CHECK_BILL_AGRMT_USING_BSP_SPID		Y or N	N	This parameter allows optional screening on the BSP SPID.
GEN_NO_BILL_AGRMT_LOG		Y or N	N	This parameter controls the generation of log TOPS 612 - No Billing Agreement and is used with SOC UNBN0101.

Table 18 Datafilling table TOPSPARM

Parameter name	Subfield or refinement	Range of values/units	Default value	Explanation
OPR_SVC_AGRMTS		See subfields	N ACCPT	This parameter is used with SOC UNBN0101 to identify the billing agreement groups with which the Operator Services wholesaler has agreements. If Y, see subfields CCVAGRMT, BNSAGRMT, or NOSPDERR. If no, use NO_CLG_AO_ACTION.
	CCVAGRMT	Billing agreement group name from table BAGNAME		Calling card validation agreement. Enter the billing agreement group name used to index into table CCVAGRMT. Datafilled in table BAGNAME.
	BNSAGRMT	Billing agreement group name from table BAGNAME		Billing number screening agreement. Enter billing agreement group name used to index into table BNSAGRMT. Datafilled in table BAGNAME.
	NOSPDERR	ACCPT, BLOCK, OPER	ACCPT	No operator services. Enter the default handling when the LIDB does not return an AO or BSP SPID in the query response.
	NO_CLG_AO_ACTION	ACCPT, BLOCK		No calling AO Action. Enter the action to accept or block the call.

BRAND_USING_DEFAULT_SPID

If BRAND_USING_DEFAULT_SPID is set to Y, and no SPID is datafilled in table DNSCRN for the calling DN, the default SPID in the DEFAULT_SPID parameter is used for front-end branding.

If BRAND_USING_DEFAULT_SPID is set to N, or if no SPID is assigned to the calling DN, the NBEC code is used for branding non-carrier calls.

A calling AO SPID is not assigned when all the following conditions are met:

- no SPID is provided by an operator position or OSSAIN SN
- no SPID is provided in an OLNS query response
- no SPID is datafilled in table DNSCRN
- no SPID is datafilled in table TOPSTOPT

- no SPID is datafilled in table TOPSPARM

Note: For branding using SPIDs to take place, the service must first be enabled in table SPIDDB. This table provides information used in branding. If the front-end branding service is disabled, branding is not provided (not even using the NBEC code).

DEFAULT_SPID

If BRAND_USING_DEFAULT_SPID is set to Y, and if DEFAULT_SPID is set to Y and datafilled with a SPID, this SPID is used for branding. If BRAND_USING_DEFAULT_SPID is set to N, or if no SPID is assigned to the calling DN, the NBEC code is used for branding of non-carrier calls.

Note: A SPID cannot be removed from table SPID if it is datafilled as the DEFAULT_SPID in table TOPSPARM.

OPP_ALWAYS_SEND_SPID_INFO

This parameter specifies whether both trunk group display and SPID display information are sent to the OPP-compatible position when both are applicable. For carrier calls, only the trunk group display is applicable. However, for non-carrier calls, the SPID display overrides the trunk group display when both are present. Table 19 shows which display is used if OPP_ALWAYS_SEND_SPID_INFO is set to N.

Table 19 Display when parameter is set to N

Carrier status	Trunk group display applicable?	SPID display applicable?	Display used
Carrier call	Yes	Yes	Trunk group
	Yes	No	Trunk group
	No	Yes	Neither
	No	No	Neither
Non-carrier call	Yes	Yes	SPID
	Yes	No	Trunk group
	No	Yes	SPID
	No	No	Neither

Table 20 shows which display is used if OPP_ALWAYS_SEND_SPID_INFO is set to Y. The distinction between carrier and non-carrier calls is ignored, because the SPID display is *always* sent to the position if available.

Table 20 Display when parameter is set to Y

Carrier status	Trunk group display applicable?	SPID display applicable?	Display used
Carrier or non-carrier call	Yes	Yes	Both
	Yes	No	Trunk group
	No	Yes	SPID
	No	No	Neither

OVERRIDE_ANIFSPL_HANDLING

This parameter performs the same function as the TOPSTOPT field ANIFSPL, except on an office-wide basis rather than a trunk basis. When this parameter is set to the default N, the call is presented at the operator position as an ANI fail if that call arrived with an ANI ID marked as special, and with the calling number is not datafilled in table SPLDNID or DNSCRN. When this parameter is set to Y, a call meeting this criteria is presented as an ANI success. The TOPSTOPT field ANIFSPL behaves exactly the same as the parameter above, with the exception that it controls calls on a trunk group basis.

ALL_CALLS_USE_OPR_SVC_AGRMTS

This parameter is set to Y when all calls incoming on TOPS/ISUP trunks are to use the operator services billing agreements to do the checks. Parameter OPR_SVC_AGRMTS provides the agreement groups.

If the ALL_CALLS_USE_OPR_SVC_AGRMTS parameter is set to N, then whether to use the operator services agreements is determined on an individual basis through field BILAGRMT in tables TOPEACAR or SPIDDB.

CHECK_BILL_AGRMT_USING_BSP_SPID

This parameter provides optional screening on the BSP SPID.

GEN_NO_BILL_AGRMT_LOG

If this parameter is set to Y, parameter OPR_SVC_AGRMTS is set to N, and the call is blocked, a TOPS612 log with reason ‘No Calling AO SPID or OPR SVC Agreements’ is generated.

OPR_SVC_AGRMTS

This parameter identifies the billing agreement groups with which the Operator Services wholesaler has billing agreements. Fields CCVAGRMT and BNSAGRMT provide an index into tables CCVAGRMT and BNSAGRMT respectively. This parameter allows CLECs to use their own billing agreements or use the billing agreements already established by the Operator Services wholesaler.

If parameter OPR_SVC_AGRMTS is set to Y, datafill subfields CCVAGRMT, BNSAGRMT, and NOSPDERR. If set to N, datafill subfield NO_CLG_AO_ACTION.

TOPSPARM example

The following figure shows example datafill.

Figure 170 MAP display example for table TOPSPARM

```
PARMNAME                                PARMVAL
-------------------------------------------------------------------
BRAND_USING_DEFAULT_SPID                Y
DEFAULT_SPID                            Y 1234
OPP_ALWAYS_SEND_SPID_INFO               Y
ALL_CALLS_USE_OPR_SVC_AGRMTS            Y
CHECK_BILL_AGRMT_USING_BSP_SPID         N
OPR_SVC_AGRMTS                          Y OPRSVCCCV OPRSVCBNS OPER
```

XLASPID

Table XLASPID allows the XLAGRP to be refined based on the calling AO SPID. This table defines the XLA translations group name that associates the XLAGRP with the SPIDGRP. The following table shows the datafill specific to TOPS unbundling for table XLASPID.

Table 21 Datafilling table XLASPID

Field	Subfield or refinement	Entry	Explanation and action
GRPKEY		See subfields	Group key. This field contains subfields XLAGRP and SPIDGRP.
	XLAGRP	XLAGRP name from table XLAGRP	Translations group. Enter the name of the translations group and also datafill subfield SPIDGRP.
	SPIDGRP	SPIDGRP name from table SPIDGRP	SPID group. Enter the name of the SPIDGRP from table SPIDGRP for the calling AO SPID.
NEWXLGRP		XLAGRP name from table XLAGRP	XLA translations group. Enter the name of the XLA translations group that is associated with the calling AO SPID.

XLASPID example

The following figure shows example datafill.

Figure 171 MAP display example for table XLASPID

```
GRPKEY                  NEWXLGRP
-------------------------------------------------------------------
TRK1 ILECXLA            TRK1ILEC
TRK1 CLECXLA            TRK1CLEC
```

XLAODIGS

Table XLAODIGS allows the XLAGRP to be refined based on the calling NPA-NXX. This table defines the XLA translations group name that associates the XLAGRP with the calling digits of the NPA-NXX. The following table shows the datafill specific to TOPS unbundling for table XLAODIGS.

Table 22 Datafilling table XLAODIGS

Field	Subfield or refinement	Entry	Explanation and action
GRPKEY		See subfields	Group key. This field contains subfields XLAGRP and ORIGDIGS.
	XLAGRP	XLAGRP name from table XLAGRP	Translations group. Enter the name of the translations group and also datafill subfield ORIGDIGS.
	ORIGDIGS	Numeric 0 to 9	Originating digits. Enter the digits of the calling NPA-NXX. Field must contain six digits
NEWXLGRP		XLAGRP name from table XLAGRP	XLA translations group. Enter the name of the XLA translations group that is associated with the calling NPA-NXX.

XLAODIGS example

The following figure shows example datafill.

Figure 172 MAP display example for table XLAODIGS

```
GRPKEY                NEWXLGRP
-----------------------------------------------------------------
TRK1 619320           TRK1619320
TRK1 619322           TRK1619322
TRK1ILEC 619320       TRK1ILEC619320
```

TOPSTOPT

Table TOPSTOPT contains options for trunk groups that originate traffic to a TOPS switch. The TOPS unbundling capability adds fields to specify the TOPS XLAGRP translations scheme for a given trunk group. This table also specifies whether to process the SPID and assign a default calling AO SPID for all incoming calls on a given trunk.

XLAGRP translations scheme datafill

The XLASCHEM field specifies whether the XLA translations scheme applies for calls arriving on the trunk. If set to Y, a translations group name (XLAGRP field) is also datafilled. The XLAGRP name is the translations group for all traffic originating on the trunk group, if no further refinements are needed.

When further refinements based on the calling AO SPID or the calling NPA-NXX are needed, the XLAGRP name also serves as the *initial* translations group name. (For details on further refinements, refer to descriptions of tables XLAODIGS and XLASPID.)

Note: If the operating company does *not* datafill the XLASCHEM area in table TOPSTOPT, the translations scheme that existed prior to the unbundling capability is used for the given trunk.

SPID assignment datafill

The SPIDPRC field specifies whether to use SPID processing for traffic arriving on the trunk. The TRKSPID field specifies whether a default SPID is assigned to the trunk group. If set to Y, the default SPID from table SPID is also datafilled.

The setting for SPIDPRC is independent of the setting for TRKSPID. For example, the operating company can datafill a default SPID for a trunk group in TRKSPID, and yet defer activating SPID processing by datafilling SPIDPRC as N.

Refer to Table 23 for a description of the four possible settings for these fields.

Table 23 SPID assignment in table TOPSTOPT

SPIDPRC	TRKSPID	Effect on calling AO SPID assignment
N	N	No SPID processing is performed, so no value is assigned to a calling AO SPID, even if an attempt to assign one is made (such as from an OLNS query or table DNSCRN).
N	Y <nnnn>	No SPID processing is performed, so no value is assigned to a calling AO SPID. A default SPID value (nnnn) can be datafilled, but it does not affect SPID assignment.

Table 23 SPID assignment in table TOPSTOPT

SPIDPRC	TRKSPID	Effect on calling AO SPID assignment
Y	N	SPID processing is performed, but no value is assigned to a calling AO SPID at this point. A SPID value may be assigned later (such as from an OLNS query or table DNSCRN).
Y	Y <nnnn>	SPID processing is performed, and a default SPID value (nnnn) is assigned to the calling AO SPID. This initial SPID value may be overridden later (such as from an OLNS query or table DNSCRN).

TOPSTOPT error message

Table 24 shows an error message for table TOPSTOPT.

Table 24 Error message for table TOPSTOPT

Error message	Explanation
`NEWXLA ACTIVATES USE OF NEW TRANSLATION TABLES.NEW TABLES MUST BE DATAFILLED FOR PROPER ROUTING.`	The user attempts to use the XLA translations method without datafilling the required tables.

The following table shows the datafill specific to TOPS unbundling for table TOPSTOPT. Only those fields that apply directly to TOPS unbundling are shown. For a description of the other fields, refer to the *Customer Data Schema Reference Manual*.

Table 25 Datafilling table TOPSTOPT

Field	Subfield or refinement	Entry	Explanation and action
XLASCHEM		See subfields	Translations scheme. This field contains subfields NEWXLA and XLAGRP.
	NEWXLA	Y or N	XLA translations. Enter Y or N to specify whether the XLA translations scheme applies to calls arriving on the trunk. If Y is entered, also datafill subfield XLAGRP.
	XLAGRP	XLAGRP name from table XLAGRP	Translations group. Enter the XLAGRP defined in table XLAGRP for the XLA translations and screening used for traffic arriving on the trunk group.
SPIDPRC		Y or N	SPID processing. Enter Y or N to specify whether to use calling AO SPID and BSP SPID for traffic arriving on the trunk group.
TRKSPID		See subfields	Trunk SPID. This field contains subfields DEFAULT_SPID_STATUS and SPID.

Table 25 Datafilling table TOPSTOPT

Field	Subfield or refinement	Entry	Explanation and action
	DEFAULT_SPID _STATUS	Y or N	Default SPID status. Enter Y or N to specify whether a default SPID applies to the trunk group. If Y is entered, also datafill subfield SPID.
	SPID	SPID from table SPID	SPID. Enter the value from table SPID that is associated with the originating trunk group.
BILLSCRN		See subfields	Billing screening. Enter Y or N to specify if billing screening applies to the call. If Y, four subfields become available. If N, no refinements performed.
	WSIDX	0-99	Wholesale index. Enter the index into table WSALEOPT. Wholesale index.
	SCRNIDX	0-100	Screening index. Enter the index for tables RESTBIL/DARSTBIL. Used for TRK based screening.
	DACCSCR	Y or N	DACC call screening. Enter a Y/N to indicate if restrictions should apply to DACC calls.I
	ANIIDSCR	Y or N	ANI ID Screening. Enter Y/N to determine if calls should be screened based on ANI ID.
ANIFSPL		Y or N	ANI failure special. Enter Y/N to determine if the call should be presented as an ANI failure if marked as special with no datafill in tables SPLDNID or DNSCRN.

TOPSTOPT example

The following figure shows example datafill, as follows:

- TRK1 has no SPID processing or default trunk group SPID.
- TRK2 does not have SPID processing enabled yet, but it does have an XLA translations scheme name (TRK2) and default trunk group SPID (1234).
- TRK3 has SPID processing enabled, but does not have a default trunk group SPID. The actual calling AO SPID is specified later from a source other than the trunk group, such as an OLNS query or datafill in table DNSCRN.
- TRK4 has SPID processing enabled, with a default trunk group SPID (ABCD). TRK4 also has call restrictions for wholesaling enabled through field BILLSCRN.

Figure 173 MAP display example for table TOPSTOPT

```
GRPKEY              ORGAREA                 DISPCLG ADASERV    ADASANS
ANITOCLI OLNSQRY   DCIBIDX    LNPCLGAM     XLASCHEM    SPIDPRC    TRKSPID
             BILLSCRN      ANIFSPL       MAXCONNS      DISPSPID
-------------------------------------------------------------------------
TRK1             Y TRK1_ORIG                  Y     NONE          NA
Y N       NONE       0        N             Y TRK1       N       N
          N                     N            0              N
TRK2            Y UNKNOWN_ORGCRIT             Y     NONE          NA
Y N       NONE       0        N             Y TRK2       N       Y 1234
          N                     N            0              N
TRK3            Y TRK3_ORIG                   Y     NONE          NA
Y N       NONE       0        N             Y TRK3       Y       N
          N                     N            0              N
TRK4            Y TRK4_ORIG                   Y     NONE          NA
N         NONE        0        N            Y TRK4       Y        Y ABCD
          Y 97 97 Y Y            N          0              N
```

CT4QSPID

Table CT4QSPID allows a new CT4Q to be associated with SPID criteria. This table maps an old CT4Q to a new CT4Q using the name of the SPID criteria. Both the old and new CT4Qs must already be datafilled in table CT4QNAMS. The SPIDCRIT that applies to the new CT4Q must already be datafilled in table TQSPIDNM.

Note: For details on table CT4QNAMS, refer to the *Customer Data Schema Reference Manual*.

The following table shows the datafill specific to TOPS unbundling for table CT4QSPID.

Table 26 Datafilling table CT4QSPID

Field	Subfield or refinement	Entry	Explanation and action
OLDCT4Q		Name from table CT4QNAMS	Old call type for queuing. Enter the name of the previous CT4Q that is to receive refinement.
SPIDCRIT		Name from table TQSPIDNM	SPID criteria. Enter the name of the SPID criteria from table TQSPIDNM.
NEWCT4Q		Name from table CT4QNAMS	New call type for queuing. Enter the name of the new CT4Q that is associated with the SPIDCRIT value.

CT4QSPID example

The following figure shows example datafill.

Table 27 MAP display example for table CT4QSPID

```
OLDCT4Q           SPIDCRIT      NEWCT4Q
-------------------------------------------------------------------
0_MINUS           CLEC1         0_MINUS_GRP1
0_MINUS           CLEC2         0_MINUS_GRP2
0_PLUS            CLEC1         0_PLUS_GRP1
0_PLUS_COIN       CLEC2         0_PLUS_GRP1
```

TOPAMAOP

Table TOPAMAOP contains parameters specific to TOPS AMA recording. Two parameters control the recording of AO and BSP SPIDs. The values for either parameter are as follows:

- CLG (calling)
- CLD (called)
- BLG (billing)
- REQ (requested)
- ALL (all values)
- NONE (no values)

The following table shows the datafill specific to TOPS unbundling for table TOPAMAOP. For a description of the other parameters, refer to the *Customer Data Schema Reference Manual*.

Table 28 Datafilling table TOPAMAOP

Parameter name	Range of values/units	Default value	Explanation
RECORD_AO_SPID_INFO	CLG, CLD, BLG, REQ, ALL, NONE	ALL	This parameter indicates which type of account owner SPIDs should be recorded on AMA module 338.
RECORD_BSP_SPID_INFO	CLG, CLD, BLG, REQ, ALL, NONE	ALL	This parameter indicates which type of billing service provider SPIDs should be recorded on AMA module 338.

TOPAMAOP example

The following figure shows example datafill.

Figure 174 MAP display example for table TOPAMAOP

```
AMAOPT                    OPTINFO
-------------------------------------------------------------------
RECORD_AO_SPID_INFO       ALL
RECORD_BSP_SPID_INFO      CLG CLD $
```

Additional tables for Equal Access calls

The following tables, in addition to the previous ones, are used to further refine a carrier call.

CICGRP

Table CICGRP contains the names of user-defined CIC groups used in XLAGRP translations. Table CICGRP contains all possible CICGRPs. The CICGRP is assigned to the carrier in table TOPEACAR.

Table 29 Datafilling table CICGRP

Field	Subfield or refinement	Entry	Explanation and action
CICGRP		Alphanumeric up to 32 characters	Carrier Identification Code group. The CICGRP associated with the CIC.

Note: For details on table CICGRP, refer to the *Customer Data Schema Reference Manual*.

CICGRP example

The following figure shows example datafill.

Figure 175 MAP display example for table CICGRP

```
CICGRP
-------------------------------------------------------------------
111SERV
111NOSERV
888SERV
888NOSERV
1118
```

LDBIDXNM

Table LDBIDXNM identifies the valid LIDB index names used for indexing into tables CCVPROV, BNSPROV, and ISOCCPRV to enable carrier-originated calls to determine which LIDB to query based on the CIC and billing number associate with the call. This functionality is activated through table TOPEACAR.

Table 30 Datafilling table LDBIDXNM

Field	Subfield or refinement	Entry	Explanation and action
LIDBIDX		Alphanumeric up to 8 characters	This field contains the valid LIDB indices used for indexing the CCVPROV, BNSPROV, and ISOCCPRV tables.

LDBIDXNM example

The following example shows sample datafill for table LDBIDXNM:

Figure 176 Table LDBIDXNM

```
TABLE: LDBIDXNM
>list all
TOP
 LIDBIDX
--------
  CAR111
  CAR222
  CAR333
  CAR311
  CAR112
  CAR113
BOTTOM
```

TOPEACAR

Table TOPEACAR allows the operating company the flexibility of assigning a carrier group to a carrier. If field CICSCHEM in table TOPEACAR is set to Y, the user is prompted to enter a CICGRP. The CICGRP names are defined in table CICGRP. If CICSCHEM is set to N, the user is not prompted to enter a group. Also if the selector is set to N, then the XLAGRP is not refined based on the carrier.

Table TOPEACAR also provides information on IXC-type providers. Field BILAGRMT is examined to determine the type of billing agreement that is in place for the provider. This field is checked when TOPSPARM parameter ALL_CALLS_USE_OPR_SVC_AGRMTS is set to N.

Note: For details on table TOPEACAR, refer to the *Customer Data Schema Reference Manual*.

Table 31 Datafilling table TOPEACAR

Field	Subfield or refinement	Entry	Explanation and action
CICSCHEM		See subfields	CIC scheme. Controls the optionality for of assigning a CICGRP to a carrier.
	NEWXLA	Y or N	New XLA. Enter a CICGRP name that is defined in table CICGRP if set to Y. If N, then the XLAGRP is not refined based upon the carrier.
	CICGRP	CICGRP name from table CICGRP	CIC group. Enter the CICGRP from table CICGRP associated with the CIC.
OPSERV		See subfields	Operator services.
	BILLAGRMT	See subfields	Billing agreement. Enter the type of billing agreement for the provider.
	AGRMTYPE	SELF, OPRSVC, NONE	Agreement type. Enter the type of agreement in place for the provider.
	CCVAGRMT	Billing agreement group name	Calling card validation agreement. Enter the billing agreement group name used to index into Table CCVAGRMT. Datafilled in Table BAGNAME.
	BNSAGRMT	Billing agreement group name	Billing number screening agreement. Enter billing agreement group name used to index into Table BNSAGRMT. Datafilled in Table BAGNAME.
	NOSPDERR	ACCPT, BLOCK, OPER	No operator services. Enter the default handling when the LIDB does not return an AO or BSP SPID in the query response.
LIDBYCIC		Y or N If Y, see subfield	LIDB by CIC. Enter or N to indicate refinement. N is default value. By setting LIDBYCIC to Y, LIDB queries are routed based on the carrier as well as the billing number.
	LIDBIDX	Alphanumeric up to 8 characters	LIDB index. Enter the value assigned by the LEC to index into tables CCVPROV, BNSPROV, and ISOCCPROV. This provides the first part of the key and the billing number when determining to which LIDB to route the query.

TOPEACAR example

The following figure shows example datafill.

Figure 177 MAP display example for table TOPEACAR

```
CARDIG CARNAME         ALTDISP OPLSCLD CAMABILL ALTCARR             NATERM
 INTERM                                                 OPSERV      TDBIDX
CICSCHEM         LIDBYCIC
------------------------------------------------------------------------
0111    C111             C111       Y        Y    0111             UNREST
 UNREST    SERV NOQUERY Y NOQUERY Y NOQUERY Y Y Y Y 100 NONE          0
Y   111SERV         Y   CAR111
0501    LECTOPS          LECTOPS       Y        Y    0113             UNREST
 UNREST    NOSERV                                N N                      0
Y     888NOSERV     N
```

CCVPROV

Table CCVPROV is indexed to obtain the index into table CCVPARMS for calls billed to a domestic calling card. Table CCVPROV is used instead of table CCVINFO when the UNBN0104 SOC and the LIDBYCIC field are active. Additionally, table TOPEACAR must have a valid LIDBIDX value datafilled. The LIDBIDX value becomes the first part of the key into table CCVPROV.

Datafill sequence and implications

There are no checks between tables TOPEACAR and CCVPROV; however, for the LIDB Query by CIC feature (UBNUG0104) to function properly, datafill between these two table must be valid.

Additionally, the PARMSIDX datafilled in table CCVPROV must first be defined in table CCVPARMS before it can be used in table CCVPROV. Thus the datafill order is as follows:

- CCVPARMS
- LDBIDXNM
- TOPEACAR
- CCVPROV

Table 32 Datafilling table CCVPROV

Field	Subfield or refinement	Entry	Explanation and action
CCVKEY		See subfields	Calling Card Validation Key. This is a two part key consisting of the index from table TOPEACAR and the calling card digits
	LIDBIDX	Alphanumeric up to 8 characters	LIDB Index. This is the index from table TOPEACAR.

Table 32 Datafilling table CCVPROV

Field	Subfield or refinement	Entry	Explanation and action
	BILLDIGS	10 digits	Billing Digits.
PARMSIDX		0 to 300	Parameter Index. This field provides the index into table CCVPARMS.

CCVPROV example

The following example shows sample datafill:

Figure 178 Table CCVPROV

```
TABLE: CCVPROV
>list 4
TOP
               CCVKEY   PARMSIDX
-----------------------------
         CAR111   20         0
         CAR111  212         0
         CAR111    3         0
         CAR222    3         1

         index from table TOPEACAR, field LIDBYCIC,
         subfield LIDBIDX
```

BNSPROV

Table BNSPROV is indexed to obtain the index into table BNSPARMS for calls billed to a third number or collect. Table BNSPROV is used instead of table BNSINFO when the UNBN0104 SOC and the LIDBYCIC field are active. Additionally, table TOPEACAR must have a valid LIDBIDX value datafilled. The LIDBIDX value becomes the first part of the key into table BNSPROV.

Datafill sequence and implications

There are no checks between tables TOPEACAR and BNSPROV; however, for UNBN0104 SOC to function properly, datafill between these two table must be valid.

Additionally, the PARMSIDX datafilled in table BNSPROV must first be defined in table BNSPARMS before it can be used in table BNSPROV. Thus the datafill order is as follows:

- BNSPARMS
- LDBIDXNM
- TOPEACAR

- BNSPROV

Table 33 Datafilling table BNSPROV

Field	Subfield or refinement	Entry	Explanation and action
BNSKEY		See subfields	Billing Number Screening Key. This is a two part key consisting of the index from table TOPEACAR and the third or collect number.
	LIDBIDX	Alphanumeric up to 8 characters	LIDB Index. This is the index from table TOPEACAR.
	BILLDIGS	10 digits	Billing Digits.
PARMSIDX		0 to 300	Parameter Index. This field provides the index into table BNSPARMS.

BNSPROV example

The following example shows sample datafill:

Table 34 Table BNSPROV

```
TABLE: BNSPROV
>list 4
TOP
               BNSKEY  PARMSIDX
------------------------------
         CAR111   20         0
         CAR111  291         0
         CAR111    3         0
         CAR222    2         1
         CAR222    3         1

      index from table TOPEACAR, field LIDBYCIC,
      subfield LIDBIDX
```

ISOCCPRV

Table ISOCCPROV is indexed to obtain the index into table CCVPARMS for calls billed to an ISO card. Table ISOCCPRV is used instead of table INTCCFMT when the UNBN0104 SOC and the LIDBYCIC field are active. Additionally, table TOPEACAR must have a valid LIDBIDX value datafilled. The LIDBIDX value becomes the first part of the key into table ISOCCPRV.

Datafill sequence and implications

There are no checks between tables TOPEACAR and ISOCCPRV; however, for UNBN0104 SOC to function properly, the datafill between these two table must be valid.

Additionally, the PARMSIDX datafilled in table ISOCCPRV must first be defined in table CCVPARMS before it can be used in table ISOCCPRV. Thus the datafill order is as follows:

- CCVPARMS
- LDBIDXNM
- TOPEACAR
- ISOCCPRV

Table 35 Datafilling table ISOCCPRV

Field	Subfield or refinement	Entry	Explanation and action
ISOKEY:		See subfields	ISO Key. This is a two-part key consisting of the index from table TOPEACAR and the calling card digits. Fields LIDBIDX and ISSUERID.
	LIDBIDX	Alphanumeric up to 8 characters	LIDB Index. This is the index from table TOPEACAR.
	ISSUERID	Up to 7 digits	User ID. A subset of the card number.
ACCIDSIZ		1 to 15	Account ID Size. The size of the account code part of the card number.
PINSIZE		0 to 4	PIN Size. The size of the Personal Identification Code (PIN).
LUHNCHK		Y or N	Luhn Digit Check. Specifies if Luhn digit check should be done on the card. ITU cards only.
CARDBRND			Card Brand. Specifies a specific carrier brand.
PARMSIDX		0 to 300	Parameter Index. This field provides the index into table CCVPARMS

ISOCCPROV example

The following example shows sample datafill:

Table 36 Table ISOCCPROV

```
TABLE: ISOCCPRV
>list
TOP
           ISOKEY ACCIDSIZ PINSIZE LUHNCHK     CARDBRND
PARMSIDX
-------------------------------------------------------
     CAR111 4251       10       4       Y  DEFAULTNAME
       0

   CAR111 891333       11       0       Y  DEFAULTNAME
       1

>
```

XLACIC

Table XLACIC refines the XLAGRP based on the CICGRP name associated with the carrier. Table XLACIC allows XLAGRP to be refined based upon the Carrier Identification Code (CIC) when using the XLAGRP method of translations. The carrier must be identified prior to accessing table XLACIC.

Note: For details on table XLACIC, refer to the *Customer Data Schema Reference Manual*.

Table 37 Datafilling table XLACIC

Field	Subfield or refinement	Entry	Explanation and action
XLAGRP		XLAGRP name from table XLAGRP	Translation group. Enter the current XLAGRP associated with the call.
	CICGRP	CICGRP name from table CICGRP	Carrier Identification Code group. Enter the CICGRP associated with the CIC.
NEWXLAGRP		Alphanumeric up to 32 characters	New translation group. Enter the new XLAGRP.

XLACIC example

The following figure shows example datafill.

Figure 179 MAP display example for table XLACIC

```
GRPKEY                NEWXLGRP
-------------------------------------------------------------------
EAUNBN   111SERV      EA111XLA
EAUNBN 888NOSERV      EACICXLA
```

EAREGN

This table contains the list of all possible region designation identifiers, and contains three hardcoded predefined entries: INTRA, INTER, and OVERSEAS. The operating company can datafill table EAREGN with any other region destination.

Note: For details on table EAREGN, please refer to *TOPS Translations and Screening Users Guide*, 297-8403-905.

Table 38 Datafilling table EAREGN

Field	Subfield or refinement	Entry	Explanation and action
REGION		Region designation from list	Region designation. Enter the region destination. Three default tuples: INTRA, INTER, OVERSEAS. Additional values can be added with up to 32 characters each.

EAREGN example

The following figure shows example datafill.

Figure 180 MAP display example for table EAREGN

```
REGION
-------------------------------------------------------------------
INTRA
INTER
OVERSEAS
RAL_NYC
```

XLAEAREG

Table XLAEAREG allows the XLAGRP to be refined based upon the REGION. The REGION is set to INTRA if a domestic carrier call has been determined intrastate, set to INTER if a domestic carrier call has been determined interstate, set to OVERSEAS for a international carrier call, or set to any other region designation that the operating company chooses to datafill via table EAREGN. For carrier calls, it takes the XLAGRP currently associated with the call and allows a new XLAGRP to be set based upon the REGION.

Note 1: The REGION of the carrier call must be determined before table XLAEAREG can be accessed.

Note 2: For details on table XLAEAREG, please refer to *TOPS Translations and Screening Users Guide*, 297-8403-905.

Table 39 Datafilling table XLAEAREG

Field	Subfield or refinement	Entry	Explanation and action
XLAGRP		Alphanumeric up to 32 characters	Translation group. Enter the current XLAGRP associated with the call.
	REGION	Name from table EAREGN	Region designation. Enter the region (state) designation for an EA call.
NEWXLAGRP		Alphanumeric up to 32 characters	New translation group. Enter the new XLAGRP.

XLAEAREG example

The following figure shows example datafill.

Figure 181 MAP display example for table XLAEAREG

```
GRPKEY                          NEWXLAGRP
-------------------------------------------------------------------
CLECSPIDXLA      INTRA          CLECSPIDA
ILECSPIDXLA      RAL_NYC        ILECINTERXLA
```

TOPEATRK

Table TOPEATRK controls the optionality to use the XLAGRP refinement method for TOPS EA calls. Selector XLASCHEM is added to determine whether to use the existing method of EA screening or use the XLAGRP method. If XLASCHEM is set to N, the EA screening method of translations and screening is used, and the system prompts the user to enter the screening attributes for INTRASSC, INTERSCC, OVSSCL, and STS. If XLASCHEM is set to Y, the XLAGRP method of translations and screening is used, and the user is prompted to enter an initial XLAGRP for equal access calls. Unless further refinement is done, the translations and screening information is obtained from table TOPSDP.

Note: For details on table TOPEATRK, refer to the *Customer Data Schema Reference Manual*.

Figure 182 Datafilling table TOPEATRK

Field	Subfield or refinement	Entry	Explanation and action
XLASCHEM		See subfields	Translation scheme. This field contains subfields NEWXLA and EAXLAGRP.
	NEWXLA	Y or N	New translations. Enter Y or N to determine whether to use the XLAGRP method. If Y is entered, also datafill subfield EAXLAGRP to set the initial XLAGRP for EA calls. If N is entered, also datafill the following subfields: INTRASSC, INTERSCC, OVSSCL, and STS
	EAXLAGRP	XLAGRP from table XLAGRP	Equal access translations group. Enter the initial XLAGRP for EA calls if NEWXLA is set to Y.
	INTRASSC	STRA from table CLVSCRC	Intrastate screening class. If NEWXLA is set to N, then index STRA of INTRASSC obtains the outgoing route from table CLVSCRC.
	INTERSSC	STER from table CLVSCRC	Interstate screening class. If NEWXLA is set to N, then index STER of INTRASSC obtains the outgoing route from table CLVSCRC.
	OVSSCL	OVS from table CLVSCRC	Overseas screening class. If NEWXLA is set to N, then index OVS of INTRASSC obtains the outgoing route from table CLVSCRC.
	STS	Name from table CLVSCRC	Serving translations scheme. If NEWXLA is set to N, then index STRA of INTRASSC obtains the outgoing route from table CLVSCRC.

TOPEATRK example

The following figure shows example datafill.

Figure 183 MAP display example for table TOPEATRK

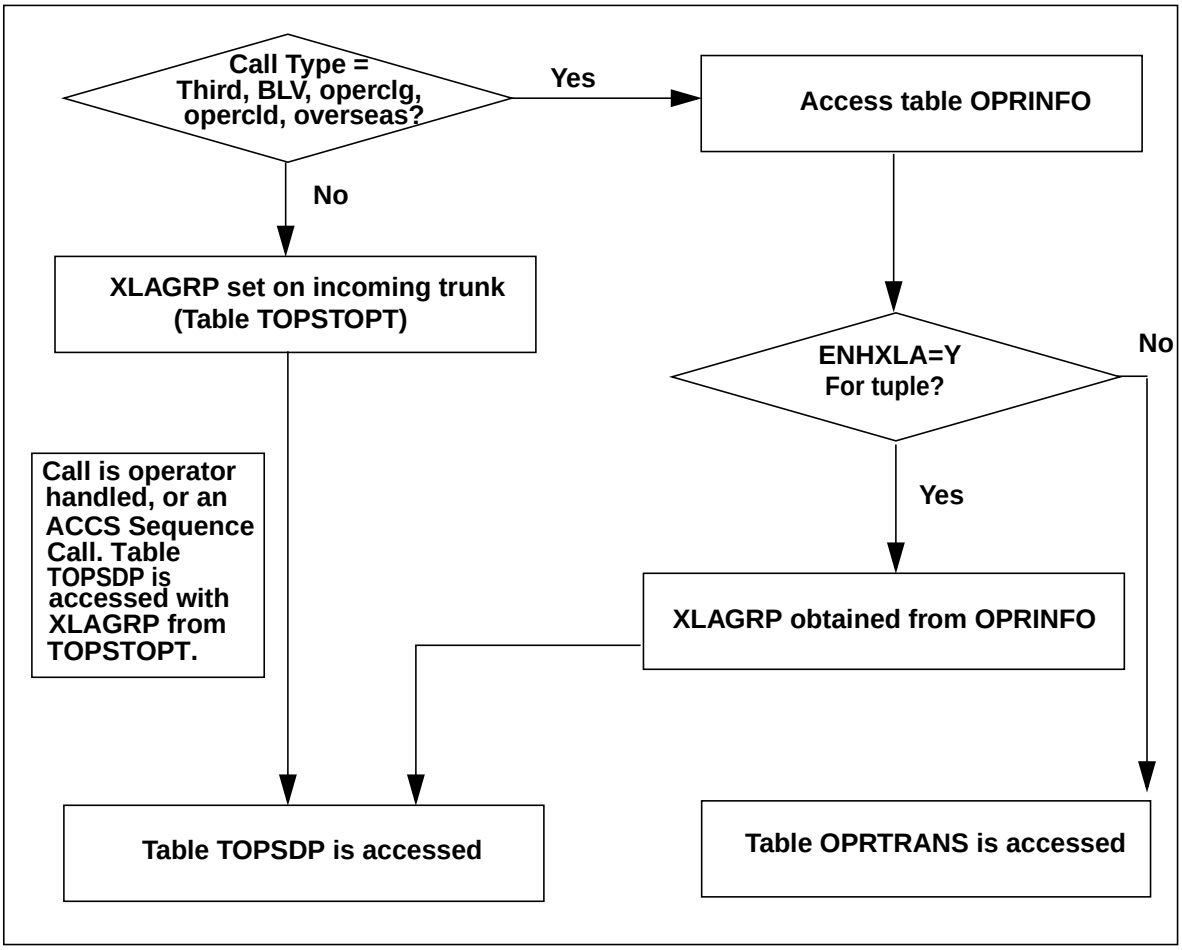
```
TRUNKGRP    ENDOFFCE    CARRIER                          SCRNFLDS
             XLASCHEM                    DNLOOK    DFLTPIC            BYPASS
-------------------------------------------------------------------------------
TOSSIC      CONFORM     0501                 LATA          L123
             N STRA STER SOVS 619       N          N                  $
TEAUNBNIC   CONFORM     0111                 LATA          L123
             Y         EAUNBN             N          N                  $
```

Special call types

Calls that are operator or SN originated, or operator handled, may access table OPRINFO or OPRTRANS. Table OPRINFO allows calls that access tuples VERIFY, DELAY, SPLVFY, and OVERSEAS to use the XLAGRP method of screening. This translation scheme now applies to third number, busy line verification, overseas calls, called with no originating agent, and calling numbers (delay).

In Table 184, the incoming trunk is datafilled to use the XLAGRP method of translations and screening.

Figure 184 Call flow through tables OPRTRANS or OPRINFO



Note 1: Even though third party verify has an originating agent present, this call accesses table OPRINFO for screening information. Also, operator handled calls with an originating agent present have already obtained an XLAGRP from table TOPSTOPT, and access table TOPSDP directly, without accessing table OPRINFO.

Note 2: All references to ACCS in this document also apply to MCCS.

OPRTRANS

Table OPRTRANS is used to obtain TOPS translation and screening information on operator assisted calls for busy line verification (BLV), third number, delay, and overseas calls. Call types that access tuples VERIFY, DELAY, SPLVFY, and OVERSEAS can use the XLAGRP method through an optionality control in table OPRINFO. If the calls do not use the XLAGRP method, table OPRTRANS provides the screening parameters using the former method of translations and screening. When using the XLAGRP method, the XLAGRP is obtained from table OPRINFO and fields STS, OPERPRTN, and OPERSCRN are used for translations and screening.

Note: For details on table OPRTRANS, refer to the *Customer Data Schema Reference Manual*.

Table 40 Datafilling table OPRTRANS

Field	Subfield or refinement	Entry	Explanation and action
STS		Class of service name from table OPRTRANS	Service translations scheme. Enter the STS obtained from table OPRTRANS. Used for code translations.
SCRNCL		Class of service name from table CLSVSCRC	Screening class. Enter screening name in index table CLSVSCRC for class of service screening.
LCANAME		Local call area screening name from table LCASCRCN	Local Call Area Name (LCA). Local screening is not done for these types of numbers.
PRTNM		Pretranslator name from table STDPRTCT	Pretranslator name. Enter pretranslator name used to index table STDPRTCT.

OPRTRANS example

The following figure shows example datafill.

Figure 185 MAP display 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
```

TOPSDP

Table TOPSDP specifies the XLA translations and screening parameters that are unique to each translations group defined in table XLAGRP. These parameters include the serving translations scheme (STS), pretranslator names, screening names for initial and subsequent translations, and a local call area name.

TOPSDP example

The following figure shows example datafill specific to table OPRINFO.

Figure 186 MAP display example for table TOPSDP

```
XLAGRP STS OPERPRTN ORIGSCRN OPERSCRN MCCSPRTN  MCCSSCRN  LCANAME
-----------------------------------------------------------------------
CLGXLA 619     BACK     NSCR     NSCR     MCCS     NSCR    NLCA
CLDXLA 619     OPER     NSCR     NSCR     MCCS     NSCR    NLCA
OVSXLA 619     OPER     NSCR     NSCR     MCCS     NSCR    NLCA
3RDXLA 619     OPER     NSCR     NSCR     MCCS     NSCR    NLCA
BLVXLA 619     OPVE     NSCR     NSCR     MCCS     NSCR    NLCA
```

OPRINFO

Table OPRINFO provides the ability to use the XLAGRP method of translations and screening scheme for the following type of numbers:

- calling number
- called number (no originating party present)
- third number
- busy line verification number
- overseas calling number

There is a tuple in OPRINFO for each type of number. The method of translations used is datafilled on a per tuple basis. If the XLAGRP method is

selected, then an XLAGRP is specified. Once the XLAGRP is retrieved from table OPRINFO, the XLAGRP is not refined again and is used to access TOPSDP directly.

If the XLAGRP method is used and field ENHXLA is set to Y, then the screening parameters are obtained from table TOPSDP in fields STS, OPERPRTN, and OPERSCRN. Refer to table TOPSDP for additional information on these fields.

Note 1: For details on table OPRINFO, refer to the *Customer Data Schema Reference Manual*.

Note 2: Table OPRINFO is expected to replace table OPRTRANS in the future and provide the ability to use the XLAGRP translation and screening method on all call types detailed above.

Table 41 Datafilling table OPRINFO

Field	Subfield or refinement	Entry	Explanation and action
NUMTYP		OPERCLG, OPERCLD, OVERSEAS, THIRD, BLV	Number type. Enter the operator group. Defines the type of call that accesses the table.
XLASCHEM		See subfields	Translations scheme. This field contains subfields ENXLA and XLAGRP.
	ENHXLA	Y or N	Enhanced translations. Enter Y or N to indicate whether or not the XLAGRP translations method applies to special calls. When set to Y, also datafill the XLAGRP subfield.
	XLAGRP	XLAGRP name from table XLAGRP	XLA Group. Enter an XLAGRP name from table XLAGRP.

Note: For more information on the relationship between tables OPTRTRANS and OPRINFO, refer to the *Translations Guide*.

OPRINFO error message

A standard table control error message is displayed under the following conditions.

Table 42 Error messages for table OPRINFO

Error message	Explanation
`ENHXLA ACTIVATES USE OF NEW TRANSLATION TABLES.NEW TABLES MUST BE DATAFILLED FOR PROPER ROUTING.`	The user attempts to use the XLA translations method before it is datafilled.

OPRINFO example

The following figure shows example datafill.

Figure 187 MAP display example for table OPRINFO

```
 NUMTYP          XLASCHEM
-------------------------------------------------------------------------
OPERCLG          Y CLGXLA
OPERCLD          Y CLDXLA
OVERSEAS         Y OVSXLA
THIRD            Y 3RDXLA
BLV              Y BLVXLA
```

Wholesaling tables

Depending upon the wholesaling option selected, one or more of the tables listed is required. To determine which tables are used with which option, please refer to Chapter 3: “Unbundling wholesaling.”

WSALEOPT

Table WSALEOPT indicates the criteria to be used for billing screening. This table consists of an index, and the fields INTRA and INTER. For each of the two available fields, data indicating the screening criteria may be entered.

Table 43 Datafilling table WSALEOPT

Field	Subfield or refinement	Entry	Explanation and action
INDEX		0 to 99	Index. This is the index into table WSALEOPT.
INTRA		TRK, SPID	Intra LATA. Enter intraLATA screening criteria. May enter TRK, SPID, or TRK and SPID.
INTER		TRK, CIC	InterLATA. Enter interLATA screening criteria. May enter TRK, CIC, or TRK and CIC.

WSALEOPT example

The following figure shows example datafill.

Figure 188 MAP display example for table WSALEOPT

```
IDX              INTRA           INTER
-------------------------------------------------------------------
1                AOSPID $         CIC $
2                TRK AOSPID $     CIC $
3                $                TRK $
4                TRK $            $
```

RESTBIL

Table RESTBIL specifies the Restricted Billing Class to be recorded on AMA for Toll and Assist (TA) and Directory Assistance (DA) calls. DA and TA calls have different tariff rules, and this table allows for the independent assignment of billing restrictions for TA calls based upon the Restricted Billing Class. Table RESTBIL provides the index to specify the allowed methods of billing for TA calls.

Table 44 Datafilling table RESTBIL

Field	Subfield or refinement	Entry	Explanation and action
BILCLASS		0 to 100	Billing Class. Enter the restricted billing number index to specify the allowed methods for billing TA calls.
AMARBC		0 to 100	AMA restricted billing class. Enter the value to record as the restricted billing class on AMA for TA calls.
SCRNDISP		Alphanumeric up to 8 characters	Screen display. Enter the screen display to be presented to the TOPS operator on call arrival.
BILTYPES		Alphanumeric up to 6 characters	Billing types. Enter the allowable billing types for the specific Restricted Billing Class.
CCPDTYPS		Local, Toll, All, or None	Call completion paid type. Enter the allowable restriction of the sent paid DACC to toll and/ or local numbers.

RESTBIL example

The following figure shows example datafill.

Figure 189 MAP display example for table RESTBIL

```
BILCLASS   AMARBC   SCRNDISP     BILTYPES       CCPDTYPES
-------------------------------------------------------------------
 31           74    31PRISON       (COL)          NONE
```

DARSTBIL

Table DARSTBIL specifies the Restricted Billing Class to be recorded on AMA for Toll and Assist (TA) and Directory Assistance (DA) calls. DA and TA calls have different tariff rules, and this table allows for the independent assignment of billing restrictions for DA calls based upon the Restricted Billing Class. Table DARSTBIL provides the index to specify the allowed methods of billing for DA calls.

Table 45 Datafilling table DARSTBIL

Field	Subfield or refinement	Entry	Explanation and action
BILCLASS		0 to 100	Billing Class. Enter the restricted billing number index to specify the allowed methods for billing DA calls.
AMARBC		0 to 100	AMA restricted billing class. Enter the value to record as the restricted billing class on AMA for DA calls.
SCRNDISP		Alphanumeric up to 8 characters	Screen display. Enter the screen display to be presented to the TOPS operator on call arrival.
BILTYPES		Alphanumeric up to 6 characters	Billing types. Enter the allowable billing types for the specific Restricted Billing Class.

DARSTBIL example

The following figure shows example datafill.

Figure 190 MAP display example for table DARSTBILT

```
BILCLASS   AMARBC   SCRNDISP     BILTYPES
------------------------------------------------------------------------
 31           74    31DAPPRSN        (CC)
```

OSSCAT

Table OSSACT, Operator services signaling category, uses field SCRNIDX in the billing screening option. This field is a restricted billing index into the restricted billing tables. When table TOPSTOPT field ANIIDSCR is set to Y, and the signaling type on the trunk dictates that the OSSCAT table should be used for ANI ID information, the SCRNIDX is obtained as an index into the billing restriction tables.

Note: The default dump and restore value for the SCRNIDX field is 100. This is the nil restricted billing index.

Table 46 Datafilling table OSSCAT

Field	Subfield or refinement	Entry	Explanation and action
SCRNIDX		0 to 100	Screening index. Enter the index into tables RESTBIL/DARSTBIL.

OSSCAT example

The following figure shows example datafill.

Figure 191 MAP display example for table OSSCAT

```
ANI    FORMAT    CLGSERV  REST    ROUTE   SCRNIDX
-------------------------------------------------------------------
  0       ANI    STATION  NONE        N         10
```

OPENANI

Table OPENANI, Open numbering ANI, uses field SCRNIDX in the billing screening option. This field is a restricted billing index into the restricted billing tables. When table TOPSTOPT field ANIIDSCR, and the signalling type on the trunk dictates that the OPENANI table should be used for ANI ID information, the SCRNIDX is obtained to be used as an index into the billing restriction tables.

Table 47 Datafilling table OPENANI

Field	Subfield or refinement	Entry	Explanation and action
SCRNIDX		0 to 100	Screening index. Enter the index into tables RESTBIL/DARSTBIL.

OPENANI example

The following figure shows example datafill.

Figure 192 MAP display example for table OPENANI

```
ANIDIGS   FORMAT  CLGSERV  SCRNIDX
-------------------------------------------------------------------
  0        ANI    STATION      10
```

BELLCAT

Table BELLCAT, Bell category, uses field SCRNIDX in the billing screening option. This field is a restricted billing index into the restricted billing tables. When table TOPSTOPT field ANIIDSCR, and the signalling type on the trunk dictates that the BELLCAT table should be used for ANI ID information, the SCRNIDX is obtained to be used as an index into the billing restriction tables.

Table 48 Datafilling table BELLCAT

Field	Subfield or refinement	Entry	Explanation and action
SCRNIDX		0 to 100	Screening index. Enter the index into tables RESTBIL/DARSTBIL.

BELLCAT example

The following figure shows example datafill.

Figure 193 MAP display example for table BELLCAT

```
ID    FORMAT  CLGSERV   ANIROUTE   SCRNIDX
-----------------------------------------------
  0       ANI  STATION     N         10
```

BAGNAME

Before a billing agreement group can be used in any of the tables, it must be datafilled in table BAGNAME. This table contains one field, BAGNAME, which is the character string name of a billing agreement group in the TOPS switch. Each name may contain up to sixteen characters.

Table 49 Datafilling table BAGNAME

Field	Subfield or refinement	Entry	Explanation and action
BAGNAME		Alphanumeric up to 16 characters.	Billing agreement group name. Enter datafill for billing agreement group name. These group names are associated with a SPID or a CIC and are used as part of the index into the agreement tables.

BAGNAME example

The following figure shows example datafill.

Figure 194 MAP display example for table BAGNAME

```
BAGNAME
------------------------------------------------------------------------
OPRSVCBNS
OPRSVCCCV
SPIDBNS
SPIDCCV
CARBNS
CARCCV
```

Table BAGNAME must be datafilled before a billing agreement group can be datafilled in any of the following tables:

- BNSAGRMT
- CCVAGRMT
- SPIDDB
- TOPEACAR
- TOPSPARM

CCVAGRMT

Billing agreements based on CCV are tracked in table CCVAGRMT. This table consists of two fields, ORIGGRP and BILLSPID. These two fields make up the key to a tuple in this table which indicates an agreement exists between the billing agreement group of the originator and the billed-to SPID.

Table 50 Datafilling table CCVAGRMT

Field	Subfield or refinement	Entry	Explanation and action
ORIGGRP		ORIGGRP from table SPIDDB or TOPEACAR.	Originating group. Enter the originating party group name for the purpose of screening for billing agreements. Note: The group name must first be datafilled in Table BAGNAME before it can be used in this table.
BILLSPID		An AO or BSP SPID.	Billed-to SPID. Enter the AO or BSP SPID of the billed-to party/entity. The SPID returned from the LIDB query is used to screen for billing agreements. Before a SPID can be added to this field, it must first be datafilled in table SPID

CCVAGRMT example

The following figure shows example datafill.

Figure 195 MAP display example for table CCVAGRMT

```
CCVKEY
------------------------------------------------------------------------
OPRSVCCCV ILEC
OPRSVCCCV CLEC
SPIDCCV ILEC
SPIDCCV CLEC
CARCCV ILEC
CARCCV CLEC
```

Table CCVAGRMT must be datafilled in the following sequence:

- SPID
- BAGNAME
- CCVAGRMT

BNSAGRMT

Billing agreements based on BNS are tracked in table BNSAGRMT. This table consists of two fields, ORIGGRP and BILLSPID. These two fields make up the key to a tuple in this table which indicates an agreement exists between the billing agreement group of the originator and the billed-to SPID.

Table 51 Datafilling table BNSAGRMT

Field	Subfield or refinement	Entry	Explanation and action
ORIGGRP		ORIGGRP from table SPIDDB or TOPEACAR.	Originating group. Enter the originating party group name for the purpose of screening for billing agreements. Note: The group name must first be datafilled in Table BAGNAME before it can be used in this table.
BILLSPID		An AO or BSP SPID.	Billed-to SPID. Enter the AO or BSP SPID of the billed-to party/entity. The SPID returned from the LIDB query is used to screen for billing agreements. Before a SPID can be added to this field, it must first be datafilled in table SPID

BNSAGRMT example

The following figure shows example datafill.

Figure 196 MAP display example for table BNSAGRMT

```
BNSKEY
------------------------------------------------------------------------
OPRSVCBNS ILEC
OPRSVCBNS CLEC
SPIDBNS ILEC
SPIDBNS CLEC
CARBNS ILEC
CARBNS CLEC
```

Tables must be datafilled in the following sequence:

- SPID
- BAGNAME
- BNSAGRMT

Chapter 8: Unbundling 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 software optionality control (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.

This chapter provides a brief description of how TOPS Unbundling implements SOC. For detailed information on how to use the SOC tool, please refer to *Software Optionality Control User's Manual*, 297-8991-901.

As of TOPS15, all SOC options have been eliminated and/or consolidated into new SOC options. The ability to specify whether or not feature previously controlled by SOC is enabled (even though the SOC option may be discontinued) has been preserved through table TOPSFTR. Additional details on this table are located at the end of this chapter.

TOPS unbundling functional group

TOPS unbundling software belongs to the UNBN (Unbundling) functional group. Each option in this group has a right-to-use (RTU) setting of Y (yes) or N (no) and a state setting of ON or IDLE. All option codes in the UNBN functional group are state options.

The UNBN functional group is organized into three UNBN option order codes: UNBN0101, UNBN0102, and UNBN0103, which are described in this section. UNBN0101 is required for each of the other unbundling SOC codes. In addition to enabling the SOC order codes, Table TOPSFTR must also be enabled through datafill to use the UNBN functionality.

Switch upgrade to TOPS15 or higher

Switches with TOPS14 or earlier had one track SOC, UNBN0001, and six state SOCs, UNBN0002 through UNBN0007. When the switch is upgraded to TOPS15 or higher, then the following statements apply:

- if UNBN0003, UNBN0004, UNBN0006, or UNBN0007 were on, then UNBN0101 will be on

- if UNBN0002 was on, then UNBN0102 will be on.
- if UNBN0005 was on, then UNBN0103 will be on

UNBN0101 (Unbundling Base)

UNBN0101 provides the following functions:

- assigns a calling AO SPID to a call
- adds the billed AO SPID and the billed BSP SPID to the LIDB protocol
- captures the SPID information on the AMA record
- adds SPID information to the ACCSVER tool and table ACCSDB
- enables or disables SPID processing for a given trunk group in table TOPSTOPT
- enables phase I of translations and screening (XLAGRP translations scheme) based on SPID
- displays the calling AO SPID at the operator position (for OPP-compatible positions)
- adds the Service Provider ID field to Call Queue Event and Position Event QMS MIS messages
- adds the Access Indicator field to Call Queue Event and Position Event QMS MIS messages
- adds the Carrier Access Code field to Call Queue Event QMS MIS messages
- adds the Call Type for Queuing field to Position Event QMS MIS messages
- adds the ability to perform restricted billing screening on calls that do not have a DN based restriction
- screening can be performed on a trunk group, AO SPID, CIC, or an ANI ID basis
- optionality activated on a per-trunk group basis in table TOPSTOPT
- checks for a billing agreement between the service providers of the calling and billed-to parties
- allows the service provider to use their own billing agreements or billing agreements established by the Operator Services wholesaler

UNBN0101 requires OSB00001 (Operator Services Basic). After UNBN0101 SOC is enabled, all the other UNBN SOC codes are optional.

UNBN0102 (Queuing by SPID)

UNBN0102 allows the SPID to be used as a call-routing criterion in TOPS QMS. UNBN0102 requires UNBN0101.

UNBN0103 (Branding by SPID)

UNBN0103 enables front-end branding based on SPID and back-end branding of Automated Coin Toll Service (ACTS) calls. UNBN0103 requires UNBN0101.

UNBN0104 (LIDB Query by CIC)

UNBN0104 enables the capability to determine which LIDB to query based on the Carrier Identification Code (CIC) and billing number associated with the call. This functionality is activated on a per-CIC basis through table TOPEACAR, and only applies to calls originating from a carrier. It also requires parameter UNBUNDLING_LIDB_QUERY_ROUTING from table TOPSFTR. UNBN0104 requires UNBN0101.

UNBN SOC report example

The following figure shows an example of the three UNBN SOC codes. In the SOC tool, each option must be entered separately with the following command: SELECT OPTION UNBN<xxxx>. All the available SOC options under the group can be displayed by entering SELECT GROUP UNBN.

Figure 197 Example SOC report for UNBN SOC codes

```
GROUP:UNBN
OPTION    NAME                RTU STATE   USAGE   LIMIT    UNITS  LAST_CHG
------    ----                --- -----   -----   -----    -----  --------
UNBN0101  Unbundling Base       Y    ON       -       -        -  00/01/23
UNBN0102  Queuing by SPID       Y    ON       -       -        -  00/09/06
UNBN0103  Branding by SPID      Y    ON       -       -        -  00/09/06
UNBN0104  LIDB Query by CIC     Y    ON       -       -        -  01/05/07
```

Table TOPSFTR

Table TOPSFTR allows the user to specify whether or not a feature is enabled. TOPSFTR contains tuples corresponding to the TOPS features. Each tuple contains the identification of the specific feature and its setting (i.e., whether or not it is enabled). A setting of Y in the data field column, FTRENABL, indicates that the feature is enabled and N indicates that the given feature is disabled.

Every individual TOPS feature that was previously controlled by SOC is now controlled by both its parent SOC option and its TOPSFTR entry. For a given TOPS feature to be functional, the parent SOC option must be ON and the corresponding FTRENABL setting in table TOPSFTR must be set to Y.

Warning messages are provided in the SOC tool to caution the user of conflicting interactions. For example, if a given SOC option is changed from IDLE to ON, then for each TOPS feature controlled by that SOC option, a message is displayed listing the state as specified in TOPSFTR. This enables the user to be aware of what features are enabled when the given SOC option is turned ON. Similarly, if a given SOC option is changed from ON to IDLE, a message is displayed listing all TOPS features that would no longer be active.

Warning messages are also displayed in the TOPSFTR table if there is a conflict in the enable/disable status of a feature in TOPSFTR and the state of the SOC option controlling that feature. For example, when the user attempts to enable a TOPS feature in TOPSFTR by setting FTRENABL to Y, a warning message is displayed if the SOC option controlling that feature is IDLE.

Figure 198 Map display for table TOPSFTR

```
FTRNAME                                    FTRENABL
-------------------------------------------------------------------
UNBUNDLING_BRANDING_VIA_SPID                   Y
UNBUNDLING_REFINEMENT_FOR_SPID                 Y
UNBUNDLING_SPID_IN_MIS_STREAM                  N
UNBUNDLING_TRANSLATIONS_VIA_SPID               N
CALL_REST_FOR_WSALE                            Y
SCREEN_FOR_BILLING_AGREEMENT                   Y
UNBUNDLING_LIDB_QUERY_ROUTING                  Y
```

Part 6: Billing

Part 6: Billing includes the following chapter:

Chapter 9: Unbundling billing

This chapter contains basic information on billing and automatic message accounting (AMA) recording. The TOPS switch supports the following two mutually exclusive billing formats:

- Bellcore AMA Format (BAF) uses the latest Bellcore-defined structure codes, call codes, and module codes. BAF supports fixed definitions per element, but allows variable modules to be appended to a record as needed. Downstream processing for BAF must take into account this variable nature of module codes.
- TOPS Call Detail Recording (TDR) uses a less complex structure for recording TOPS billing data than the Bellcore-defined structure. TDR maintains a fixed definition for each record, which makes downstream processing less complex.

The TOPS portion of the switch can only record in one billing record format for all TOPS calls.

Note 1: For additional details on BAF, refer to *Bellcore Format Automatic Message Accounting Reference Guide*, 297-1001-830.

Note 2: For additional details on TDR, refer to *TOPS Call Detail Recording (TDR) User's Guide*, 297-8403-904.

BAF AMA recording

A module code 338—Service Provider Information—is appended to the AMA record for TOPS calls that have associated SPIDs, and that use the following structure codes:

- 0752 (calls originating on a remote operator number identification trunk or TOPS trunk directly from an end office using the North American dialing plan)
- 0772 (calls that launch an OLNS database query)

This section describes the format of module 338. It also discusses datafill in the parameter table TOPAMAOP (TOPS AMA Options).

Module 338

Module 338 indicates the following information:

- the party identifier for which the module is appended
- the type of service provider
- the SPID that corresponds to the party

Table 52 shows the information, field numbers, number of binary coded decimal (BCD) characters, and a description for module 338.

Table 52 Module 338

Information	Field number	Number of characters	Definition
Module code	88	4	Identifies module 338
Party identifier	730	4	Identifies the party
Service provider type	638	4	Identifies the type of service provider
Service provider ID	639	4	Identifies the SPID of the party in EBCDIC format

Field 730

Refer to Table 53 for information on the party identifier.

Table 53 Field 730—party identifier

BCD character	Value	Meaning
1-3	001	Originating party DN data
	002	Terminating party DN data
	003	Billing party DN data
	009	Requested party DN data
	999	Unknown
4	Hex C	SIGN

Field 638

Refer to Table 54 for information on the service provider type.

Table 54 Field 638—service provider type

BCD character	Value	Meaning
1-3	001	Account owner (AO)
	002	Billing service provider (BSP)
	999	Unknown

Table 54 Field 638—service provider type

BCD character	Value	Meaning
4	Hex C	SIGN

Field 639

Refer to Table SPID for information on the service provider ID.

Table 55 Field 639—service provider ID

BCD character	Value	Meaning
1-4		SPID (EBCDIC field)

Example BAF AMA record with module 338 appended

The following figure shows an operator services call where a calling AO SPID of 1234 is assigned to DN 6295201234.

Figure 199 Example BAF AMA record for calling AO SPID

```
HEX ID:AA  STRUCTURE CODE:40752C  CALL CODE:192C  SENSOR TYPE:036C
SENSOR ID:0619351C  REC OFFICE TYPE:036C  REC OFFICE ID:0619351C
DATE:70522C  TIMING IND:00000C  STUDY IND:0200000C  SERVICE OBSERVED:0C
ORIG NPA:629C  ORIG NUMBER:5201234C  CONNECT TIME:1345508C
ELAPSED TIME:000002441C  OPERATOR IDS:1060922009999C  ACC OPERATOR WORK
TIME:00190C  SERVICE FEATURE:001C STATION SIGNALING IND:2C
SCREENING CODE:000C  CALLED NUMBER INPUT:2C  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:00369C  TERM NUMBER:2589999C
COMPLETION IND:001C  RATE IND:1C  OSS CALL COMPLETION CONDITIONS:1111110C
MODULE CODE:338C PARTY IDENTIFIER:001C  SERVICE PROVIDER TYPE:001C
SERVICE PROVIDER ID:F1F2F3F4  MODULE CODE:000C
```

Recording SPIDs on the BAF AMA record

When a SPID is assigned to a call, the SPID is recorded in module 338. If no SPID is assigned, module 338 is not appended to the AMA record.

When the service changes from DA to TA, a DA AMA record is generated, which contains module 338 with the requested AO SPID. Then, internally, the requested AO SPID becomes the called AO SPID. So when the TA AMA record is generated, it contains module 338 with the called AO SPID.

Related BAF AMA datafill

This section describes the datafill for table TOPAMAOP.

Note: For details on how to datafill all the tables for unbundling, refer to Chapter 7: “Unbundling data schema.”

Table TOPAMAOP

Table TOPAMAOP contains parameters specific to TOPS AMA recording. The following two parameters control the recording of SPIDs:

- RECORD_AO_SPID_INFO indicates which type of account owner SPIDs should be recorded on AMA module 338.
- RECORD_BSP_SPID_INFO indicates which type of billing service provider SPIDs should be recorded on AMA module 338.

The values for either parameter are as follows:

- CLG (calling)
- CLD (called)
- BLG (billing)
- REQ (requested)
- ALL (all values)
- NONE (no values)

ALL is the default value. The following figure shows example datafill.

Figure 200 MAP display example for table TOPAMAOP

```
AMAOPT                  OPTINFO
-------------------------------------------------------------------
RECORD_AO_SPID_INFO     ALL
RECORD_BSP_SPID_INFO    CLG CLD $
```

Module 052

When screening for billing agreements is performed, calls will be blocked if there is no billing agreement. Module Code 52 is the alternate billing services module and is appended to the billing record for these calls.

For BNS queries, the following values are set:

- LIDB response - ACCEPT
- Operator services system action (OSS Action) - Provided restricted billing treatment

Note: Figure 201 shows a MAP example from a BNS query.

For CCV queries, the following values are set:

- LIDB response - PIN MATCH
- Operator services system action (OSS Action) - Provided restricted billing treatment

Figure 201 MAP display example for module 052

```
HEX ID:AA  STRUCTURE CODE:40752C  CALL CODE:192C  SENSOR TYPE:036C
SENSOR ID:0619351C  REC OFFICE TYPE:036C  REC OFFICE ID:0619351C
DATE:91210C  TIMING IND:00000C  STUDY IND:0200000C  SERVICE OBSERVED:0C
ORIG NPA:619C ORIG NUMBER:3226969C  CONNECT TIME:1216516C
ELAPSED TIME:00000000C  OPERATOR IDS:0009999009999C
ACC OPERATOR WORK TIME:00000C  SERVICE FEATURE:000C
STATION SIGNALING IND:2C  SCREENING CODE:000C  CALLING NUMBER INPUT:1C
CALLING NUMBER SOURCE:1C MODULE CODE:051C  OVERSEAS IND:0C
TERM NPA:00202C  TERM NUMBER:2205656C  COMPLETION IND:008C  RATE IND:1
OSS CALL COMPLETION CONDITIONS:3111110C  MODULE CODE:051C
BILLING TYPE ID:1C  FORMAT ID:2C  SIG DIGITS NEXT FIED:010C
BILLABLE DIGITS 1:02016966969C  BILLABLE DIGITS 2:FFFFFFFFFF
RAO NUMBER:201C  CALLING CARD SUBACCOUNT NUMBER:001C
BILLING NUMBER TREATMENT:FF  LIDB RESPONSE:405C  OSS ACTION:5C
MEANS OF INPUT/RESPONSE:113C  SEQUENCE CALL COUNTER:001C  MODULE CODE:338C
PARTY IDENTIFIER:001C  SERVICE PROVIDER TYPE:001C
SERVICE PROVIDER ID:C9D3C5C3  MODULE CODE:338C  PARTY IDENTIFIER:003C
SERVICE PROVIDER TYPE:001C  SERVICE PROVIDER ID:C1C2C3C4  MODULE CODE:338C
PARTY IDENTIFIER:003C  SERVICE PROVIDER TYPE:002C
SERVICE PROVIDER ID:C9D3C5C3  MODULE CODE:000C
```

Modules 053 and 054

Calls that have an associated SPID and carrier can have module codes 338 and 053/054 attached to the same billing record.

Module code 053 - IC/INC Delivery Service

This module indicates whether a call was transferred successfully to an interexchange carrier (IC) or an international carrier. It contains the following data elements:

- carrier code
- carrier connect time
- trunk group

Figure 202 MAP display example for module 053 and 338

```
HEX ID:AA  STRUCTURE CODE:40752C  CALL CODE:190C  SENSOR TYPE:036C
SENSOR ID:0619351C  REC OFFICE TYPE:036C  REC OFFICE ID:0619351C
DATE:91208C  TIMING IND:00000C  STUDY IND:0200000C  SERVICE OBSERVED:0C
ORIG NPA:619C ORIG NUMBER:3226969C  CONNECT TIME:2312583C
ELAPSED TIME:00000019C  OPERATOR IDS:10608000099999C
ACC OPERATOR WORK TIME:00180C  SERVICE FEATURE:000C
STATION SIGNALING IND:2C  SCREENING CODE:000C  CALLING NUMBER INPUT:2C
CALLING NUMBER SOURCE:1C MODULE CODE:053C  IC/INC PREFIX:01112C
CC DATE:91208C  CC TIME:2312526C  ELAPSED CC:000003168C
IC/INC EVENT STATUS:010C  TRUNK GROUP NUMBER:10127C
SOURCE OF IC/INC CODE:2C  IC/INC AGREEMENT TABLE:1C
METHOD OF SIGNALING:010C  MODULE CODE:338C  PARTY IDENTIFIER:001C
SERVICE PROVIDER TYPE:001C  SERVICE PROVIDER ID:C9D3C5C3  MODULE CODE:338C
PARTY IDENTIFIER:003C  SERVICE PROVIDER TYPE:001C
SERVICE PROVIDER ID:C1C2C3C4  MODULE CODE:000C
```

Module code 054 - IC/INC Information

This module indicates that an IC or INC call was not successfully delivered to the carrier. Some reasons noted are:

- IC/INC lacks a point of presence in that area
- all trunks busy
- encountering a treatment in the TOPS office
- call is canceled prior to outpulsing to the carrier

For additional information, please refer to the *Bellcore Format Automatic Message Accounting Reference Guide,* 297-1001-830.

Impact of unbundling BAF AMA

Bellcore has not mandated that SPID information can be appended with a module code 338 for an AMA record having structure code 0001 and call code 006. The TOPS switch generates this type of AMA record for direct-dial (1+) non-coin TOPS calls that route directly to the destination without being presented to an operator or being handled by an automated TOPS system. TOPS does not append SPID information for these AMA records.

TDR AMA recording

The following table summarizes the TDR data fields that apply to Unbundling. This table lists the field names, field type, range, and associated templates. For complete details on TDR, please refer to *TOPS Call Detail Recording (TDR) User's Guide,* 297-8403-904.

Table 56 TDR data fields for SPID data

TDR data field name	AMADUMP/ CALLDUMP field name	Field type	Range	Associated templates
SPID, Billed Party, Account Owner	SPIDBILL	Ebcidic characters	0 to 3	BLV / interrupt template Call completion template Charge adjust template Combined template General assistance template Listing services template
SPID, Called Party, Account Owner	SPIDCLD	Ebcidic characters	0 to 3	BLV / interrupt template Call completion template Charge adjust template Combined template
SPID, Calling Party, Account Owner	SPIDCLG	Ebcidic characters	0 to 3	BLV / interrupt template Call completion template Call transfer to carrier template Charge adjust template Combined template General assistance template Listing services template
LIDB response	LIDBRESP	Decimal	0 to 15	BLV/intercept template Call completion template Charge adjust template Combined template General assistance template Listing services template

Table 56 TDR data fields for SPID data

TDR data field name	AMADUMP/ CALLDUMP field name	Field type	Range	Associated templates
Operator Services System Action	OSSACTION	Decimal	0 to 15	BLV/intercept template Call completion template Charge adjust template Combined template General assistance template Listing services template

TDR and SPID processing

The first three data fields in table Table 56 relate specifically to SPID processing. Figure 203 shows a TDR AMA record using SPIDs.

Figure 203 TDR AMA record with SPIDs

```
RECCODE:F0 TMPLTVER:00 TMPLTID:001 ACTTMPLID:0 RECLENGTH:068
WORDLAYOUTIND:0 ASSOCTDR:1 TOOLGEN:0 SEQNUM:00003
ORIGNUM:00000000006193208655 LRNCLG:0000000000 SPIDCLG: CLEC
OLNSSERVEQP:000 INTRKGRP:0136 CLGSRC:1 INTRKMEM:0001 SERVOBS:0
TRAFSAMP:0 DATEYR:9 DATEMO:01 DATEDAY:29 SERVFEAT:0 TIMEMIN:04
TIMESEC:32 TIME10TH:9 TIMEHR:14 SCRNCODE:000 SUBBILLIND:0 ORIGNUMIND:1
ELAPTIMEMIN:00000 ELAPTIMESEC:30 ELAPTIME10TH:0 OPRWKTIMEMIN:00
OPRWKTIMESEC:00 OPRWKTIME10TH:0 OPER#LAST:9999 ACVAL:0 OPERTEAMLAST:006
ACCODE:00000000000000 BILLTYPID:0 CALLCRDFMT:0 CALLCRDSEQCNT:000
ALTBILLNUM:00000000000000000000000 LIDBRESP:01 CALLCRDSUBACT:00
LRNBILL:2023300000 SPIDBILL:ILC RAO:000 OSSACTION:05 MULTFACT:00001
AMTCHARGE:00000 AMTDEPOSIT:00000 CHARGEIND:0 COINCRDT:0 RATEIND:0
HOTELRM: HOTELNM: ICSRC:00 ICAGREEMNT:0 IC:0000
SNELAPTIMEMIN:01 SNELAPTIMESEC:38 SNELAPTIME10TH:5 SNIDLAST:00079
SNNETID:08655 SN#TRANS:00010 SN#NODES:0000 TERMNUM:00000000002012208655
LRNCLD:2024400000 SPIDCLD: ILEC OSSCCSCECI:1 OSSCCSCSTI:1 OSSCCSCRI:1
OUTTRKGRP:0140 OSSCCSCATI:2 OUTTRKMEM:0001 OSSCCSCNPI:1 TERMNUMIND:1
PERSONIND:0 OVSNPAIND:1 COMPLIND:1 ICCALLEVNTSTAT:00 CCDATEDAY:00
CCDATEMO:00 CCDATEYR:0 CCTIMEHR:00 CCTIMEMIN:00 CCTIMESEC:00
CCTIME10TH:0 CCELAPTIMEMIN:00000 CCELAPTIMESEC:00 CCELAPTIME10TH:0
```

TDR and Module 052

When screening for billing agreements is performed, calls will be blocked if there is no billing agreement. Module Code 52 is the alternate billing services module and is appended to the billing record for these calls. See Table 56 for information on fields LIDB response and Operator services system action.

For TDR billing, fields LIDB response and Operator services system action are updated when this feature blocks the call due to the lack of a billing agreement: See Figure 203 for an example of a BNS query.

For BNS queries, the values are set to:

- LIDB response - BNS ACCEPT (01)
- Operator services system action - PROVIDED RESTRICTED BILLING TREATMENT (05).

For CCV queries

- LIDB response - CCV PIN MATCH (05)
- Operator services system action - PROVIDED RESTRICTED BILLING TREATMENT (05).

Refer to the *TDR User's Guide*, 297-8403-904, for more detailed information on TDR.

Part 7: OA&M

Part 7: Operation, administration, and maintenance includes the following chapters:

Chapter 10: Unbundling tools

This chapter describes how the TOPS unbundling capability uses the following command interpreter (CI) tools:

- XRATE for external rating
- TQMIST for QMS MIS
- ACCSVER for ACCS verification
- QCALL for QMS refinement

XRATE

The XRATE tool is updated to support adding the calling AO SPID to query messages sent by the switch to the RTRS database. The XRATE parameter CLGAOSPID identifies the service provider of the calling party. It is exactly four alphanumeric characters 0 to 9 and A-Z (uppercase).

Default CLGAOSPID value parameter

XRATE parameters are initialized to default values after a cold or reload restart. Entering and leaving the XRATE increment does not change parameter values. The parameters keep any values that are assigned by the user.

The default value for the CLGAOSPID is NIL. When the CLGAOSPID value is set to NIL, CLGAOSPID is not encoded or sent in a query message to the RTRS database.

Selecting a value for the CLGAOSPID parameter

In the XRATE increment, users select values for query parameters by entering a specific command name followed by one or more arguments. Each XRATE parameter has a specific command associated with it and the name of the command has the same name as the parameter. Entering the CLGAOSPID command without a parameter displays the current value of the parameter.

The following figure shows how to set the CLGAOSPID parameter.

Figure 204 Setting and querying the CLGAOSPID parameter

```
XRATE:
>CLGAOSPID ‘1445’
CLGAOSPID = 1445
>CLGAOSPID ‘TRM1’
CLGAOSPID = TRM1
>CLGAOSPID <cr>
CLGAOSPID = TRM1
```

After the user enters a valid value for the CLGAOSPID parameter, the XRATE tool automatically initializes the SPID type, party type and CLGAOSPID name, and sends the query to the external database.

Note: Basic error checking ensures the SPID entered is exactly four characters. If the entry fails, the CLGAOSPID parameter retains its previous value.

The following figure shows the error messages when the SPID entered is not four characters.

Figure 205 SPID entered not exactly four characters

```
XRATE:
>CLGAOSPID ‘ABCDEF’
THE SPECIFIED CLGAOSPID NAME MUST BE EXACTLY 4 CHARACTERS.
>CLGAOSPID <cr>
CLGAOSPID = TRM1
>CLGAOSPID ‘ABC’
THE SPECIFIED CLGAOSPID NAME MUST BE EXACTLY 4 CHARACTERS.
>CLGAOSPID <cr>
CLGAOSPID = TRM1
>CLGAOSPID ‘A.BC’
THE CLGAOSPID PARAMETER NAME SUPPORTS DIGITS 0-9 AND UPPERCASE ALPHAS
A-Z ONLY.
>CLGAOSPID = TRM1
```

Note: The entered SPID does not have to be datafilled in table SPID.

Clearing the CLGAOSPID parameter

The following figure shows how to clear the CLGAOSPID parameter.

Figure 206 Clearing the CLGAOSPID parameter

```
XRATE:
>CLGAOSPID NIL
CLGAOSPID = NIL
THE CLGAOSPID VALUE HAS BEEN CLEARED.
>CLGAOSPID <cr>
CLGAOSPID = NIL
```

Note: When the parameter value is set to NIL, the CLGAOSPID value is not sent in the query.

Requesting Help for the CLGAOSPID parameter

When the user enters the Help CLGAOSPID command, the system displays a brief description of the syntax. The following figure shows an example.

Figure 207 Requesting help for the CLGAOSPID parameter

```
XRATE:
>HELP CLGAOSPID <cr>
Display or update clgaospid information. Alphanumeric
format supporting digits 0-9 and uppercase alphas A-Z only.
Select NIL to clear current CLGAOSPID parameter value.
(eg. clgaospid ‘1234’, clgaospid ‘AB1D’, clgaospid NIL)
Parms: [<clgaospid> STRING]
```

Displaying the CLGAOSPID parameter

When the user enters the SHOW command, the system displays the current value of every XRATE parameter. The SHOW command does not have any arguments. The following figure shows an example.

Figure 208 Displaying the CLGAOSPID parameter

```
XRATE:
>SHOW
PREFIX = NO_PFX
FGDSTAT = N
HANDLING = STATION
BILLPRTY = ORIG
BILLOPT = LINE
CLGAOSPID = TRM1
      •
      •
```

Selecting a predefined query type

Selecting the correct parameter values for an XRATE query can be difficult and time consuming. The XRATE tool command, SELQUERY, creates default data for a specific type of query. The default for CLGAOSPID for predefined queries is NIL. The user may enter a SPID, however to override the default value.

ACCSVER

The ACCSVER tool is used to send queries to the LIDB. The results returned are displayed at the MAP.

The ACCSVER tool has been updated to display the billed AO and billed BSP SPIDs if returned by the LIDB or accessed in table ACCSDB. If one or both SPIDs are not returned, the output of the ACCSVER command indicates this.

The ACCSVER tool outputs two new lines. When the LIDB returns an AO or BSP SPID, the line “AO SPID IS: <XXXX>” or “BSP SPID IS: <XXXX>” is output. The following figure shows example output.

Figure 209 Example ACCSVER output

```
>accsver n 6193201234 2012200000 2012200000

THE RESPONSE FROM THE DATABASE TOOK
0 MINUTES, 1 SECONDS, 742 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: 1234
BSP SPID IS: ABCD
```

QCALL

The QCALL directory details the refinements and call assignment information for one particular call having a unique set of characteristics. The QCALL tool is updated with the SPID command. The SPID command sets or displays the value of the SPID for a hypothetical call queue assignment. Entering the SPID command without a parameter displays the current value. The following figure shows example output.

Figure 210 Example QCALL output

```
>show
The current values of the QCALL variables are:
AUTO     = Unassigned
BLST     = Unassigned
CAR      = Unassigned
CLAS     = Unassigned
CLDDIG   = Unassigned
CLDNAM   = Unassigned
CO       = Unassigned
CT4Q     = Unassigned
EXPLAIN  = ON
LANG     = Unassigned
LASTCT4Q = Unassigned
ORDER    = PREOPR
ORIGCLG  = Unassigned
ORIGTRNK = Unassigned
PFXT     = Unassigned
REST     = Unassigned
SPID     = Unassigned
TIME     = Unassigned
USE      = ACTIVE
>spid
SPID = Unassigned
>spid ABCD
THE VALUE HAS BEEN ASSIGNED:  SPID = ABCD
>spid
SPID = ABCD
>spid '1234'
THE VALUE HAS BEEN ASSIGNED:  SPID = 1234
>spid
SPID = 1234
>spid ABCDE
SPID MUST BE FOUR CHARS
>>>>> THIS VALUE CAN NOT BE USED <<<<<
>spid AB12
SPID ENTERED IS NOT IN TABLE SPID
>>>>> THIS VALUE CAN NOT BE USED <<<<<
>spid 'AB.3'
SPID ENTERED IS NOT IN TABLE SPID
```

Note: The QVIEW directory details the refinements and call assignment information for a whole set of calls with all of their possible characteristics. The existing FROMTABLE and TOTABLE commands for the QVIEW tool support table CT4QSPID.

TQMIST

The TQMIST tool allows QMS MIS messaging to be captured in and displayed from a QMS MIS message buffer on the DMS switch (with or without an attached MIS system).

Call Queue Event message example

Unbundling adds the calling AO Service Provider ID, Access Indicator, and Carrier Access Code to Call Queue Event messages. The following table shows an example of the formatted MAP display.

Table 57 Example Call Queue Event message

Field	Hex value	Semantics
Tag	7F00	CallQueueEventDID
Length	1E	Octet count of 30
Application	00	Application 0 (TOPS)
Sequence Number	0D	Sequence Number 13
CW and Queuing Event	00	CWOFF, Call Presented to Operator
Switch I.D.	FE	Stand-alone switch
Originating Trunk CLLI	0197	ADNUM #197
Originating Trunk Group Member I.D.	0001	EXTRKNM #0001
Call Type For Queueing	0007	CT4Q 7
Call Queue	06	Call Queue 6
Time In Queue/Predicted Wait Time	0B81	Call was in queue for 294.5 seconds
Current Call Queue Size	0000	0 calls remain in Call Queue 6
Position Number	0221	Position 545
Call I.D.	00540002	Call ID # 00540002
Tenths Of Seconds	6204	
Service Provider ID	**31323334**	**Service Provider ID is ‘1234’ (ASCII)**
Access Indicator	**00**	**Operating Company**
Carrier Access Code	**FFFF**	**Unpopulated**

Position Event message example

Unbundling adds the calling AO Service Provider ID, Access Indicator, and CT4Q fields to Position Event messages. The following table shows an example of the formatted MAP display.

Table 58 Example Position Event message

Field	Hex value	Semantics
Tag	7F10	PositionEventDID
Length	32	Octet count of 50
Application	00	Application 0 (TOPS)
Sequence Number	0E	Sequence Number 14
Reset Time Flag	01	Reset Time
Tenths Of Seconds	6205	
Position Number	0221	Position 545
Team Number	06	Team (Traffic Office) 6
Position State	09	Occupied, Opr. logged in, Not POS BUSY
Position Type	01	Operator, Serving Call Queue(s)
Profile ID	05	Call Queue Profile 5
Service Profile ID	0A	Service Profile 10
Operator Number	02BD	Operator Number 701
Call Queue	FF	Unpopulated
Service	FF	Service 1
Queue Peg Indicators	20	Peg IDLT (Idle Time)
Service Peg Indicators	00	No peg
Loop Num/Call Disp	00	No loop accessed/No Disposition peg
Class Charge	FF	Unpopulated
Special Number Type	FF	Unpopulated
Call I.D.	FFFFFFFF	Unpopulated
Station Class	FF	Unpopulated
Prefix Type	FF	Unpopulated
Called Number Type	FF	Unpopulated
Call Origination Type	FF	Unpopulated
Restricted Billing Idx	FF	Unpopulated

Table 58 Example Position Event message

Field	**Hex value**	**Semantics**
Carrier Access Code	FFFF	Unpopulated
Auto. System Info.	FF	Unpopulated
Language	FF	Unpopulated
Miscellaneous Info.	00	No Miscellaneous Info.
FM Call Type	FFFF	Unpopulated
Originating Trunk CLLI	FFFF	Unpopulated
Originating Member ID	FFFF	Unpopulated
Switch ID	FF	Unpopulated
OGT Key	FF	Unpopulated
Service Provider ID	**FFFFFFFF**	**Unpopulated**
Access Indicator	**FF**	**Unpopulated**
Call Type for Queueing	**FFFF**	**Unpopulated**

Chapter 11: Unbundling logs

This chapter provides information on logs for Unbundling. Each log is given a brief description, an example log report, an action, and a list of any associated OM registers.

TOPS 611

This log is generated when the following conditions are met:

- SOC UNBN0101 is ON
- parameter CALL_REST_FOR_WSALE in table TOPSFTR is enabled
- the call has been assigned a restricted billing index through the call restrictions for wholesaling process
- the index is not found in table RESTBIL/DARSTBIL.

Figure 211 Example log report for TOPS 611

```
**TOPS611 NOV19 14:16:39 0001 INFO WHOLESALE RESTRICTION INFO
CLG NO = 620 261 0003 INDEX = 10
ORIG TRUNK GRP = T908TI00
DATA = RESTRICTED INDEX NOT FOUND IN TABLE RESTBIL

**TOPS611 NOV19 14:16:39 0001 INFO WHOLESALE RESTRICTION INFO
CLG NO = 620 261 0003 INDEX = 12
ORIG TRUNK GRP = T908TI00
DATA = RESTRICTED INDEX NOT FOUND IN TABLE DARSTBIL
```

Action

This is an informational log. This log indicates call processing has detected a restricted billing index assigned to call that is not in tables RESTBIL and DARSTBIL. This log is associated with the call restrictions for wholesaling option.

OM register

None

TOPS 612

This log is enabled by setting parameter GEN_NO_BILL_AGRMT_LOG in table TOPSPARM to Y. Once the parameter is set, a log is generated when SOC UNBN0101 is ON, parameter SCREEN_FOR_BILLING_AGREEMENT in table TOPSFTR is enabled, and one of the following conditions is met:

- no billing agreement between the calling AO SPID or CIC of the originating party and the billed-to SPID
- no Billed AO or BSP SPID is returned from the LIDB
- no Calling AO SPID and parameter OPR_SVC_AGRMTS in table TOPSPARM is set to N BLOCK

Figure 212 Example log report for TOPS 612

```
TOPS612 JAN01 00:00:01 4400 INFO No Billing Agreement
   Calling Number:  6202611234
   Calling AO SPID: ILEC
   Called Number:   6202811111
   Carrier:         NO CIC
   Billed Number:   6133972000
   Billed AO SPID:  LECA
   Billed BSP SPID: LECA
   Reason:          No Billing Agreement
```

Action

There are three possible reasons for generating this log and each has a separate action. The reasons and their actions are listed below.

- “No Billing Agreement” - determine whether a billing agreement should exist between the Calling AO SPID/Carrier and the Billed AO/BSP SPID. If so, then appropriately datafill tables CCVAGRMT and BNSAGRMT.
- “No Billed AO SPID or BSP SPID Returned” - determine whether a SPID should have been returned. If so, then ensure the LIDB datafill is correct. If no SPID should have been returned, then ignore the log.
- “No Calling AO SPID or OPR SVC Agreements” - ensure that parameter OPR_SVC_AGRMTS in table TOPSPARM is datafilled with valid billing agreement groups.

  Note: If the calling AO SPID cannot be determined, the system will default to the operator services agreement.

OM register

None

List of terms

AABS

Automated Alternate Billing Service

account owner (AO)

The provider of local service and dial tone to a subscriber. *See also* service provider identifier (SPID).

ACCS

Automated Credit Card System

ACTS

Automated Coin Toll Service

agent

A concept representing the external entities that connect with the switch. Examples include subscribers, conference port circuits, operator voice and data, and service node (SN) voice and data.

AMA

automatic message accounting

ANI

automatic number identification

ANIF

automatic number identification failure

AO

account owner

Automated Alternate Billing Service (AABS)

A DMS TOPS feature that allows automated call completion of a calling card, collect, and third-number billed calls. AABS is the only existing TOPS automated system that can be datafilled in an OSSAIN control list.

Automated Coin Toll Service (ACTS)

A feature package that allows the operating company to handle long distance (1+) coin calls from a coin station without operator assistance.

Automated Credit Card System (ACCS)

A feature that allows the subscriber to dial a call and bill it to a calling card number provided by the operating company.

automatic message accounting (AMA)

An automatic recording system that documents all the necessary billing data of subscriber-dialed long distance calls.

automatic number identification (ANI)

A system whereby a calling number is identified automatically and transmitted to the automatic message accounting (AMA) office equipment for billing. *See also* Operator Number Identification (ONI).

automatic number identification failure (ANIF)

A service that allows the operator to enter the calling number manually when ANI fails.

BAF

Bellcore AMA format

Bellcore AMA format (BAF)

The standard format for AMA data used by Bell operating companies. The format consists of a structure code that identifies the format of the data fields in the call record, a call code that identifies the type of call recorded in the call record, other data fields that define the attributes of the call, and if needed, one or more module codes that identify the format of any additional data appended to the call record.

billed number screening (BNS)

Validation of a collect or third number for billing acceptance.

billing service provider (BSP)

The provider that collects and generates bills to the subscriber.

BNS

billed number screening

branding

A feature that allows operating companies the option to connect customer-definable announcements to directory assistance (DA) or toll calls before placing them in a queue or connecting them to an available operator or automated operator system.

BSP

billing service provider

call code

A call type descriptor used in AMA recording. The call code defines the type of call or statistic being recorded.

call context block

A generic block of data that contains additional information about a call or the parties involved in a call. It is passed by a service node (SN) or operator terminal to the DMS switch.

call type for queuing (CT4Q)

In TOPS and OSSAIN, a method of characterizing an incoming call based on certain criteria, so that the call can be assigned a queue to receive service.

calling card validation (CCV)

Validation of a calling or credit card for billing acceptance.

CCS7

common channel signaling 7

CCV

calling card validation

central office (CO)

A central office arranged for terminating subscriber lines and provided with switching equipment trunks for establishing connections to and from other switching offices.

CLEC

competitive local exchange carrier

CLLI

common language location identifier

CM

computing module

CO

central office

common channel signaling 7 (CCS7)

A digital message-based network signaling standard, defined by the CCITT, that separates call signaling information from voice channels so that interoffice signaling is exchanged over a separate signaling link.

common language location identifier (CLLI)

A standard identification method for trunk groups in the form aaaa bb xx yyy, where:

- aaaa is the city code
- bb is the province or state code
- xx is the trunk group identifier
- yyyy is the trunk number

competitive local exchange carrier (CLEC)

A new entrant into a market where there is already an existing LEC that provides local telephone service. *See also* incumbent local exchange carrier (ILEC).

computing module (CM)

The processor and memory of the dual-plane combined core used by the DMS SuperNode. Each CM consists of a pair of CPUs with associated memory that operate in a synchronous matched mode on two separate planes. Only one plane is active; it maintains overall control of the system while the other plane is on standby.

CT4Q

call type for queuing

DAS

directory assistance system

Digital Multiplex System (DMS)

A central office (CO) switching system in which all external signals are converted to digital data and stored in assigned time slots. Switching is performed by reassigning the original time slots.

digital recorded announcement machine (DRAM)

A peripheral module in which voice messages are stored in digital form, providing access to up to 30 different voice announcements.

directory assistance system (DAS)

A system that provides directory assistance information and call intercept service.

directory number (DN)

The full complement of digits required to designate a subscriber's station within one numbering plan area (NPA)—usually a three-digit central office (CO) code followed by a four-digit station number.

DMS

Digital Multiplex System

DN

directory number

DRAM

digital recorded announcement machine

DTMF

dual-tone multifrequency

dual-tone multifrequency (DTMF) signaling

A signaling method that uses set combinations of two specific voice-band frequencies. One of these voice-band frequencies is selected from a group of four low frequencies, and the other is selected from a group of three or four relatively high frequencies.

EA

equal access

EAEO

equal access end office

EBAF

expanded Bellcore AMA format

end office (EO)

A switching office (SO) arranged for terminating subscriber lines and provided with trunks for establishing connections to and from other SOs.

EO

end office

equal access (EA)

An operating company tariff offering for local access and transport area (LATA) access equal in type, quality, and price for all connected interLATA and international carriers.

equal access end office (EAEO)

A central office that provides access to several long distance carriers.

expanded Bellcore AMA format (EBAF)

The ability to append additional data in modular form to Bellcore AMA format (BAF) call records. Module codes are used to identify the format for the data appended to the BAF call record. One or more modules can be appended to a BAF record.

HMI

human-machine interface

human-machine interface (HMI)

The series of commands and responses used by operating company personnel to communicate with the DMS-100 Family switches. Communication takes place through the MAP terminal and other input/output devices.

incumbent local exchange carrier (ILEC)

The LEC currently providing local telephone service. *See also* competitive local exchange carrier (CLEC).

interLATA

Telecommunication services, revenues, and functions that originate in one local access and transport area (LATA) and terminate either outside that LATA or inside another LATA.

interLATA carrier

Any carrier that provides telecommunication services between a point inside a local access and transport area (LATA) and a point either outside that LATA or inside another LATA.

intraLATA

Telecommunication services, revenues, and functions that originate and terminate within the same local access and transport area (LATA).

intraLATA carrier

An operating company or carrier that has regulatory approval to provide intraLATA services.

LIDB

line information database

line information database (LIDB)

A database used to query alternate billed intraLATA calls. The LIDB relays to the DMS switch information regarding billing number verification for a given dialing number (for example, the collect bill-to-third calls that are always refused and the collect bill-to-third calls that are always accepted).

LNP

local number portability

local exchange carrier (LEC)

The company that provides local telephone service. LECs include independent local telephone companies. *See also* ILEC.

local number portability (LNP)

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, or *ported*, to a different end office. Other subscribers can connect to the ported DN without changing their dialing procedure.

maintenance and administration position (MAP)

A group of components that provides a user interface between operating company personnel and the DMS-100 Family of switches. The interface consists of a video display unit and keyboard, a voice communications module, test facilities, and special furniture.

management information system (MIS) node

An external third-party database that collects and displays QMS statistics.

MAP

maintenance and administration position

MIS

management information system

module code

An identifier that defines a set of additional data fields to be appended o the base AMA record.

Northern Telecom publication (NTP)

A document that contains descriptive information about Northern Telecom (Nortel) hardware or software modules and performance-oriented practice for installing, testing, or maintaining the system. The document is often supplied as part of the standard documentation package provided to an operating company.

NPA

numbering plan area

NTP

Northern Telecom publication

numbering plan area (NPA)

Any of the designated geographical divisions of the United States, Canada, Bermuda, Caribbean, Northwestern Mexico within which no two telephones have the same seven-digit number. Each NPA is assigned a unique three-digit area code. The NPA of the directory number 613-621-1234 is 613.

OAP

Open Automated Protocol

OLNS

originating line number screening

OM

operational measurements

ONI

operator number identification

Open Automated Protocol (OAP)

The protocol required to communicate data between a TOPS switch and an external OSSAIN service node (SN).

Open Position Protocol (OPP)

The protocol required to communicate data between a TOPS switch and an OPP-compatible terminal, such as the TOPS IWS.

operational measurements (OM)

The hardware and software resource of the DMS-100 Family switches that control the collection and display of measurements taken on an operating system. The OM subsystem organizes the measurement data and manages its transfer to displays and records. The OM data is used for maintenance, traffic, accounting, and provisioning decisions.

operator number identification

A feature that brings an operator into the circuit to check the calling number when a subscriber has direct-dialed a long distance call that is to be charged on an itemized bill. *See also* automatic number identification (ANI).

operator service center (OSC)

The physical location of the TOPS operator positions.

Operator Services System Advanced Intelligent Network (OSSAIN)

A generic switch-to-service node (SN) interface that allows SNs to control switch functionality associated with operator services. There are two basic OSSAIN network configurations: standalone OSSAIN and centralized OSSAIN (OSAC).

OPP

Open Position Protocol

originating line number screening (OLNS)

A query to a database that contains centralized information on originating numbers.

OSC

operator service center

OSSAIN

Operator Services System Advanced Intelligent Network

PCL

product computing module load

peripheral module (PM)

A generic term referring to all hardware modules in the DMS-100 Family switches that provide interfaces between external line, trunk, or service facilities. A PM contains peripheral processors that perform routines, thus relieving the load on the CPU.

PM

peripheral module

product computing module load (PCL)

The software load delivered to the operating company. A PCL contains both base and optional functionalities.

QCALL utility

A utility that details the refinement and call assignment information of a single call having a unique set of characteristics. The QCALL command is accessed from the command interpreter at the MAP.

QMS

Queue Management System

QMS CAM

Queue Management System Call and Agent Manager

Queue Management System (QMS)

A software package that provides enhanced capabilities for the management of call and agent queues.

Queue Management System Call and Agent Manager (QMS CAM)

The call queue management system for OSSAIN processing that has its own set of call queues and call queue profiles.

QVIEW utility

A utility that details the refinement and call assignment information of a set of calls. The QVIEW command is accessed from the command interpreter at the MAP.

right-to-use (RTU)

The permission granted to an operating company that allows the operating company to change the state of a software option and use the option. The operating company must receive a password for the option from Nortel before RTU is granted.

RTU

right-to-use

SCP

service control point

service control point (SCP)

A node in a common channel signaling 7 (CCS7) network that supports application databases. The function of an SCP is to accept a query for information, retrieve the requested information from one of its application databases, and send a response message to the originator of the request.

service node (SN)

An external node that interacts with the switch to provide OSSAIN services.

service provider identifier (SPID)

A code that uniquely identifies the service provider. A SPID can apply to the calling number, called number, billed number, or requested number. The account owner (AO) SPID identifies the provider of local service and dial tone to the subscriber. The billing service provider (BSP) SPID identifies the provider that collects and generates the bill to the subscriber.

service switching point (SSP)

A common channel signaling 7 (CCS7) node that interacts with the service control point (SCP) to implement special service code features.

serving numbering plan area (SNPA)

The first 16 primary number plan areas (NPA).

signaling transfer point (STP)

A node in a common channel signaling 7(CCS7) network that routes messages between nodes. Signaling transfer points transfer messages between incoming and outgoing signaling links but, with the exception of network management information, do not originate or terminate messages. Signaling transfer points are deployed in pairs. If one STP fails, the mate takes over, ensuring that service continues without interruption.

SN

service node

SNPA

serving numbering plan area

SO

switching office

SOC

software optionality control

software optionality control (SOC)

A tool for controlling and monitoring the options in a product computing module load (PCL).

SPID

service provider identifier

SSP

service switching point

STP

signaling transfer point

structure code

An identifier that defines and provides structure to a set of data fields in an AMA record.

switching office (SO)

A node in the common channel signaling 7 (CCS7) network that originates and terminates signaling messages related to the set up and take down of associated ISDN user part (ISUP) trunks.

T1

The standard 24-channel 1.544-Mb/s pulse code modulation (PCM) system used in North America. This digital carrier carries a signal whose designation is a DS-1 link.

TA

toll and assist

TCAP

transaction capabilities application part

toll and assist (TA)

A facility that allows an operator to help a subscriber complete a dialed toll call.

TOPS

Traffic Operator Position System

TOPS IWS

Traffic Operator Position System Intelligent Workstation System

Traffic Operator Position System (TOPS)

A call processing system made up of a number of operator positions. Each operator position consists of a visual display unit (VDU), a controller, a keyboard, and a headset.

Traffic Operator Position System Intelligent Workstation System (TOPS IWS)

An integrated operator assistance, intercept, and DA position, which uses a personal computer with customized software, keyboard, and interface.

transaction capabilities application part (TCAP)

A service that provides a common protocol for remote operations across the Common Channel Signaling 7 (CCS7) network. The protocol consists of message formatting, content rules, and exchange procedures. TCAP provides the ability for the service switching point (SSP) to communicate with a service control point (SCP).

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TOPS Unbundling

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