

297-8403-910

DMS-100 Family

North American DMS-100

TOPS Translations Guide Volume 1 of 5

Group OSB

TOPS15 and up Standard 01.01 May 2001

DMS-100 Family

North American DMS-100

TOPS Translations Guide Volume 1 of 5

Group OSB

Publication number: 297-8403-910

Product release: TOPS15 and up

Document release: Standard 01.01

Date: May 2001

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Printed in the United States of America

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About this document

When to use this document

This document describes translations for the TOPS office.

How to check the version and issue of this document

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

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

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

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

References in this document

The following documents are referred to in this document:

- Advanced Business Services Log Report Reference Manual
- Advanced Business Translations Guide
- Advanced Intelligent Network 0.1 Complete Maintenance Guide, 297-5161-510
- Advanced Intelligent Network 0.1 Cookbook, 297-5161-352
- Advanced Intelligent Network 0.1 Feature Interactions, 297-5161-107
- Advanced Intelligent Network 0.1 Response Translation Guide, 297-5161-353
- Advanced Intelligent Network Essentials Service Implementation Guide

- Advanced Intelligent Network Service Enablers Service Implementation Guide
- Advanced Intelligent Network Service Switching Point (SSP) Provisioning Cookbook
- Basic Administration Procedures
- Basic Translations Tools Guide, 297-1001-360
- BCS35 ISDN Primary Rate UNI Specifications (NIS A211-1)
- Bellcore Format Automatic Message Accounting Reference Guide, 297-1001-830
- Bellcore Technical Reference, TR-TSY-000350
- CCS/CCIS6 and CCITT6 System Description
- CCS7 Maintenance Reference Manual
- Commands Reference Manual, 297-2663-819
- Common Channel Signaling 7 Maintenance Reference Manual, 297-1001-531
- Core Translations Guide
- Cost of Ownership Reduction Feature Specification
- Customer Data Change (CDC) Operating Company Guide, 297-2061-312
- Customer Data Schema Reference Manual, 297-8021-351
- Dialable Wideband Service Services Guide, 297-2663-110
- Digital Recorded Announcement Machine DRAM and EDRAM Guide, 297-1001-527
- Digital Recorded Announcement Machine Maintenance Reference Manual, 297-1001-527
- DMS-100 Alarm Clearing Procedures, 297-8021-543
- DMS-100 Family Commands Reference Manual, 297-1001-822
- DMS-100 Family Maintenance and Operations Manual, 297-8991-500
- DMS-100 Provisioning Manual, 297-1001-450
- Equal Access Maintenance Manual
- Feature Description Manual
- GSF Metering Guide, 297-8601-020
- Hardware Description Manual
- Integrated Business Network Services Meridian M5009 Basic (9 Button) Business Set Description, Installation and Maintenance

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- Integrated Business Network Services Meridian M5112 Handsfree (12 Button) Business Set Description, Installation, Operation and Maintenance
 - ISDN SERVORD Reference Manual, 297-2041-310
 - Location Routing Number-Local Number Portability Service Implementation Guide
 - Log Reports Reference Manual
 - Meridian Digital Centrex Simplified Message Desk Interface Set-up and Operation, 297-2051-104
 - Meridian Digital Centrex Station Message Detail Recording Reference Guide, 297-2071-119
 - Office Parameters Reference Manual
 - One Night Process and Hybrid Software Delivery Procedures, 297-1001-303
 - Operational Measurements Reference Manual
 - Recovery Procedures
 - SERVORD Reference Manual
 - TOPS MP Force Management Guide
 - TOPS MP Operator Guide
 - TOPS MPX Force Management Guide
 - TOPS TAMI User Guide
 - TOPS VSN Installation Manual

As of NA011 (LEC and LET) and EUR010 (EUR) releases, any references to the data schema section of the Translations Guide will be mapped to the Customer Data Schema Reference Manual.

The Advanced Business Services suite does not include an Advanced Maintenance Guide. Consult one or more of the following documents:

- Bellcore Format Automatic Message Accounting Maintenance Guide, 297-1001-570
- Input/Output Devices Maintenance Guide, 297-1001-590
- Lines Maintenance Guide, 297-1001-594
- Networks Maintenance Guide, 297-1001-591
- Peripheral Modules Maintenance Guide, 297-1001-592
- Trunks Maintenance Guide, 297-1001-595

What precautionary messages mean

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

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

Examples of the precautionary messages follow.

ATTENTION - Information needed to perform a task

ATTENTION

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

DANGER - Possibility of personal injury



DANGER

Risk of electrocution

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

WARNING - Possibility of equipment damage



WARNING

Damage to the backplane connector pins

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

CAUTION - Possibility of service interruption or degradation

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

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

How commands, parameters, and responses are represented

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

Input prompt (>)

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

```
>BSY
```

Commands and fixed parameters

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

```
>BSY CTRL
```

Variables

Variables are shown in lowercase letters:

```
>BSY CTRL ctrl_no
```

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

Responses

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

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

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

1 Reference information

This chapter provides cross reference and informational lists (package/feature to functionality and history).

Revision history

This section provides a history of revision changes.

TOPS15 changes

The changes are as follows:

- TOPS and Succession Interworking, OSB00101 (new)
- TOPS SDM Interworking, OSB00101 (new)
- EOL for TOPS15, OSB00101 (new)

The general limitations and restrictions are as follows:

- OC-IP and MIS-IP features are available by special order only and are not generally available. Availability is restricted to the LET and LLT PCLs. IP features are not available in the global market.
- Senior Operator is not supported as of TOPS15.
- Table TOPSTERM is not supported as of TOPS15.
- Tone repeat is not supported as of TOPS15.
- Request CAMA is not supported as of TOPS15.
- The TMS and UTM loads do not exist in the TOPS15 release because the platforms were Manufacture Discontinued (MD) in TOPS04. Only the ETM and EUT loads (ETMS) are supported in TOPS14. Also, the XCH loads will no longer be available. The EXC loads will replace the XCH loads and will need the EDCH hardware.
- Delayed Outpulsing is not supported as of TOPS14.
- Inward Validation is not supported as of TOPS14.
- AMR5 Signalling is not supported as of TOPS14.
- TOPS III and IV terminals are not supported as of TOPS13.

- Up to 62 operator centralization (OC) nodes can be supported.
- An enhanced TOPS message switch (ETMS) dedicated for operator centralization functionality is not capable of also supporting positions or an Enhanced D-Channel Handler (EDCH); an additional ETMS would be needed for position or EDCH support.
- TOPS ACD is no longer supported as of TOPS12.
- This release is supported on the following DMS processor platforms:
 - BRISC (non-Succession PCLs only, Series 60, 70, and 70EM)
Succession cannot exist with BRISC
TOPS15 is not supported on the NT40
 - XA-Core (Legacy PCL only)

TOPS14 changes

The changes are as follows:

- TOPS Carrier RLT, OSEA0007 (changed)
 - 59022000 - Release Link Trunking (Variant 2) Enhancements (new)
- TOPS Carrier RLT-2, OSEA0009 (changed)
 - 59022000 - Release Link Trunking (Variant 2) Enhancements (new)
- EOL for TOPS14, OSB00001 (new)
- External RTRS Interface, ENSV0103 (changed)
 - 59020353 - TOPS External Rating ADACC Enhancements (new)
- GR317/GR394 ISUP to/from TOPS, OSEA0005 (changed)
 - 50130667 - Table AMASRVID Overrides CC194 RLT (new)
- OSNC Enhancements, OSEA0013 (new)

This feature is patched back to TOPS13 as part of OSNC.
- Treatment for Intercept Failure, OSB00001 (new)
- DACC Enhancements I, OSDA0001 (new)
- GDP Support Location Digit Type, OSB00001 (new)
- New Access Method for SN, OSB00001 (new)
- TOPS SPM Interworking, OSB00001 (new)
- OSSAIN 12 Enhancements, OSAN0007 (changed)
 - 50319574 - Send SN the Billing SPID in the Class Charge (new)
- Table OFCENG parameter TQMS_MIS_MPC_BUFFS is deleted due to XA Core replacement of the CM (Computing Module) and SLM (System Load Module) in the Supernode cabinet

The general limitations and restrictions are as follows:

- TOPS-IC and OG trunks over SPM are fully supported in LET14/TOPS14. To take advantage of full functionality both on the IC/OG sides, the LET14 and SPM14 loads are required.

For NA, the incoming trunks include TOPS-IC (Signalling types EAOSS/MF, COMFGD/MF, EAFGD/MF, OSS/MF, and BELL/MF). Also supported on the incoming side are IT and ATC trunk types with MF, TOPS-ISUP, and OSNC/SS7 signalling variants.

On the outgoing side from a TOPS perspective, IT and ATC trunk types are fully supported with MF, TOPS-ISUP, and OSNC/SS7 signalling variants

- Beginning with TOPS03, the ability to connect a non-featured POTS line directly into the Operator Services call processing environment through translations, without loop around trunks, is no longer supported. This will impact the translations and provisioning of DTCs in many TOPS 100/200 combination offices.
- Beginning with TOPS03, the ability to connect IBN BTUP (British Telecom ISUP) signalling trunks directly for Operator Services call processing is no longer supported.
- In TOPS14, XA-Core release 2 is supported with a 3 + 1 multi-processor configuration. Release 1 is not supported (single processor element).
- In the TOPS04 through TOPS08 release, IDDD 15-digit dialing is available, but standard DA protocol will not support it. In the TOPS09 release and up, IDDD 15-digit dialing is available, and standard DA protocol will support it
- The TMS and UTM loads do not exist in this release because the platforms were Manufacture Discontinued (MD) in TOPS04. Only the ETM and EUT loads (ETMS) are supported in this release. Also, the XCH loads will no longer be available. The EXC loads will replace the XCH loads and will need the EDCH hardware.
- Delayed Outpulsing is not supported as of TOPS14.
- Inward Validation is not supported as of TOPS14.
- AMR5 Signalling is not supported as of TOPS14.
- TOPS III and IV terminals are not supported as of TOPS13.
- Up to 62 operator centralization (OC) nodes can be supported.
- An enhanced TOPS message switch (ETMS) dedicated for operator centralization functionality is not capable of also supporting positions or an Enhanced D-Channel Handler (EDCH); an additional ETMS would be needed for position or EDCH support.
- TOPS ACD is no longer supported as of TOPS12.

- This release is supported on the following DMS processor platforms:
 - BRISC (Legacy or non-Succession PCLs only, Series 60, 70, and 70EM)
Succession cannot exist with BRISC
TOPS14 is not supported on the NT40
 - XA-Core (Legacy PCLs only)
- EBAF Phase 0 and Phase 1 are not available.

TOPS13 changes

The changes are as follows:

- FMCRT Elimination, ADVQ0001 (new)
- Code Removal of TOPS IV, OSB00001 (new)
- Billing Enhancements for EA Calls, OSB00001 (new)
- Operator Services Network Capability, ASEA0013 (new)
- UNBN Screening for Billing Agreement, UNBN0007 (new)
- OSSAIN 12 Enhancements, OSAN0007 (changed)
 - 59011611 - OSSAIN Support for DA Automation (new)

The general limitations and restrictions are as follows:

- Beginning with TOPS03, the ability to connect a non-featured POTS line directly into the Operator Services call processing environment through translations, without loop around trunks, is no longer supported. This will impact the translations and provisioning of DTCs in many TOPS 100/200 combination offices.
- Beginning with TOPS03, the ability to connect IBN BTUP (British Telecom ISUP) signalling trunks directly for Operator Services call processing is no longer supported.
- In TOPS13, XA-Core release is supported. Release 2 is not supported.
- In the TOPS04 through TOPS08 release, IDDD 15-digit dialing is available, but standard DA protocol will not support it. In the TOPS09 release and up, IDDD 15-digit dialing is available, and standard DA protocol will support it
- The TMS and UTM loads do not exist in this release because the platforms were Manufacture Discontinued (MD) in TOPS04. Only the ETM and EUT loads (ETMS) are supported in this release. Also, the XCH loads will no longer be available. The EXC loads will replace the XCH loads and will need the EDCH hardware.
- TOPS III and IV terminals are not supported as of TOPS13.

- Up to 62 operator centralization (OC) nodes can be supported.
- An enhanced TOPS message switch (ETMS) dedicated for operator centralization functionality is not capable of also supporting positions or an Enhanced D-Channel Handler (EDCH); an additional ETMS would be needed for position or EDCH support.
- TOPS ACD is no longer supported as of TOPS12.
- This release is supported on the following DMS processor platforms:
 - BRISC (Series 60, 70, and 70EM)
TOPS13 is not supported on the NT40.
 - XA-Core (LET PCLs only) - Release 1 is supported. Release 2 is not supported.
- EBAF Phase 0 and Phase 1 are not available.

TOPS12 changes

The changes are as follows:

- ALPP ADAS Base Enhancements, ALPP0001 (new)
- ALPP ADAS Base Barge-In Stats, ALPP0001 (new)
- TOPS Robustness, OSB00001 (changed)
 - 59011217 - ADAS Plus Call Deflection (new)
- Table LATANAME Expansion, OSB00001 (new)
- Call Restrictions for Wholesaling, UNBN0006 (new)
- QMS Customer Service Enhancements, ADVQ0006 (changed)
 - 59006877 - QMS CASE: Call Alerting (new)
- Seconds Based Announcements, OSB00001 (new)
- OSSAIN 12 Enhancements, OSAN0007 (new)
- MD Code Removal and ReEngineering, OSB00001 (new)
- TOPS On/Off Switch, OSB00001 (new)
- Unbundling OPRTRANS, UNBN0001 (new)
- IN Operator Backup, ENSV0023 (new)
- Disallowed Card Issuer Blocking, ABS00014 (new, this functionality was released after TOPS07 and is now documented)

- GR317/GR394 ISUP to/from TOPS, OSEA0005 (changed)
 - Under the Operation section, new subsection "ISUP routing considerations" indicates the types of originations supported on ATC trunks.
 - Under the Limitations and restrictions section at the end, additional notes indicate supported and unsupported ISUP ATC trunk configurations.
- TOPS Call Processing Features (Rating), OSB00001 (changed)
 - Section Interactions, subsection Sub-period billing indicated that when table OFCENG parameter DISC_TIME_BILLED is set to Y, the call length is decreased by the fixed amount before calculating charges. Instead, the parameter should be set to N for this call length decrease. This correction now agrees with the parameter's description in the Office Parameters Reference Manual, which is correct.
- UADA log report descriptions: UADA300 - UADA306, written to SRUD90021
- In release NA010, new office parameter table OFCAUT allows automatic provisioning of the parameters listed in the table, which normally exist in table OFCENG. If a parameter in table OFCAUT is enabled, that parameter is removed from table OFCENG and managed by the system. If at a later time that parameter is disabled in table OFCAUT, the parameter moves back to table OFCENG and uses the previous value from table OFCENG. For further information, refer to these documents:
 - Table OFCAUT in the DMS-100 Customer Data Schema Reference Manual, 297-8021-351.
 - Feature SD1090 in LET0010 PCL RelDoc, PLN-8021-004. The FN section is in volume 2 of 4 and the DS section is in volume 3 of 4.

TOPS11 changes

The changes are as follows:

- External RTRS Interface, ENSV0009 (changed)
 - AF7865 - Hotel External Rating Enhancements (new)
- IN Fall Back, ENSV0023 (new)
- OLNS Foreign Language, ENSV0021 (new)
- OLNS Support of No Automation, ENSV0022 (new)
- OSSAIN 11 Enhancements, OSAN0006 (new)
- OSSAIN Global, OSAN0001 (new)
- 800+ Interworking, OSB00001 (new)
- Position/Device Evolution IP, OSB00001 (new)

NTP 297-8341-550, *TOPS and TMS Maintenance Manual*. has maintenance information.

- RU Robustness, OSB00001 (new)
- TOPS 11 Robustness/Real Time Recovery, OSB00001 (new)
- TOPS/Carrier Interworking, OSB00001 (new)
- Table TOPSDISP Expansion, OSB00001 (new)
- ADAS Base Diagnostic Enhancements, ALPP0001 (changed)
 - AF7811 - ADAS Base Enhancements and Robustness (new)
- QMS Host/Reomte Queuing, ADVQ0009 (no content change)
 - Functionalities Host QMS (ADVQ0003) and Remote QMS (ADVQ0004) are combined into QMS Host/Remote Queueing, ADVQ0009. There is no change to the content.
- TOPS Incoming FGD Signalling, OSEA0004 (changed)
 - SR 50093498: COMFGD trunks can now datafill a STATCLASS of COMBINED. Before, only RESTBIL was allowed.
- TOPS BC/STS/SNPA - OSB00001 (changed)
 - The release NA10 six-digit screening method can now be used. Therefore, an LCANAME representing six-digits can be entered in tables TOPSBC, CLGSET, TOPSDP, TRKGRP, ISUPTRK, and OPRTRANS. Refer to section "Translations and screening".
 - A note was added indicating that for intercept calls, the called digits are received in the ANI spill instead of the calling number. Refer to the end of section "Calling number expansion".
- Table TOPSPARM (changed)
 - SR 50095068: Parameter TOPS11_DEVICE_Enhancements added. Refer to data schema.
- Table SERVICES field VERSION can use value 5. Refer to data schema.

TOPS10 changes

The changes are as follows:

- Logical TID for Time and Charges Recall - OSB00001 (new)
- PCNAME Expansion - OSB00001 (new)
- TOPS BC/STS/SNPA - OSB00001 (new). Note, this enhancement can be used for TOPS LNP calling DN conversion from 7 to 10 digits.
- Music and Announcement in Queue - ADVQ0008 (new)
- Queue by Called Type - ADVQ0001 (new)

- External RTRS Interface - ADVQ0009 (revised)
 - AF7497 - TOPS External Rating Enhancements (new)
- OSSAIN 10 Enhancements - OSAN0005 (new)
- TOPS Bellcore LNP - OSEA0010 (new)
- TOPS Canadian Equal Access - OSEA0011 (new)
- TOPS Flex ANI - OSEA0012 (new)
- Additional provisioning is required in table OFCENG parameters NO_OF_HIS_CONTROL_BLKs and NO_OF_HIS_DATA_BLKs for all North American TOPS offices in release LET010. Refer to these parameters in the *NA DMS-100 Office Parameters Reference Manual*, 297-8021-855.

TOPS09 changes

The changes are as follows:

- New functionality group OSAN (OSSAIN) is created. As a result, two existing functionalities are moved into this new group, their names are changed, but their information is not changed as follows:
 - Operator Services AIN, ENSV0014, changes to OSSAIN Initial Release, OSAN0002.
 - OSSAIN Enhancements, ENSV0020, changes to OSSAIN 07 Enhancements, OSAN0003.
- New functionality group UNBN (Unbundling) is created. As a result, TOPS07 functionality TOPS SPID Branding, ENSV0017, divides into the following functionalities:
 - SPID Assignment, UNBN0001 - This functionality controls the assignment of SPIDs and table SPID.
 - TOPS SPID Branding, UNBN0005 - This functionality controls branding (both front-end and ACTS back-end) by SPID. Also, this functionality takes on the value of the ENSV0017 SOC over a One Night Process (ONP).

The ENSV0017 information did not change during division into these two functionalities.

- Attendant Pay Station, OSB00001 (new)
- OSSAIN 09 Enhancements, OSAN0004 (new)
- 09 Realtime Recovery, OSB00001 (new)
- QMS Billing Indicator, ADVQ0007 (new)

- External RTRS Interface, ENSV0009 (revised)
 - Feature AF7163 - Unbundling: External Reater Protocol Changes (new). Refer to the Description section for a listing of all changed sections.
- Miscellaneous DA Enhancements, OSDA0001 (new)
- ADAS Base Barge-In, ALPP0001 (new)
- ADAS Per Link Blocking, ALPP0001 (new, in TOPS07)
- ADAS Base Diagnostics Enhancements, ALPP0001 (new)
- Billing Changes, UNBN0001 (new)
- Queueing, UNBN0002 (new)
- Translations and Routing, UNBN0003 (new)

Note: This functionality contains changes to TOPS translations and screening that are applicable to all TOPS functionality groups.

- Stats, UNBN0004 (new)
- Carrier Selection, ENSV0001 (changed)

A new restriction for calling card carrier selection requires a class charge for the called number. This restriction is enforced when this functionality is active and the called number is foreign/overseas.

- TOPS Call Processing Features (Rating), OSB00001 (revised)
 - Feature AF7110 - TOPS Rating: Sub-Period Billing (new).
Table CHARGE has new fields SPBI and GRACE for sub-period billing. Refer to the Operation, Interactions, and Limitations and restrictions under AF7110. Also, refer to the datafill procedures section under table CHARGE.
- TOPS LNP, OSEA0008 (revised):
 - New non-TOPS switch office parameter RECORD_LNP_MODULE_719 affects 800 call records. Refer to the "Billing" section under subsection "LNP module 720".
 - Local call area screening is not performed on the LRN. Refer to the "Operation" section under subsection "Outgoing translations and screening".
 - A discussion shows how to route to TOPS from the pretranslator rather than from HNPACONT. There was a misunderstanding that the pretranslator was a line pretranslator. But, the pretranslator is supposed to be on the incoming side of a loop-around trunk to the TOPS environment. Refer to the datafill procedure section, call processing

tables, under subtable STDPRTCT.STDPRT. The recommended pretranslator tuple is:

555 555 T DD 0 TOPS 7 7 NONE

- TOPS Call Processing Features (Call Processing) - OSB00001 (revised) Table TOPSPARM parameter DOM_CCARD_FORMAT_CHECKS is added by SR 50058693.
- PRS 50039957 - Operator positions that provide directory assistance (DA) or intercept services must have unique position numbers in table TOPSPOS. This applies across the network and to all software releases. Position numbers must be different between the host and its remotes, and between remotes off the same host.
- Office parameters are not affected.

TOPS08 changes

The changes are as follows:

- TOPS OLNS Interface - ABS00012 (revised) - Table TOPSPARM has new parameter OLNS_RESTRICTED_DACC.
- OSSAIN (ENSV0014) and OSSAIN Enhancements (ENSV0020) are revised - The following tables are changed:
 - OATPRFIX: For fields CPROFIDX, TPROFIDX, and DPROFIDX the range of subfield PROFIDX is expanded to 0-2046.
 - OACNNPRF: The ranges of fields DTMFIDX and CAUSEIDX are expanded to 0-2046.
 - OACAUPRF: The range of field IDX is expanded to 0-2046.
 - OATLKPRF: The range of field TALKIDX is expanded to 0-2046.
 - OADSCPRF: The ranges of fields DISCIDX and DTMFIDX are expanded to 0-2046.
- Automated Alternate Billing Service (ABS00002) - Branding of AABS calls is provided. This is a protocol change only, no datafill is required. Refer to feature BY71965 in this functionality for further details.
- Office parameters are not affected.

TOPS07 changes

The changes are as follows:

- TOPS Year 2000 - OSB00001 (new)
- TOPS LNP - OSEA0008 (new)
- AMA Table 281 - OSB00001 (new)
- DNSCRN Enhancements - OSB00001 (new)

- OSSAIN Enhancements - ENSV0020 (new)
- Estimated Call Charges - ENSV0018 (new)
- Interface Signaling - OSB00001 (new)
- Logs and Device Changes - GOS00001 (new)
- Miscellaneous Enhancements - GOS00001 (new)
- TCAP TRID Replace - OSB00001 (new)
- Branding via SPID - ENSV0017 (new)
- TOPS Carrier RLT - OSEA0007 (new)
- TOPS Robustness - OSB00001 (revised)
 - AN1856 - TOPS Debugging Tools (new)
- TOPS Open Position Protocol - EWSS0004 (revised)
 - AF6512 - OPP Interface Development (new): provides TOPS07 support, but no changes to functionality description
- Advanced DA Service- OSDA0004 (revised)
 - AF6544 - ADAS Per Line Blocking - new
- DA Automation I/F - OSDA0006 (revised)
 - AF6544 - ADAS Per Line Blocking - new
 - AF6431 - Branding for TOPS via SPID - new (this feature in new functionality Branding via SPID, ENSV0017 made changes that affect functionality DA Automation I/F)

- Cell/IXC/LEC ADACC, OSDA0005 (revised)
 - AF6431 - Branding for TOPS via SPID - new (this feature in new functionality Branding via SPID, ENSV0017 made changes that affect functionality Cell/IXC/LEC ADACC)
- OLNS IntraLATA Presubscription - OSEA0006 (revised)
 - Table ILPELGBL field LCLREGNS maximum value is increased from 20 to 220
- TOPS IDDD 15 Digit Expansion - OSB00001 (revised)
 - PRS UT66923 (Bulletin 970004) - moving some MTM or MT8 circuits
- Office parameters are affected as follows:
 - CRS_SUBRU_POOL1_SIZE (table OFCENG) is used in Estimated Call Charges, ENSV0018
 - CRS_SUBRU_POOL2_SIZE (table OFCENG) requires recalculation in TOPS LNP, OSEA0008
 - OSAC_NUM_RU (table OFCENG) is new in OSSAIN Enhancements, ENSV0020
 - TOPS_BRAND_DISPLAY (table OFCENG) is used in Branding via SPID, ENSV0017

TOPS06 changes

The changes are as follows:

- ADVQ0006 - QMS Customer Service Enhancement (new)
- ENSV0014 - Operator Services AIN (new)
- ABS00012 - TOPS OLNS Interface (new)
- OSEA0006 - OLNS IntraLATA Presubscription (new)
- OSDA0001 - Multiple DA System I (new)
- OSB00001 - TOPS06 Robustness (new)
- ABS00009 - Automated Room and Authorization Number (new); This functionality was proprietary in TOPS03, but is now generally available.
- ABS00010 - Calling Card Denial Reasons (new); This functionality was proprietary in TOPS03, but is now generally available.

- ABS00013 - TOPS Authorization Code Billing (revised)
 - AF6340 - TOPS Authorization Code Enhancements (new): This feature increases the number of authorization codes for directory number group from 10 to 64,000.
- GOS00001 - Global Operator Services Rating (revised): sub-minute (seconds) rating is supported in tables CHGHEAD and CHGATRIB.
- Table TOPSPARM parameter COIN_PAY_SEQUENCE is valid only in a Global Operator Services (GOS) office.
- Table ACTSOPTS parameters are changed as follows:
 - RING_BACK_WAIT is deleted since support ended in BCS28
 - RING_BACK_TIME description is changed since the prior description was misleading. Previously, it implied the time period was the delay until ACTS applied ringback. Rather it is the amount of time ACTS rings back the calling party on a disconnect when charges are due.
- The TOPS preset parameters are changed. Refer to the preset office parameters section of the *Office Parameters Reference Manual* and to the revision history section of each module for the changes.
- Nortel provides an engineering aid for datafilling table VH for initial installations and software extensions. This service must be requested from Nortel Engineering. This service used to be provided by the program `Ratecomp`, which is obsolete. Therefore, when requesting this service, ask for `an engineering aid for datafilling table VH` rather than referencing program `Ratecomp`.
- For TOPS03 and TOPS04, table ADACCOPT, field BILTYPES values OPERBIL and ALL should not be used. Refer to this table in data schema for further information.
- Exceeding the size limit for table TOPSPOS in table CLLI (fixed CLLIs TOPSPOS and TOPSPOSDATA) can cause switch outage for releases TOPS03 and earlier. Refer to table TOPSPOS, `Table size` section, for more information.

- ADVQ00003 - Host QMS (revised)
 - UT63374 — Normally, assistants are datafilled in table OPRDAT. However, assistants at MPX positions should be datafilled in table TQOPROF as operators. Refer to either table OPRDAT or TQOPROF.
- Office parameters are affected as follows:
 - MAX_NO_OF_TRANS_ID is recalculate in TOPS OLNS Interface, ABS00012.
 - CRS_SUBRU_POOL5_SIZE is new in TOPS OLNS Interface, ABS00012.
 - TOPS_OC_REMOTE_BVC is deleted in QMS Customer Service Enhancement, ADVQ00006.
 - VALIDATE_CCITT_LUHN_DIGIT is deleted in QMS Customer Service Enhancement, ADVQ00006.
 - TOPS_POPB_TEST is deleted in QMS Customer Service Enhancement, ADVQ00006.
 - QMSFM_NUM_QUEUES requires recalculation in QMS Customer Service Enhancement, ADVQ00006.
 - TOPS_QMS_MAX_ACTIVE_CALL_QUEUES requires recalculation in QMS Customer Service Enhancement, ADVQ00006.
 - OSSAIN_NUM_RU is new in Operator Services AIN, ENSV0014.
 - CRS_SUBRU_POOL1_SIZE, CRS_SUBRU_POOL2_SIZE, and CRS_SUBRU_POOL4_SIZE have new provisioning in Operator Services AIN, ENSV0014.

TOPS05 changes

The changes are as follows:

- ENSV0013 - Audiogram Delivery Services - Offer of Service Prompt (new)
- OSB00001 - AMA Modules (new)
- OSEA0005 - GR317/GR394 ISUP to/from TOPS (new)
- ENSV0010 - Auto Country Direct (new)
- ABS00013 - TOPS Authorization Code Billing (new)

- GOS00001 - R2 on TOPS (revised):
 - MX51957 - TOPS R2 Connectivity - Restricted Billing Enhancements (new)
- OSDA0005 - Cellular/IEC/LEC ADACC (revised)
 - In TOPS03, new value OPERBIL was added to table ADACCOPT, field BILTYPES. Value OPERBIL is not recognized by the ADACC announcement software, causing announcement failure. Therefore, values OPERBIL and ALL (includes OPERBIL) should not be used for releases TOP03 and up.
- ADVQ0003 and ADVQ0004 - Host and Remote QMS (revised)
 - UT54592 - When using automated services, table CT4QAUTO must contain datafill. Otherwise, if the table is empty, the automated system returns for further assistance to the wrong service type.
- OSB00001 - TOPS Call Processing Features (Call Processing) (revised)
 - BK04281 - TOPS ISUP Re-engineering Phase I (new in BCS36)
- Tables TERMRC, ORIGRC, and PTP (revised)
 - Fields ORC and TRC show the range 0-255 on the DMS switch. Value 0 is a NIL value and not allowed by table control.
- TOPS calls can now use CF6Ps from the common DMS pool of CF6Ps datafilled in table CONF6PR.
- New OFCENG office parameter CRS_SUBRU_POOL1_SIZE calculation is modified in Auto Country Direct, ENSV0010.
- Additional preset parameters for TOPS have been added to the preset office parameters section of the *Office Parameters Reference Manual*.
- The following changes are preparatory for NA006 and non-functional; therefore, these changes appear in the NA005 load but cannot be used:
 - Table TQMSFCQA has new field ASSTAREA.
 - Tables TQORDERA and TQORDERB have new field ASST.
 - For CI commands QCALL and QVIEW, subcommand ORDER has new ordering ASST.
 - Table TCAPTRID, field TCAPAPPL has new value OLNS.
 - Table CT4QNAMS has new field SYSAREA with refinements. Subfield SYSAREA_SEL has values TOPSOPR and OSSAIN. Only value TOPSOPR is valid, OSSAIN is not functional.
 - Table QAPLNDEF, field APLNAME has new value OSSAIN.
 - Table TRKMEM tuples cannot be deleted if a voice circuit being deleted is in use in new table OAVLMAP.

- Table EXNDINV, field ENPMTYPE has new value OSNM.
- Software Optionality Control appearance of QMS CASE, ADVQ0006.
- Office parameters are not affected.

TOPS04 changes

The changes are as follows:

- ENSV0008 and ENSV0011 - Enhanced TOPS OC and Increased Remote Support (new)
- GOS00001 - R2 on TOPS (new)
- OSB00001 - TOPS Robustness (new)
- GOS00001 - Manual Toll Break-In (new)
- OSB00001 - TOPS IDDD 15 Digit Expansion (new)
- ENSV0009 - External RTRS Interface (new)
- OSDA0001 - TOPS MP Support of Internal DRAM (new, BCS31)
- OSB00001 - TOPS Inward Validation (new, BCS09)
- Automated Alternate Billing Service, ABS00002 (revised)
 - PRS UT307750 - A TOPS04 call type is not supported when PO/PB characters (parm TOPS_PO_PB_CHARS) are turned on.
- Host and Remote Queue Management Services, ADVQ0003 and ADVQ0004 (revised)
 - PRS UT409914 - Datafill for ACD and QMS display of operator messages CALL COMP, MULT SERV, and MULT REQS.
 - PRS BX77689 - Table TQMSSERV, field AUTOAMA is valid only if service is changed to different service. If new service is same as old, AMA record is produced regardless of value in AUTOAMA.
- TOPS Bellcore AMA, OSB00001 (revised)
 - PRS BX48178 - Delete OFCVAR parameter TOPS_411_RECORD_NPA_IN_AMA
- TOPS Alternate Announcement, ENSV0003 (revised)
 - PRS BR44544 - Changed table DRMUSERS tuple examples ACTSTOPS 20-23 to ACTSTOPS 30-33. Tuples ACTOPS 20-23 are

reserved for TOPS03 functionality TOPS Prepaid Coin Overtime, ENSV0007.

- TOPS ACD Features, OSB00001 (revised)
 - PRS BR43535 - Revised formula for OFCENG parameter TOPS_CALLS_WAITING_Q_SIZE.
 - PRS BR45555 - A transfer queue cannot be activated with XA command if reference in LANGTOQ. A transfer queue cannot be deactivated with XD command if reference in LANGTOQ, TOPS, VSNOPT, or XFROPSEL.
- DA Automation I/F, OSDA0006 (revised)
 - Reworded QMS portion of section "Deflection and overflow".
- Automated DA Service, OSDA0004 (revised)
 - PRS UT50786 - When handling ADAS calls, set VROPT parameter DA_AUTO_POS_RLS to N to prevent potential operator confusion.
- Added billing information from GFDs to billing section of the following:
 - Base TOPS Equal Access, OSEA0001
 - TOPS Exchange Access Operator Services Signaling, OSEA0003
 - TOPS InterLATA Carrier, OSEA0002
 - TOPS Bellcore AMA, OSB00001
 - TOPS Service Billing, OSB00001
 - TOPS Closedown, ADVQ0002
 - TOPS Incoming FGD Signaling, OSEA0004
- Limitations and restrictions
 - Any changes to AMA are only incorporated in EBAF Phase 2.
 - Up to 32 OC offices can be supported. For a full 32 node network, at least one host/standalone node must not be employing the Host/Remote Networking by Queue Type functionality, ADVQ0005.
 - Enhanced TOPS Message Switch (ETMS), when configured in the operator centralization mode, does not support Enhanced D-Channel Handler (EDCH).

- The TMS and UTM loads do not exist in XPM05, since the platforms are manufacture discontinued with TOPS04. Only the ETM and EUT loads (ETMS) are supported with TOPS04.
- Standard DA protocol does not support TOPS IDDD 15 Digit Dialing.
- Office parameters (revised)
 - MAX_NO_OF_TRANS_ID (table OFCENG) calculation is modified in External RTRS Interface (ENSV0009).
 - TOPS Robustness (OSB00001) affects the following parameters:
 - TOPS_ASST_POS is deleted.
 - TOPS_ACCS_ACG_SIZE is deleted.
 - TOPS_CALLS_WAITING_Q_SIZE, the restart requirement is removed when increasing.
 - TOPS_EQUAL_ACCESS_OFFICE, the restart requirement is removed.
 - TOPS_MAX_OPERATOR_NUM is deleted.
 - TOPS_NUM_STUDY_REG is deleted.
 - TOPS_NUM_TRAFFIC_OFFICES, the restart requirement is removed.
 - TOPS_START_OF_DAY, the restart requirement is removed.
 - TOTAL_ROUTE_QUEUED_CALLS, the restart requirement is removed.

TOPS03 changes

Following are the changes in TOPS03 from BCS36:

- OSDA0005 - Cellular/IEC/LEC ADACC (new)
- EWSS0003 - TMS Processor Upgrade (new)
- ENSV0007 - Pre-paid Coin (new)
- ABS00008 - TOPS Commercial Credit Card (new)
- OSEA0001 - Equal Access Carrier Code Expansion (new)
- OSDA0006 - DA Automation I/F (new)
- ABS0012 - AABS Enhanced Services Access (new)

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- OSDA0004 - ADAS (revised)
 - AN1027 - ADAS CM MMI Enhancements (new)
 - OSEA0003 - TOPS EAOSS (revised)
 - AN1337 - EAOSS Enhancements (new)
 - OSB00001 - TOPS NOTIS Format (new, BCS10)
 - Global Operator Services (GOS) section (new)
 - OSI section - TOPS Call Descriptions (new, BCS20)
 - Incorporation of manual NED 297-0002, TOPS Call Descriptions.
 - ADVQ0003 (Host QMS) and ADVQ0004 (Remote QMS) (revised)
 - BR42434 - Change datafill order of tables TQORDERA and TQORDERB to follow CT4Q refinement tables. Otherwise, incorrect routing of calls can occur.
 - New log group TQMS with log TQMS 100 indicates incorrect table CT4QAUTO datafill.
 - Added datafill guidelines to field IMPLCT4Q in table TQMSSERV in Operation section of Remote QMS (which applies to both the Host and Remote).
 - ABS00001 - Expanded Calling Card Format SS7 (revised)
 - In section "CCIT cards not marked for 14 digit validation", card is no longer marked for manual validation. Instead, card is processed as a CCITT (ISO) calling card and sent to the database specified in table QUERYTYP or INTCCFMT.
 - OSDA0004 - ADAS (revised)
 - AN1027 - Added field ADASANS to table TOPSTOPT and parameter ADAS_RINGING_DURING_PLAYBACK to table TOPSPARM. Refer to table TOPSTOPT in the "Trunk provisioning" and datafill procedure sections. Refer to table TOPSPARM in the datafill procedure section. And refer to the "Limitation and restrictions" and "Interactions" sections.
 - AN1028 - ADAS Service Monitor. This feature is OA&M position specific. Refer to 297-2211-311, ADAS OAM Position User Guide, for
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operational information. However, in order to support this functionality, the following datafill changes must be made:

- Table ENTYPES: Must add a tuple with field ENTYPE = ADAS_OAMPOS.
 - Table EXNDINV: The tuples for the ADAS OA&M positions must be changed in the ENTYPE field to ADAS_OAMPOS.
 - Table IPHTRON: All EIU tuples (including those not associated with the OA&M position) must be changed to EIU x 10 40 CM 25\$.
- EWSS0005 - TOPS Increased Multiplexing (revised)
 - In operation section for datafill procedure of table TMSPVC, 16 position, TPC-A, datafill tuple ORDB 100 TRANS, changed entry (5 ORDB 151 TRANS 8) to (5 ORDB 201 TRANS 8).
 - In datafill procedure section for table TOPSPOS, added note: “when datafilling MP on a TPC, the entry will be blocked and an error message given if the the MP and TPC are not connected to the same TMS.”
 - Added section “Mixed cluster sizes”. Also, added notes at beginning about mixed cluster sizes.
 - ADVQ0005 - Host/Remote Networking by Queue Type (revised)
 - In table OCOFC, field VALUE, value 0 should never be used since it is a NIL value to the software. An office datafilled with an index of 0 is not recognized by the software.
 - In table OCHOSTQ, if fields PRIHOST and ALTHOST are the same, an error message is given.
 - OSB00001 - TOPS ACD Features (revised)
 - Changed calculation formula for OFCENG parameter TOPS_CALLS_WAITING_Q_SIZE per PRS BR43535.
 - Office parameters (revised)
 - Added CRS_SUBRU_POOL1_SIZE, CRS_SUBRU_POOL2_SIZE, and CRS_SUBRU_POOL2_SIZE from GOS Enhancements (GOS00001).
 - TOPS_OTC_CARRIER_NUMBER - reference to EA Carrier Code Expansion (OSEA0001).
 - General - The following changes are due to software decoupling (TOPS02)
 - Line to TOPS: The ability to connect a non-featured POTS line directly into the Operator Services call processing environment through translations, without loop-around trunks, is no longer supported. This

impacts translations and provisioning of DTCs in many TOPS 100/200 combination offices.

- IBN trunks-TOPS: The ability to connect IBN BTUP (British Telecom ISUP) signaling trunks directly for Operator Services call processing is no longer supported.
- NT40 processor: TOPS03 is not supported on NT40 processor DMS systems.
- AMA: All AMA changes apply to EBAF Phase 2 AMA only, not phase 0 or 1.

Preset office parameters

Prior to BCS36, office parameter values were calculated according to detailed engineering rules. Then in BCS36, preset office parameters were introduced as an option for a simpler, more reliable method of parameter engineering and to prevent switch outages from changing or correcting these values. Preset parameters are a simpler, more reliable method of parameter engineering. Now, in NA001 and up, preset office parameters are required and are applicable to the U.S. market only.

Following are the U.S. market Office parameters reference manuals revised by addition of a preset office parameters section:

- 297-8001-855.01.01 LEC003
- 297-8401-855.01.01 TOPS003
- 297-8411-855.01.01 USTOPS003
- 297-8021-855.01.01 LET003

For more information, refer to the applicable manual listed above.

The following Canadian market manuals are not revised:

- 297-8011-855.02.01 CDN003
- 297-8421-855.01.01 CDNTOPS003
- 297-8031-855.01.01 LTT003

2 Datafilling Operator Services Basic

This chapter contains the operator services basic functionalities.

800+ Interworking with LNP

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS11 and up

800+ Interworking with LNP was introduced in TOPS11.

Prerequisites

To operate, 800+ Interworking with LNP has the following prerequisites:

- Base Generic, BAS00003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- TOPS LNP, OSEA0103

Description

The TOPS switch supports the following types of toll-free calls:

- Enhanced 800 (E800) in the United States (This functionality does not affect these calls.)
- 800 Plus in Canada (This functionality applies to these calls.)

This functionality provides the following:

- For toll-free (800 Plus and E800) tandem and centralized automatic message accounting (CAMA) calls, local number portability (LNP) processing is added to directory number(s) (DNs) returned from the Number Services Center (NSC) database.
- For operator handled 800 Plus calls, a new table TOPSPARM parameter controls whether NSC processing is performed: at a TOPS position.

For background information refer to the following:

- Functionality TOPS LNP, OSEA0103 in this Translations Guide
- *TOPS LNP Users' Guide*, 297-8403-902

800+ Interworking with LNP (continued)

This functionality is provided by the following feature:

Feature number	Feature name
AF7864	LNP 800+/NP Interworking

Operation

This feature ensures that TOPS LNP processing on 800 Plus calls is early enough in the network to avoid tying up unnecessary resources at the donor switch and ensures that all the billing information is contained in one AMA record.

Operator services system advanced intelligent network (OSSAIN) does not do NSC processing, the same as before this functionality.

No protocol changes are introduced or modified by this feature.

Tandem and CAMA calls

For tandem (1+) and CAMA toll-free calls, the following steps are done at the TOPS switch:

1. Do LNP processing on the calling number. This step is prior functionality.
2. Do an NSC query on the toll-free number. This step is prior functionality.
3. If the DN(s) returned from the NSC database is portable, do LNP processing on the DN(s). The TOPS switch uses the LRN for routing. This step is new functionality.

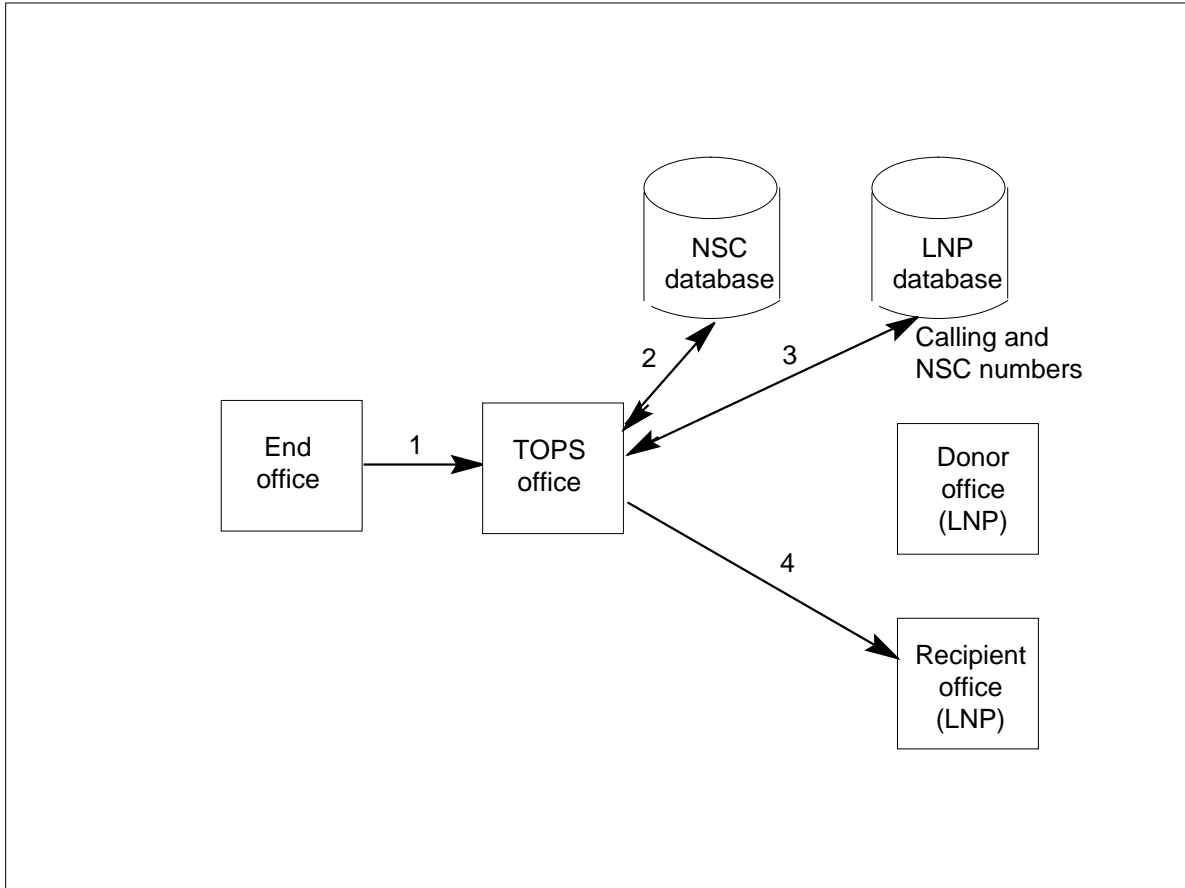
The calling number receives standard LNP processing independently of the DN returned by the NSC database.

Each DN used for Overflow Call Routing (OCR) receives the same LNP processing as the first DN (step 3 above) in the call.

Note 1: LNP processing is not performed for E800 cut-through calls.

Note 2: To avoid unnecessary LNP queries, it is recommended that toll-free numbers and similar service access codes are not datafilled in table PORTNUMS.

The following figure shows the call flow.

800+ Interworking with LNP (continued)**Tandem and CAMA 800 Plus call flow****E800 operator calls**

The TOPS switch does not provide toll-free processing of E800 calls that go to an operator position. This rule is prior functionality and not changed by this feature.

800 Plus operator handled calls

For operator handled 800 Plus calls, NSC processing is determined by table TOPSPARM new parameter NSC_800PLUS_QUERY_AT_POSITION with the values as follow:

- Y - At the TOPS position, perform NSC processing on the toll-free number. Then signal the returned DN(s) to the adjacent switch. At the adjacent switch, perform LNP processing on the calling number. An LNP

800+ Interworking with LNP (continued)

query is not performed on the DN(s) returned from the NSC database at the TOPS switch. This processing is prior functionality.

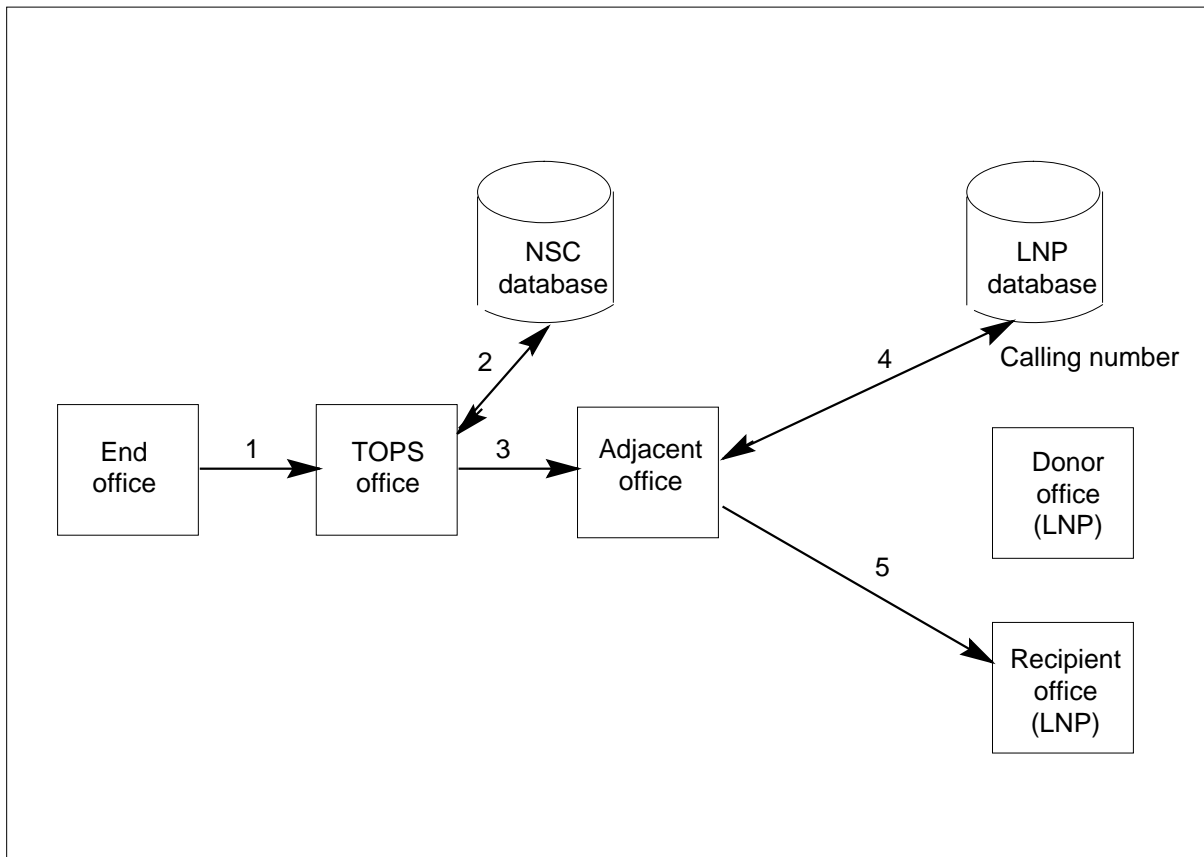
- N - Signal the calling and toll-free numbers to the adjacent switch. At the adjacent switch, perform NSC processing on the toll-free number and LNP processing on the calling number. This process is new functionality.

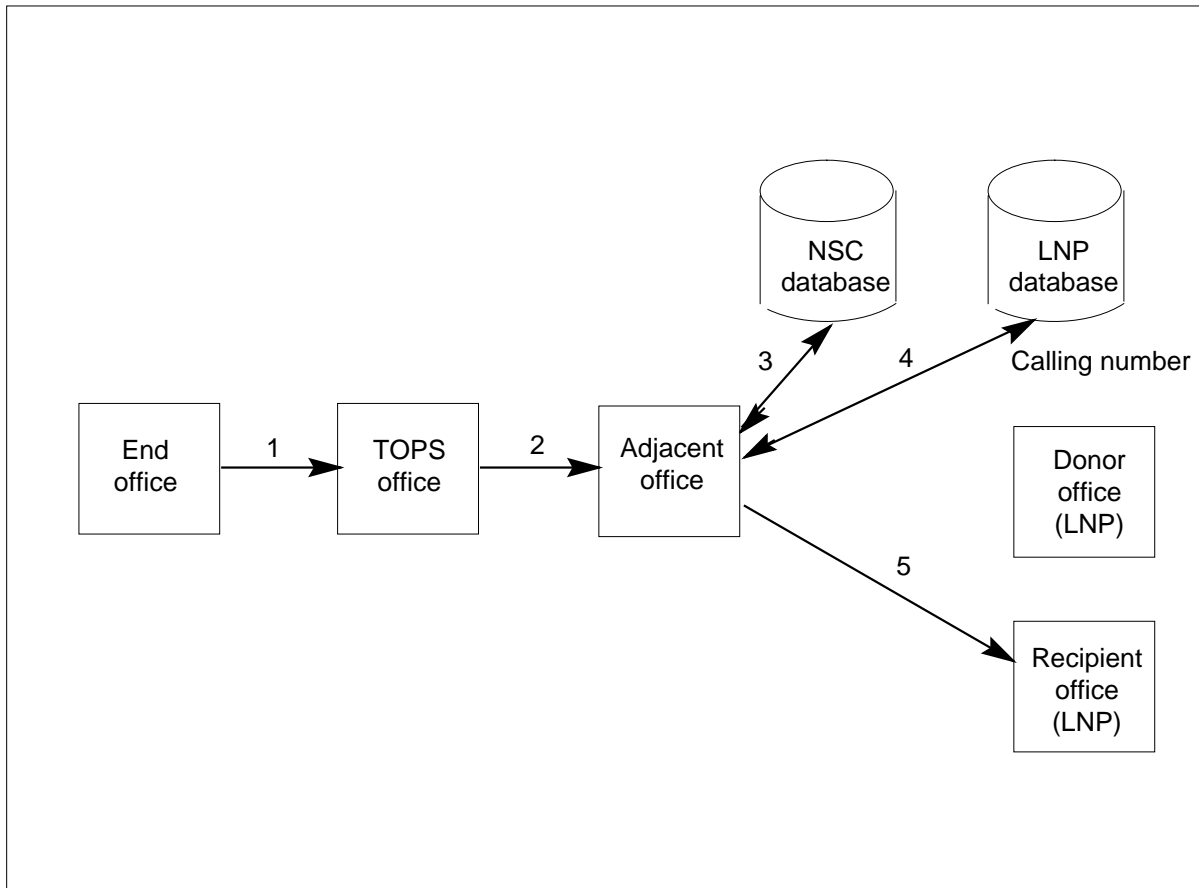
The calling number receives standard LNP processing regardless of the setting of the NSC_800PLUS_QUERY_AT_POSITION parameter.

Refer to the datafill procedure section for details on this parameter.

The following figures show these call flows.

Operator handled 800 Plus call flow (NSC_800PLUS_QUERY_AT_POSITION = Y)



800+ Interworking with LNP (continued)**Operator handled 800 Plus call flow (NSC_800PLUS_QUERY_AT_POSITION = N)**

Hotel calls that are routed to a position for entry of the room number are handled as operator calls and are under control of the new parameter.

Signalling

Signalling for 800 Plus operator handled calls is affected by parameter NSC_800PLUS_QUERY_AT_POSITION values as follow:

- Y - Signalling remains unchanged since this is prior functionality.
800 Plus Southbound calls from the operator do not pass ANI as the charge number (CN), regardless of the state of the BAS00018 option (ANI Enhanced). This operation is not modified by this feature.
- N - Nortel recommends that for a toll-free call at position, if parameter NSC_800PLUS_QUERY_AT_POSITION = N, integrated services digital network signalling user part (ISUP) trunks should be used to the adjacent office. If the trunk loops around to the same office, feature AF6729 allows

800+ Interworking with LNP (continued)

ISUP looparound trunks to be configured with a single Destination Point Code (DPC) in offices that already support ISUP signaling.

To perform an NSC query elsewhere in the network (outside of the TOPS office), the calling number must be signalled.

For feature AF6729, refer to PLN-8021-0004, *LET0008 Release Document*.

MF to ISUP signalling: Note, this section is relevant only when table TOPSPARM parameter NSC_800PLUS_QUERY_AT_POSITION = N.

Receipt of the calling number on a multi-frequency (MF) trunk does not guarantee that it is signalled on an outgoing ISUP trunk.

Non-TOPS switch functionality ANI Enhanced, BAS00018, offers calling number to CN conversion on ISUP InterToll (IT), Toll Outgoing (TO), and Toll Two-way (T2) trunks.

For a non equal access call, if BAS0018 is enabled and the outgoing trunk is in table ANICNCTL, the calling number is passed to the adjacent switch by an ISUP IT, TO, or T2 trunk. If BAS00018 is activated, all call types on a given trunk in table ANICNCTL are impacted. If it is desired to limit the impact to 800 Plus calls, then 800 Plus traffic must be sent on dedicated trunks.

Retranslating DN(s) returned from the NSC database

Prior to this feature, non-standard TOPS translations were applied to the DN(s) returned from the NSC database. This is not changed by this feature. Since standard TOPS translations are not used, toll-free calls going through the TOPS office do not receive the benefit of per SPID routing.

SOC

This feature is delivered with Operator Services Basic, OSB0001. Therefore, this functionality is always active in the TOPS environment. However, this functionality is dependent on the following SOC codes:

- OSEA0008 (TOPS LNP): This SOC must be on to perform an LNP query.
- BAS00018 (ANI Enhanced): This SOC must be on when parameter NSC_800PLUS_QUERY_AT_POSITION = N to send the calling DN over an ISUP trunk if the incoming trunks is MF.

Translations table flow

The 800+ Interworking with LNP does not affect translations table flow.

800+ Interworking with LNP (continued)

Limitations and restrictions

800+ Interworking with LNP has no limitations or restrictions.

Interactions

The following paragraphs describe the interactions between 800+ Interworking with LNP and other functionalities.

There are no interactions with 800 Plus capabilities other than OCR.

If NSC_800PLUS_QUERY_AT_POSITION is Y, an NSC query is not launched and a query indication is not sent to position.

Table SERVSCRN holds service numbers, but toll-free numbers are not to be entered into this table, so there is no interaction with this feature.

Activation/deactivation by the end user

800+ Interworking with LNP requires no activation or deactivation by the end user.

Billing

This feature adds the ability to append an LNP module (719 or 720) to the AMA record for a DN returned from the NSC database.

Before this feature, an LNP module (719 or 720) was appended to an AMA record for the calling number in a toll-free call if that calling number was portable.

For information on which LNP AMA module is produced for the different call types, refer to the *TOPS LNP Users' Guide*, 297-8403-902.

If OCR is invoked, an LNP AMA module 719 or 720 is appended only for the last DN attempted and only if that DN is portable.

Station Message Detail Recording

800+ Interworking with LNP does not affect Station Message Detail Recording.

Datafilling office parameters

800+ Interworking with LNP does not affect office parameters.

800+ Interworking with LNP (continued)

Datafill sequence

The following table lists the tables that require datafill to implement 800+ Interworking with LNP. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for 800+ Interworking with LNP

Table	Purpose of table
TOPSPARM	TOPS parameters contains TOPS office wide parameters.

Datafilling table TOPSPARM

The following table shows the datafill specific to 800+ Interworking with LNP for table TOPSPARM. Only those parameters that apply directly to 800+ Interworking with LNP are shown. For a description of the other parameters, refer to the data schema section of this document.

Datafilling table TOPSPARM

Field	PARMNAME	Field PARMVAL	Explanation and action
	NSC_800PLUS_QUERY_AT_POSITION	Y or N	<p>This new parameter indicates where NSC processing is done for an 800 Plus call at an operator position. The values are as follows:</p> <ul style="list-style-type: none"> Y - Do NSC processing at the current TOPS switch. The call is routed with the DN received from the database. LNP processing is done at an adjacent switch. This process is the same as before this functionality. N - Do NSC processing at an adjacent switch. The calling and toll-free numbers are signalled to the adjacent switch. LNP processing also is done at the adjacent switch. If the adjacent switch is not a tandem switch, a looparound trunk to the same office ensures that LNP processing occurs soon enough in the network to avoid last resort routing. <p>For trunking recommendations, refer to the Operator handled calls section.</p> <p>The default is Y.</p>

800+ Interworking with LNP (end)

Datafill example for table TOPSPARM

The following example shows sample datafill for table TOPSPARM.

MAP display example for table TOPSPARM

PARMNAME	PARMVAL
-----	-----
NSC_800PLUS_QUERY_AT_POSITION	Y

Translation verification tools

800+ Interworking with LNP does not use translation verification tools.

SERVORD

800+ Interworking with LNP does not use SERVORD.

AMA Table 281

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS07 and up

AMA Table 281 was introduced in TOPS07.

Prerequisites

To operate, AMA Table 281 requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This functionality adds new values to the Rate Indicator in TOPS AMA Table 281 for the following calls:

- Reconnect after a credit request.
- Manual handling of a directory assistance call that could be completed by using directory assistance call completion (DACC).

This functionality is provided by the following feature:

Feature number	Feature name
AF6511	TOPS AMA Table 281 Modifications

Operation

Refer to the Billing section.

Translations table flow

The AMA Table 281 does not have translations table flow.

Limitations and restrictions

AMA Table 281 has no limitations or restrictions.

Interactions

AMA Table 281 has no functionality interactions.

AMA Table 281 (continued)**Activation/deactivation by the end user**

AMA Table 281 requires no activation or deactivation by the end user.

Billing**Reconnect after a credit request**

Prior to this functionality, if a customer lost connection due to a service difficulty, they may have called the operator to request billing credit for the previous call and to be reconnected. Since there was no billing record that the reconnect was due to a service difficulty, the customer was unreasonably surcharged.

Note that use of Dial Rate keying by the operator negates a surcharge on a station paid call only. In a DA application, Dial Rate keying applies the lowest surcharge, it does not remove the surcharge.

With this functionality, when the operator enters Charge Adjust keying, Table 281, byte 1 is set to 6. This indicates a reconnect following credit and the operating company revenue accounting office (RAO) should ignore the associated operator surcharge. The following records are generated for this call:

Reconnect following credit AMA records

Record	Call code	Module	Tables/Values	Description
Original call record	192 or 194	051	Table 281, byte1=1	RAO determined
Mirror of original call record with elapsed time when connected	192 or 194	051	Table 281, byte1=6	RAO determined
The credit record (call code 189)	189	058	Table 204 describes the charge adjust	Reconnect credit

AMA Table 281 (continued)**Manual handling of a DACC call**

For 411, 555, and 0- calls, the customer may request the operator to manually complete a DA call, rather than releasing to the automated system (DACC). Therefore, the possible types of DA service are as follows:

- Automated DA - The DA operator obtains information from the calling party and releases to audio. This requires minimal operator involvement and is therefore the lowest charge.
- Operator assisted - The DA operator obtains information from the calling party and releases to audio. The call returns from audio and the operator manually quotes the information. Since this involves a combination of manual and automatic, the rate should be between fully automatic and operator handled.
- Operator handled - The DA operator obtains information from the calling party and manually quotes the information. This requires the highest level of operator involvement and is therefore charged at the highest rate.

The type of DA service is indicated in AMA Table 282, shown in the following tables, before and with this functionality:

DA AMA values (prior to this functionality)

Service level	Module	Tables/Values	Description
Automated DA	051	Table 281, Byte1=1	RAO determined
		Table 282, Byte1=3	Auto OSS completion
		Table 282 Byte5=7	Subsequent to DA
Non-automated DA	051	Table 281, Byte1=1	RAO determined
		Table 282, Byte1=1	Norm OSS completion
		Table 282, Byte5=7	Subsequent to DA

DA AMA values (with this functionality)

Service level	Module	Tables/Values	Description
Automated DA	051	Table 281, Byte1=1	RAO determined
		Table 282, Byte1=3	Auto OSS completion
		Table 282 Byte5=7	Subsequent to DA

AMA Table 281 (continued)

DA AMA values (with this functionality)

Service level	Module	Tables/Values	Description
Operator assisted DA	051	Table 281, Byte1=1	RAO determined
		Table 282, Byte1=1	Norm OSS completion
		Table 282, Byte5=7	Subsequent to DA
Operator handled DA	051	Table 281, Byte1=7	Operator invoked manual
		Table 282, Byte1=1	Norm OSS completion
		Table 282, Byte5=7	Subsequent to DA

Datafill

The above changes to AMA Table 281 are enabled by table TOPAMAOP new parameter ENHANCED_RATE_INDICATORS. Refer to the datafill procedure section for details.

AMA Module and Table descriptions

Module Code 051 is appended to the record when the operator performs a reconnect after credit or call completion service. The following shows this table with the new Rate indicator.

Module code 051

Information	Field number	Number of characters
Module code	88	4
Overseas NPA dialing indicator	15	2
Terminating NPA	16	6
Terminating number	17	8
Completion indicator	280	4
<i>Rate indicator</i>	281	2
OSS call completion service conditions	282	8

AMA Table 281 (continued)

The following table shows AMA Table 281 with new values 6 and 7.

281 - Rate indicator

Character	Value	Meaning
1		Rate indicator
	1	RAO determined rates. Prior to this functionality, this value was recorded for all call completion calls that did not record any of the values 2-5.
	2	Operator invoked customer dialed rates. This value is recorded when the operator keys DIAL RATE which invokes direct dialed rates for the call.
	3	Operator invoked, non-revenue/no-AMA call. This value is recorded when the operator keys NO AMA or `NO AMA' appears on the screen.
	4	Free call, table invoked free call. This value is recorded when the called number appears in table SERVSCRN as `TOLLFREE'.
	5	DDD CAMA ONI call operator identified only. This value is recorded in two situations. The first is a CAMA call (either ONI or ANI fail). The second is a 1+ call that has the following characteristics: <ul style="list-style-type: none"> • a non-carrier call • dialed 1+ • billed station paid • calling party is station (non-coin, non-hotel, non-restricted) • ANI status is ONI • no Time and Charges • no non-standard notify
	6	Reconnect following credit. This is a new value that is recorded when an operator keys Charge Adjust on a reconnect following a credit.

AMA Table 281 (continued)

281 - Rate indicator

Character	Value	Meaning
	7	Manual handling rate. This is a new value that is recorded when the operator indicates a call was a manually handled DACC call.
2	hex C	Sign

The following figure is an example of an AMA record with an appended Module Code 051.

Example AMA record with Module Code 051

```

HEX ID:AA STRUCTURE CODE:40752C CALL CODE:192C
SENSOR TYPE:036C SENSOR ID:0000000C
REC OFFICE TYPE:036C REC OFFICE ID:0000000C DATE:970130
TIMING IND:00000C STUDY IND:0000000C SERVICE OBSERVED:0C
ORIG NPA:613C ORIG NUMBER:2391234C
CONNECT TIME:0427380C ELAPSED TIME:000005320C
OPERATOR IDS:10102000000000C ACC OPERATOR WORK TIME:00250C
SERVICE FEATURE:000C STATION SIGNALLING IND:9C
SCREENING CODE:000C CALLED NUMBER INPUT:1C
CALLING NUMBER SOURCE:1C MODULE CODE:051C OVERSEAS IND:1C
TERM NPA:00212C TERM NUMBER:2208978C
COMPLETION IND:001C RATE IND:7C
OSS CALL COMPLETION CONDITIONS:1111100C
MODULE CODE:000C
    
```

Station Message Detail Recording

AMA Table 281 does not affect Station Message Detail Recording.

Datafilling office parameters

AMA Table 281 does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement AMA Table 281. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for AMA Table 281

Table	Purpose of table
TOPAMAOP	TOPS AMA Options specifies billing options

AMA Table 281 (end)

Datafilling table TOPAMAOP

The following table shows the datafill specific to AMA Table 281 for table TOPAMAOP. Only those fields that apply directly to AMA Table 281 are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TOPAMAOP

PARMNAME	Explanation and action
ENHANCED_RATE_INDICATORS	This is a new parameter that determines the range of field Rate Indicator in Module code 051, Table 281. If this parameter is set to Y, the field's range is 1-7. If this parameter is set to N, the field's range is 1-5.

Datafill example for table TOPAMAOP

The following example shows sample datafill for table TOPAMAOP.

MAP display example for table TOPAMAOP

AMAOPT	OPTINFO

ENHANCED_RATE_INDICATORS	Y

Translation verification tools

AMA Table 281 does not use translation verification tools.

SERVORD

AMA Table 281 does not use SERVORD.

Attendant Pay Station

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Functional group ordering code: ABSM0019

Functionality ordering code: ABSM009

Release applicability

APC009.1

TOPS09 and up

Attendant Pay Station was introduced in TOPS09.

Prerequisites

To operate, Attendant Pay Station requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This functionality supports calls from an attendant pay station (APS). An APS is a public site for placing telephone calls. Each site has supervision by an attendant who assigns telephones to customers and collects payments on their calls.

This functionality consists of the following feature:

Feature number	Feature name
AF7161	Attendant Pay Station

This functionality supports calls from an attendant pay station (APS). An APS is a public service building where a customer can make a telephone call. An attendant supervises the site, assigns a telephone to a customer, and collects payment for each call.

Attendant Pay Station (continued)

Customers can make the following types of calls:

- operator assisted
- direct-dial toll
- direct-dial local

Operation

This section describes how APS calls are identified, handled, recorded, and rated.

Identify APS direct-dial local and toll calls

Provision metering on each Integrated Business Network (IBN) line in the service building. Provision APS on each line in the service building using service order (SERVORD) option APS. This option identifies calls coming from a service building.

Identify APS operator-assisted calls

An APS operator-assisted call requires automatic number identification (ANI) digits to identify the call as an APS call.

ANI identification digits identify an APS call. Table OPENANI maps incoming ANI ID digits and ANI format to an APS operator-assisted call.

Identify APS calls

APS calls are received over TOPS trunks and identified by either of the methods as follows:

- Dedicated APS trunks: Field STATCLASS (station class) has new value APS for TOPS incoming trunks.
- ANI ID digits: This method applies TOPS trunks which use open number signaling. Table OPENANI maps incoming ANI ID digits and ANI format to a calling service feature. This method requires that the office signaling the call can determine it is an APS call. Currently, R1 and GOSS7 trunks can use table OPENANI.

Details on the above tables are given in the datafill procedure section.

Call handling

All operator-assisted dialed calls marked as APS calls route to an operator position. When the call arrives, the operator must enter a booth number*¹, bill the call, and can indicate a fixed duration. Then, the operator releases the call.

¹* A booth number is equivalent to a room number for a hotel call.

Attendant Pay Station (continued)

All direct dial (DD), operator handled (OH), and operator assisted (OA) dialed calls marked as APS calls route to an operator position.

When the call arrives, the operator must enter a booth number, bill the call and can indicate fixed duration. Then, the operator releases the call. A booth number is equivalent to a room number for a hotel call.

On termination of the call, a call record is generated at either a hotel billing information center (HOBIC) or on a log. The call record indicates the charges for the call.

Note: APS call records are not generated for no answer, no duration operator assisted (that is, a call that goes to an operator or automated system) APS calls.

Fixed duration

APS calls are marked as fixed duration by either of the methods as follows:

- Table TOPSPARM new parameter FIXED_DURATION_APS. The operator must enter a duration before the call releases.
- The operator marks the call as fixed duration..

For APS calls marked as fixed duration, table TOPSPARM parameter ALERT_TONE_TIME defines the period. This parameter specifies the number of seconds before the duration period expires. At the end of the period, a tone notifies the parties that the call will be terminated.

When the specified duration period expires, the call ends and a call record is generated with the charges.

Call records

An APS call record can be either a HOBIC record or an APS log. Refer to the *DMS-100 Family Maintenance and Operations Manual*, 297-8991-500 for more information about HOBIC and HOBIC records. Refer to the *Advanced Business Services Log Report Reference Manual*, for more information about APS logs.

An APS call record can be either a HOBIC record or an APS log. Refer to the *DMS-100 Family Maintenance and Operations Manual*, 297-8991-500 for more information about HOBIC and HOBIC records. Refer to the *DMS-100 Log Report Reference Manual*, 297-8021-840 for more information about APS logs.

Attendant Pay Station (continued)

An APS call record routes to a HOBIC device or log by either of the methods as follows:

- Table SPLDNID indicates a HOBIC device (AQHTL or VQHTL) or log. The log is new selector APSLOG in field SEL. The directory number is the APS (calling) number. The service hall contains the AQHTL. The HOBIC contains the VQHTL device.
- Tables DNSCRN, TOPSDB, and TDBCLASS. Table DNSCRN contains an APS directory number and a pointer to table TOPSDB that points to table TDBCLASS. Table TDBCLASS specifies the device the same as table SPLDNID above.

HOBIC device

Charge information for each type of call transfers to the HOBIC. HOBIC is an operator attended location that is next to a DMS switch that has Traffic Operator Position System (TOPS) software.

The allowed APS HOBIC devices are AQHTL and VQHTL. The service hall contains the AQHTL. The HOBIC contains the VQHTL device.

Use tables DNSCRN, TOPSDB, and TDBCLASS to specify a HOBIC device. Table DNSCRN contains an APS directory number and a pointer to table TOPSDB that points to table TDBCLASS. Table TDBCLASS specifies the device.

LOG device

Operating company personnel can specify a log device. Datafill value APSLOG in the device field of table TDBCLASS to specify an APSLOG device.

Assign a class to an APS log in table LOGCLASS. Assign each log class a physical log device in table LOGDEV. Table LOGDEV also allows operating company personnel to specify an alternate log device. If the primary log device fails, the switch uses the alternate log device. Information from both tables determines where the APS1XX log prints. Refer to the *Advanced Business Translations Guide* for more information about tables LOGCLASS and LOGDEV.

If operating company personnel do not assign a device to an APS call or datafill table DNSCRN incorrectly, an APS100 log generates.

All DMS switch logs are automatically saved in log buffers. If the specified log device goes out of service, manual operation is available. Manual retrieval of the logs in the DMS log buffers is available until the log device returns to service.

Attendant Pay Station (continued)

Table OFCVAR office parameters LOG_CENTRAL_BUFFER_SIZE and LOG_DEVICE_BUFFER_SIZE define the size of each buffer. A log stays in the buffer until it prints.

Charges for APS calls

The APS log report or HOBIC record indicates the charge information for each call. Direct-dial local calls use a different method of calculating call charges compared to direct-dial toll and operator assisted calls.

The switch uses table OFCVAR office parameter METER_PULSE_MONETARY_RATE and meter counts to calculate the charge for direct-dial local calls. METER_PULSE_MONETARY_RATE stores the charge factor for each call. The switch multiplies the METER_PULSE_MONETARY_RATE value with the meter pulses for each call to determine the total charge. This information transfers to the APS1XX log or HOBIC record.

The switch that contains the TOPS software determines the charge for direct-dial toll calls. Direct-dial toll calls use the Global Traffic Operator Position System (GTOPS) internal rating system tables to determine the charge for a call.

No charge calls

Calls that have no charge (for example, collect and alternate billing) are indicated by field NC in table TDBCLASS. This field affects call records as follows:

- Y-Generate an APS log or HOBIC record for all calls.
- N-Generate an APS log or HOBIC record for calls that have charges.

GTOPS internal rating tables

The GTOPS system defines a set of charge rates based on calling numbers, called numbers, call type, and time of call. Provision the GTOPS internal rating tables to provide charges for direct-dial toll calls.

The following GTOPS tables must be datafilled in the order shown to define the minimum set of charge rates:

- SSETNAME
- SCHNAME
- CLGSSET
- SCHEDEF
- RSNAT

Attendant Pay Station (continued)

- RSFOR
- RSLOC
- CHGHEAD

Refer to *Advanced Business Services Translations Guide* for more information about GTOPS.

If you datafill the GTOPS tables incorrectly, the following information displays in the charge field of the APS log or HOBIC record:

- the charge field has no value for an APS log
- the charge field has a value of \$999.99 for a HOBIC record

Call rating

All APS calls are rated as operator assisted with a call attribute of APS. This condition applies unless the operator marks the call as Dial Rate. If the operator marks the APS call as Dial Rate, the call is then rated as a Direct Dialed with a call attribute of APS. This information goes into the global rating system where charges for the call are calculated.

LOGS

New APS1XX logs (where XX is 00-21) are created to print APS call records to a log device.

Translations table flow

The Attendant Pay Station translations tables are described in the following list:

- Table CLLI defines the APS trunk.
- Table TRKGRP defines the APS trunk.
- Table TRKSGRP defines the APS trunk.
- Table TRKMEM defines the APS trunk.
- Table DNSCRN contains a pointer to table TOPSDB for each directory number.
- Table TOPSDB contains a pointer to table TDBCLASS.
- Table TDBCLASS lists call record devices.
- Table SPLDNID defines call record devices for directory numbers.
- Table TOPSDEV defines TOPS office devices.

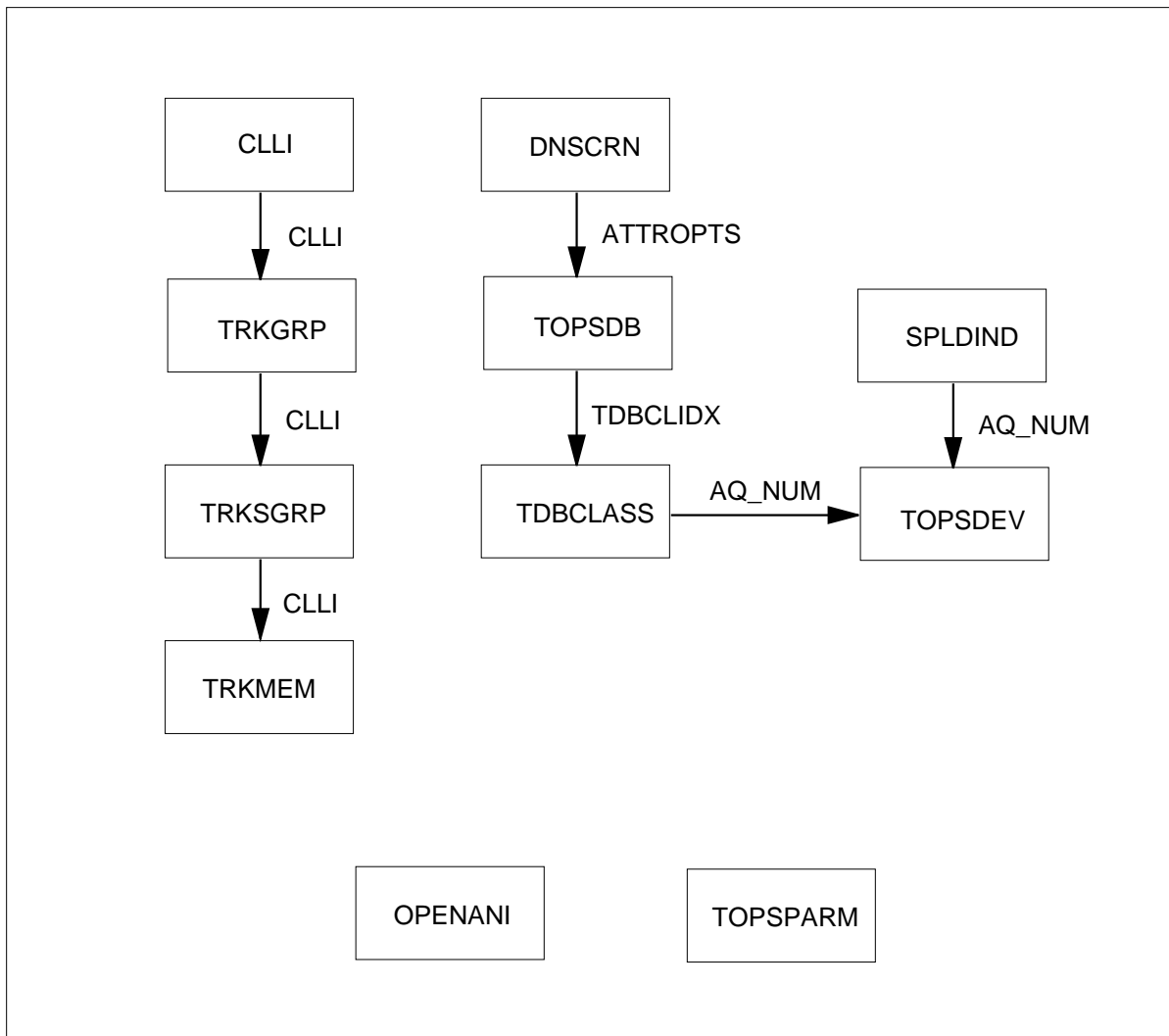
Attendant Pay Station (continued)

The Attendant Pay Station translations tables are described in the following list:

- Table DNSCRN contains a pointer to table TOPSDB for each directory number.
- Table TOPSDB contains a pointer to table TDBCLASS.
- Table TDBCLASS lists call record devices.
- Table TOPSDEV defines TOPS office devices.

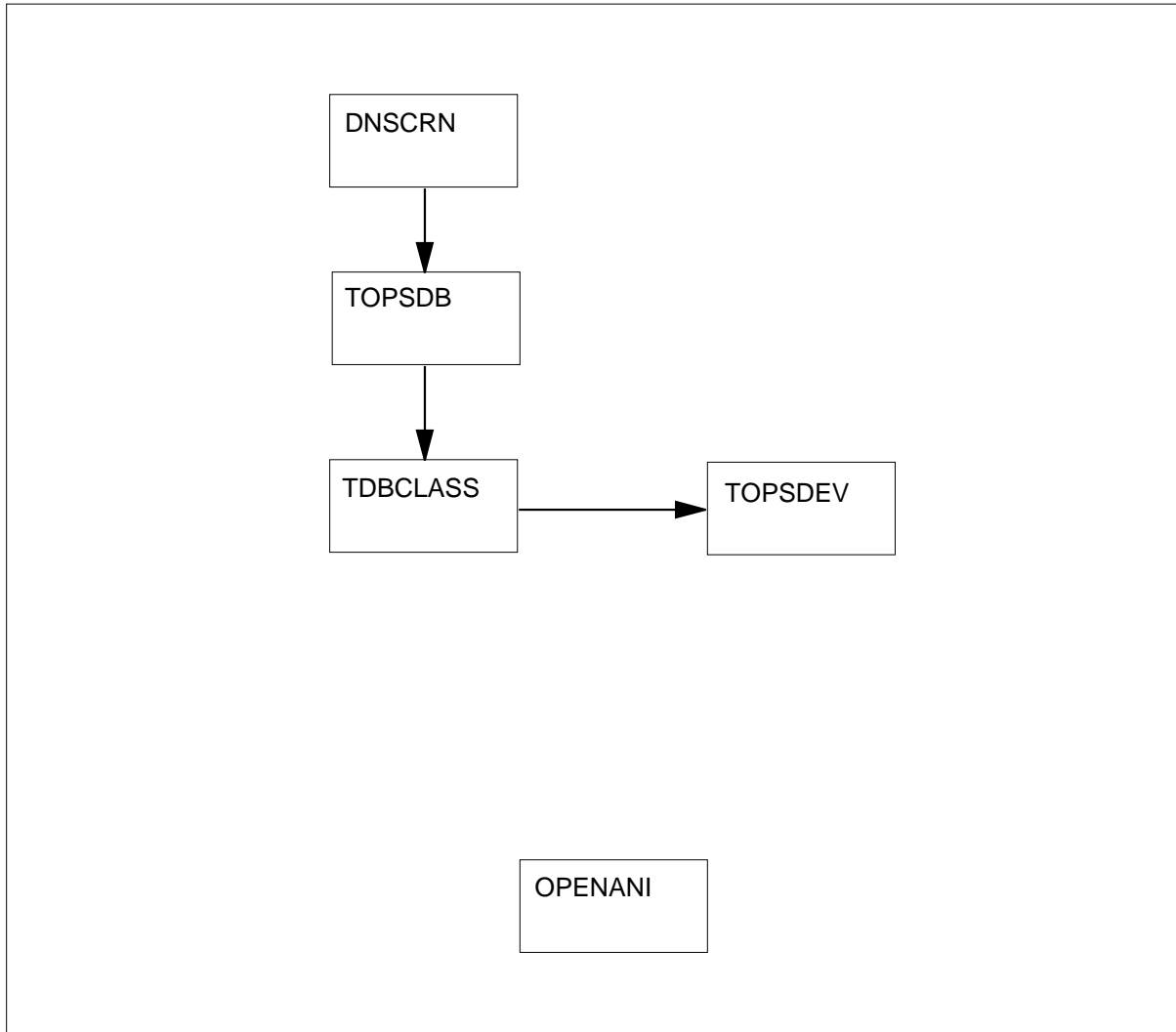
The Attendant Pay Station translation process is shown in the flowchart that follows.

Table flow for Attendant Pay Station



Attendant Pay Station (continued)

Table flow for Attendant Pay Station



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

Datafill example for Attendant Pay Station

Datafill table	Example data
CLLI	T2TI00 258 24 APS
TRKGRP	T2TI00 TOPS 0 TLD NCRT 2W MIDL 816 TXLA NLCA NSCR N NIL APS N N 3 1234 NONE OPENNUM 2 2 N WINK N N \$
TRKSGRP	T2TI00 0 DS1SIG STD OG NP IM 0 0 NO NO N N Y 70

Attendant Pay Station (continued)

Datafill example for Attendant Pay Station

Datafill table	Example data
TRKMEM	T2TI00 2 0 DCM 0 0 21
DNSCRN	6201234567 (TOPSDB 10 0) \$
TOPSDB	10 10 0 0 0 0
TDBCLASS	1 AQHTL 1 Y
TOPSDEV	1 AQ E LF17 VER TM8 0 0 2X72AC BELL108

Datafill example for Attendant Pay Station

Datafill table	Example data
DNSCRN	6201234567 (TOPSDB 10 0) \$
TOPSDB	10 10 0 0 0 0
TDBCLASS	10 VQHTL N N N
TOPSDEV	1 VQ E LF17 VER TM8 0 0 2X72AC BELL108
OPENANI	40 ANI APS
Note: Datafill table OPENANI for APS operator assisted calls.	

Limitations and restrictions

The following limitations and restrictions apply to Attendant Pay Station:

- The global rating system supports sub-period billing, and the actual charges for the call reflect any sub-period billing charges. But, the duration of the call is rounded to the nearest minute when the call record generates.
- Time and Charges is not allowed with APS calls.
- Consider GOSS7 trunks that use table OPENANI to determine if the call is an APS call. The incoming Initial Address Message (IAM) must contain an Originating Line Indicator (OLI) parameter. The value in the OLI parameter is the index into table OPENANI.
- There is a requirement for subscribers who want to receive Selective Charge Recording (SCR) on calls that route to the TOPS switch. These subscribers must request the operator to mark the call as a Time and Charges call. On completion of the call, the originating party remains

Attendant Pay Station (continued)

off-hook and the call routes to an operator for an announcement. The announcement indicates the duration and charges for the call.

As stated above, Time and Charges is not allowed for APS calls.

The following limitations and restrictions apply to Attendant Pay Station:

- APS operator assisted calls do not support the following features:
 - Automatic Line (AUL)
 - Call Forward to Announcement (CFTANN)
 - Call Forward to Operator (CFO)
 - Call Forward Fixed (CFF)
 - Call Forwarding All Calls (CFU)
 - Call Forwarding Busy (CFB)
 - Call Forwarding Don't Answer (CFDA)
 - Call Transfer (CXR)
 - Call Waiting (CWT)
 - Calling Line Identification with Flash (CLF)
 - Cancel Call Waiting (CCW)
 - Free Number Origination (FNO)
 - Hotel (HOT)
 - Printed Meter Check (PMC)
 - Ring Again (RAG)
 - Six Way Call
 - Speed Calling (SCS)
 - Station Activated Do Not Disturb (MSB)
 - Subscriber Activated Call Blocking (SACB)
 - Three way Call (3WC)
 - Voice Mail
 - Wake-Up Call (WUCR)
 - Warm Line (WML)
- APS does not support Universal Access to Wake-up Call (UAWUCR).

Attendant Pay Station (continued)

- APS direct-dial toll calls require the GTOPS internal rating tables.
- APS direct-local calls require operating company personnel to provision metering on each APS line.

Interactions

Attendant Pay Station has no functionality interactions.

The following paragraphs describe the features an attendant pay station can use and the how an attendant pay station call affects features on a terminating line.

Operating company personnel can provision the following features for an APS:

- Hunt Group Service
- Subscriber Activated Call Blocking (SACB)
- Suspended Service (SUS)

Attendant Pay Station (continued)

APS direct-dial local and toll calls interact with features on a terminating line. The following list describes how an APS call can use other features that are on a terminating line:

- Call Forward
 - A terminating line can forward an APS direct-dial local or toll call. The switch applies regular call forward charges to the APS call.
- Call Waiting
 - A terminating line can have Call Waiting. The switch charges an APS direct dial or local call when the terminating line answers the APS call.
- Calling Line Identification with Flash
 - A terminating line that has Calling Line Identification with Flash can trace calls to an APS.
- Free Number Termination
 - If an APS direct-dial local or toll call terminates to a line with Free Number Termination (FNT), the call is free of charge.
- Three-way or Six-way Call
 - A terminating line can transfer an APS direct-dial toll or local call to a conference call. The switch charges the APS call for the time the APS call is in conference.

Activation/deactivation by the end user

Attendant Pay Station requires no activation or deactivation by the end user.

Billing

All APS calls generate an Origination Call Type Module Code 311. The recorded call origination type is Attendant Pay Station (value 31).

If the APS call has charges (that is, the call is not alternately billed) the record contains information as follows:

- An Open Numbering Plan Environment (ONPE) Charges Module Code 036, or a charges Module Code 60 for the North American environment.

Note, APS calls that the operator marks as DD do not generate a Module Code 36 (or Module Code 60 for North American Markets) although the call has charges.
- A Charge Indicator of Time and Charges with Tax (value 3)
- The charges for the call.

Attendant Pay Station (continued)

Operating company personnel must provision the automatic message accounting (AMA) system to generate AMA records. The switch uses the AMA record to generate an APS log for direct-dial toll calls. The APS log contains the billing information for the call.

Station Message Detail Recording

Attendant Pay Station does not affect Station Message Detail Recording.

Datafilling office parameters

Attendant Pay Station does not affect office parameters.

The following table shows the office parameters used by Attendant Pay Station. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by Attendant Pay Station

Table name	Parameter name	Explanation and action
OFCVAR	APS_ANI_ID_DIGITS	This parameter specifies the digits sent in the Automatic Number Identification (ANI) ID field in an ANI message. The ANI message identifies outgoing operator assisted calls. This parameter has a default value of 40.
	LOG_CENTRAL_BUFFER_SIZE	This parameter specifies the size of the log system central buffer.
	LOG_DEVICE_BUFFER_SIZE	This parameter specifies the size of the buffer for the devices.
	METER_PULSE_MONETARY_RATE	This parameter indicates the monetary value of each meter pulse for direct dial local calls. The value of the meter pulse can range from 0 to 100. This parameter has a default value of 1.

Attendant Pay Station (continued)

Datafill sequence

The following table lists the tables that require datafill to implement Attendant Pay Station. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Attendant Pay Station

Table	Purpose of table
TRKGRP	Trunk Group defines characteristics of trunk groups.
OPENANI	Open Automatic Number Identification defines the format and calling service for ANI digits.
TOPSDEV	TOPS Device table defines the device to which the APS log transfers.
SPLDNID	Special Directory Number Identification defines call record devices for directory numbers.
TDBCLASS	TOPS Database Class lists call record devices.
TOPSDB	TOPS Database contains a pointer to table TDBCLASS.
DNSCRN	Directory Number Screening contains a pointer to table TOPSDB for each directory number.
TOPSPARM	TOPS parameters contains office wide parameters for the TOPS office.

Datafill tables required for Attendant Pay Station

Table	Purpose of table
OPENANI	Open Automatic Number Identification defines the format and calling service for ANI digits.
TDBCLASS	TOPS Database Class assigns a device type.
TOPSDB	TOPS Database contains a pointer to table TDBCLASS.
DNSCRN	Directory Number Screening contains an APS directory number and a pointer to table TOPSDB for each directory number.
TOPSDEV	TOPS Device table defines the device to which the APS log transfers.
Note: Datafill table OPENANI for APS operator assisted calls.	

Datafilling table TRKGRP

The following table shows the datafill specific to Attendant Pay Station for table TRKGRP. Only those fields that apply directly to Attendant Pay Station

Attendant Pay Station (continued)

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

Datafilling table TRKGRP

Field	Subfield or refinement	Entry	Explanation and action
			This table supports APS calls that route over a dedicated trunk.
	STATCLASS	APS	Station class. Enter new value APS to mark the call.

Datafill example for table TRKGRP

The following example shows sample datafill for table TRKGRP.

MAP display example for table TRKGRP

```

GRPKEY
-----
T2TI00
TOPS 0 TLD NCRT 2W MIDL 816 TXLA NLCA NSCR N NIL APS N N 3 1234
NONE OPENNUM 2 2 N WINK N N $
GRPINFO
    
```

Datafilling table OPENANI

The following table shows the datafill specific to Attendant Pay Station for table OPENANI. Only those fields that apply directly to Attendant Pay Station are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table OPENANI

Field	Subfield or refinement	Entry	Explanation and action
			This table is not changed. This table supports open numbering plan signaling when the ANI ID marks the call as APS. Enter a tuple for this service.
FORMAT		ANI	ANI format. For an APS call, the ANI format must be ANI.
CLGSERV		APS	Calling service. Enter APS.

Attendant Pay Station (continued)

Datafilling table OPENANI

Field	Subfield or refinement	Entry	Explanation and action
ANIDIGS		2 digit 00 to 99	Automatic number identification digits. Enter the automatic number identification (ANI) index number.
FORMAT		alphabetic ANI, ANIF, or ONI	<p>Digit spill format. Enter the digit spill format.</p> <p>ANI. The ANI format expects called digits. If called digits are present, the switch flags the call as an ANI success. If called digits are not present, the switch flags the call as an ANI failure. Enter ANI for an APS call.</p> <p>ANIFThe ANI failure (ANIF) format does not expect called digits.</p> <p>If called digits are present, the switch performs the following functions:</p> <ul style="list-style-type: none"> • The switch flags the call as an ANI failure. • The switch ignores the received calling digits. <p>If called digits are not present, the switch flags the call as an ANI failure.</p> <p>ONI. The operator number identification (ONI) format does not expect called digits. If called digits are present, the switch flags the call as an ANI failure and ignores the received called digits. If called digits are not present, the switch flags the call as requiring ONI.</p>
CLGSERV		alphabetic APS	<p>Calling service feature type. Enter the calling service feature type.</p> <p>APS. Enter APS for the Attendant Pay Station service.</p>

Datafill example for table OPENANI

The following example shows sample datafill for table OPENANI.

Attendant Pay Station (continued)

MAP display example for table OPENANI

ANIDIGS	FORMAT	CLGSERV
0	ANI	STATION
1	ONI	STATION
2	ANIF	STATION
6	ANI	HOTEL
7	ANI	SPECIAL
8	ANIF	HOTEL
9	ANI	MOBILE
11	ANI	STATION
14	ANI	COIN
27	ANI	COIN
32	ONI	INTC
33	ONI	BLDNINTC
34	ONI	TRBLINTC
40	ANI	APS
73	ANI	RESTRICT

Datafilling table TOPSDEV

The following table shows the datafill specific to Attendant Pay Station for table TOPSDEV. Only those fields that apply directly to Attendant Pay Station are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TOPSDEV

Field	Subfield or refinement	Entry	Explanation and action
DEVNO		numeric 1 to 9999	Device number Enter the device number assigned to the Traffic Operator Position System (TOPS) device. You can assign this number in random order with gaps. Entries outside the indicated range are invalid. The MAP display shows a range of 0 to 9999; however, 0 is not valid.
DEVTYPE		see subfield	Device type This field consists of subfield DEVSEL and refinements.
	DEVSEL	alphabetic AQ or VQ	Device selector Enter the device selector.

Attendant Pay Station (continued)

Datafilling table TOPSDEV

Field	Subfield or refinement	Entry	Explanation and action
			Enter AQ (auto quote) for the auto quote device selector. Enter VQ (voice quote) for the voice quote device.

Datafilling table TOPSDEV

Field	Subfield or refinement	Entry	Explanation and action
DEVNO		numeric 1 to 9999	This table is not changed. If a new HOBIC record device is required to support APS, add a tuple.

Datafill example for table TOPSDEV

The following example shows sample datafill for table TOPSDEV.

MAP display example for table TOPSDEV

DEVNO	DEVTYPE
-----	-----
1	VQ E LF17 VER TM8 0 0 2X72AC BELL108

Datafilling table SPLDNID

The following table shows the datafill specific to Attendant Pay Station for table SPLDNID. Only those fields that apply directly to Attendant Pay Station

Attendant Pay Station (continued)

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

Datafilling table SPLDNID

Field	Subfield or refinement	Entry	Explanation and action
SPLDN		1 to 10 digits	Special directory number. If this table routes call records to a HOBIC recording device or an APS log, enter the APS (calling) number.
SPLSEL		see subfield	Table SPLDNID selector. This field consists of subfield SEL and refinements.
	SEL	AQHTL, VQHTL, or APSLOG	Selector. Select a HOBIC recording device or a log. The only allowed entry for APS is AQHTL, VQHTL, or APSLOG. Enter AQHTL for the auto quote hotel device and enter datafill in refinements AQ_NUM and NC. Enter VQHTL for the voice quote hotel device and enter datafill in refinement NC. Enter new value APSLOG for a log and enter datafill in refinements APSLOG_NUM and NC.
	APSLOG_NUM	0 to 21	APS log number. This field indicates the log number in log APSLOGxx, where xx is the field entry.
	AQ_NUM	0 to 9999	Autoquote device number. Enter the TTY for this directory number. This number is the index into table TOPSDEV.
	NC	Y or N	No charge calls. Enter Y to record all calls, charge and no charge. No charge calls have no charge or tax on the record. Enter N to record only charge calls. This field does not apply to no answer, no duration calls.

Datafill example for table SPLDNID

The following example shows sample datafill for table SPLDIND.

Attendant Pay Station (continued)

MAP display example for table SPLDNID

```

SPLDN      SPLSEL
-----
6201234567  APSLOG 12 Y
    
```

The above examples shows that a call made from DN 6201234567 would route to TOPS as an APS call and print out an APS 112 log.

Datafilling table TDBCLASS

The following table shows the datafill specific to Attendant Pay Station for table TDBCLASS. Only those fields that apply directly to Attendant Pay Station are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TDBCLASS

Field	Subfield or refinement	Entry	Explanation and action
			This table is not changed. If tables DNSCRN, TOPSDB, and TDBCLASS route call records to a recording device, enter a tuple to support the APS number.
	SEL	AQHTL, VQHTL, or APSLOG	<p>Selector. Select a HOBIC recording device or a log. The only allowed entry for APS is AQHTL, VQHTL, or APSLOG.</p> <p>Enter AQHTL for the auto quote hotel device and enter datafill in refinements AQ_NUM and NC.</p> <p>Enter VQHTL for the voice quote hotel device and enter datafill in refinement NC.</p> <p>Enter new value APSLOG for a log and enter datafill in refinements APSLOG_NUM and NC.</p>
	APSLOG_NUM	0 to 21	APS log number. This field indicates the log number in log APSLOGxx, where xx is the field entry.

Attendant Pay Station (continued)

Datafilling table TDBCLASS

Field	Subfield or refinement	Entry	Explanation and action
	AQ_NUM	0 to 9999	Autoquote device number. Enter the TTY for this directory number. This number is the index into table TOPSDEV.
	NC	Y or N	No charge calls. Enter Y to record all calls, charge and no charge. No charge calls have no charge or tax on the record. Enter N to record only charge calls. This field does not apply to no answer, no duration calls.

Datafilling table TDBCLASS

Field	Subfield or refinement	Entry	Explanation and action
IDX		numeric 0 to 1000	IndexThis field is the key to the table. Enter the table index. Table TOPSDB references the entry in field IDX.
SEL	SEL	alphabetic AQHTL, VQHTL, or APSLOG	SelectorSelect a recording device. The only allowed entry for APS is either AQHTL, VQHTL or APSLOG. Enter AQHTL for the auto quote hotel device. Enter VQHTL for the voice quote hotel device. Enter APSLOG for the APSLOG.

Datafill example for table TDBCLASS

The following example shows sample datafill for table TDBCLASS.

MAP display example for table TDBCLASS

IDX	TDBCLSEL	ARANSEL	EAANI	BLKCLI
10	VQHTL	N	N	N

Attendant Pay Station (continued)

MAP display example for table TDBCLASS

IDX	TDBCLSEL	ARANSEL	EAANI	BLKCLI
10	VQHTL	N	N	N

Datafilling table DNSCRN

The following table shows the datafill specific to Attendant Pay Station for table DNSCRN. Only those fields that apply directly to Attendant Pay Station are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table DNSCRN

Field	Subfield or refinement	Entry	Explanation and action
DN		see subfield	Directory numberThis field consists of subfield DNDIGS.
	DNDIGS	vector up to 24 digits	Directory number digitsEnter the directory number (DN) that represents the calling line number or the called line number.
ATTROPTS		alphanumeric TOPSDB	Screening attribute optionsEnter the screening attributes. Enter TOPSDB to allow DNs, entered in table DNSCRN, to index into table TOPSDB.

Datafill example for table DNSCRN

The following example shows sample datafill for table DNSCRN.

MAP display example for table DNSCRN

DN	ATTROPTS
6201234567	TOPSDB 10 0

Datafilling table TOPSDB

The following table shows the datafill specific to Attendant Pay Station for table TOPSDB. Only those fields that apply directly to Attendant Pay Station

Attendant Pay Station (continued)

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

Datafilling table TOPSDB

Field	Subfield or refinement	Entry	Explanation and action
			This table is not changed. If tables DNSCRN, TOPSDB, and TDBCLASS route call records to a HOBIC record device or an APS log, enter a tuple to support the APS number.

Datafilling table TOPSDB

Field	Subfield or refinement	Entry	Explanation and action
TDBKEY		see subfield	TOPS data base key. Enter the DNSCRN index.
	IDX	numeric 0 to 32 766	Index. Enter the data value from the attribute in table DNSCRN.

Datafill example for table TOPSDB

The following example shows sample datafill for table TOPSDB.

MAP display example for table TOPSDB

TDBKEY	TDBCLIDX	TDBDAOPT	TDBNORM	TDBSERV	OAFUNBLK
10	10	0	0	0	0

Datafill example for table TOPSDB

The following example shows sample datafill for table TOPSDB.

MAP display example for table TOPSDB

TDBKEY	TDBCLIDX	TDBDAOPT	TDBNORM	TDBSERV	OAFUNBLK
10	10	0	0	0	0

Datafilling table DNSCRN

The following table shows the datafill specific to Attendant Pay Station for table DNSCRN. Only those fields that apply directly to Attendant Pay Station

Attendant Pay Station (continued)

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

Datafilling table DNSCRN

Field	Subfield or refinement	Entry	Explanation and action
DN		see subfield	This table is not changed. If tables DNSCRN, TOPSDB, and TDBCLASS route call records to a HOBIC recording device or an APS log, enter a tuple for the APS (calling) directory number. Directory number. This field consists of subfield DNDIGS.
	DNDIGS	up to 24 digits	Directory number digits. Enter the APS (calling) directory number.

Datafill example for table DNSCRN

The following example shows sample datafill for table DNSCRN.

MAP display example for table DNSCRN

DN	ATTROPTS

6201234567	(TOPSDB 10 0) \$

Datafilling table TOPSPARM

The following table shows the datafill specific to Attendant Pay Station for table TOPSPARM. Only those parameters that apply directly to Attendant Pay

Attendant Pay Station (continued)

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

Datafilling table TOPSPARM

PARAMNAME	Explanation and action
ALERT_TONE_TIME	This existing parameter has no changes. It applies to APS calls marked as fixed duration. This parameter specifies the number of seconds before the duration period ends when a notification tone sounds.
FIXED_DURATION_APS	This new parameter indicates if APS calls are marked as fixed duration. APS calls are marked as fixed duration by either this parameter or the operator. When a call receives marking as fixed duration, the operator must first enter a duration for the call. Then, the operator can release the call. When the duration period ends, the switch stops the call and generates a record with the charges. The values are Y (yes, APS calls are fixed duration) and N (no, APS calls are not fixed duration). As mentioned above, parameter ALERT_TONE_TIME indicates the number of seconds before the duration period ends that a notification tone sounds.

Datafill example for table TOPSPARM

The following example shows sample datafill for table TOPSPARM.

MAP display example for table TOPSPARM

PARAMNAME	PARAMVAL
ALERT_TONE_TIME	5
FIXED_DURATION_APS	Y

Translation verification tools

Attendant Pay Station does not use translation verification tools.

SERVORD

Attendant Pay Station does not use SERVORD.

Attendant Pay Station uses servord option APS in SERVORD to provision the APS service.

SERVORD limitations and restrictions

Attendant Pay Station has no SERVORD limitations and restrictions.

Attendant Pay Station (end)

SERVORD prompts

The following table shows the SERVORD prompts used for the Attendant Pay Station feature.

SERVORD prompts for Attendant Pay Station

Prompt	Valid input	Explanation
SONUMBER	Date and time.	Enter the current date and time.
DN_OR_LEN	Valid directory number or line equipment number.	Enter the DN or LEN.
OPTION	APS	Enter APS for the Attendant Pay Station feature.

SERVORD example for adding Attendant Pay Station

The following SERVORD example shows how Attendant Pay Station is added to a line using the ADO command.

SERVORD example for Attendant Pay Station in prompt mode

```
>ADO
SONUMBER:      NOW  92  3 27 AM
>
DN_OR_LEN:
>6210000
OPTION:
>APS
OPTION:
> $
```

SERVORD example for Attendant Pay Station in no-prompt mode

```
>ADO $ 6210000 APS $
```

AudioGram Delivery Services-Offer of Service Prompt

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS12 and later versions

AudioGram Delivery Services-Offer of Service Prompt was introduced in TOPS05.

Requirements

To operate, AudioGram Delivery Services-Offer of Service Prompt has the following requirements:

- AABS Enhanced Services Access, ABS00101
- Automated Alternate Billing Service, ABS00101
- Base Generic, BAS00003
- ADS OOSP Voice Files (9T), EDRM0095 or ADS OOSP Voice Files (SLM), EDRM0094
- QMS Host/Remote Queueing, OSB00101
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y

Description

The following feature provides this functionality:

Feature number	Feature name
AN1542	TOPS MDS Enhancements (TOPS05)
59006865	EOL Notification and EOL of TOPS ACD (TOPS12)

Functionality synopsis

This functionality increases subscriber acceptance of AudioGram Delivery Services (ADS). These enhancements include the play of an offer of service prompt (OOSP) after an attempted connection to the called party. In most events, the Digital Multiplex System (DMS) switch offers a context sensitive OOSP to the subscriber when connection to the called party is determined not to occur. The first example of this condition is that the line of the called party

AudioGram Delivery Services-Offer of Service Prompt (continued)

is busy and the called party does not answer. The second example of this condition is that the line is ringing and the called party does not answer.

Note: The ADS was earlier named Message Delivery System (MDS). The MDS is used in datafill and is still correct.

Functional overview

This functionality contains enhancements to the original ADS functionality. These enhancements provide the subscriber and the operating company with an improved user interface. These enhancements apply to all ADS qualified calls. These calls are routed to the Voice Service Node (VSN) for Automated Alternate Billing Service (AABS) and 0- calling card calls.

This functionality provides the following list of enhancements:

- The DMS switch detects if the called party line is busy or ringing without answer.
- The DMS switch plays the Busy OOSP to the ADS subscriber on DMS switch detection of called party busy.
- The DMS switch plays the Network Busy OOSP to the ADS subscriber on DMS switch detection of network busy (fast busy).
- The operating company enters the length of time that the ADS subscriber hears the busy tone before the DMS switch plays the Busy OOSP. The maximum length of time is 15 s.
- The operating company can define the length of time that the subscriber can access ADS when the DMS switch plays the Busy OOSP.
- The operating company can define the length of time that ringing is detected on the line of the called party before the operating company interprets the call plan as Ring No Answer (RNA). The length of time is a maximum of 120 s.
- On DMS switch detection of RNA, the DMS switch plays the RNA OOSP to the ADS subscriber.
- A timer can determine when the DMS switch plays a Generic OOSP to the ADS subscriber. When this action occurs, detection of the network condition is not determined. Detections of the network condition are called party busy, network busy, and called party busy. You can assign values in the DMS switch through datafill. The appropriate range for this time is 0-60 s.

AudioGram Delivery Services-Offer of Service Prompt (continued)

- Bilingual prompts for the busy, network busy, RNA, and generic plans are available.

Note: The language name sent to the DMS switch in the AABS protocol determines the language prompt that the DMS switch must play. The switch receives this language name from subscriber input. The switch offers a bilingual prompt when the subscriber does not choose the language type.

- The subscriber selects ADS when connection is made to the called party.
- Improved ADS Operational Measurements are available.
- The DMS switch relays call status information to the Network Applications Vehicle (NAV)/ADS position when the switch routes the call for ADS.
- Operating companies can offer ADS for 0- calling card calls.

Operation

Background

ADS provides a method for a subscriber to leave a message with the called party when the calling party cannot reach the called party. The called party can or cannot accept the message. A fee is normally charged to the calling party for this service.

The original ADS functionality provided ADS to subscribers that place alternately billed 0+ or 0- calls that route to AABS. The switch played OOSP at the VSN before connection to the called party. This OOSP was not context sensitive.

The length of the OOSP (approximately 5-8 s) delayed the connection to the called party. This delay occurred because the switch played OOSP before connection to the called party. The subscriber perceived this delay as an a problem. Because the DMS played the OOSP on all alternately billed AABS calls that were ADS qualified, this problem was made worse. This problem occurred because the switch played OOSP on answered calls.

The ADS functionality was improved so that the functionality plays context sensitive OOSPs for Signal System 7 (SS7) calls. The functionality plays these calls when the DMS switch detects specified network conditions on the line of the called party.

DMS switch detection of network condition

The DMS switch can determine the network condition of ADS qualified calls that use outgoing SS7 trunks from the Traffic Operator Position System

AudioGram Delivery Services-Offer of Service Prompt (continued)

(TOPS) office. The specified network conditions that are monitored are network busy, called party busy, and called party ringing. When the network condition is not determined, the DMS switch plays a standard OOSP to the ADS subscriber. The switch plays this OOSP after the subscriber had a chance to connect to the called party.

Detection of called party busy and network busy

If the terminating office cannot complete an SS7 call because the called party is off-hook (called party busy) or because of resources that are not available (network busy), the DMS switch receives a message. This message indicates that the network condition of the call is called party busy or network busy. When the DMS switch receives the message, after the BUSY_TIMER expires, the DMS switch plays two different conditions. The switch plays the Busy OOSP or the Network Busy OOSP for the subscriber. The network condition that plays depends on the network condition encountered.

Detection of called party ringing

The terminating office for the SS7 call can determine that the called party is on-hook and the office can access the call. When this event occurs, the office applies ringing to the line. If the called party does not answer, the DMS switch receives a message. This message indicates that the network condition of the call is call party ringing. When the DMS switch receives the message, after the RNA_TIMER expires, the DMS switch plays the RNA OOSP for the subscriber.

Failure to detect network condition

The DMS switch cannot always detect the network condition of the call. The problem that causes this condition can include:

- the outgoing trunk that is not an SS7 type trunk. The outgoing trunk can be an analog MF trunk.
- the DMS switch receives a message that indicates a network condition other than called party busy, network busy or called party ringing
- the interworking condition encountered between the DMS switch and the terminating end office

The definition of interworking is the network condition value in the SS7 message when the connection to the called party is not end-to-end SS7.

Note 1: In all above conditions, the network condition is not determined. The switch initiates the FRONT_END_TIMER. When FRONT_END_TIMER expires, the DMS switch plays the Generic OOSP for the subscriber.

AudioGram Delivery Services-Offer of Service Prompt (continued)

Note 2: See the “Access timers” section for this functionality for an explanation of the ADS timers. See the “Offer of service prompts” section for this functionality for additional information about the ADS OOSPs.

Access timers

This ADS functionality creates four timers. These timers allow each operating company to customize the ADS network for best subscriber acceptance. The following list defines the four timers with the acceptable values in table MDSOPT and a description of the use of the timers:

- BUSY_TIMER (0-15 s)

This timer defines the length of time the DMS switch pauses before the switch plays the Busy or Network Busy OOSP. The switch plays these conditions when the switch determines the network condition to be called party busy or network busy.

For example, the outgoing trunk can be an SS7 trunk and the switch can detect a network condition of called party busy. When this action occurs, the switch initiates this timer. The calling party hears the standard busy tone until this timer expires. After this timer expires, the DMS switch plays the Busy OOSP.

- BUSY_AVAIL_TIMER (0-60 s)

This timer defines the length of time the ADS subscriber has access to ADS when the switch initiates Busy or Network Busy OOSP.

The switch starts this timer when the switch starts Busy or Network Busy OOSP. When this timer expires, the ADS subscriber cannot access ADS. This timer defines the point when the operating company can free up the ADS resources to use for other calls.

- RNA_TIMER (0-120 s)

This timer defines the length of time the DMS switch pauses before the switch plays the RNA OOSP. The switch plays the timer when the switch detects a network condition of called party ringing.

For example, the outgoing trunk can be an SS7 trunk and the DMS switch can detect a network condition of called party ringing. When this event occurs, the switch initiates this timer. The calling party hears standard

AudioGram Delivery Services-Offer of Service Prompt (continued)

ringing until this timer expires. After the timer expires, the DMS switch plays the RNA OOSP.

- FRONT_END_TIMER (0-60 s)

This timer defines the length of time the DMS switch pauses before the switch plays the Generic OOSP on an ADS qualified call. This call has a network condition that is not determined.

For example, when the outgoing trunk is an MF trunk, the DMS switch cannot determine the network condition of the call. The DMS switch starts this timer. When the timer expires, the DMS switch initiates the Generic OOSP.

This timer must make sure the DMS switch does not offer ADS on calls with intercept network conditions. Set the value of this timer large enough to accomplish this action. Perform this action so that during intercept treatment, the calling party hears the announcement and acts accordingly, and ends the call before the timer expires. Several examples of intercept network conditions are vacant number announcements, changed number announcements, and calls routed to an operator.

Table MDSOPT

This ADS functionality introduces table MDSOPT. The four timers discussed earlier and four additional tuples are entered in this table. Refer to the Subscriber ADS access and key action detection and AudioGram Delivery Services eligibility of 0- calling card calls sections for this functionality. These sections have information about these additional tuples. Refer to the following datafill example for MDSOPT.

MAP example for table MDSOPT

PARAM	VALUE
BUSY_TIMER	5
BUSY_AVAIL_TIMER	60
RNA_TIMER	30
FRONT_END_TIMER	30
HOOKFLASH_ENABLE	N
MDS_FOR_0_MINUS_CLG_CARD	N
LANG1	N
LANG2	N

AudioGram Delivery Services-Offer of Service Prompt (continued)

Offer of service prompts

This ADS functionality requires four separate ADS OOSPs. The DMS switch plays these OOSPs, not the VSN. The VSN plays these OOSPs with the original ADS functionality. The OOSP the DMS switch plays depends on the network condition of the call.

The operating companies retain VSN to play OOSPs until the operating companies make sure subscribers accept this ADS functionality.

The amount of time the VSN uses to play the OOSPs reduces the hold time of the VSN. The DMS switch provides the ADS OOSPs to the subscriber.

The operating company expects these four prompts to greatly improve subscriber acceptance of this ADS functionality. Three prompts are context sensitive. The fourth prompt is generic. The fourth prompt does not specify the reason that the calling party cannot reach the called party. All prompts can be bilingual.

Busy offer of service prompt

The DMS switch activates the Busy OOSP when the switch detects a network condition of called party busy and the BUSY_TIMER expires. The calling party hears the standard busy tone before the calling party hears the Busy OOSP. If the calling party remains on the call after the prompt completes, the calling party hears the standard busy tone again.

Network Busy offer of service prompt

The DMS switch activates the Busy OOSP when the switch detects a network condition of network busy. The BUSY_TIMER expires. The calling party hears the standard network busy tone before the calling party hears the Network Busy OOSP. If the calling party remains on the call after the prompt completes, the calling party hears standard network busy tone again.

RNA offer of service prompt

The DMS switch activates the RNA OOSP when the switch detects a network condition of called party ringing and the RNA_TIMER expires. The calling party hears standard ringing before the switch plays the RNA OOSP. If the calling party remains on the call after the prompt completes, the calling party hears the standard ringing again. If the called party answers during the prompt, the switch stops the prompt. The calling party can speak to the called party.

Generic offer of service prompt

The switch initiates the FRONT_END_TIMER when the switch cannot detect network condition of the call. The DMS switch activates the Generic OOSP

AudioGram Delivery Services-Offer of Service Prompt (continued)

after the FRONT_END_TIMER expires. This prompt is generic. This prompt does not specify the reason that the calling party cannot reach the called party.

EDRAM datafill procedure

This ADS functionality supports announcements that use Enhanced Digital Recorded Announcement Machine (EDRAM) announcements. Enter all EDRAM related tables.



DANGER

Make sure that only one person makes modifications.

When you perform this task, make sure that no other person in the office modifies DRAMREC or DRAMTRK.

The following list is the datafill sequence for the EDRAM tables:

- table TMINV
- table EDRAMINV
- table CLLI
- table DRAMS
- table ANNS
- table ANNMEMS
- DRAMREC utility
- table DRMUSERS

If changes are required to these tables after you enter the first ADS EDRAM information, follow the following special procedures in the order indicated:

1. Display and print the contents of DRMUSERS and DRAMREC.
2. Delete all ADS tuples from table DRMUSERS.
3. Delete all assigned ADS tuples in DRAMREC.
4. Use DRAMREC in the same order that appears in Step 1 to add new or changed ADS tuples again.
5. Add ADS tuples again in table DRMUSERS.

The following information explains each table and utility required for EDRAM datafill:

AudioGram Delivery Services-Offer of Service Prompt (continued)

Table TMINV. Table TMINV lists the assignment data for each trunk module. The subfield TMTYPE must be set to DTM because EDRAM only supports ADS announcements.

Note: TMTYPE is a subfield of field TMNM.

Sample datafill for table TMINV appears in the following example.

MAP example for table TMINV

TMNM	FRTYPE	FRNO	SHPOS	FLOOR	ROW	FRPOS	LKDATA	EQPEC	LOAD
	EXECS		SCTMLOC						
DTM 1	TME	004	04	00	P	44	1 28	1X80AA	EDRMAD06
	MTMEX		SINGLE_CARD			MTM 9 05			

Table EDRAMINV. Table EDRAMINV contains load file information for EDRAM. Each EDRAM has a maximum of eight single-density load files. Each load file can be a different set of announcement phrases.

Sample datafill for table EDRAMINV appear in the following example.

MAP example for table EDRAMINV

EDRAMNM	TUPINFO
DTM 1 1	ANN MDSTOP01

Table CLLI. Table CLLI contains the common language location identifier (CLLI) definitions that specify the maximum number of announcement members for ADS applications. If only one EDRAM card is available for ADS, the field TRKGRSIZ can be set to 30. This number allows all 30 channels on the EDRAM card to connect at the same time to play ADS OOSPs.

Sample datafill for table CLLI appears in the following example.

AudioGram Delivery Services-Offer of Service Prompt (continued)

MAP example for table CLLI

CLLI	ADNUM	TRKGRSIZ	ADMININF
MDSTOPS	115	30	MDS_ANN

Table DRAMS. Table DRAMS contains the physical card information related to the DRAM and EDRAM. The two fields that EDRAM directly affects are:

- CARDCODE
- TMTYPE

Note: Enter the CARDCODE field as 1X80AA (EDRAM card). Enter the TMTYPE field as DTM.

Sample datafill for table DRAMS appear in the following example.

MAP example for table DRAMS

DRAMCARD	TMTYPE	TMNO	TMCKT	CARDCODE	CARDINFO
0 0	DTM	1	0	1X80AA	CTLR EDRAM3
0 1	DTM	1	2	1X80AA	PROM (0)(1) \$

Table ANNS. Table ANNS defines the CLLI codes assigned to announcements and the maximum number of simultaneous connections that can be made to a single announcement. Table ANNS defines the cycle time of the announcement and the number of times the announcement must be repeated.

The cycle time of an announcement is very important. Make sure you correctly enter values. The precise timing for each announcement appears in the LENGTH field of the DRAMREC utility. The cycle time must be equal to the recorded length of the phrases that constitute the announcement.

The maximum number of cycles must be set to 1.

The ANTYPE field of this table provides the announcement type. The ANTYPE field must be set to the ADS announcement type MDS.

Sample datafill for table ANNS appears in the following example.

AudioGram Delivery Services-Offer of Service Prompt (continued)

MAP example for table ANNS

CLLI	ANTYPE	TRAFSNO	MAXCONN	CYTIME	MAXCYC
MDSTOPS	MDS	25	1	0	1

Table ANNMEMS. Table ANNMEMS contains the track assignments for each announcement member defined in table ANNS.

Sample datafill for table ANNMEMS appears in the following example.

MAP example for table ANNMEMS

ANNMEM	HDWTYPE	CARD	MEMINFO
MDSTOPS 0	DRAM	DRA	(0 DTM 1 0) \$
MDSTOPS 1	DRAM	DRA	(0 DTM 1 1) \$
"			"
MDSTOPS 29	DRAM	DRA	(0 DTM 1 29) \$

The DRAMREC utility defines announcement phases.

Sample data for the DRAMREC utility appears in the following example.

AudioGram Delivery Services-Offer of Service Prompt (continued)**DRAMREC sample input**

DRAMREC				
DRAM	PHRASENAME	LENGTH	BLOCK	PHRASENO
ASSIGN 0	EBUSY1A	2	0	4
ASSIGN 0	EBUSY1B	2	0	5
ASSIGN 0	FBUSY1A	2	1	4
ASSIGN 0	FBUSY1B	2	1	5
ASSIGN 0	FBUSY1C	2	1	6
ASSIGN 0	ERNA1A	2	0	8
ASSIGN 0	ERNA1B	2	0	9
ASSIGN 0	FRNA1A	2	1	7
ASSIGN 0	FRNA1B	2	1	8
ASSIGN 0	FRNA1C	2	1	9
ASSIGN 0	EBUSY2A	2	0	6
ASSIGN 0	EBUSY2B	2	0	7
ASSIGN 0	FBUSY2A	2	0	17
ASSIGN 0	FBUSY2B	2	0	18
ASSIGN 0	ERNA2	2	0	10
ASSIGN 0	FRNA2A	2	0	15
ASSIGN 0	FRNA2B	2	0	16
ASSIGN 0	ENOANSRA	2	1	17
ASSIGN 0	ENOANSRB	2	1	18
ASSIGN 0	ENOANSRC	2	1	19
ASSIGN 0	FNOANSRA	2	1	13
ASSIGN 0	FNOANSRB	2	1	14
ASSIGN 0	FNOANSRC	2	1	15
ASSIGN 0	ENETBUSYA	2	0	11
ASSIGN 0	ENETBUSYB	2	0	12
ASSIGN 0	FNETBUSYA	2	1	10
ASSIGN 0	FNETBUSYB	2	1	11
ASSIGN 0	FNETBUSYC	2	1	12
ASSIGN 0	EMESSAGE	2	1	16
ASSIGN 0	FMESSAGEA	2	0	13
ASSIGN 0	FMESSAGEB	2	0	14

Table DRMUSERS. Table DRMUSERS specifies the phrases that define an announcement. Use table DRMUSERS to join phrases and messages that play back as announcements. The phrases are assigned in programmable read-only memory (PROM) or recorded in random access memory (RAM) with the DRAMREC utility. The joined phrases create language tracks.

AudioGram Delivery Services-Offer of Service Prompt (continued)

Use caution when you enter announcements in table DRMUSERS. Twelve possible ADS announcement prompts are available. These prompts must meet the following numbering pattern:

- MDSTOPS 1 = Busy offer in primary language
- MDSTOPS 2 = Busy offer in secondary language
- MDSTOPS 3 = Busy offer in bilingual languages
- MDSTOPS 4 = Network Busy offer in primary language
- MDSTOPS 5 = Network Busy offer in secondary language
- MDSTOPS 6 = Network Busy offer in bilingual languages
- MDSTOPS 7 = Ring No Answer offer in primary language
- MDSTOPS 8 = Ring No Answer offer in secondary language
- MDSTOPS 9 = Ring No Answer offer in bilingual languages
- MDSTOPS 10 = Generic offer in primary language
- MDSTOPS 11 = Generic offer in secondary language
- MDSTOPS 12 = Generic offer in bilingual languages

Note: The numbering is standard. The announcement name depends on the what the operating company wants. This name must be defined in tables CLLI and ANNS.

The operating company can record announcement phrases for the company. The operating company can use the standard announcement phrases to compose the twelve differences of the OOSPs. The following table provides standard announcement information that the ADS load file provides. The phrase name is not standard. The operating company personnel can modify the phrase name. The phrase content is standard.

Note: Attenuated tones are automatically included with the standard announcements. Attenuated tones are busy tones or ringing tones that can

AudioGram Delivery Services-Offer of Service Prompt (continued)

be heard in the background of the OOSP. The operating company must record customized announcements.

AudioGram Delivery Services announcement phrases

Phrase name	Phrase Content
EBUSY1A	"The line is busy." (attenuated busy tone in background, one leading busy cycle tone in background.)
EBUSY1B	"To send a message, press star." (attenuated busy tone in background)
FBUSY1A	"La ligne est occupée." (attenuated busy tone in background, one leading busy cycle before prompt start.)
FBUSY1B	"Pour envoyer un message," (attenuated busy tone in background)
FBUSY1C	"appuyez sur l'étoile." (attenuated busy tone in background)
ERNA1A	"There is no answer." (attenuated ringing before prompt start.
ERNA1B	"To send a message, press star." (attenuated ringing tone in background)
FRNA1A	"Il n'y a pas de response." (attenuated ringing tone in background, one leading busy cycle before prompt start.)
FRNA1B	"Pour envoyer un message," (attenuated ringing tone in background)
FRNA1C	"appuyez sur l'étoile." (attenuated ringing tone in background)
EBUSY2A	"To send a message," (attenuated busy tone in background, one leading busy cycle before prompt start)
EBUSY2B	"press star." (attenuated busy tone in background)
FBUSY2A	"Pour envoyer un message," (attenuated busy tone in background, one leading busy cycle before prompt start)

AudioGram Delivery Services-Offer of Service Prompt (continued)

AudioGram Delivery Services announcement phrases

Phrase name	Phrase Content
FBUSY2B	"appuyez sur l'étoile." (attenuated busy tone in background)
ERNA2	"To send a message, press star." (attenuated ringing tone in background, one leading busy cycle before prompt start.)
FRNA2A	"Pour envoyer un message," (attenuated ringing tone in background, one leading busy cycle before prompt start.)
FRNA2B	"appuyez sur l'étoile." (attenuated ringing tone in background)
ENOANSRA	"Your call could not be completed."
ENOANSRB	"Press star for..."
ENOANSRC	"Bell Star Messenger Service."
FNOANSRA	"Votre appel ne peut pas etre achemine."
FNOANSRB	"Appuyez sur l'étoile pour..."
FNOANSRC	"Le Service Messageur Bell."
ENETBUSYA	"Your call could not be completed." (attenuated network busy tone in background)
ENETBUSYB	"To send a message, press star." (attenuated network busy tone in background)
FNETBUSYA	"Votre appel ne peut pas etre achemine." (attenuated network busy tone in background)
FNETBUSYB	"Pour envoyer un message..." (attenuated network busy tone in background)
FNETBUSYC	"appuyez sur l'étoile." (attenuated network busy tone in background)
EMESSAGE	"To send a message, press star."

AudioGram Delivery Services-Offer of Service Prompt (continued)

AudioGram Delivery Services announcement phrases

Phrase name	Phrase Content
FMESAGEA	"Pour envoyer un message..."
FMESAGEB	"appuyez sur l'étoile."

Sample datafill for table DRMUSERS appear in the following example.

MAP example for table DRMUSERS

USERANN	PHSLIST
MDSTOPS 1	(EBUSY1A) (EBUSY1B) \$
MDSTOPS 2	(FBUSY1A) (FBUSY1B) (FBUSY1C) \$
MDSTOPS 3	(EBUSY1A) (EBUSY1B) (FBUSY1A) (FBUSY1B) (FBUSY1C) \$
MDSTOPS 4	(ENETBUSYA) (ENETBUSYB) \$
MDSTOPS 5	(FNETBUSYA) (FNETBUSYB) (FNETBUSYC) \$
MDSTOPS 6	(ENETBUSYA) (ENETBUSYB) (FNETBUSYA) (FNETBUSYB) (FNETBUSYC) \$
MDSTOPS 7	(ERNA1A) (ERNA1B) \$
MDSTOPS 8	(FRNA1A) (FRNA1B) (FRNA1C) \$
MDSTOPS 9	(ERNA1A) (ERNA1B) (FRNA1A) (FRNA1B) (FRNA1C) \$
MDSTOPS 10	(EMESSAGE) \$
MDSTOPS 11	(FMESAGEA) (FMESAGEB) \$
MDSTOPS 12	(EMESSAGE) (FMESAGEA) (FMESAGEB) \$

Offer of service prompt examples

The following are examples of each OOSP:

- *Busy OOSP.* "The line is busy." "To send a message, press star." Linked phrase names EBUSY1A and EBUSY1B in table DRMUSERS compose this announcement.
- *Network OOSP.* "Your call could not be completed." "To send a message, press star." Linked phrase names ENETBUSYA and ENETBUSYB in table DRMUSERS compose this announcement.
- *RNA OOSP.* "There is no answer." "To send a message, press star." Linked phrase names ERNA1A and ERNA1B in table DRMUSERS compose this announcement.
- *Generic OOSP.* "To send a message press star."

AudioGram Delivery Services-Offer of Service Prompt (continued)

Note: For additional information on recording EDRAM announcements, refer to the *Digital Recorded Announcement Machine Maintenance Reference Manual*.

Subscriber ADS access and key action detection

This ADS functionality allows an ADS subscriber to access ADS when the connection to the called party is made. One of four call plans was encountered. These call plans are busy, network busy, RNA and generic. This functionality means that the calling party makes a connection to the line of the called party. This connection does not mean that the calling party answers the call. The BUSY_AVAIL_TIMER defined in the Access timers section for this functionality limits access to ADS for busy and network busy SS7 call plans. For other ADS qualified call plans, an ADS subscriber can access ADS on two conditions. These conditions are if the calling party did not abandon the call and the called party did not answer.

Identical to the original ADS functionality, the subscriber can press "*" when the connection to the called party is made. The subscriber presses "*" so the subscriber can access an automated ADS operator. The subscriber can press "0" or "hookflash" under the same situations to access a live ADS operator. In both conditions, the DMS switch routes the subscriber to the appropriate ADS operator.

Subscriber access to ADS through use of "hookflash" depends on the datafill of the operating company in the DMS switch. A tuple in table MDSOPT defines if the operating company enables "hookflash" as an appropriate request. This request is for ADS on calling card and bill-to-third party calls. If the tuple is set to Y, detection of "hookflash" is enabled. If tuple is not set to Y, detection is ignored. The "hookflash" capability allowed appears in the following example:

MAP example for table MDSOPT

PARAM	VALUE
HOOKFLASH_ENABLE	Y

A subscriber can access a live ADS operator through "hookflash" for collect calls. For these calls, VSN controls ADS access through the parameter MDS_HOOKFLASH_ENABLE in the VSN environment. This parameter determines if the subscriber can access ADS. When this parameter is set to Y, ADS access is enabled. When this parameter is set to N, the subscriber cannot access ADS through "hookflash". The VSN05 functionality ADS 0+ Gateway Screening-2 (VABS0001) starts this parameter.

AudioGram Delivery Services-Offer of Service Prompt (continued)

Identical to the original ADS functionality, when the DMS switch plays an OOSP, the subscriber can press “#” to stop access of the OOSP. The DMS switch can detect if the switch plays a prompt through an EDRAM trunk that connects to the incoming trunk of the calling party. The connection of an EDRAM trunk indicates that the switch plays the announcement.

For calling card calls only, if the switch does not play a prompt and the subscriber presses “#”, the switch interprets “#” as a sequence call request.

Note 1: The detection of “#” is a function of the dual-tone multifrequency (DTMF) receiver. The VSN requests the DMS switch to connect the receiver. The interpretation of “#” and the start of the appropriate subsequent action(s) is a function of the TOPS functionality.

Note 2: The subscriber can access ADS if the called party does not answer when the line of the called party is ringing. When the subscriber selects ADS, the called party cannot answer.

Relaying call status information to AudioGram Delivery Services

The ADS uses call status information when ADS determines the delivery interval for message delivery attempts now that the operating company offers context sensitive OOSPs. This ADS ability allows for improved service to ADS subscribers.

For example, the subscriber can leave a message for the called party because the line is busy. When this event occurs, ADS can define the message delivery schedule in small intervals. The ADS uses small intervals because a busy line normally indicates the called party is at home. If the call plan is RNA, ADS can define the message delivery schedule on a larger time interval. The ADS uses large intervals because the called party is probably not available.

AudioGram Delivery Services eligibility of 0- calling card calls

This functionality improvement is the exception to the rule that ADS is only offered for 0+/- AABS alternately billed calls. All 0- calling card calls are now eligible for ADS.

Until the time the TOPS operator position releases the calls, the calls progress as normal. The operator obtains calling card information, billing authorization and releases the call.

After release of the call, a check is in the POS RLS key function that activates ADS eligibility for these 0- calling card calls. Activation depends on the value of the ADS office-wide parameter, MDS_FOR_0_MINUS_CLG_CARD, in table MDSOPT. This office wide parameter activated and a default language value specified appear in the following example:

AudioGram Delivery Services-Offer of Service Prompt (continued)

MAP example for table MDSOPT

PARAM	VALUE
MDS_FOR_0_MINUS_CLG_CARD	Y LANG1
LANG1	Y ENG
LANG2	N

Note: LANG1 and LANG2 in the DMS switch must correspond, in that order, to the primary and secondary languages that the VSN defines.

If this tuple is N, a language value is not required. If the tuple is Y, the system prompts the operating company personnel to enter a default language value for use with OOSPs. The correct language values are LANG1, LANG2, and LANG1_2. The LANG1_2 value implies bilingual prompts. To enter any values, the related MDSOPT tuples for LANG1 and LANG2 must be Y and have a language name assigned from table TOPSLANG. Enter both related MDSOPT tuples for LANG1 and LANG2 if a bilingual default is specified. The automated language (AUTOLANG) field must be Y. This language name is the default language used for 0- calling card calls.

For example, if MDS_FOR_0_MINUS_CLG_CARD is Y LANG1, the tuple LANG1 must be a value of Y. The tuple LANG1 must have a language name assigned from table TOPSLANG with the AUTOLANG field set to Y. If MDS_FOR_0_MINUS_CLG_CARD is Y LANG1_2, LANG1 and LANG2 must be Y. The tuples must have language names assigned from table TOPSLANG with the AUTOLANG field set to Y.

You can enter the tuples LANG1 and LANG2 with any language name entered in table TOPSLANG with the AUTOLANG field set to Y. The language names relate to the language digits that operators can assign to calls. The language digits are the numeric designs of a language in table TOPSLANG. The language name associated with the default language value when MDS_FOR_0_MINUS_CLG_CARD is Y is the default language. This language name is for all ADS prompts for 0- calling card calls.

The operator can override the default language with another language. To perform this action, the operator enters the associated language digits for the call. If the operator marks the call with a language for which ADS prompts are not recorded, ADS is not offered. The TOPS functionality checks the operator marked language for a match with LANG1 or LANG2 tuples. The functionality plays the corresponding prompt when an operator marks the call for a specified language and the switch plays the OOPS. The functionality

AudioGram Delivery Services-Offer of Service Prompt (continued)

plays the prompt only if a prompt is present. If the operator marked language does not match that of LANG1 or LANG2, ADS is not offered.

The operator enters all necessary call information and presses the POS RLS key. A few checks are made to determine if to offer ADS to the subscriber. These checks make sure that this ADS functionality is set at the Software Optionality Control (SOC) state of ON and that MDS_FOR_0_MINUS_CLG_CARD is Y. If these calls are eligible for ADS, the TOPS functionality makes sure that a DTMF receiver is attached.

Up front screening is not performed on these calls because these calls are not routed to AABS. Back end screening is performed when the subscriber accesses ADS.

Note 1: Up front screening is screening for eligibility before the switch offers ADS to the calling party. The locality screening tables in the VSN perform up front screening. Back end screening is eligibility screening when the subscriber chose ADS and was routed to ADS. This back end screening is performed on all calls routed to ADS.

Note 2: If the operator keys START before the operator keys POS RLS, the TOPS functionality does not provide ADS to the subscriber. This action occurs because the operator chose to remain connected to the call when the subscriber attempts called party connection. An example of this condition is when the calling party wants the operator to perform a busy line verification. The TOPS functionality cannot provide ADS if the operator remains connected when the calling party keys "*" to access ADS. In this event, the subscriber can request ADS connection from the operator.

Queue Management System datafill

This functionality requires the Queue Management System (QMS) datafill. For operational information about QMS datafill requirements, refer to the QMS datafill section of the AABS Enhanced Services Access functionality (ABS00011) in this document. Refer to the Host Queue Management System functionality (ADVQ0003) in this document.

Note: The QMS tables are in the Datafill sequence and the table datafill section of this functionality.

Functionality optionality

This ADS functionality is an option that the SOC utility controls. The SOC utility provides two types of control.

The first type of control allows the management of software options when the operating company personnel sets the ON or IDLE states in this field. In the

AudioGram Delivery Services-Offer of Service Prompt (continued)

ON state, the functionality operates as intended. In the IDLE state, the functionality is not operable. Datafill is allowed and retained in the IDLE state.

The second type of control allows the management of software options based on operating company personnel usage.

This functionality supports only the first type of control.

Note: The SOC utility eventually supports an OFF state, so that the functionality is almost invisible. Datafill for an option is not visible or allowed when the option is in the OFF state. This functionality does not support the OFF state when the SOC base group that updates software starts this functionality. The ON and IDLE states are the only correct states for this functionality.

Translations table flow

The AudioGram Delivery Services-Offer of Service Prompt translations tables are in the following list:

- *Table TMINV.* Table TMINV lists the assignment data for each trunk module.

Tables EDRAMINV, DRAMS and ANNMEMS access this table. Each table maps a peripheral module and number fields/subfields to the subfields TMTYPE and TMNO in table TMINV to access table TMINV. Assignment data list is as follows:

- Table EDRAMINV maps the subfields DTMTYPE and DTMNO to access table TMINV.
- Table DRAMS maps the fields TMTYPE and TMNO to access table TMINV by mapping
- Table ANNMEMS maps the subfields PMTTYPE and TMNO to access TMINV.

Note: TMTYPE and TMNO are subfields of the field TMNM in table TMINV. DTMTYPE and DTMNO are subfields of field EDRAMNM in table EDRAMINV. PMTTYPE and TMNO are subfields of the field MEMINFO.

Table EDRAMINV. Table EDRAMINV contains load file information for EDRAM. Each EDRAM has a maximum of eight single-density load files. Each load file can represent a different set of announcements.

AudioGram Delivery Services-Offer of Service Prompt (continued)

Table DRAMS accesses table EDRAMINV by mapping the BLKLIST subfield to the EDRAMNO subfield in table EDRAMINV.

Note: The BLKLIST is a subfield of the CARDINFO field in table DRAMS. The EDRAMNO is a subfield of the EDRAMNM field in table EDRAMINV.

Table CLLI. Table CLLI contains the common language location identifier (CLLI) definitions. These definitions specify the maximum number of announcement members for ADS applications.

Tables ANNS and DRAMS access this table. Table DRAMS maps to the subfield CLLI to the CLLI field in table CLLI to access table CLLI. This CLLI is the EDRAM CLLI code. Table ANNS maps the CLLI field to the CLLI field in table CLLI to access table CLLI. This CLLI is the announcement CLLI.

Note: The CLLI is a subfield of the CARDINFO field in table DRAMS.

Table DRAMS. Table DRAMS contains the card information related to the DRAM and EDRAM.

Table ANNMEMS maps the subfields PMTYPE, TMNO and TMCKT in table ANNMEMS to access table DRAMS. The mapping transfers to the TMTYPE, TMNO and TMCKT in table DRAMS.

Note: Subfields PMTYPE, TMNO and TMCKT are subfields of the field MEMINFO in table ANNMEMS.

Table ANNS. Table ANNS defines the CLLI codes assigned to announcements and the maximum number of simultaneous connections that can be made to a single announcement. Table ANNS defines the cycle time of the announcement and the number of times the announcement must be repeated.

Tables ANNMEMS and DRMUSERS access this table. Table ANNMEMS maps the subfield ANN in table ANNMEMS to the field CLLI in table ANNS to access table ANNS. Table DRMUSERS maps the subfield CLLI in table DRMUSERS to the field CLLI in table ANNS to access table ANNS.

Note: Subfield ANN is a subfield of the field ANNMEM in table ANNMEMS. Subfield CLLI is a subfield of the field USERANN in table DRMUSERS.

Table ANNMEMS. Table ANNMEMS contains the track assignments for each of the announcement members table ANNS defines.

AudioGram Delivery Services-Offer of Service Prompt (continued)

Table DRMUSERS. Table DRMUSERS specifies the phrases that define an announcement. This table joins phrases to become messages that play back as announcements. The phrases are assigned in programmable read-only memory (PROM) or recorded in random access memory (RAM) with the DRAMREC utility. The joined phrases create language tracks.

Table TOPSLANG. Table TOPSLANG defines a language attribute for TOPS calls. Any language name specified in table MDSOPT must first be defined in this table in the field LANGNAME. This language name must have the AUTOLANG field set to Y.

Table MDSOPT. Table MDSOPT provides a single place for operating companies to customize the ADS network of the company through datafill. Three of these tuples affect table flow. These tuples are: MDS_FOR_0_MINUS_CLG_CARD, LANG1 and LANG2.

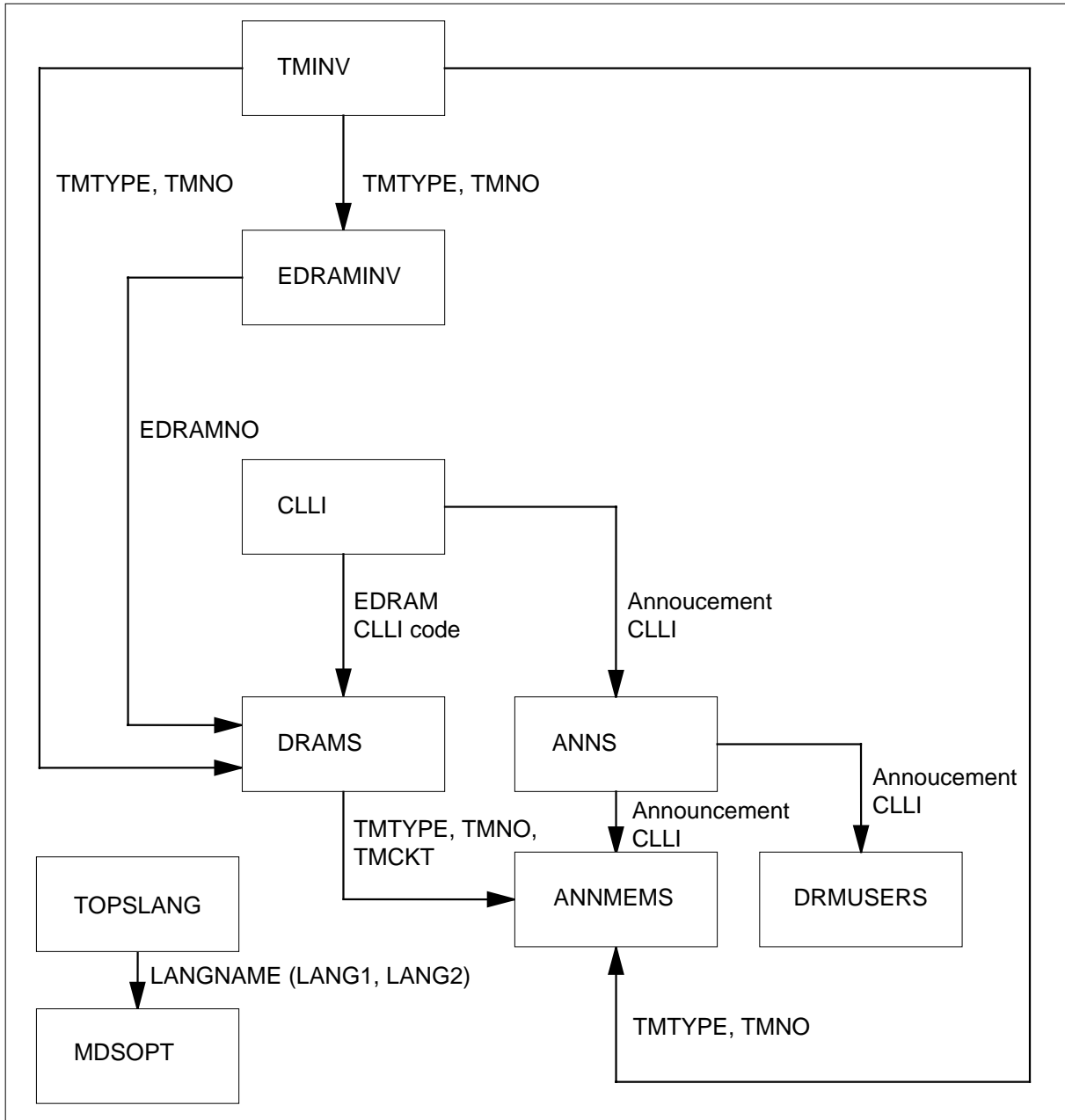
If this tuple is N, a language value is not required. If the tuple is Y, the system prompts operating company personnel to enter a default language value for use with OOSPs. The correct language values are LANG1, LANG2, and LANG1_2. The LANG1_2 value implies bilingual prompts. To enter any values, the related MDSOPT tuples for LANG1 and LANG2 must be Y and have a language name assigned from table TOPSLANG. Enter both related MDSOPT tuples for LANG1 and LANG2 if a bilingual default is specified. The automated language (AUTOLANG) field must be Y. This language name is the default language used for 0- calling card calls.

Note: See the "Host Queue Management System" functionality (ADVQ0003) in this document for the translations flow for the Queue Management System (QMS) tables.

The AudioGram Delivery Services-Offer of Service Prompt translation process appears in the following flowchart.

AudioGram Delivery Services-Offer of Service Prompt (continued)

Table flow for AudioGram Delivery Services-Offer of Service Prompt



AudioGram Delivery Services-Offer of Service Prompt (continued)

The datafill content in the flowchart appears in the following table.

Datafill example for AudioGram Delivery Services-Offer of Service Prompt

Datafill table	Example data
TMINV	DTM 1 TME 4 4 0 P 44 1 28 1X80AA EDRMAD06 MTMEX SINGLE_CARD MTM 9 5
EDRAMINV	DTM 1 1 ANN MDSTOP01
CLLI	MDSTOPS 115 30 MDS_ANN
DRAMS	3 0 DTM 1 0 1X80AA CTRL EDRAM3
ANNS	MDSTOPS MDS 25 1 0 1
ANNMEMS	MDSTOPS 0 DRAM DRA (0 DTM 1 0) \$
DRMUSERS	MDSTOPS 1 (EBUSY1A)(EBUSY1B)\$
TOPLANG	17 ENG Y 1
MDSOPT	LANG1 Y ENG
MDSOPT	MDS_FOR_0_MINUS_CLG_CARD Y LANG1

Limits

The following limits apply to AudioGram Delivery Services-Offer of Service Prompt:

- The timers that this functionality creates provide the operating company with flexibility to define their ADS network. Operating company personnel must understand how the different parameters interact. For example, when the operating company sets the `BUSY_AVAIL_TIMER`, the operating company must consider the length of the Busy OOSP. The length of the Busy OOSP can be greater than the length of the `BUSY_AVAIL_TIMER`. When this event occurs, the subscriber can never access ADS if the switch allows the whole prompt to play.

Note: The timer begins when the Busy or Network Busy OOSP begins.

- The `FRONT_END_TIMER` must make sure the DMS switch does not offer ADS on calls with intercept network conditions. Set the value of this timer large enough to perform this action. Perform this action so that during intercept treatment, the calling party hears the announcement and acts accordingly, and ends the call before the timer expires. Several examples of intercept network conditions are vacant number

AudioGram Delivery Services-Offer of Service Prompt (continued)

announcements, changed number announcements, and calls the system routes to an operator.

- The subscriber can access ADS only if the called party does not answer when the line of the called party is ringing. When the subscriber selects ADS, the called party cannot answer.
- Up front ADS screening is not performed on 0- calling card calls. This type of screening is a function of the locality screening tables of the VSN. The system does not route these calls to the VSN.
- With respect to 0- calling card calls, the TOPS functionality does not provide ADS to the subscriber. This action occurs if the operator keys START before the operator keys POS RLS. This action occurs because the operator chose to remain connected to the call when the subscriber attempts called party connection. An example of this condition is when the calling party wants the operator to perform a busy line verification. The TOPS functionality cannot provide ADS if the operator remains connected when the calling party keys "*" to access ADS. When this event occurs, the subscriber can request ADS connection from the operator.
- For the TOPS functionality to route a call to ADS on the detection of "hookflash", the functionality must receive the "hookflash" from the end office of the subscriber. In call plans where the subscriber presses "hookflash" to request ADS, the TOPS office cannot identify the request as a request for ADS. The end office interprets the request as an initiation of another subscriber feature and does not report "hookflash" to the TOPS office. An example of the plan is when the subscriber activates the call waiting feature.
- The DMS switch controls ADS to process "hookflash" as a correct request for calling card and bill-to-third party calls, and by the VSN for collect calls. For consistent handling in the DMS switch and the VSN, enter parameters (HOOKFLASH_ENABLE in the DMS switch and MDS_HOOKFLASH_ENABLE in the VSN) with the same value. If the parameters do not have the same value, ADS subscribers cannot consistently access ADS through "hookflash".

Interactions

The following paragraph describes the interactions between AudioGram Delivery Services-Offer of Service Prompt and other functionalities.

The OOSP ability of the original ADS functionality in the VSN must be deactivated. If the functionality is not deactivated, the DMS switch can play OOSPs twice for the subscriber. The switch plays OOSP one time at the VSN before connection to the called party. The switch plays OOSP one time at the DMS switch after connection to the called party.

AudioGram Delivery Services-Offer of Service Prompt (continued)

Activation/deactivation by the end user

Activation:

At your telephone

- 1 *Calls that route to AABS:* Make a 0+ (calling card, bill-to-third or collect) or 0- (bill-to-third or collect) call.

Response:

The calling party hears tones associated with one of three detectable network conditions. These network conditions are called party busy, network busy, and called party ringing. The DMS switch activates the appropriate OOSP to offer ADS to the subscriber when the switch detects the network condition. The associated timer expires. If the calling party encounters a network condition that the switch does not determine, a timer starts. The DMS switch plays a standard OOSP after the timer expires.

Note 1: A connection is made to AABS. These 0- calls first route to a live TOPS operator and are handed off to AABS. Billing is verified for calling card and bill-to-third party calls. If billing is accepted, ADS is offered to the calling party.

Note 2: For collect calls, ADS is offered to the calling party if the called party does not answer.

Calls that do not route to AABS: Make a 0- calling card call.

Response:

The calling party hears tones associated with one of three detectable network conditions. These network conditions are called party busy, network busy, and called party ringing. The DMS switch activates the appropriate OOSP to offer ADS to the subscriber when the switch detects the network condition. The associated timer expires. If the calling party encounters a network condition that the switch does not determine, a timer starts. The DMS switch plays a standard OOSP after the timer expires.

Note: A connection is not made to AABS. These 0- calling card calls route to a live operator without subsequent routing to AABS. The operator receives the calling card number for billing purposes. If the parameter MDS_FOR_0_MINUS_CLG_CARD is allowed in table MDSOPT, ADS is offered to the calling party.

- 2 The calling party enters "*", "0", or "hookflash" in response to the OOSP.

Response:

If the calling party enters "*", the call is connected to an automated ADS operator. If the calling party enters "0" or "hookflash", the call is connected to a live ADS operator.

Note: For calling card and bill-to-third party calls that access ADS through the DMS switch, the operating company allows access through "hookflash". The operating company enables access when the tuple HOOKFLASH_ENABLE is Y in table MDSOPT. For collect calls that access ADS through the VSN, the operating company enables access through "hookflash". The operating company enables access when the tuple MDS_HOOKFLASH_ENABLE is Y in the VSN environment.

- 3 Leave a voice message. Hang up.

Response:

AudioGram Delivery Services-Offer of Service Prompt (continued)

A message is recorded. A message passes to the intended party.

Deactivation:

This functionality does not require end user deactivation.

Billing

AudioGram Delivery Services-Offer of Service Prompt does not affect billing.

Station Message Detail Recording

AudioGram Delivery Services-Offer of Service Prompt does not affect Station Message Detail Recording.

Datafilling office parameters

AudioGram Delivery Services-Offer of Service Prompt does not affect office parameters.

Datafill sequence

The tables that require datafill to implement AudioGram Delivery Services-Offer of Service Prompt appear in the following table. The tables appear in the correct entry order.

Datafill requirements for AudioGram Delivery Services-Offer of Service Prompt

Table	Purpose of table
EDRAM and announcement datafill	
TMINV	Defines EDRAM peripherals
EDRAMINV	Defines the load files that contain the ADS announcements
CLLI	Defines the maximum number of announcement members
DRAMS	Provides physical card information related to DRAM and EDRAM
ANNS	Defines the CLLI codes assigned to announcements. Defines the maximum number of simultaneous connections, the cycle time and the repetition time for announcements.
ANNMEMS	Contains the track assignments for each of the announcement members defined in table ANNS
DRAMREC	A utility where announcement phrases can be defined
DRMUSERS	Composes announcements from phrases that are defined in the DRAMREC utility
ADS selection	

AudioGram Delivery Services-Offer of Service Prompt (continued)

Datafill requirements for AudioGram Delivery Services-Offer of Service Prompt

Table	Purpose of table
TOPSLANG	Defines language attributes for TOPS calls
MDSOPT	Defines ADS timers, ADS languages and if the subscriber can access ADS through "hookflash".
MDSLANG	Enables ADS for a language
MDSACTN	Maps old language to new language
TOPSPARM	Enables subscriber to request ADS
Services and position profiles (QMS)	
TOPSPOS	Defines operator positions
TQOPROF	Assigns QMS call selection and service profiles to operator number
TQMSSERV	Names and define QMS services
TQSVPROF	Defines service profiles
Call queue selection (QMS)	
QMSTOPS	Initial QMS call queue assignment
CT4QNAMS	Defines CT4Q names
CT4QCLAS	Modifies CT4Q by class of service
CT4QLANG	Modifies CT4Q by language
TQORDERA and TQORDERB	Defines order of CT4Q refinement tables
TQMSFCQA	Assigns final CT4Q
TQCQINFO	Assigns service to final call queue
Agent queue and call queue relation (QMS)	
TQCQPROF	Defines call queue profiles
Transfers (QMS)	
TQOGTKEY	Defines QMS outgoing trunk (OGT) keys
Force management (QMS)	

AudioGram Delivery Services-Offer of Service Prompt (continued)

Datafill requirements for AudioGram Delivery Services-Offer of Service Prompt

Table	Purpose of table
TQFMNAMS	Defines Force Management names
TQFMCT4Q	Defines Force Management call types
Route to QMS (QMS)	
TOPSTOPT	Defines trunks for ADS handling. The table datafill activates the QMS system. Always datafill last.

EDRAM datafill

The EDRAM only supports the ADS functionality. Enter data in all EDRAM related tables.

The following list is the datafill sequence for the EDRAM tables:

- table TMINV
- table EDRAMINV
- table CLI
- table DRAMS
- table ANNS
- table ANNMEMS
- DRAMREC utility
- table DRMUSERS

See the "EDRAM datafill procedure" section of this functionality for additional information about EDRAM datafill.

Datafilling table TMINV

Table TMINV lists the assignment data for each trunk module.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table TMINV appears in the following table. Only fields that apply to AudioGram

AudioGram Delivery Services-Offer of Service Prompt (continued)

Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TMINV

Field	Subfield or refinement	Entry	Explanation and action
TMNM			Trunk module number.
	TMTYPE	DTM	Trunk module type. This subfield must be set to DTM because EDRAM only supports ADS announcements.
EQPEC		1X80AA	Equipment product engineering code. Enter this field as 1X80AA (EDRAM card).

Sample datafill for table TMINV appears in the following example.

Datafill example for table TMINV

MAP example for table TMINV

```

TMNM  FRTYPE  FRNO  SHPOS  FLOOR  ROW  FRPOS  LKDATA  EQPEC  LOAD
      EXECs          SCTMLOC
-----
DTM 1  TME      004    04    00  P    44    1 28    1X80AA  EDMAD06
      MTMEX          SINGLE_CARD  MTM 9 05
    
```

Datafilling table EDRAMINV

Table EDRAMINV contains load file information for EDRAM. Each EDRAM has a maximum of eight single-density load files. Each load file can represent a different set of announcement phrases.

AudioGram Delivery Services-Offer of Service Prompt (continued)

Sample datafill for table EDRAMINV appears in the following table. The load file name, MDSTOP01 is for example purposes only. The load file name for actual datafill can be different.

Datafilling table EDRAMINV

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table EDRAMINV

MAP example for table EDRAMINV

EDRAMNM	TUPINFO
DTM 1 1	ANN MDSTOP01

Datafilling table CLLI

Table CLLI contains the common language location identifier (CLLI) definitions that specify the maximum number of announcement members for ADS applications.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table CLLI appears in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table CLLI

Field	Subfield or refinement	Entry	Explanation and action
TRKGRSIZ		numeric (0 to 2047)	Trunk group size. If only one EDRAM card is available for ADS, the field TRKGRSIZ can be set to 30. This number indicates that all 30 channels on the EDRAM card connects at the same time so the switch can play ADS OOSPs.

Sample datafill for table CLLI appears in the following example.

Datafill example for table CLLI

AudioGram Delivery Services-Offer of Service Prompt (continued)

MAP example for table CLLI

CLLI	ADNUM	TRKGRSIZ	ADMININF
MDSTOPS	115	30	MDS_ANN

Datafilling table DRAMS

Table DRAMS contains the card information related to the DRAM and EDRAM.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table DRAMS appear in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table DRAMS

Field	Subfield or refinement	Entry	Explanation and action
CARDCODE		1X80AA	Card codes. Enter this field as 1X80AA (EDRAM card).
TMTYPE		DTM	Trunk module type. Enter this field as DTM.

Sample datafill for table DRAMS appears in the following example.

Datafill example for table DRAMS

MAP example for table DRAMS

DRAMCARD	TMTYPE	TMNO	TMCKT	CARDCODE	CARDINFO
0 0	DTM	1	0	1X80AA	CTLR EDRAM3
0 1	DTM	1	2	1X80AA	PROM (0)(1) \$

Datafilling table ANNS

Table ANNS defines the CLLI codes assigned to announcements Table ANNS also defines the maximum number of simultaneous connections that can be made to a single announcement. Table ANNS defines the cycle time of the announcement and the number of times the announcement must be repeated.

AudioGram Delivery Services-Offer of Service Prompt (continued)

The cycle time of an announcement is very important. Make sure you correctly enter values. The precise timing for each announcement appears in the LENGTH field of the DRAMREC utility. The cycle time must be equal to the recorded length of the phrases in the announcement.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table ANNS appear in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table ANNS

Field	Subfield or refinement	Entry	Explanation and action
ANTYPE		MDS	Announcement type. This field must be set to MDS for ADS announcements.
MAXCYC		1	Maximum cycles. This field must be set to 1 for ADS announcements.

Sample datafill for table ANNS appears in the following example.

Datafill example for table ANNS

MAP example for table ANNS

CLLI	ANTYPE	TRAFSNO	MAXCONN	CYTIME	MAXCYC
MDSTOPS	MDS	25	1	0	1

Datafilling table ANNMEMS

Table ANNMEMS contains the track assignments for each announcement member that table ANNS defines.

Datafilling table ANNMEMS

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Sample datafill for table ANNMEMS appears in the following example.

AudioGram Delivery Services-Offer of Service Prompt (continued)

Datafill example for table ANNMEMS**MAP example for table ANNMEMS**

ANNMEM	HDWTYPE	CARD	MEMINFO
MDSTOPS 0	DRAM	DRA	(0 DTM 1 0) \$
MDSTOPS 1	DRAM	DRA	(0 DTM 1 1) \$
"			"
MDSTOPS 29	DRAM	DRA	(0 DTM 1 29) \$

DRAMREC utility

The DRAMREC utility defines announcement phases.

Sample data for the DRAMREC utility appears in the following example.

AudioGram Delivery Services-Offer of Service Prompt (continued)**DRAMREC sample input**

DRAMREC				
DRAM	PHRASENAME	LENGTH	BLOCK	PHRASENO
ASSIGN 0	EBUSY1A	2	0	4
ASSIGN 0	EBUSY1B	2	0	5
ASSIGN 0	FBUSY1A	2	1	4
ASSIGN 0	FBUSY1B	2	1	5
ASSIGN 0	FBUSY1C	2	1	6
ASSIGN 0	ERNA1A	2	0	8
ASSIGN 0	ERNA1B	2	0	9
ASSIGN 0	FRNA1A	2	1	7
ASSIGN 0	FRNA1B	2	1	8
ASSIGN 0	FRNA1C	2	1	9
ASSIGN 0	EBUSY2A	2	0	6
ASSIGN 0	EBUSY2B	2	0	7
ASSIGN 0	FBUSY2A	2	0	17
ASSIGN 0	FBUSY2B	2	0	18
ASSIGN 0	ERNA2	2	0	10
ASSIGN 0	FRNA2A	2	0	15
ASSIGN 0	FRNA2B	2	0	16
ASSIGN 0	ENOANSRA	2	1	17
ASSIGN 0	ENOANSRB	2	1	18
ASSIGN 0	ENOANSRC	2	1	19
ASSIGN 0	FNOANSRA	2	1	13
ASSIGN 0	FNOANSRB	2	1	14
ASSIGN 0	FNOANSRC	2	1	15
ASSIGN 0	ENETBUSYA	2	0	11
ASSIGN 0	ENETBUSYB	2	0	12
ASSIGN 0	FNETBUSYA	2	1	10
ASSIGN 0	FNETBUSYB	2	1	11
ASSIGN 0	FNETBUSYC	2	1	12
ASSIGN 0	EMESSAGE	2	1	16
ASSIGN 0	FMESSAGEA	2	0	13
ASSIGN 0	FMESSAGEB	2	0	14

Datafilling table DRMUSERS

Table DRMUSERS specifies the phrases that define an announcement. This table joins phrases in messages that play back as announcements. The phrases

AudioGram Delivery Services-Offer of Service Prompt (continued)

are assigned in PROM or recorded in RAM with use of the DRAMREC utility. These joined phrases create language tracks.

Datafilling table DRMUSERS

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Sample datafill for table DRMUSERS appears in the following example.

Datafill example for table DRMUSERS

MAP example for table DRMUSERS

```

USERANN                                     PHSLIST
-----
MDSTOPS 1                                     (EBUSY1A) (EBUSY1B) $
MDSTOPS 2                                     (FBUSY1A) (FBUSY1B) (FBUSY1C) $
MDSTOPS 3      (EBUSY1A) (EBUSY1B) (FBUSY1A) (FBUSY1B) (FBUSY1C) $
MDSTOPS 4                                     (ENETBUSYA) (ENETBUSYB) $
MDSTOPS 5                                     (FNETBUSYA) (FNETBUSYB) (FNETBUSYC) $
MDSTOPS 6 (ENETBUSYA) (ENETBUSYB) (FNETBUSYA) (FNETBUSYB)
          (FNETBUSYC) $
MDSTOPS 7                                     (ERNA1A) (ERNA1B) $
MDSTOPS 8                                     (FRNA1A) (FRNA1B) (FRNA1C) $
MDSTOPS 9      (ERNA1A) (ERNA1B) (FRNA1A) (FRNA1B) (FRNA1C) $
MDSTOPS 10                                     (EMESSAGE) $
MDSTOPS 11                                     (FMESSAGEA) (FMESSAGEB) $
MDSTOPS 12      (EMESSAGE) (FMESSAGEA) (FMESSAGEB) $
    
```

Datafilling table TOPSLANG

The TOPS Language (TOPSLANG) table associates language digits with each language name defined in the table. The language digits are numeric designs of the languages that can be assigned to calls through operator keying action or through automated service.

Table TOPSLANG is referenced when TOPS calls route from the AABS VSN to the DMS switch.

AudioGram Delivery Services-Offer of Service Prompt (continued)

Enter the languages for the ADS in TOPSLANG as automated languages. Add a cross-check to the table control to prevent the deletion of any language or change in the AUTOLANG field to N for associated tuples in tables MDSLNG and table MDSACTN.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table TOPSLANG appear in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table TOPSLANG

Field	Subfield or refinement	Entry	Explanation and action
LANGNAME		ENG, FRE, SPA, JAP. or TAI.	Language that AABS uses and operators use when ADS is not involved.
		MDS	Auto ADS involved, real language is not known.
		MEN	Auto ADS involved, real language is ENG.
		MFR	Auto ADS involved, real language is FRE.
		MOP	Live ADS operator involved, real language is not known.
		MOE	Live ADS operator involved, real language is ENG.
		MOF	Live ADS operator involved, real language is FRE.
			With the introduction of this ADS functionality, add a check to this table. This action makes sure that a tuple cannot be deleted without the deletion of the tuples from table MDSOPT. This action also makes sure that the AUTOLANG field can be set to N without the deletion of the tuples from table MDSOPT.

Datafill example for table TOPSLANG

Sample datafill for table TOPSLANG appears in the following example.

AudioGram Delivery Services-Offer of Service Prompt (continued)

MAP example for table TOPSLANG

LANGDIGT	LANGNAME	AUTOLANG
17	ENG	Y 1
19	FRE	Y 2
26	MDS	Y 3
27	MEN	Y 4
29	MFR	Y 5
36	MOP	Y 6
37	MOE	Y 7
39	MOF	Y 8

Error messages for table TOPSLANG

The following error messages apply to table TOPSLANG.

Error messages for table TOPSLANG

Error message	Explanation and action
LANGUAGE MUST FIRST BE DELETED FROM TABLE MDSLANG TUPLE/TUPLES .	If you attempt to delete a language that appears in tables MDSLANG, MDSACTN or MDSOPT, one or more of these messages appears.
LANGUAGE MUST FIRST BE DELETED FROM TABLE MDSACTN TUPLE/TUPLES .	
LANGUAGE MUST FIRST BE DELETED FROM TABLE MDSOPT TUPLE/TUPLES .	
LANGUAGE MUST REMAIN AS AN AUTOLANG OR FIRST BE DELETED FROM TABLE MDSLANG TUPLE/TUPLES .	One or more of these messages can appear. These messages appear if you attempt to change the AUTOLANG field to N for a language that appears in tables MDSLANG, MDSACTN or MDSOPT

AudioGram Delivery Services-Offer of Service Prompt (continued)

Error messages for table TOPSLANG

Error message	Explanation and action
LANGUAGE MUST REMAIN AS AN AUTOLANG OR FIRST BE DELETED FROM TABLE MDSACTN TUPLE/TUPLES.	
LANGUAGE MUST REMAIN AS AN AUTOLANG OR FIRST BE DELETED FROM TABLE MDSOPT TUPLE/TUPLES.	

Datafilling table MDSOPT

The AudioGram Delivery Services-Offer of Service Prompt functionality introduces the Message Delivery System Option (MDSOPT) table. This functionality provides a single place to customize the ADS network through datafill. This functionality contains eight permanent default tuples. These tuples cannot be deleted. Any additional tuples cannot be added.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table MDSOPT appears in the following table. The fields that apply to AudioGram

AudioGram Delivery Services-Offer of Service Prompt (continued)

Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table MDSOPT

Parameter name	Value	Explanation and action
BUSY_TIMER	0-15 s	<p>This timer defines the length of time the DMS switch pauses before the switch plays the Busy or Network Busy OOSP. The switch plays one OOSP when the network condition was determined to be called party busy or network busy.</p> <p>The default value is 5.</p>
BUSY_AVAIL_TIMER	0-60 s	<p>This timer defines the length of time the ADS subscriber has access to ADS when the switch initiated the Busy or Network Busy OOSP.</p> <p>The switch starts the timer when the switch starts the Busy or Network Busy OOSP. When the timer expires, the ADS subscriber cannot access ADS. This timer serves a dual role for the operating company. The operating company defines when the operating company can free up the ADS resources to use for other calls.</p> <p>The default value is 60.</p>
RNA_TIMER	0-120 s	<p>This timer defines the length of time the DMS switch pauses before the switch plays the RNA OOSP. This event occurs when the switch detects a network condition of called party ringing.</p> <p>For example, the outgoing trunk can be an SS7 trunk and the DMS switch can detect a network condition of called party ringing. When this event occurs, the switch starts this timer. The calling party hears standard ringing until this timer expires. After the timer expires, the DMS switch plays the RNA OOSP.</p> <p>The default value is 30.</p>

AudioGram Delivery Services-Offer of Service Prompt (continued)

Datafilling table MDSOPT

Parameter name	Value	Explanation and action
FRONT_END_TIMER	0-60 s	<p>This timer defines the length of time the DMS switch pauses before the switch plays the Generic OOSP on an ADS qualified call. This call has a network condition that is not determined.</p> <p>For example, when the outgoing trunk is an MF trunk, the DMS switch cannot determine the network condition of the call. The DMS switch starts this timer. When this timer expires, the DMS switch starts the Generic OOSP.</p> <p>This timer makes sure that the DMS switch does not offer ADS on calls with intercept network conditions. Set the value of this timer large enough to accomplish this action. When intercept treatment occurs, the calling party hears the announcement, acts accordingly, and ends the call before the timer expires. Several examples of intercept network conditions are vacant number announcements, changed number announcements, and calls the system routes to an operator.</p> <p>The default value is 30.</p>
HOOKFLASH_ENABLE	Y/N	<p>The setting of this tuple determines if the operating company allows "hookflash" as an appropriate request for ADS on calling card and bill-to-third party calls. If the tuple is set to Y, the operating company enables detection of "hookflash". If the tuple is set to N, the tuple is ignored.</p> <p>The default value is N.</p>

AudioGram Delivery Services-Offer of Service Prompt (continued)

Datafilling table MDSOPT

Parameter name	Value	Explanation and action
MDS_FOR_0_MINUS_CLG_CARD	Y/N	<p>If this tuple is N, a language value is not required. If the tuple is Y, the switch prompts the operating company personnel to enter a default language value for use in OOSPs. The appropriate language values are LANG1, LANG2, and LANG1_2. The LANG1_2 value implies bilingual prompts. To enter any values, the related MDSOPT tuples for LANG1 and LANG2 must be Y and have a language name assigned from table TOPSLANG. The automated language (AUTOLANG) field must be Y. Enter both tuples if you enter a bilingual default. This language name is the default language for 0- calling card calls.</p> <p>The default value is N.</p>
LANG1	Y/N	<p>If this tuple is N, other datafill is not required. If the tuple is Y, specify a language name. This language name must be a name defined in table TOPSLANG, with the AUTOLANG field set to Y.</p> <p>The default value is N.</p>
LANG2	Y/N	<p>If this tuple is N, other datafill is not required. If the tuple is Y, specify a language name. This language name must be a name defined in table TOPSLANG, with the AUTOLANG field set to Y.</p> <p>The default value is N.</p>

Datafill example for table MDSOPT

Sample datafill for table MDSOPT appears in the following example.

AudioGram Delivery Services-Offer of Service Prompt (continued)

MAP example for table MDSOPT

PARM	VALUE
BUSY_TIMER	5
BUSY_AVAIL_TIMER	60
RNA_TIMER	30
FRONT_END_TIMER	30
HOOKFLASH_ENABLE	N
MDS_FOR_0_MINUS_CLG_CARD	N
LANG1	N
LANG2	N

Error messages for table MDSOPT

The following error messages apply to table MDSOPT.

Error message for table MDSOPT

Error message	Explanation and action
LANG1 ENTRY MUST BE SPECIFIED AS AN AUTOLANG IN TABLE TOPSLANG	If you attempt to enter a language name for LANG1 from table TOPSLANG for which the AUTOLANG field is N, this message appears.
LANG2 ENTRY MUST BE SPECIFIED AS AN AUTOLANG IN TABLE TOPSLANG	If you attempt to enter a language name for LANG2 from table TOPSLANG for which the AUTOLANG field is N, this message appears.
TUPLES LANG1 AND LANG2 CANNOT BE ASSIGNED THE SAME LANGUAGE VALUE .	If you attempt to assign the same language name to LANG1 and LANG2, this message appears.
LANG1 MUST BE DEFINED BEFORE IT CAN BE USED AS THE DEFAULT LANGUAGE .	If you attempt to enter LANG1 as the default language value for the tuple MDS_FOR_0_MINUS_CLG_CARD, and LANG1 is N, this message appears.
LANG2 MUST BE DEFINED BEFORE IT CAN BE USED AS THE DEFAULT LANGUAGE .	If you attempt to enter LANG2 as the default language value for the tuple MDS_FOR_0_MINUS_CLG_CARD, and LANG2 is N, this message appears.

AudioGram Delivery Services-Offer of Service Prompt (continued)

Error message for table MDSOPT

Error message	Explanation and action
BOTH TUPLES LANG1 AND LANG2 MUST BE DEFINED BEFORE A BILINGUAL DEFAULT LANGUAGE CAN BE USED.	This message appears when two conditions are present. The first condition is if you attempt to enter LANG1_2 as the default language values for the tuple MDS_FOR_0_MINUS_CLG_CARD. The second condition is when one or both LANG1 and LANG2 are N,
LANG1 CANNOT BE UNASSIGNED WHILE BEING USED FOR TUPLE MDS_FOR_0_MINUS_CLG_CARD.	If you attempt to change the datafill for LANG1 from Y to N when you enter this tuple for the tuple MDS_FOR_0_MINUS_CLG_CARD, this message appears.
LANG2 CANNOT BE UNASSIGNED WHILE BEING USED FOR TUPLE MDS_FOR_0_MINUS_CLG_CARD.	If you attempt to change the datafill for LANG2 from Y to N when you enter this tuple for the tuple MDS_FOR_0_MINUS_CLG_CARD, this message appears.
DELETIONS NOT ALLOWED FROM THIS TABLE	If you attempt to delete a tuple from this table, this message appears. These tuples cannot be deleted.

Datafilling table MDSLANG

The TOPS Message Delivery System Language (MDSLANG) table is referenced when TOPS calls route from the AABS VSN to the DMS switch.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table MDSLANG appears in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table MDSLANG

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table MDSLANG

Sample datafill for table MDSLANG appears in the following example.

AudioGram Delivery Services-Offer of Service Prompt (continued)

MAP example for table MDSLANG

LANGNAME	MONITOR
MDS	Y
MEN	Y
MFR	Y
MOP	N
MOE	N
MOF	N

Error messages for table MDSLANG

The following error messages apply to table MDSLANG.

Error messages for table MDSLANG

Error message	Explanation and action
LANGNAME ENTRY MUST BE SPECIFIED AS AN AUTOLANG IN TABLE TOPSLANG.	If you attempt to enter a language that you did not enter in table TOPSLANG as an automated language, this message appears.

Datafilling table MDSACTN

The TOPS MDS Actions (MDSACTN) table is referenced after a call routes from the AABS VSN to the DMS switch and the DMS switch detects subscriber input.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table MDSACTN appears in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear. See the data schema section of this manual for a description of the other fields.

Datafilling table MDSACTN

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table MDSACTN

Sample datafill for table MDSACTN appears in the following example.

AudioGram Delivery Services-Offer of Service Prompt (continued)

MAP example for table MDSACTN

LANGACTN	NEWLANG	
MDS	STAR	MDS
MDS	ZERO	MOP
MDS	FLASH	MOP
MEN	STAR	MEN
MEN	ZERO	MOE
MEN	FLASH	MOE
MFR	STAR	MFR
MFR	ZERO	MOF
MFR	FLASH	MOF

Error messages for table MDSACTN

The following error messages apply to table MDSACTN.

Error messages for table MDSACTN

Error message	Explanation and action
LANGNAME ENTRY MUST BE SPECIFIED AS AN AUTOLANG IN TABLE TOPSLANG.	If you attempt to enter a language that you did not enter in table TOPSLANG as an automated language, this message appears.

Datafilling table TOPSPARM

The TOPS Parameter table (TOPSPARM) is referenced when a QMS receives a coin call.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table TOPSPARM appears in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table TOPSPARM

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table TOPSPARM

Sample datafill for table TOPSPARM appears in the following example.

AudioGram Delivery Services-Offer of Service Prompt (continued)

MAP example for table TOPSPARM

PARAMNAME	PARMVAL
AUTO_MDS_QMS_CQPROF	Y 30

Datafilling table TOPSPOS

Table TOPSPOS defines the position to the DMS switch.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table TOPSPOS appears in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table TOPSPOS

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table TOPSPOS

Sample datafill for table TOPSPOS appears in the following example.

MAP example for table TOPSPOS

POSNO	VCCKT	VC	PCDGRP	CARDCODE	DATAPATH
POSAREA					
400	TMS 1 2 5	NPDGP	DS1SIG	TMS MP ASCII	100 1
	OPR 4	QMSCAM	CORECAM 4		
1500	TMS 1 2 6	NPDGP	DS1SIG	TMS MP ASCII	100 2
	OPR 10	QMSCAM	CORECAM 20		
1700	TMS 1 2 7	NPDGP	DS1SIG	TMS MP ASCII	100 3
	OPR 10	QMSCAM	CORECAM 21		

Datafilling table TQOPROF

Table TQOPROF specifies the TOPS QMS call selection and service profiles that apply to an operator number.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table TQOPROF appears in the following table. The fields that apply to AudioGram

AudioGram Delivery Services-Offer of Service Prompt (continued)

Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

How to enter data into table TQOPROF

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table TQOPROF

Sample datafill for table TQOPROF appears in the following example.

MAP example for table TQOPROF

OPRNUM	DLFTTEAM	SVCPRNUM	SELAREA
400	4	4	CALLQ 0
1500	10	20	CALLQ 30
1700	10	21	CALLQ 31

For the above datafill example, team 4 is field TEAM (subfield of POSAREA) in table TOPSPOS and team 10 is field DLFTTEAM in table TQOPROF.

Datafilling table TQMSSERV

Table TQMSSERV names and describes QMS services. Each TOPS QMS call receives one service name entered in this table.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table TQMSSERV appears in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table TQMSSERV

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table TQMSSERV

Sample datafill for table TQMSSERV appears in the following example.

AudioGram Delivery Services-Offer of Service Prompt (continued)

MAP example for table TQMSSERV

SERVNUM	QMSSERV	BASESERV	IMPLCT4Q	SERVTYPE
4	TOPS_TA	TASERV	0_MINUS	BASE y
20	MDS_AUTO_SERV	TASERV	MDS_AUTO	CUSTOM 945 MDS N
21	MDS_OPR_SERV	TASERV	MDS_OPR	CUSTOM 945 MDS N

Datafilling table TQSVPROF

Table TQSVPROF associates service names to specify service profiles.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table TQSVPROF appears in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table TQSVPROF

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table TQSVPROF

Sample datafill for table TQSVPROF appears in the following example.

MAP example for table TQSVPROF

PROFNUM	SVCLIST
4	(TOPS_TA) \$
20	(MDS_AUTO_SERV) \$
21	(MDS_OPR_SERV) (TOPS_TA) \$

The live ADS operators can also serve as regular toll and assist (TA) operators. The example defines this ability for the third tuple.

Datafilling table QMSTOPS

Table QMSTOPS provides the first phase of call queue assignment for calls marked for QMS. Table QMSTOPS provides a new call type for queuing (CT4Q) for each origination type. This value is the first CT4Q value for each call.

AudioGram Delivery Services-Offer of Service Prompt (continued)

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table QMSTOPS appears in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table QMSTOPS

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table QMSTOPS

Sample datafill for table QMSTOPS appears in the following example.

MAP example for table QMSTOPS

CO	CT4Q
UNSPEC	UNSPEC
OH	0_MINUS
OA	0_PLUS
DD	1_PLUS
CAMA	CAMA
RCAMA	RCAMA
DELAY	DELAY

Datafilling table CT4QNAMS

Table CT4QNAMS defines the operator display.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table CT4QNAMS appears in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table CT4QNAMS

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table CT4QNAMS

Sample datafill for table CT4QNAMS appears in the following example.

AudioGram Delivery Services-Offer of Service Prompt (continued)

MAP example for table CT4QNAMS

CT4QNUM	CT4QNAME	NOAMA	SYSAREA
0	UNSPEC	N TOPSOPR	N
1	0_MINUS	N TOPSOPR	N
2	0_PLUS	N TOPSOPR	N
3	0_PLUS_COIN	N TOPSOPR	N
4	0_PLUS_NONCOIN	N TOPSOPR	N
5	1_PLUS	N TOPSOPR	N
6	CAMA	N TOPSOPR	N
7	RCAMA	N TOPSOPR	N
8	DELAY	N TOPSOPR	N
9	MDS_AUTO	N TOPSOPR	N
10	MDS_OPR	N TOPSOPR	Y MDSUNK Y 10
11	MDS_OPR_ENG	N TOPSOPR	Y MDSENG Y 10
12	MDS_OPR_FRE	N TOPSOPR	Y MDSFRE Y 10

In the datafill example, MDSENG appears to an ADS English operator.

Datafilling table CT4QCLAS

Table CT4QCLAS modifies the CT4Q according to the class of service. The following datafill example indicates division of different types of 0+ calls. Table CT4QCLAS is not a required table. Table CT4QCLAS only indicates how other refinements (besides language) can work.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table CT4QCLAS appears in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the Data Schema section of this manual for a description of the other fields.

Datafilling table CT4QCLAS

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table CT4QCLAS

Sample datafill for table CT4QCLAS appear in the following example.

AudioGram Delivery Services-Offer of Service Prompt (continued)

MAP example for table CT4QCLAS

OLDCT4Q	CLASCRIT	NEWCT4Q
0_PLUS	COIN	0_PLUS_COIN
0_PLUS	UNKNOWN_CLAS	0_PLUS_NONCOIN
0_PLUS	STATION	0_PLUS_NONCOIN
0_PLUS	HOTEL	0_PLUS_NONCOIN
0_PLUS	RESTRICTED	0_PLUS_NONCOIN

Datafilling table CT4QLANG

Table CT4QLANG provides call type for queuing refinement according to language criterion (LANGCRIT). The LANGCRIT is a language name associated with the call. The operator or an automated service determines the language. The operator marks the language of the call through key actions. On recall, the operator uses this language mark to route the call to the correct queue for recall. If the automated service marks the language, the language becomes a criterion in this table. The language goes to an appropriate operator. This operator is fluent in the language specified on the first position seizure.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table CT4QLANG appears in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table CT4QLANG

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table CT4QLANG

Sample datafill for table CT4QLANG appears in the following example.

AudioGram Delivery Services-Offer of Service Prompt (continued)**MAP example for table CT4QLANG**

OLDCT4Q	LANGCRIT	NEWCT4Q
UNSPEC	MDS	MDS_AUTO
UNSPEC	MEN	MDS_AUTO
UNSPEC	MFR	MDS_AUTO
UNSPEC	MOP	MDS_OPR
UNSPEC	MOE	MDS_OPR_ENG
UNSPEC	MOF	MDS_OPR_FRE
0_MINUS	MDS	MDS_AUTO
0_MINUS	MEN	MDS_AUTO
0_MINUS	MFR	MDS_AUTO
0_MINUS	MOP	MDS_OPR
0_MINUS	MOE	MDS_OPR_ENG
0_MINUS	MOF	MDS_OPR_FRE
0_PLUS_COIN	MDS	MDS_AUTO
0_PLUS_COIN	MEN	MDS_AUTO
0_PLUS_COIN	MFR	MDS_AUTO
0_PLUS_COIN	MOP	MDS_OPR
0_PLUS_COIN	MOE	MDS_OPR_ENG
0_PLUS_COIN	MOF	MDS_OPR_FRE
0_PLUS_NONCOIN	MDS	MDS_AUTO
0_PLUS_NONCOIN	MEN	MDS_AUTO
0_PLUS_NONCOIN	MFR	MDS_AUTO
0_PLUS_NONCOIN	MOP	MDS_OPR
0_PLUS_NONCOIN	MOE	MDS_OPR_ENG
0_PLUS_NONCOIN	MOF	MDS_OPR_FRE
1_PLUS	MDS	MDS_AUTO
1_PLUS	MEN	MDS_AUTO
1_PLUS	MFR	MDS_AUTO
1_PLUS	MOP	MDS_OPR
1_PLUS	MOE	MDS_OPR_ENG
1_PLUS	MOF	MDS_OPR_FRE
DELAY	MDS	MDS_AUTO
DELAY	MEN	MDS_AUTO
DELAY	MFR	MDS_AUTO
DELAY	MOP	MDS_OPR
DELAY	MOE	MDS_OPR_ENG
DELAY	MOF	MDS_OPR_FRE
MDS_OPR	MOP	MDS_OPR
MDS_OPR	MOE	MDS_OPR_ENG
MDS_OPR	MOF	MDS_OPR_FRE

Datafilling tables TQORDERA and TQORDERB

Tables TQORDERA and TQORDERB determine the order of CT4Q refinement.

AudioGram Delivery Services-Offer of Service Prompt (continued)

Datafill for AudioGram Delivery Services-Offer of Service Prompt for tables TQORDERA and TQORDERB appear in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling tables TQORDERA and TQORDERB

Field	Subfield or refinement	Entry	Explanation and action
ASST			This field is introduced in NA005. This field cannot be used until NA006. This field appears in these tables for all offices at release NA005 and later versions. This field does not apply to datafill for AudioGram Delivery Services-Offer of Service Prompt.

Datafill example for tables TQORDERA and TQORDERB

Sample datafill for tables TQORDERA and TQORDERB appears in the following example.

MAP example for tables TQORDERA and TQORDERB

CT4QTABL	PREOPR	POSTAUTO	RECALL	ASST
CT4QCLAS	1	0	0	0
CT4QREST	0	0	0	0
CT4QPFXT	0	0	0	0
CT4QCLD	0	0	0	0
CT4QORIG	0	0	0	0
CT4QTIME	0	0	0	0
CT4QCAR	0	0	0	0
CT4QAUTO	0	0	0	0
CT4QLANG	0	1	1	1

Datafilling table TQMSFCQA

Table TQMSFCQA assigns the final call queue.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table TQMSFCQA appears in the following table. The fields that apply to

AudioGram Delivery Services-Offer of Service Prompt (continued)

AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table TQMSFCQA

Field	Subfield or refinement	Entry	Explanation and action
ASSTAREA			This field is introduced in NA005. This field cannot be used until NA006. This field appears in these tables for all offices at release NA005 and later versions. This field does not apply to datafill for AudioGram Delivery Services-Offer of Service Prompt.

Datafill example for table TQMSFCQA

Sample datafill for table TQMSFCQA appears in the following example.

MAP example for table TQMSFCQA

CT4Q	CALLQ	RECALLQ	ASSTAREA
UNSPEC	CQ2	CQ6	SA
0_MINUS	CQ2	CQ6	SA
0_PLUS	CQ2	CQ6	SA
0_PLUS_COIN	CQ2	CQ6	SA
0_PLUS_NONCOIN	CQ2	CQ6	SA
1_PLUS	CQ2	CQ6	SA
CAMA	CQ0	CQ0	SA
RCAMA	CQ0	CQ0	SA
DELAY	CQ2	CQ6	SA
MDS_AUTO	CQ10	CQ14	SA
MDS_OPR	CQ11	CQ15	SA
MDS_OPR_ENG	CQ12	CQ16	SA
MDS_OPR_FRE	CQ13	CQ17	SA

Datafilling table TQCQINFO

Table TQCQINFO uses the value of the CALLQ field in table TQMSFCQA to assign the service of first call arrivals.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table TQCQINFO appears in the following table. The fields that apply to

AudioGram Delivery Services-Offer of Service Prompt (continued)

AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table TQCQINFO

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table TQCQINFO

Sample datafill for table TQCQINFO appears in the following example.

MAP example for table TQCQINFO

CALLQ	QMSSERV	CWOFF	CWON	TREAT
CQ0	TOPS_TA	10	25	EMR3
CQ2	TOPS_TA	10	25	EMR3
CQ6	TOPS_TA	10	25	EMR3
CQ10	MDS_AUTO_SERV	32766	32767	EMR4
CQ11	MDS_OPR_SERV	10	25	EMR4
CQ12	MDS_OPR_SERV	10	25	EMR4
CQ13	MDS_OPR_SERV	10	25	EMR4
CQ14	MDS_AUTO_SERV	32766	32767	EMR4
CQ15	MDS_OPR_SERV	10	25	EMR4
CQ16	MDS_OPR_SERV	10	25	EMR4
CQ17	MDS_OPR_SERV	10	25	EMR4

Datafilling table TQCQPROF

Table TQCQPROF allows the operating company to create call queue profiles through associating lists of call queues with a call queue profile number. Separate operator numbers are associated with one profile number. Datafill for profiles common to several operators is central for easier maintenance and reduced data store use.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table TQCQPROF appears in the following table. The fields that apply to

AudioGram Delivery Services-Offer of Service Prompt (continued)

AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table TQCQPROF

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table TQCQPROF

Sample datafill for table TQCQPROF appears in the following example.

MAP example for table TQCQPROF

CQPROFNM	DLAYCT4Q	AGENTQ	PRIOAREA
2	0_MINUS	AQ0	OFC (CQ2) (CQ6) \$
30	MDS_AUTO	AQ1	OFC (CQ10)(CQ14)\$
32	MDS_OPR	AQ3	PROF(CQ15 10) (CQ16 10) (CQ17 10) \$ (CQ11 10) (CQ12 10) (CQ13 10) \$ (CQ6 10) \$ (CQ12 10) \$

In the example, the live ADS operator (profile #32) serves calls according to the following priorities:

- ADS recalls (transfers)
- ADS non-recalls
- TA recalls
- TA non-recalls

Datafilling table TQOGTKEY

Two types of transfers are available. A description of each type follows:

- automated to live

With an outgoing trunk (OGT) key for language selection, the automated system changes the language to route to the appropriate operator that

AudioGram Delivery Services-Offer of Service Prompt (continued)

handles that language. The automated system displays the correct language to the operator

- live to automated

The live operator is not required to change the language before the operator transfers the call to the automated system.

An OGT key must be available for each of the two transfers.

Table TQOGTKEY contains OGT values for any TOPS Multi-purpose (TOPS MP), TOPS Single Purpose (TOPS SP) or TOPS Basic Position (TOPS BP) position types entered in table TOPSPOS as with an automatic call distribution (ACD) method of Queue Management System Call Agent Manager (QMSCAM). The OGT keys added for ADS include three language keys and three CT4Q keys. These three keys are used for transfers. The language keys are necessary for the automated operators to correctly change the language before the automated operator transfers calls to a live operator. The CT4Q keys are for the real transfer.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table TQOGTKEY appears in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table TQOGTKEY

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table TQOGTKEY

Sample datafill for table TQOGTKEY appears in the following example.

AudioGram Delivery Services-Offer of Service Prompt (continued)

MAP example for table TQOGTKEY

KEYNUM	LABEL	KEYINFO	
0	ASST	ASST	
17	ENGLISH	LANG	ENG
19	FRENCH	LANG	FRE
20	MDSUNK	LANG	MOP
21	MDSENG	LANG	MOE
22	MDSFRE	LANG	MOF
26	AUTOMDS	CT4Q	MDS_AUTO
36	LIVEMDS	CT4Q	MDS_OPR

Datafilling table TQFMNAMS

Table TQFMNAMS assigns symbol names for force management call types (FMCT) assignment processing.

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table TQFMNAMS appears in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table TQFMNAMS

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table TQFMNAMS

Sample datafill for table TQFMNAMS appears in the following example.

MAP example for table TQFMNAMS

FMCTNUM	FMCTNAME
1	0_MINUS
9	MDS_AUTO
10	MDS_OPR

Datafilling table TQFMCT4Q

Table TQFMCT4Q assigns a base Force Management (FM) call type.

AudioGram Delivery Services-Offer of Service Prompt (continued)

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table TQFMCT4Q appears in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table TQFMCT4Q

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table TQFMCT4Q

Sample datafill for table TQFMCT4Q appears in the following example.

MAP example for table TQFMCT4Q

CT4Q	FMCT
0_MINUS	0_MINUS
MDS_AUTO	MDS_AUTO
MDS_OPR	MDS_OPR

Datafilling table TOPSTOPT

Datafill for AudioGram Delivery Services-Offer of Service Prompt for table TOPSTOPT appears in the following table. The fields that apply to AudioGram Delivery Services-Offer of Service Prompt appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table TOPSTOPT

Field	Subfield or refinement	Entry	Explanation and action
This table does not change.			

Datafill example for table TOPSTOPT

Sample datafill for table TOPSTOPT appears in the following example.

AudioGram Delivery Services-Offer of Service Prompt (end)

MAP example for table TOPSTOPT

GRPKEY	ACDDATA	DISPCLG	ADASERV	ADASANS
ANITOCCLI				

I TRAFDD1	QMSCAM	CORECAM	N	Y
N			NONE	NA

Tools for verifying translations

AudioGram Delivery Services-Offer of Service Prompt does not use tools for verifying translations.

SERVORD

AudioGram Delivery Services-Offer of Service Prompt does not use SERVORD.

Auto Country Direct

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS12 and later versions.

Auto Country Direct was introduced in TOPS05.

Requirements

To operate, Auto Country Direct has the following requirements:

- Operator Services Basic, OSB00101, and table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- Table TOPSFTR parameter COUNTRY_DIRECT = Y
- BAS Generic, BAS00003

Description

The following features provide this functionality:

Features in this functionality

Feature number	Feature name
AN1340	Country Direct Service (TOPS05)
AN1568	Country Direct Automatic message accounting (AMA) Changes in the CCM Layer (no xla) (TOPS05)
AN1339	SHR Changes for country Direct Service (no xla) (TOPS05)
50058691	Bypass country direct rating with table TOPSPARM parm CDIR_RATING. (TOPS08.1)
59006865	EOL Notification & EOL of TOPS ACD (TOPS12)

This functionality allows a caller to dial an access code and called number to reach an operator in another country. The operator bills the call and connects to the called party. The called party can be in the same country or a different country than the operator. This ability is for a subscriber that travels in another country. The subscriber wants to call a different country. The subscriber wants to bill the call at the location of the operator. Home country refers to the

Auto Country Direct (continued)

country of the operator. The country of the operator is not always the home country of the caller.

You can activate TOPS country direct calls without the use of this functionality. This action can affect resources.

Operation

This functionality provides the following features for Country Direct calls:

- call handling by Tops Operator Position System (TOPS) Toll and Assist (TA) operators
- automatic identification of a call as Country Direct
- operator screen displays marked Country Direct, includes the origin country
- billing verification
- The AMA record identification of a Country Direct call
- identification of allowed/denied billing types
- hand off to Automated Alternate Billing System (AABS)
- call completion in the home country or to a third country
- support for North American and Global TOPS

North American indicates the countries that use the North American Numbering Plan (NANP). Global, or Open Numbering and Global Operating System (GOS), refers to countries that use the Open Numbering dialling plan (OPENNUM).

- routing to TOPS on TOPS, ISUP IT, and ISUP ATC trunks

The system supports routing on ISDN user part (ISUP) IT and ISUP Automatic Time And Charges (ATC) trunks. The system supports routing when Software Optionality Control (SOC) option OSEA0102 (GR317/GR394 ISUP to/from TOPS) is in the ON state. The system supports signaling types R1 and R2 on TOPS trunks.

- A TOPS operator can handle calls, like 0- calls, where the operator must enter the called number

Auto Country Direct (continued)

The following are two types of country direct calls:

- *Country Direct* - The call terminates in the home country of the operator.
As an example, a Canadian subscriber travels in France. The subscriber dials an access code to reach an operator in Canada for a called number in Canada.
- *Country-to-Country* - The call terminates in a third country.
As an example, a Canadian subscriber travels in England. The subscriber dials an access code to reach an operator in Canada for a called number in France.

Optionality

This functionality is an option, OSB00101. The SOC controls this functionality. The SOC Utility provides two types of control:

- You can set the option to ON or IDLE . In the ON state, full functionality is available. In the IDLE state, functionality is not available, but datafill can occur and the system retains the datafill. The SOC utility will support the off state. This functionality will not support the OFF state.
- Use determines control. Auto Country Direct supports state control only. Auto Country Direct does not support SOC Usage control.

Datafill that this functionality describes can occur in the IDLE or ON state. You can enter calls to mark Country Direct with the feature in the IDLE state. The system marks these calls with the OA call origination. The system treats these calls as 0+, and route the calls to an operator for call handling. The Country Direct digit stream remains in the CALLED number field.

Refer to the *Software Optionality Control User Manual*, 297-8991-901 for information on how to use SOC.

New call origination

The creation of new call origination CDIR occurs. This call origination CDIR is for use in default tuples for tables TOPS, TOPSAMA and QMSTOPS. These tuples appear in the datafill procedure section.

You can enter the new call origination with datafill in the following TOPS tables that use call origination:

- AMASRVID
- TDBNORM

Directory Assistance (DA) related tables DABILL, TOPSOIC and ADACCOPT allow the new call origination datafill. The system does not

Auto Country Direct (continued)

support DA processing for Country Direct calls. These DA related tables do not require datafill.

The new call origination can pass to current protocols with a call origination field. External vendors must make changes to the OPP, AABS, QMS MIS and PARS protocols.

Screening

Country Direct calls route to TOPS from an international gateway office in the home country. The format of the digit stream is not completely known. The TOPS allows for differences of the digit streams. The Country Direct digit stream transmits to TOPS as a called number. The Country Direct digit stream contains the following:

- on access code, 1 to 4 digits
- a country code, 1 to 3 digits

This code can be the country code normally associated with a country. This code indicates the origin country for a Country Direct call. The system uses this code to screen and rate Country Direct calls. The system records this code in new module code 122. This country code is optional.

- carrier of origin, 1 to 14 digits

This code can relate to the carrier for the call as TOPS Equal Access defines. This code indicates the carrier of origin. The system uses this code for Country Direct rating. The system records the code in new AMA module code 122. The carrier of origin is optional.

- directory number, 0 to 14 digits

The directory number is optional.

As an example, a Country Direct call can signal to TOPS with the following called digit stream: 171 069 12. In this stream 171 is the access code, 069 is the country code of the originating country. The carrier of the origin is 12. A directory number (DN) is not signaled with this call.

The total stream can add a maximum of 21 digits. The telephone network and TOPS software can handle a maximum of 15 digits. The system truncates digits higher than 15. These truncated digits are part of the DN. The calling DN does not affect a Country Direct call. Loss of information does not occur when the system truncates at 15 digits.

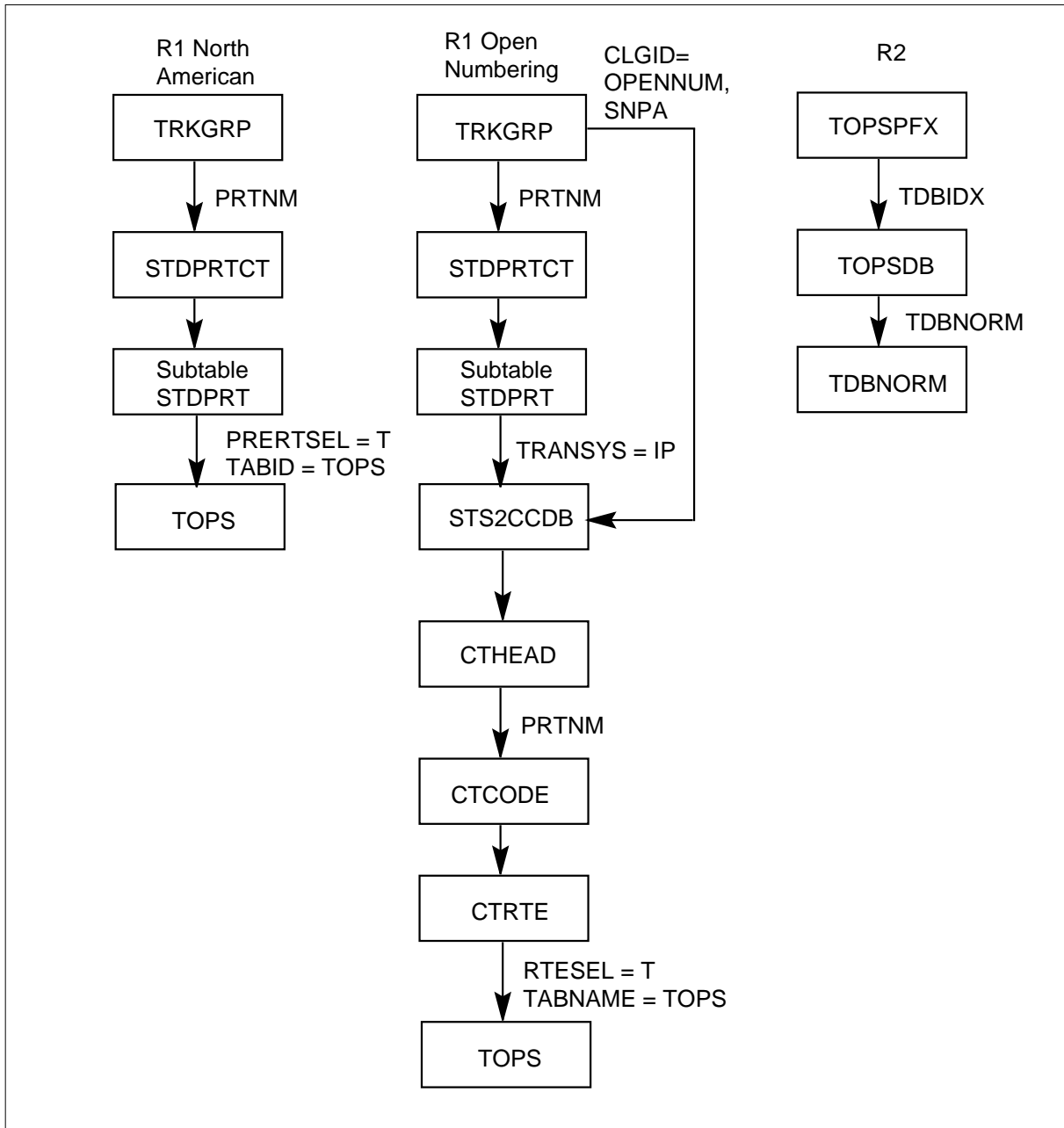
Screening (assigning the call origination)

To screen a Country Direct call, first mark the call as Country Direct with the new CDIR call origination. To identify a call as Country Direct, different

Auto Country Direct (continued)

datafill is a requirement for TOPS R1 signaling in a North American Environment. Different datafill is also a requirement for TOPS R1 signaling in an Open Numbering environment and TOPS R2 signaling. The table flow to assign the call origination this section discusses, appears in the following figure:

Table flow for how to assign the call origination



Auto Country Direct (continued)

R1 North American signalling

Datafill in table STDPRTCT marks a TOPS R1 call that uses the NANP as a Country Direct. This action is like the way the system processes 411 or 555 DA calls. For each pretranslator name entered on a trunk that can serve Country Direct calls, enter possible access codes in subtable STDPRT. Use a T selector to route the calls to table TOPS, tuple CDIR. Do not delete the access code, NOPREDIG = 0. This code is for use later in Country Direct screening.

For example, a call arrives at TOPS on trunk TBELLIC1, with called digit stream 171 069 12. Table TRKGRP, field PRTNM contains PTOP.

MAP example for table TRKGRP

GRPKEY	GRPINFO
OTWAONC1	TOPS 31 NPDGP NCRT IC MIDL 613 PTOP NLCA NSCR N NIL COMBINED N N 0 0000 NONE BELL 10 5 5 N Y OFFHK N N

MAP example for subtable STDPRTCT.STDPRT, tuple PTOP

FROMDIGS	TODIGS	PRETRTE
171	171	T NL 0 TOPS CDIR 2 24 NONE

This action routes the call to table TOPS. Table TOPS assigns the CDIR call origination.

MAP example for table TOPS

CO	DISPLAY	NOAMA	POSTYPE	SERV Typ
CDIR	S	N	GEN	TASERV

R1 Open Numbering signalling (global)

Datafill in the CT table marks a TOPS R1 call that uses the OPENNUM as Country Direct.

Enter the incoming trunk in table TRKGRP, with the CLGID field entered as OPENNUM.

Auto Country Direct (continued)**MAP example for table TRKGRP**

GRPKEY	GRPINFO
TOPENIC1	TOPS 31 NPDGP NCRT IC MIDL 284 TXLA NLCA NSCR N NIL COMBINED N N 0 0000 NONE OPENNUM 1 2 2 N OFFHK N N

The pretranslator name is from TRKGRP. The pretranslator name indexes table STDPRTCT. The called digits index subtable STDPRT:

MAP example for subtable STDPRTCT.STDPRT, tuple TXLA

FROMDIGS	TODIGS	PRETRTE
0	9	N OA O IP

The IP value in the TRANSYS field of table STDPRT causes the call to access the universal translations system. To gather additional information about the call, the call must route through universal translations. Calls that use OPENNUM signaling must not route directly to table TOPS from table STDPRTCT.

The key to universal translations depends on the trunk group datafill. The Serving Translation Scheme (STS) of the incoming trunk in table TRKGRP indexes table STS2CCDB (Serving Translation Scheme to Country Code Data Base).

MAP example for subtable STS2CCDB

STS	TRANNAME
284	TOPSIC

The data field of this table provides an index in table CTHEAD. Table CTHEAD datafill contains default values.

Auto Country Direct (continued)**MAP example for subtable CTHEAD**

XLANAME	DFLT		DFOP	CON	MAXIDX
TOPSIC	DFLT	TRMT (OFC VCCT)\$	DFOP \$	NOCON	STD

Index table CTCODE with the translator name and the called digits.

MAP example for subtable CTCODE

XLANAME	FROMD	TOD	XLADATA
TOPSIC	171	171	RTE (MM 2 15)(DEST 4) \$

Entry DEST 4 tells TOPS to index table CTRTE, tuple TOPSIC 4.

MAP example for subtable CTRTE

XLANAME	RTEREF	RETLIST
TOPSIC	4	(T TOPS CDIR) \$

Table CTRTE routes the call to table TOPS, tuple CDIR.

MAP example for table TOPS

CO	DISPLAY	NOAMA	POSTYPE	SERVTYP
CDIR	S	N	GEN	TASERV

Translations sets the call origination type to CDIR.

Refer to functionality Global TOPS Call Processing, GOS00001, for additional information on TOPS Open Numbering translations.

R2 signalling (global)

The R2 signaling is for use in a GOS environment. Datafill in the TOPS database tables marks a TOPS R2 call as Country Direct. Table TOPSPFX uses prefix digits the subscriber identifies to retrieve an index in table

Auto Country Direct (continued)

TOPSDB. You must enter correct Country Direct access codes in table TOPSPFX to indicate a tuple in table TOPSDB.

MAP example for table TOPSPFX

INDEX	ANISTAT	TDBIDX
171 171	NOANI	1
172 172	NOANI	1

In the preceding table, TOPSPFX, for Country Direct calls, the automatic number identification (ANI) does not have an effect. The ANI is not a requirement. Set ANISTAT to NOANI. Field TDBIDX points to table TOPSDB:

MAP example for table TOPSDB

TDBKEY	TDBCLIDX	TDBDAOPT	TDBNORM	TDBSERV
1	0	0	1	0

Field TDBNORM of table TOPSDB provides an index to table TDBNORM. Table TDBNORM maps R2 data in the North American TOPS framework. The R2 data allows the interworking of R2 on TOPS trunks. Field TDBSERV of table TOPSDB provides an index to table TDBSERV. Table TDBSERV identifies TOPS services and the attributes of services. Table TDBNORM maps a TOPSDB index to a call origination, calling service type, call source and AMA type. Enter the appropriate TDBNORM tuple as follows:

MAP example for table TDBNORM

INDEX	CALLORIG	CLGSRV	CALLSRC	NOAMA	OVRXLACO	ANIFAIL
1	CDIR	SPECIAL	ORIG	NIL	Y	ANIF

Screening (parsing the digit stream)

When datafill marks a call as Country Direct, the next step in screening is to parse the digit stream. Signal a Country Direct call with an access code. You

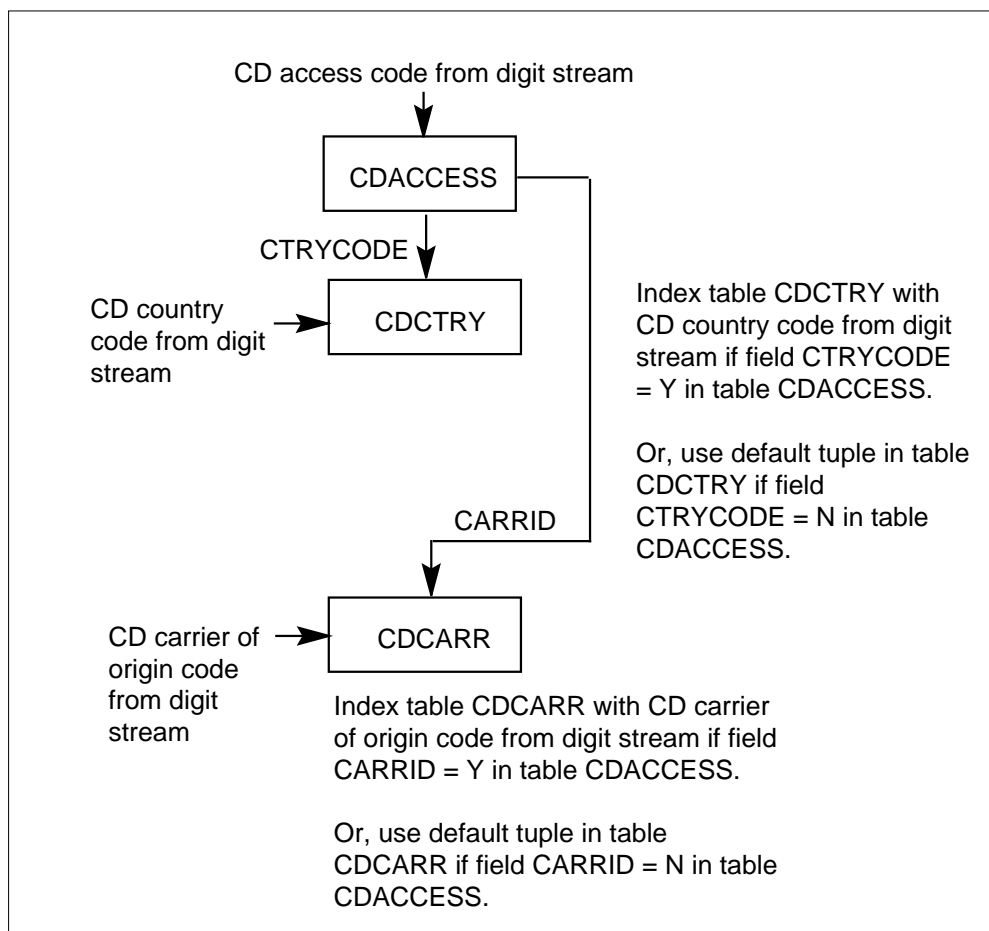
Auto Country Direct (continued)

can signal a Country Direct call with a country code, carrier of origin and a DN. Enter these codes in the following new tables:

- CDACCESS - Country direct access codes
- CDCTRY - Country direct country codes
- CDCARR - Country direct carrier of origin

The table flow appears in the following figure:

Table flow for parsing the digit stream



The preceding figure applies to the three types of signaling: R1 North American, R1 Open Numbering and R2. See the datafill procedure section for details on these tables. Sample datafill and a description of these tables follows.

Auto Country Direct (continued)**MAP example for table CDACCESS**

KEY	ACCDIGS	CTRYCODE	CARRID
171 171	3	Y	Y
172 172	3	Y	N
173 173	3	N	Y
9107 9107	4	N	N

In table CDACCESS, if field CTRYCODE = Y, use the country code in the digit stream to index table CDCTRY. If field CTRYCODE = N in table CDACCESS, use the default tuple in table CDCTRY.

MAP example for table CDCTRY

KEY	CTRYDIGS	BILLOPT	CDCTRYNM	CTRYRATE
000 000	3	ALL	0	NOCTRY
069 069	3	ALL	1	BARBRATE
30 30	2	THIRD	2	PORTRATE
76 76	2	COLLECT	15	CHLRATE

In table CDACCESS, if field CARRID = Y, use the carrier of origin code in the digit stream to index table CDCARR. If field CARRID = N in table CDACCESS, use the default tuple in table CDCARR:

MAP example for table CDCARR

KEY	CARRDIGS	CARRRATE
0000 0000	4	NOCARR
11 11	2	CARR1RATE
21 21	2	CARR2RATE
31 31	2	CARR3RATE

If the preceding datafill is in use, a Country Direct call signaled with the Country Direct digit stream 17106911. The call has access code 171, country code 069 and carrier of origin 11. A DN is not signaled in the Country Direct digit stream.

Auto Country Direct (continued)

Datafill in table CDCARR does not always relate to TOPS Equal Access datafill. This table identifies carriers of origin signaled in the Country Direct digit stream. The system uses this table to rate Country Direct calls. This table is for use in the new Country Direct AMA module code. In an Equal Access office, current Equal Access conditions and limits continue to apply to Country Direct calls.

From the preceding datafill, consider a Country Direct call signaled with digit stream 17106911. Table CDACCESS, tuple 171 171 has ACCDIGS = 3. The access code is 171. Parsing continues after three digits, with 06911. Table CDCTRY, tuple 069 069 has CTRYDIGS = 3. The country code is 069. Parsing continues after three more digits, with 11. Table CDCARR, tuple 11 11 has CARRDIGS = 2. The carrier of origin is 11. If additional digits are present after the carrier of origin, the digits are the DN.

Screening (error conditions)

The digits signaled to TOPS as the Country Direct digit stream do not always match the preceding datafill. When this condition occurs the system treats the call as an error condition. The system routes the call to VACT treatment. Possible error conditions appear in the following list:

- Invalid Access Code. Datafill marks a call Country Direct. The "Screening (assign the call origination)" section describes this datafill. Entry of the digits at the start of the Country Direct digit stream does not occur in table CDACCESS.
- Invalid Country Code. Field CTRYCODE = Y for the CDACCESS tuple for the appropriate access code. The digits that follow the access code are not in table CDCTRY. This condition can indicate that the country code is not signaled in the digit stream. This condition can indicate that entry of the country code in the digit stream does not occur in table CDCTRY.
- Invalid Carrier ID. Field CARRCODE = Y for the CDACCESS tuple for the appropriate access code. The digits that follow the country code or the access code are not in table CDCARR. This condition can indicate that the carrier of origin is not signaled in the digit stream. This condition can indicate that the entry of the carrier of origin in the digit stream does not occur in table CDCARR.

If one of the preceding error conditions occurs, new OM CDIRFL increases. The system generates new TOPS log TOPS126 to indicate an error in the digit stream. The system generates current log TRK138 to indicate that the system routes the call to treatment.

Auto Country Direct (continued)

Call presentation

After the datafill marks the call as Country Direct and the system parses the digit stream, the call routes to an operator.

Calling number selection

Select a calling number. The preceding digit stream transmits to TOPS as the called number. The system alternately bills every Country Direct call. Calling numbers the gateway office sends TOPS are not important. A new TOPSPARM, CDIR_DEDICATED_DN, determines the calling number. If set to N, the system uses the digit stream. If set to Y, enter a ten digit DN as the calling number for all Country Direct calls in the office. Enter the ten digit DN after the Y. The ten digit number can change for future use. If a country code transmits, the country code replaces the last three digits of the DN you enter. If a country code does not transmit, the system uses the DN you enter. The DN does not change.

In a North American office, you must enter the NXX of the dedicated DN in table TOPSPARM.

MAP example for table TOPSPARM

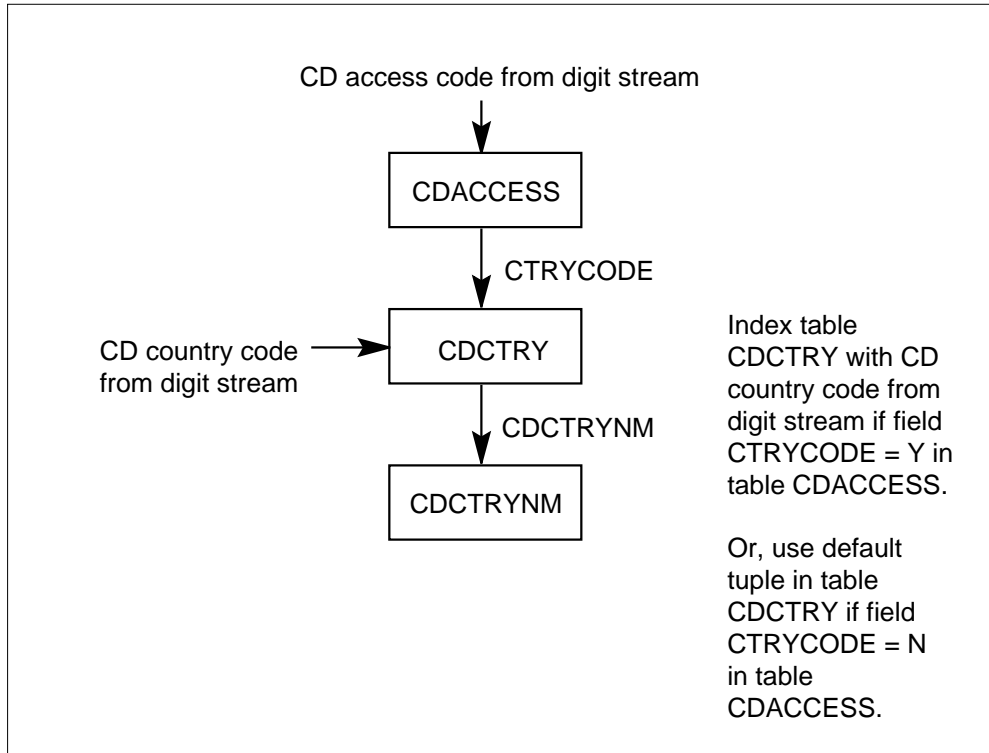
PARAMNAME	PARAMVAL
-----	-----
CDIR_DEDICATED_DN	Y 6193200000

Country of origin display

The table flow to display the country of origin appears in the following figure:

Auto Country Direct (continued)

Table flow for displaying the country of origin



If table CDACCESS, field CTRYCODE = Y, an index of table CDCTRY occurs with the CD country code from the digit stream. If field CTRYCODE = N, the use of the default tuple in table CDCTRY occurs. In table CDCTRY, field CDCTRYNM indexes to table CDCTRYNM (Country Direct Country Name). Table CDCTRYNM displays the country of origin names that appear on TOP-MP positions.

For positions that comply with OPP positions, the index to table CDCTRYNM transmits to the position. The position must contain parallel datafill to map the integer to the appropriate string.

Sample datafill appears in the following examples:

Auto Country Direct (continued)**MAP example for table CDACCESS**

KEY	ACCDIGS	CTRYCODE	CARRID
171 171	3	Y	Y
172 172	3	Y	N
173 173	3	N	Y
9107 9107	4	N	N

MAP example for table CDCTRY

KEY	CTRYDIGS	BILLOPT	CDCTRYNM	CTRYRATE
000 000	3	ALL	0	NOCTRY
069 069	3	ALL	1	BARBRATE
30 30	2	THIRD	2	PORTRATE
76 76	2	COLLECT	15	CHLRATE

MAP example for table CDCTRYNM

NAMEIDX	CTRYNAME
0	CTRYDIR
1	BARBADOS
2	PORTUGAL
15	CHILE

Addition of the default tuple 0 CTRYDIR to table CDCTRYNM at IPL to correspond to the default tuple in table CDCTRY occurs.

As an example with the above datafill, a Country Direct call routes to TOPS with country code 069. In table CDACCESS, field CTRYCODE = Y. Table CDCTRY indexes at the second tuple, 096 096. The second tuple points to tuple 1 in table CDCTRYNM. This action sends the name BARBADOS to a TOPS-MP position or the index that corresponds, 1, to the OPP compliant position.

The country of origin does not appear on TOPS 04 positions.

Auto Country Direct (continued)

Call handling

When a Country Direct call arrives at an operator position, the operator can process the call. The following exceptions apply:

- The operator cannot change services to DA when the operator serves a Country Direct call.
- To prevent fraud, the operator cannot change the calling number.
- In a North American environment, you can enter ten-digit domestic called numbers only. You can enter any length for overseas called numbers.

The operator must enter the terminating number, collect billing information and class charge the call. Station paid and person paid calls cannot occur. The operator can attempt to mark a Country Direct call as station paid or person paid. When this condition occurs, a current screen indicates that the class charge is not correct.

The operator class can charge a Country Direct call as collect, calling card or billed to third. When this condition occurs the system checks Country Direct datafill. The system checks the datafill to see if the class charge is correct. If table CDACCESS, field CTRYCODE = N for the appropriate tuple, the billing options in the default tuple of table CDCTRY are correct. If CTRYCODE = Y, the system references the tuple for the country of origin, as signaled in the Country Direct digit stream, in table CDCTRY. Field BILLOPT contains the billing options that are correct for that country of origin. If the operator selects an incorrect class charge, a current screen display alerts the operator to select another class charge.

When the operator completes a Country-to-Country call, additional billing restrictions can apply to the terminating country. Enter these billing restrictions for each terminating country in table OVSBILL.

MAP example for table OVSBILL

COUNTRY	COLLECT	PERONLY	THIRDOK	CCSCRN	COLSSCRN	THRDSCRN
FRANCE	PER	Y	Y	N	N	N

See the data schema section of this manual for additional information on table OVSBILL.

Operators can enter class charges for Country-to-Country calls that the system does not allow for the end country. When this condition occurs, a screen display indicates that the class charge is not correct.

Auto Country Direct (continued)

When the operator enters the terminating number and collects the billing information, the operator can hand off calls. The operator can hand off collect or third number calls can hand off to AABS. The AABS handles billing verification. If handoff can occur is based on standards defined by functionality "Operator Hand Off to AABS" (ABS00101).

The system supports handoff to AABS for telephones with dual-tone multifrequency (DTMF) ability only. Operator practice indicates that the operator must ask the subscriber when the call originates from a country with limited DTMF equipment. The operator must not hand off the call to AABS if the equipment does not comply with DTMF.

If a call hands off to AABS, a new operational measurement (OM), CDIRHA, increases. The OM CDIRHA increase indicates handoff.

In some countries, Country Direct calls can require person-to-person billing for collect or billed to third calls. The operating company must make this an operator practice. A current AABS limit does not allow the operator to hand off the following calls to AABS:

- person-to-person collect
- billed to third calls

If the calling or called party requests, the operator can mark the call for Time and Charges (T&C). To reduce operator work time, the operator must ask the party that requests T&C to stay on the line. The operator asks the party that requests T&C to stay on the line when the other party goes on hook. This action minimizes the result on the network for a T&C recall to the operator. The TOPS internal rating system provides real time rating for the call. In a North American office, ACTS can provide the T&C quote.

The party that pays for the call can disconnect before the party receives a T&C quote. When this condition occurs the call recalls to an operator. The operator must key Print T&C to print the record on a TTY device. The TTY output has a Country Direct calling number. The operator cannot call back the calling party with the T&C quote.

The necessary datafill to provide real time rating appears in "Rating Enhancements." If the datafill is not in place to determine a rate step, information appears on a screen display. The screen display indicates that the operator must enter a rate step. When the operator enters a rate step, the call can continue.

Auto Country Direct (continued)

Branding enhancements

You can enter call branding announcements for Country Direct calls. You do not have to use a standard TA branding announcement like: Thank you for using XYZ's Country Direct Service.

Table BRANDANN expands to include two new fields: CDANN and CDCLLI:

MAP example for table BRANDANN

CARNBEC	TAANN	TACLII	DAANN	DACLII	CDANN	CDCLLI
0111 CARR	Y	TA0111BRND	N		Y	CD0111BRND
1234 NBEC	Y	TA1234BRND	Y	DA1234BRND	Y	TA1234BRND

See the datafill procedure section for details on table BRANDANN.

This functionality does not change the methods to determine if a call must be branded. This functionality does not change the method to select the BRANDANN tuple to use. Refer to functionality "TOPS Directory Assistance/Toll Branding" (OSB00101) for additional details on branding. The size of table DRAMTRK does not increase for additional announcements.

Rating enhancements

Country Direct calls require real time rating when the calling or called party requests T&C. This condition occurs because the system cannot bill Country Direct calls as station paid coin or hotel calls. Country Direct calls cannot use Automated Room and Authorization Number (ARAN).

Changes must occur to North American and Global rating systems to support Country Direct rating. These changes depend on the country of origin, the carrier signaled in the Country Direct digit stream and the called number. This functionality supports the TOPS internal rating system. This functionality does not support external rating.

North American Rating uses a calling tariff to determine rating. Global Rating uses a calling schedule set name. Country Direct calls do not have a correct calling number. The system uses the country code and carrier of origin signaled in the Country Direct digit stream. The system uses this information to determine the calling tariff/schedule. The determination of a calling tariff/schedule satisfies many of the rating tables like tax and discount (time of day and holiday) tables. The system can determine the rate.

Auto Country Direct (continued)

The creation of a new table, CDCTRYRT defines rating names. This table defines the rating names to rate a Country Direct call according to the country of origin. Enter Country Direct country rating names in this table. The system adds a default country rating name, NOCTRY, to CDCTRYRT at initial program load (IPL).

MAP example for table CDCTRYRT

```
CTRYRTNM
-----
```

```
NOCTRY
BARBRATE
CHILRATE
PORTRATE
```

The creation of table CDCARRRT occurs to define the rating names used to rate a Country Direct call on a carrier of origin basis. This table must contain all Country Direct carrier rating names. The addition of a default carrier rating name, NOCARR, occurs to CDCARRRT at IPL.

MAP example for table CDCARRRT

```
CARRRTNM
-----
```

```
NOCARR
CARR1RATE
CARR2RATE
CARR3RATE
```

Field CTRYRATE in table CDCTRY specifies the country code rating name. Field CARRRATE in table CDCARR specifies the carrier rating name. These two values are the key to table CDRATE. Table CDRATE determines the calling tariff in a North American environment. These two values can be the key to table CDRATEG. Table CDRATEG determines the calling schedule set name in a GOS environment. The following are examples of tables CDCTRY and CDCARR:

Auto Country Direct (continued)**MAP example for table CDCTRY**

KEY	CTRYDIGS	BILLOPT	CDCTRYNM	CTRYRATE
000 000	3	ALL	0	NOCTRY
069 069	3	ALL	1	BARBRATE
30 30	2	THIRD	2	PORTRATE
76 76	2	COLLECT	15	CHLRATE

In table CDACCESS, if field CARRID = Y, the system checks the digit stream for a code in table CDCARR:

MAP example for table CDCARR

KEY	CARRDIGS	CARRRATE
0000 0000	4	NOCARR
11 11	2	CARR1RATE
21 21	2	CARR2RATE
31 31	2	CARR3RATE

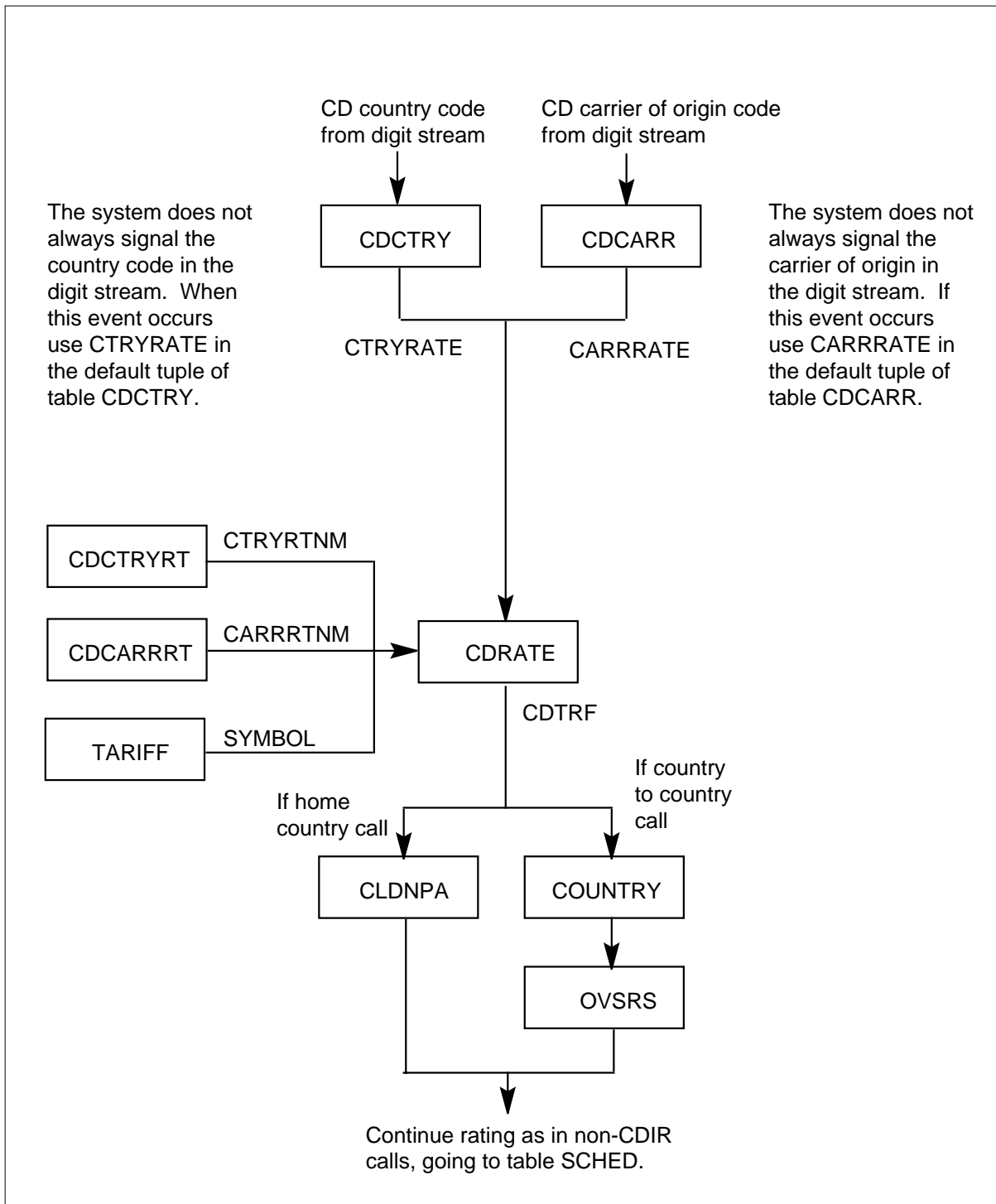
The values in CTRYRATE and CARRRATE are not set. Table CDCTRYRT must have a defined country name before you can enter the country name in table CDCTRY. Table CDCARRT must define a carrier rate name before you can add the carrier rate name to table CDCARR.

North American internal rating

The table flow for rating in the North American environment appears in the following table.

Auto Country Direct (continued)

Table flow for North American internal rating



Auto Country Direct (continued)

In a North American environment, use table CDRATE to map a country code rate name and a carrier rate name to a calling tariff name. The country code rate name is CTRYRATE from table CDCTRY. The carrier rate name is CARRATE from table CDCARR. The calling tariff name is in table TARIFF. The entry of the tariff name occurred earlier.

MAP example for table CDRATE

CTRYRATE	CARRRATE	CDTRF
NOCTRY	NOCARR	TRF_CD0
BARBRATE	CARR1RATE	TRF_CD3
BARBRATE	CARR2RATE	TRF_CD5

If a country code does not signal in the Country Direct digit stream, use the country rate name, CTRYRATE. The CTRYATE is in the default tuple of table CDCTRY. If a carrier of origin does not signal in the Country Direct digit stream, use the carrier rate name, CARRRATE. The CARRRAT is from the default tuple of table CDCARR. Definition of a country rate name in table CDCTRYRT must occur before entry of the country rate name in table CDRATE. Definition of a carrier rate name in table CDCARRRT must occur before you add the carrier rate name to table CDRATE.

As an example, a Country Direct call signals to a TOPS office with country code 069 and carrier of origin 11. Table CDCTRY provides country rate name BARBRATE. Table CDCARR provides carrier rate name CARR1RATE. The tariff that the datafill in table CDRATE defines, is TRF_CD3.

Use tables CDCTRY, CDCARR and CDRATE to obtain a calling tariff in a North American office. Use these tables and not table CLGTRF for rate Country Direct calls.

The calling number for Country Direct calls is not always a correct calling number. If this condition occurs time zone differences that table TMZONE normally supplies do not apply to Country Direct calls. This rating depends on the time at the switch. This rating does not depend on the time at the location of the calling party.

Calls completing within the home country. A Country Direct tariff, calling tariff, can be from table CDRATE. When this condition occurs use table CLDNPA to determine a schedule name and rate step. For Country Direct calls that complete in the home country, index table CLDNPA with the called number. This action determines rating information. You can have a different

Auto Country Direct (continued)

rating for Country Direct calls. For this action to occur use domestic schedule names and rates steps, table SCHNUM and SCHED.

The rate type Single Rate Area (SRA) allows the definition of a schedule name and a rate step to occur in table CLDNPA. These two values drive the charge calculations with other conditions that can affect the total charge. Refer to functionality "TOPS call Processing Features" (Rating) (OSB00101) for additional information on the rating tables. The system does not support other rate types, V&H, Point to Point, and City Zone for Country Direct calls. The system allows datafill to the rate types the system does not support. The system does not use this datafill.

The following is an example of table CLDNPA:

MAP example for table CLDNPA

NPATRF	OVERLAY
619 TRF_CD3	SRA DOMCDIR 555
407 TRF_CD0	SRA DOMCDIR 557

Access to table CLDNPA occurs to rate Country Direct calls that complete in the home country. This access occurs if the call translates as local. A local call does not apply to Country Direct calls. Rating continues through table CLDNPA and not table LCLRS.

When the system finds the schedule name and rate step, rating proceeds in table SCHED.

Country-to-country calls. Country-to-Country calls have an overseas called number type. You cannot use table CLDNPA to determine the schedule name and rate step. Use tables COUNTRY and OVSRS.

The overseas called number indexes table COUNTRY. The operator enters the overseas called number with the KP + OVS key sequence. Table COUNTRY maps an overseas number to a called country name. This called country name, with the tariff name from table CDRATE, indexes the Overseas Rate Step table OVSRS. This action occurs to determine the schedule name and rate step. The following are examples of tables COUNTRY and OVSRS:

Auto Country Direct (continued)

MAP example for table COUNTRY

COUNTRY	OVSNUM
FRANCE	33

MAP example for table OVSRS

TARIFF	COUNTRY	SCHNAME	RATESTEP
TRF_CD0	FRANCE	FORCDIR	536
TRF_CD3	FRANCE	FORCDIR	537

Selection of a schedule name and rate step occurs. Rating can proceed in table SCHED.

RATE tool. An update to the RATE tool occurs. This update allows the RATE tool to rate Country Direct calls. Before this tool you were able to input the call origination and called number to RATE. With this tool you can input the country code and carrier of origin signaled in the Country Direct digit stream to RATE. The following are additional details of the changes:

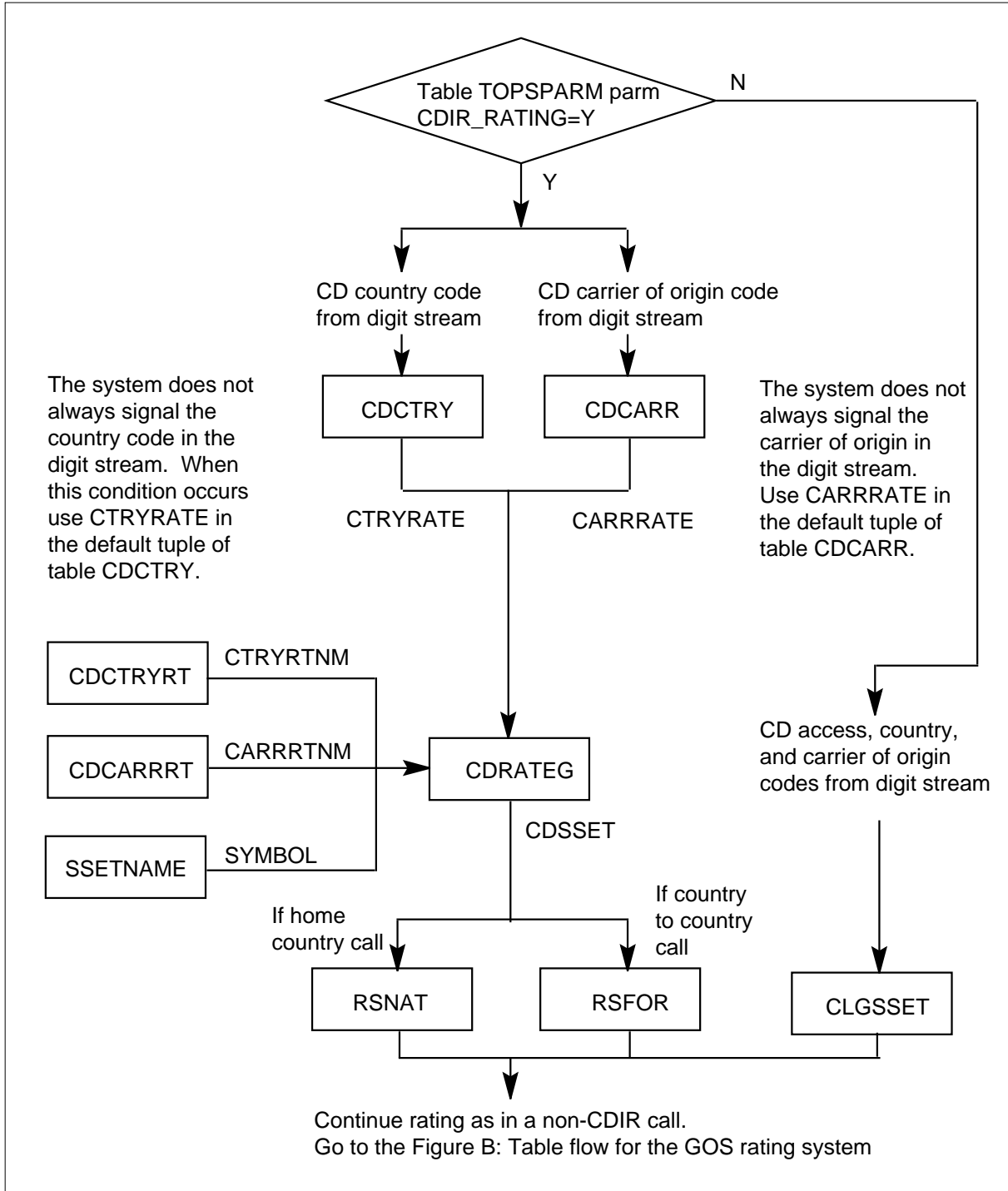
- CAT - The CAT command sets the call origination type for the call the RATE tool rates. This command changes to allow entry of new call origination type CDIR.
- CDCTRY - This command sets the country of origin for the call the RATE tool rates.
- CDCARR - This command sets the carrier of origin for the call the RATE tool rates.

GOS Internal Rating

Functionality Global Operator Services Rating(GOS00001) activates the GOS Rating. Refer to this functionality for additional information on the rating system. The table flow for Global internal rating appears in the following figure:

Auto Country Direct (continued)

Figure A: Table flow for GOS internal rating of a CDIR call



Auto Country Direct (continued)

In a GOS environment, table TOPSPARM parameter CDIR_RATING indicates signaled codes. The signaled codes determine how to rate country direct calls:

- If CDIT_RATING = Y, base the rate on the signalled country and carrier codes. The default value is Y. Use the special country direct tables to derive an SSETNAME for entry of the GOS rating system in figure B.
- If CDIR_RATING = N, base the rate on the signaled access, country and carrier codes. Use these codes to index table CLGSSET. Table CLGESSET gives an SSETNAME to enter the GOS rating system in Figure B.

When CDIR_RATING = Y, table CDRATEG maps a country code rate name, and a carrier rate name to a calling schedule set name. The country code rate name is CTRYRATE from table CDCTRY. The carrier rate name is CARRRATE from table CDCARR. The calling schedule set name is in table SSETNAME. The entry of the set name occurs earlier.

MAP example for table CDRATEG

CTRYRATE	CARRRATE	CDSSET
NOCTRY	NOCARR	SSET_CD0
BARBRATE	CARR1RATE	SSET_CD3
BARBRATE	CARR2RATE	SSET_CD5

If a signal does not occur for a country code in the Country Direct digit stream, use the country rate name, CTRYRATE. The CTRYRATE is in the default tuple of table CDCTRY. A signal does not always occur for a carrier of origin in the Country Direct digit stream. When this condition occurs use the carrier rate name, CARRRATE. The CARRRATE from the default tuple of table CDCARR. Definition of a country rate name in table CDCTRYRT must occur before entry of the country rate name in table CDRATEG. Table CDCARRRT must define a carrier rate name before you can add the carrier rate name to table CDRATEG.

For example the system can signal a Country Direct call to a TOPS office with country code 069 and carrier of origin 11. Table CDCTRY provides country rate name BARBRATE. Table CDCARR provides carrier rate name CARR1RATE. The call schedule set name assigned from the datafill in table CDRATEG is SSET_CD3.

Auto Country Direct (continued)

Use tables CDCTRY, CDCARR and CDRATEG to obtain a calling schedule set name in a GOS office. Use these tables to rate Country Direct calls. Do not use table CLGSSET to rate Country Direct calls.

The calling number for Country Direct calls is not always a correct calling number. When this condition occurs time zone differences that table TIMEZONE normally supplies do not apply to Country Direct calls. The rating depends on the time at the switch. The rating does not depend on the time at the location of the calling party.

Calls completing within the home country. When datafill in table CDRATEG determines a calling schedule set name, use table RSNAT (national). Use this table to determine the rate step for calls that complete in the home country. You can perform the following recommended actions:

- define new schedules for global rating in table SCHNAME
- define the new schedules for global rating in table SCHEDEF with a NATIONAL termtyp

These actions are recommendations and not requirements. This table supports SRA. The SRA provides a schedule name and rate step to use to calculate a rate.

Two rate calculation schemes are present in the GOS rating system. The calculation schemes are the SRA system and the vertical and horizontal coordinate, V and H, system. The SRA system uses table RSNAT. The V and H system uses tables VANDH and DISTANCE. Like the North American rating system, Global Country Direct rating supports only SRA rating. Tables VANDH and DISTANCE are not in use for Global CD rating. The system allows datafill in the rate type that the system does not support. The system does not use this datafill.

The following is an example of table RSNAT:

MAP example for table RSNAT

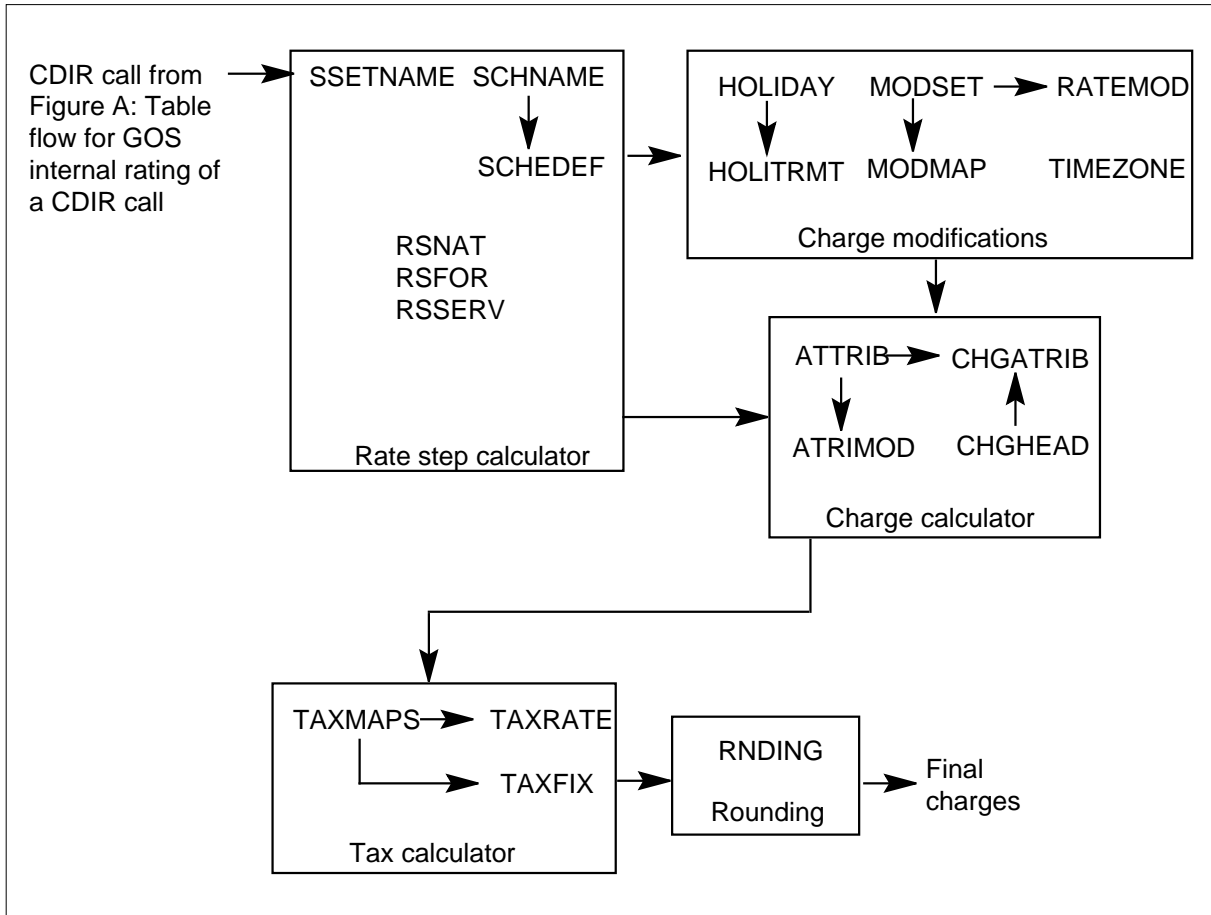
SSETNAME	CLDAREA	RATETYPE	SCHNAME	RATESTEP
SSET_CD5	1022	SRA	CD_DOM1	320
SSET_CD7	3041	SRA	CD_DOM2	321

A Country Direct call flows through the rating tables like other calls flow. Functionality "Global Operator Services Rating" GOS00001, describes this

Auto Country Direct (continued)

flow. Modification occurs to the table flow that appears in this functionality. The table flow appears in the following figure:

Figure B: Table flow for the GOS rating system



Access of table RSNAT occurs to rate Country Direct calls that complete in the home country. This access also occurs when the call translates as local. A local call does not apply to Country Direct calls. The rating continues through table RSNAT. The rating does not continue through table RSLOC.

The GOS rating system allows the attributes of a call to break down rating data in table CHGHEAD. The attributes include the call origination. The system maps the possible TOPS call originations to rating call originations for use in table ATTRIB. The rating call originations are:

- UNSPECIFIED
- OA

Auto Country Direct (continued)

- OH
- DD
- INTERCEPT
- DA
- INWARD
- BOOK
- SPECIAL
- DATABASE
- OPER
- ESTIMATE

The system maps the CDIR call origination to SPECIAL.

Country-to-country calls. Like the North American rating description, Country-to-Country calls have an overseas called number type. These calls cannot use table RSNAT. Use the schedule name from table CDRATEG and the overseas number to index table RSFOR. The RSFOR tuple provides a schedule name and a rate step.

MAP example for table RSFOR

SSETNAME	COUNTRY	SCHNAME	RATESTEP
SSET_CD5	33	CD_FOR1	510

The system maps Country Direct calls to SPECIAL for use in table ATTRIB.

IRATE tool. An update of the IRATE tool occurs. This update allows the IRATE TOOL to rate Country Direct calls. Before this tool you were able to input the called number to IRATE. With this tool you can input the country code and carrier of origin signaled in the Country Direct digit stream to IRATE. The following are the details of the changes:

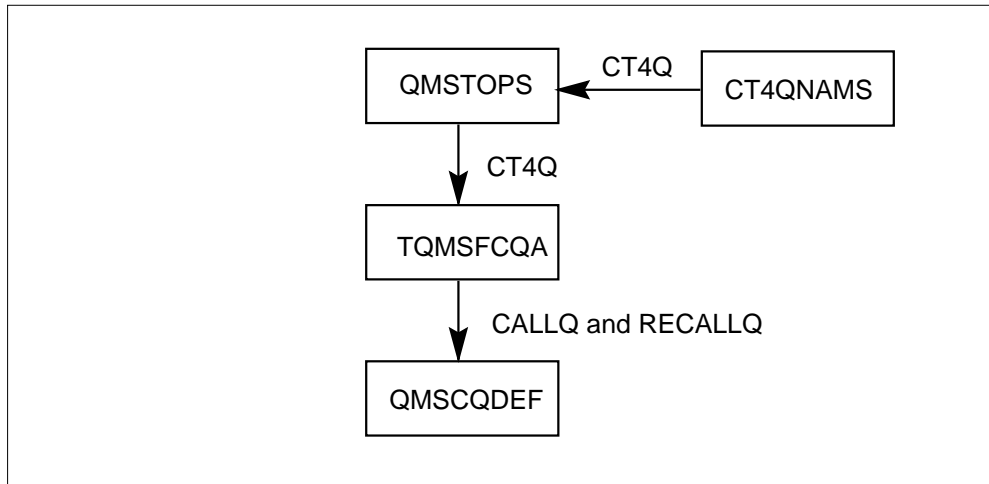
- CTRYDIR - This command marks the call as Country Direct.
- CDCTRY - This command sets the country of origin for the call to rate.
- CDCARR - This command sets the carrier of origin for the call to rate.

Auto Country Direct (continued)

Queuing priority

The table flow to give a Country Direct call queuing priority over other calls, appears in the following table:

Table flow for queuing priority



To give Country Direct priority, assign a higher grade of service through QMS call queue datafill. The system does not support this ability for calls that use TOPSACD. This ability occurs through QMS tables. The call queuing priority for a Country Direct call can be higher than an operator assisted. This condition appears in the following example.

Table QMSTOPS assigns the original CT4Q with the CDIR call origination type.

MAP example for table QMSTOPS

CO	CT4Q

OA	ZERO_PLUS
CDIR	COUNTRY_DIRECT

A definition of CT4Q must appear in table CT4QNAMS.

Table TQMSFCQA associates a call queue and recall call queue to a CT4Q.

Auto Country Direct (continued)**MAP example for table TQMSFCA**

CT4Q	CALLQ	RECALLQ
ZERO_PLUS	CQ35	CQ135
COUNTRY_DIRECT	CQ45	CQ145

Table QMSCQDEF configures the call queue parameters:

MAP example for table QMSCQDEF

APPLNCQ	CQPRIQ	CQAGS	CQMAXSIZ	DEFLAREA	PRAQAREA
TOPS 35	0	70	300	N	N
TOPS 45	0	40	300	N	N

In table QMSCQDEF, field CQAGS defines the Assignable Grade of Service (AGS) for each QMS call queue. The range is from 10 to 80 tenths of a second. This number artificially ages the call. The system multiplies this number by the actual time the call is in queue when an operator considers the call for service.

For example, an operator assisted call can wait in CQ35 for 19 s. A Country Direct call can wait in CQ45 for 5 s. When this event occurs the Country Direct call receives service first. When an operator becomes available, the calculation is: CQ35 has a call that is $19 \times 1.0 = 19$ s and CQ45 has a call that is $5 \times 4.0 = 20$ s. The queueing mechanism takes the oldest call in queue. This call is now the Country Direct call.

Refer to functionality Host Queue Management System, ADVQ0003, for additional information on other queueing priority options.

To use this functionality, a definition an additional QMS call queue must occur for Country Direct calls.

Examples

The following are examples of the datafill and screening a Country Direct call. The following datafill is for example purposes. The following calls are not rated. The rating occurs after the operator marks the call for Time and Charges. The rating occurs after the following call flows.

Auto Country Direct (continued)

R1 North American

The system signals a call that arrives to TOPS on trunk TBELLIC1 with a called digit stream 17106921. Enter TBELLIC1 in table TRKGRP:

MAP example for table TRKGRP

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

The system references the pretranslator name, PTOP, in table STDPRTCT. The called number, 17106921 indexes subtable STDPRT.

MAP example for subtable STDPRTCT.STDPRT, tuple PTOP

FROMDIGS	TODIGS	PRETRTE
171	171	T NL 0 TOPS CDIR 2 24 NONE

The pretranslator routes to table TOPS, tuple CDIR:

MAP example for table TOPS

CO	DISPLAY	NOAMA	POSTYPE	SERV Typ
CDIR	S	N	GEN	TASERV

The system marks the call as a call that uses the CDIR call origination. Parse the Country Direct digit stream. Check table CDACCESS first to find the access code. The calling number indexes the table:

MAP example for table CDACCESS

KEY	ACCDIGS	CTRYCODE	CARRID
171 171	3	Y	Y

Auto Country Direct (continued)

Enter the beginning of the called number in table CDACCESS, field ACCDIGS = 3. The access code is 171. The system checks table CDCTRY to parse the country code because table CDACCESS, field CTRYCODE = Y. The calling number without the access code, 06921, indexes the table:

MAP example for table CDCTRY

KEY	CTRYDIGS	BILLOPT	CDCTRYNM	CTRYRATE
069 069	3	ALL	1	BARBRATE

Enter the next digits of the called number in CDCTRY. CTRYDIGS = 3. The country code is 069 because table CDACCESS, field CARRCODE = Y. The system checks table CDCARR to parse the carrier of origin. The called digit stream without the access code and the country code, 21, indexes the table.

MAP example for table CDCARR

KEY	CARRDIGS	CARRRATE
21 21	2	CARR2RATE

Enter the next digits of the called number in table CDCARR. Field CARRDIGS = 2. The carrier of origin is 21. The parsing of this number is complete. Selection of the calling number occurs. Table TOPSPARM parameter CDIR_DEDICATED_DN is checked to see what calling number to use:

MAP example for table TOPSPARM

PARMNAME	PARMVAL
CDIR_DEDICATED_DN	Y 6193200000

The dedicated DN for Country Direct calls is 619-320-0000. The country code replaces the last three digits. The calling number that appears when the call arrives at the operator is 619-320-0069.

Auto Country Direct (continued)

A call can route to a position that complies with TOPS-MP or OPP. When this event occurs you must determine the country of origin screen display. Retrieve the index to table CDCTRYNM from table CDCTR, field CDCTRYNM.

MAP example for table CDCTRY

KEY	CTRYDIGS	BILLOPT	CDCTRYNM	CTRYRATE
069 069	3	ALL	1	BARBRATE

MAP example for table CDCTRYNM

NAMEIDX	CTRYNAME
1	BARBADOS

The system sends Index 1 in table CDCTRYNM to an OPP compliant position. The system sends the name BARBADOS to a TOPS-MP position.

The operator can complete the call. The operator enters the called number, class charging the call and collecting billing information.

R1 Open Numbering

The system signals a call that arrives to TOPS on trunk TOPENIC1 with called digit stream 17230. Enter trunk TOPENIC1 in table TRKGRP:

MAP example for table TRKGRP

GRPKEY	GRPINFO
TOPENIC1	TOPS 31 NPDGP NCRT IC MIDL 284 TXLA NLCA NSCR N NIL COMBINED N N 0 0000 NONE OPENNUM 1 2 2 N OFFHK N N

The system references the pretranslator name, TXLA in table STDPRTCT. Subtable STDPRT indexes with the called number, 17230:

Auto Country Direct (continued)**MAP example for subtable STDPRTCT.STDPRT, tuple TXLA**

FROMDIGS	TODIGS	PRETRTE
0	9	N OA O IP

Subtable STDPRT datafill indicates that the system must continue to screen. The system checks the SNPA in table STS2CCDB to find a name for use in universal translations.

MAP example for subtable STS2CCDB

STS	TRANNAME
284	TOPSIC

The system references the translator name in table CTHEAD:

MAP example for subtable CTHEAD

XLANAME	DFLT	DFOP	CON	MAXIDX
TOPSIC	DFLT TRMT (OFC VCCT)\$	DFOP \$	NOCON	STD

Table CTHEAD contains default datafill. The system checks the CTCODE and indexed the CTCODE with translator name and the called digits, 17230:

MAP example for subtable CTCODE

XLANAME	FROMD	TOD	XLADATA
TOPSIC	171	171	RTE (MM 2 15) (DEST 4) \$

The system checks table CTRTE. The translator name indexes table CTRTE and the route reference from CTCODE, 4: As the DEST 4 route lists.

Auto Country Direct (continued)

MAP example for subtable CTRTE

XLANAME	RTEREF	RETLIST
TOPSIC	4	(T TOPS CDIR) \$

The CTRTE routes to table TOPS, tuple CDIR:

MAP example for table TOPS

CO	DISPLAY	NOAMA	POSTYPE	SERV Typ
CDIR	S	N	GEN	TASERV

The system checks table CDACCESS to find the access code. The system marks the call as a call that uses the CDIR call origination. The system parses the Country Direct digit stream. The calling number 17230 indexes the table.

MAP example for table CDACCESS

KEY	ACCDIGS	CTRYCODE	CARRID
172 172	3	Y	N

Entry of the beginning of the called number occurs in table CDACCESS, field ACCDIGS = 3. The access code is 172. Because table CDACCESS, field CTRYCODE = Y, the system checks table CDCTRY to parse the country code. The calling number, without the access code, 30, indexes the table:

MAP example for table CDCTRY

KEY	CTRYDIGS	BILLOPT	CDCTRYNM	CTRYRATE
30 30	2	THIRD	2	PORTRATE

Entry of the next digits of the called number occurs in CDCTRY. Field CTRYDIGS = 2. The country code is 30. Because table CDACCESS, field CARRCODE = N, the default tuple in table CDCARR applies to this call:

Auto Country Direct (continued)**MAP example for table CDCARR**

KEY	CARRDIGS	CARRRATE
0000 0000	4	NOCARR

Selection of the calling number occurs. The system checks table TOPSPARM parameter CDIR_DEDICATED_DN to determine the calling number to use.

MAP example for table TOPSPARM

PARMNAME	PARMVAL
CDIR_DEDICATED_DN	N

Parameter CDIR_DEDICATED DN is N. The Country Direct digit stream moves directly to the calling number field. The calling number that appears when the call arrives at the operator, is 17230.

For calls that route to a position that complies with TOPS-MP or OPP, the system must determine the country of origin screen display. The system retrieves the index to table CDCTRYNM from table CDCTRY, field CDCTRYNM:

MAP example for table CDCTRY

KEY	CTRYDIGS	BILLOPT	CDCTRYNM	CTRYRATE
30 30	2	THIRD	2	PORTRATE

MAP example for table CDCTRYNM

NAMEIDX	CTRYNAME
2	PORTUGAL

The system sends index 2 to a position that complies with OPP. The system sends name PORTUGAL to a TOPS-MP position.

Auto Country Direct (continued)

The operator can complete the call. The operator enters the called number, class charging the call and collecting billing information.

R2

A call arrives at TOPS on incoming trunk TR2IC1, with called digit stream 17321. Data entries for trunk TR2IC1 in TRKGRP occur like in the following example:

MAP example for table TRKGRP

GRPKEY	GRPINFO
TR2IC1	TOPS 0 TLD NCRT IC MIDL 629 NPRT NLCA NSCR N NIL COMBINED N N 00000 NONE R2 PX OPENCLG N N N

A search occurs in table TOPSPFX for the called digit stream, 17321.

MAP example for table TOPSPFX

INDEX	ANISTAT	TDBIDX
173 173	NOANI	3

Table TOPSPFX, field TDBIDX points to table TOPSDB, tuple 3.

MAP example for table TOPSDB

TDBKEY	TDBCLIDX	TDBDAOPT	TDBNORM	TDBSERV
3	0	0	3	0

Table TOPSDB, tuple 3, field TDBNORM points to table TDBNORM, tuple 3.

Auto Country Direct (continued)**MAP example for table TDBNORM**

INDEX	CALLORIG	CLGSRV	CALLSRC	NOAMA	OVRXLACO	ANIFAIL
3	CDIR	SPECIAL	ORIG	NIL	Y	ANIF

The system marks the call like a call that uses the CDIR call origination. The system parses the Country Direct digit stream. The system checks table CDACCESS to find the access code. The calling number 17321 indexes the table.

MAP example for table CDACCESS

KEY	ACCDIGS	CTRYCODE	CARRID
173 173	3	N	Y

Data entry of the beginning of the called number occurs in table CDACCESS, field ACCDIGS = 3. The access code is 173. Because table CDACCESS, field CTRYCODE = N, the default tuple of table CDCTRY applies to this call:

MAP example for table CDCTRY

KEY	CTRYDIGS	BILLOPT	CDCTRYNM	CTRYRATE
000 000	3	ALL	0	NOCTRY

Table CDACCESS, field CDCTRY can be N. When this condition occurs the value of table CDCTRY, field CTRYDIGS is not important. The system continues to parse the digit stream after the access code.

Table CDACCESS, field CARRCODE can be Y. When this condition occurs the system checks table CDCARR to parse the carrier of origin. The called digit stream without the access code indexes the table. The access code is 21.

Auto Country Direct (continued)

MAP example for table CDCARR

KEY	CARRDIGS	CARRRATE
21 21	2	CARR2RATE

Data entry of the next digits of the called number occurs in CDCARR. Field CARRDIGS = 2. The carrier of origin is 21. The number is completely parsed. The selection of the calling number occurs. The system checks table TOPSPARM parameter CDIR_DEDICATED_DN to see what calling number to use.

MAP example for table TOPSPARM

PARMNAME	PARMVAL
CDIR_DEDICATED_DN	N

Parameter CDIR_DEDICATED DN is N. The Country Direct digit stream moves directly to the calling number field. The calling number that appears when the call arrives at the operator is 17321.

For a calls that route to a position that complies with TOPS-MP or OPP the system must determine the country of origin screen display. The system retrieves index to table CDCTRYNM from table CDCTRY, field CDCTRYNM.

MAP example for table CDCTRY

KEY	CTRYDIGS	BILLOPT	CDCTRYNM	CTRYRATE
000 000	3	ALL	0	NOCTRY

MAP example for table CDCTRYNM

NAMEIDX	CTRYNAME
0	CTRYDIR

Auto Country Direct (continued)

The system sends Index 0 to a position that complies with OPP. The system sends name CTRYDIR to a TOPS-MP position.

The operator can complete the call. The operator enters the called number, class charging the call and collecting billing information.

LOGS

The TOPS log TOPS126 indicates an error in the Country Direct digit stream. The following errors can occur in the Country Direct digit stream:

- a not correct access code signaled a call
- a country code or carrier ID was not specified
- a country code or carrier ID does not contain datafill

The TOPS log TOPS126 contains the following information to indicate errors in the COUNTRY DIRECT digit stream:

- the calling number
- the called (Country Direct) digit stream
- the incoming trunk group name
- a reason text. This text indicates the cause of the problem. The problem can be not correct access code, a not correct country code or a not correct carrier ID.

Translations table flow

The Auto Country Direct translations tables appear in the following list:

- Table CDACCESS defines country direct access codes.
- Table CDCTRY defines country names for operator displays.
- Table CDCARR defines country direct carrier codes.
- Table CDCTRYNM defines country names for operator displays.
- Table CDCTRYRT defines country direct country rating names.
- Table CDCARRRT defines country direct carrier rating names.
- Table TARRIF defines calling tariff names.
- Table SSETNAME defines calling schedule set names.
- Table CDRATE associates a tariff name with a country rate name.
- Table CDRATEG associates a schedule name with a country rate name for GOS.

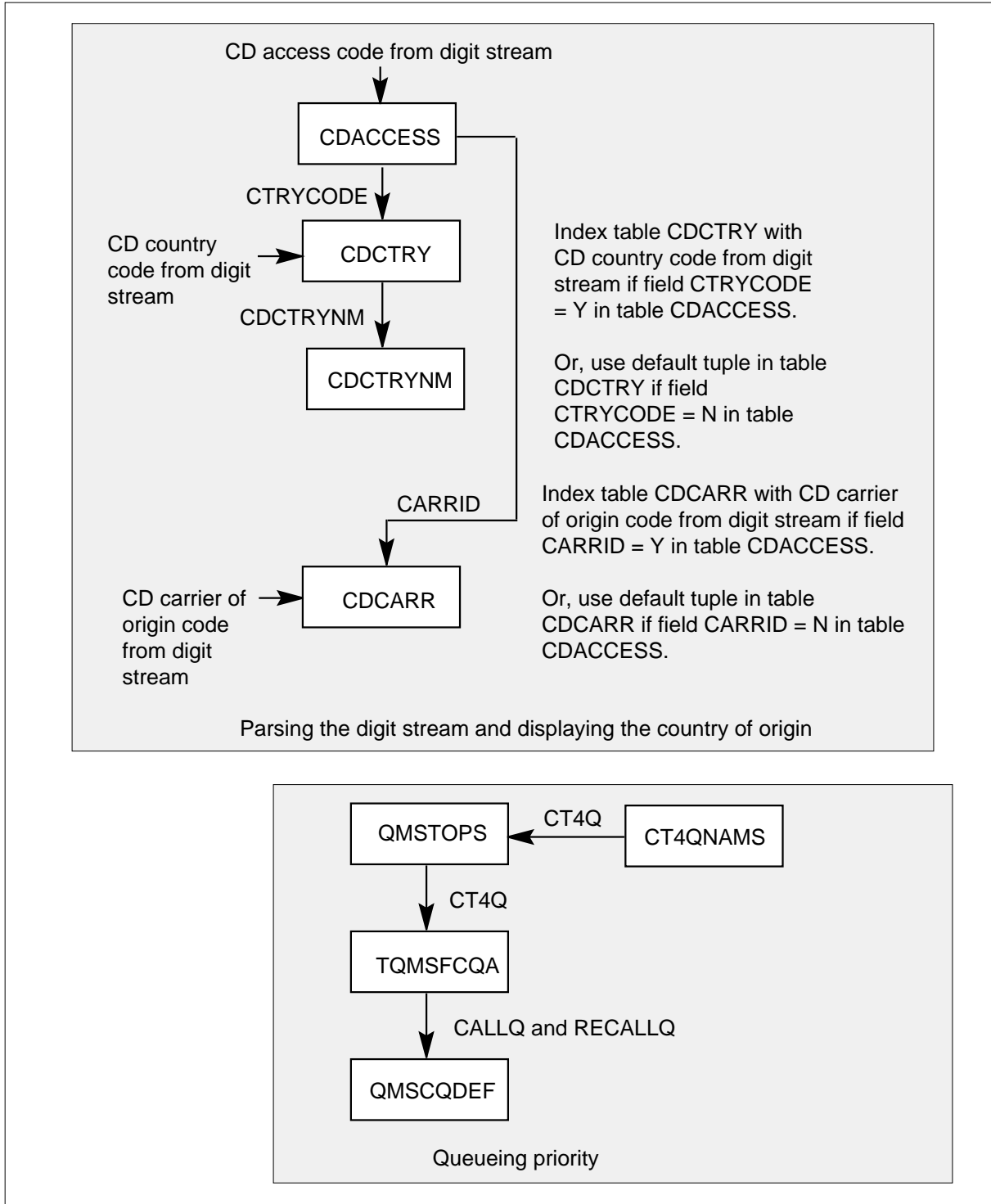
Auto Country Direct (continued)

- Table CLDNPA defines schedule names and rate steps for North American home country calls.
- Table COUNTRY maps an overseas number to a called country number for North American country-to-country calls.
- Table OVSRS defines schedule names and rate steps for North American country-to-country calls.
- Table RSNAT determines schedule names and rate steps for GOS home country calls.
- Table RSFOR determines schedule names and rate steps for GOS country-to-country calls.
- Table CT4QNAMS defines CT4Q names.
- Table QMSTOPS assigns the original CT4Q with the CDIR call origination type.
- Table TQMSFCQA associates a call queue and recall call queue to a CT4Q.
- Table QMSCQDEF defines the call queue parameters.

The Auto Country Direct translation process appears in the following flowchart:

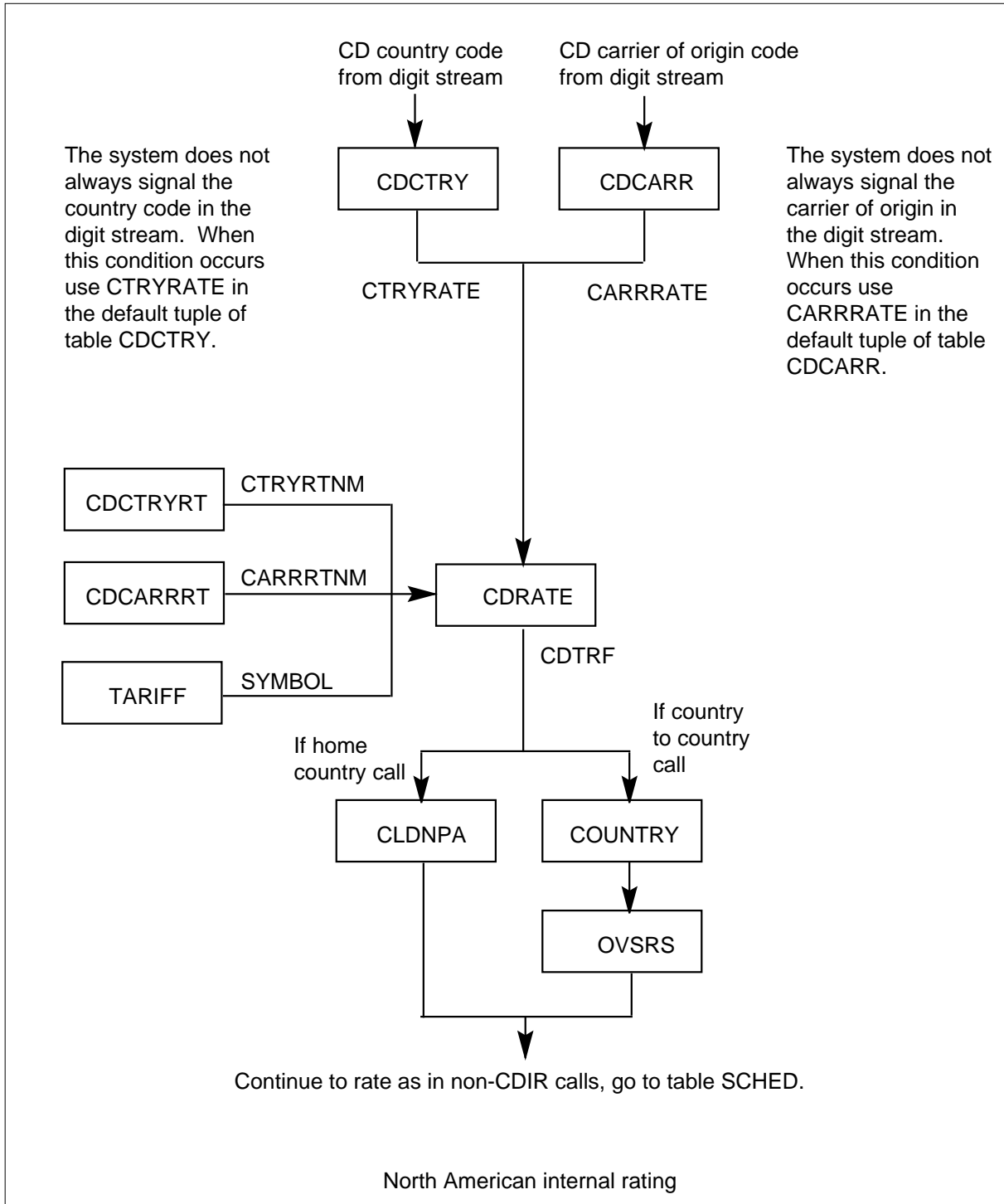
Auto Country Direct (continued)

Table flow for Auto Country Direct



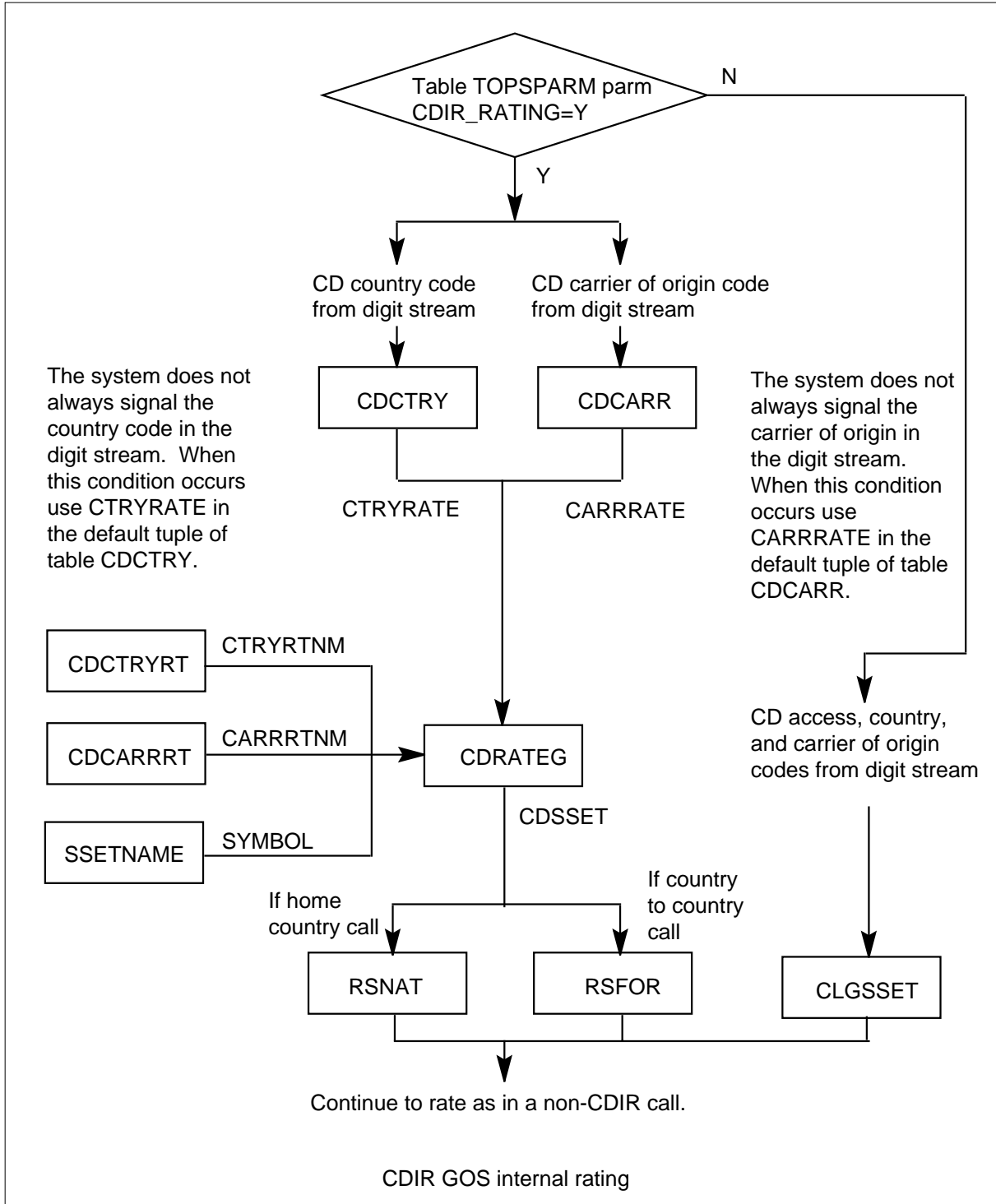
Auto Country Direct (continued)

Table flow for Auto Country Direct (continued)



Auto Country Direct (continued)

Table flow for Auto Country Direct (continued)



Auto Country Direct (continued)

The datafill content in the flowchart appears in the following table.

Datafill example for Auto Country Direct

Datafill table	Example data
CDACCESS	171 171 3 Y Y
CDCTRY	069 069 3 ALL 1 BARBRATE
CDCARR	11 11 2 CARR1RATE
CDCTRYNM	1 BARBADOS
CDCTRYRT	BARBRATE
CDCARRRT	CARR1RATE
TARIFF	3 TRF_CD3
CDRATE	BARBRATE CARR1RATE TRF_CD3
CLDNPA	619 TRF_CD3 SRA DOMCDIR 555
COUNTRY	FRANCE 33
OVSRS	TRF_CD3 FRANCE FORCDIR 537
SSETNAME	SSET_CD5
CDRATEG	BARBRATE CARR1RATE SSET_CD5
RSNAT	SSET_CD5 1022 SRA CD_DOM1 320
RSFOR	SSET_CD5 33 CD_FOR1 510
CT4QNAMS	3 COUNTRY_DIRECT N N N
QMSTOPS	CDIR COUNTRY_DIRECT
TQMSFCQA	COUNTRY_DIRECT CQ45 CQ145
QMSCQDEF	TOPS 45 0 40 300 N N

Limits

The following limits apply to Auto Country Direct:

In an Operator Centralization (OC) configuration, the host and remote must be at TOP05 before activation of this functionality. In a configuration where the remote is at TOP05, the host is at a lower release. Country Direct activates in the remote. The host cannot handle Country Direct calls. Because of this

Auto Country Direct (continued)

condition, the recommended action is to upgrade the host and remote before activation of this functionality. Mechanisms are not present to make sure that this condition applies. The system does not support this functionality in some environments. An example of these environments occurs when host is at a release lower than TOP05.

The system does not support sequence calls for Country Direct calls that an operator serves.

This functionality allows Country Direct calls to use combined trunks, but this functionality adds a limit. The called network access point (NPA) on a TOPS call and the access codes of a Country Direct call can be the same. When this condition occurs, separate incoming trunks must translate the digits through different STDPRTCT subtables.

This functionality does not include provisions to prevent the relay of a Country-to-Country call over multiple satellite links. The operating company must analyze the network to make sure that multiple satellite links do not occur. Country Direct does not support incoming or outgoing satellite indicators.

Assignment of a higher grade of service to Country Direct calls occur through Queue Management System (QMS) call queues. The operating company must define an additional QMS call queue to implement this functionality. This functionality is not available for calls that use TOPSACD.

This functionality supports the TOPS internal rating system. This functionality does not support external rating. This functionality supports only Single Rate Area rating for Country Direct calls. This functionality does not support other rating methods like V&H, point to point and city zone. Datafill does not restrict this condition.

The calling number for Country Direct calls is not a correct calling number. Time zone differences normally applied when rating calls through tables TMZONE and TIMEZONE do not apply to Country Direct calls. The time at the switch determines rating. The time at the location of the calling party does not determine rating.

The SOC utility can support the OFF state. When this condition occurs this functionality does not support the OFF state. The ON and IDLE states are the only correct states.

The SOC Utility provides two types of control. The first type of control manages software options. The SOC utility allows you to turn an option to an ON or IDLE state. The second type of control manages software options based

Auto Country Direct (continued)

on customer use. This functionality supports state control only. This functionality does not support the SOC Usage control.

The Personal Audio Response System (PARS) protocol is updated. You must upgrade the PARS nodes before activation of this functionality.

An updated OPP protocol requires that you upgrade the OPP positions before you activate this functionality.

An updated AABS protocol requires that you upgrade the AABS-compatible nodes before activation of this functionality.

You can enter the new call origination (CDIR) in TOPS tables that use call origination. Tables that use call origination are: AMASRVID and TDBNORM. You can add the call origination to tables DABILL and ADACCOPT. The DA processing cannot occur for Country Direct calls.

The limits and parsing in the software that table CDACCESS uses are not clear. Because of this condition, two access codes with different lengths cannot start with the same digits. For example, a tuple 23 23 and a tuple 231 231 cannot be present in the same table. The system cannot distinguish between an access code 23 that a country code 1 follows, and an access code 231. You must define access codes so that an access code 23 and 231 is not a requirement. You can have an access code 231 and an access code 232. The same restriction applies to country codes in table CDCTRY, and carriers of origin in table CDCARR.

Country Direct is a TA service. You must enter queues that serve Country Direct calls with a base service type of TASERV. The system does not support routing Country Direct calls to DA-only positions. You must configure position and queuing datafill to cause Country Direct calls to route to TA positions. In addition to other datafill, you must enter the base service for a Country Direct call in QMS as TASERV. The SERVTYPE field in table TOPS for tuple CDIR must be TASERV.

The system supports Country Direct for TOPS trunks. The system supports Country Direct for ISUP IT and ATC trunks under specified conditions. The system supports Country Direct for these trunks if SOC option OSEA0102, GR317/GR394 ISUP to/from TOPS is ON. Potential Country Direct calls that arrive on other trunk types, or ISUP trunks when OSEA0102 is in the IDLE state, are marked as 0+. These calls do not receive Country Direct call processing.

In a North American environment, you can enter only ten digit domestic called numbers. The system allows any length numbers for overseas called numbers.

Auto Country Direct (continued)

Calling number limits

The Country Direct digit stream is the calling number if CDIR_dedicated_dn = N. If the Country Direct digit stream is the calling number limits apply because a correct calling number is not present. These limits apply only if CDIR_DEDICATED_DN = N. The limits appear below:

- The system does not search table NBECODE for the Country Direct digit stream. If a Country Direct call requires an NBEC code, datafill in table TRKGRP provides the code.
- The system does not search table DNPIC for the Country Direct digit stream. If a Country Direct call requires Equal Access CIC, datafill in table TOPEATRK provides the CIC.
- The system does not search table SPLDNID for the Country Direct digit stream. The application of billing restrictions occurs through datafill in table CDCTRY.
- The system does not search table TOPSBC for the Country Direct digit stream.

Interactions

The interactions between Auto Country Direct and other functionalities appear in the following paragraphs.

The system can hand off Country Direct calls to AABS for billing verification. This functionality does not affect the current AABS system.

The system can mark Country Direct calls for Time and Charges. This process causes interaction with the TOPS internal rating system. This functionality does not change the current internal rating system.

To process Country Direct calls that arrive to TOPS on an ISUP IT or ATC trunk, specified conditions must be present. The SOC option OSEA0102, GR317/GR394 ISUP to/from TOPS, must be in the ON state.

You can enter data in other routing tables to point to table TOPS, tuple CDIR. The recommended methods to mark a call as Country Direct are as follows. Mark a call as Country Direct through table STDPRTCT in a North American numbering plan environment. Mark a call as country Direct through table CTRTE in an OPENNUM environment.

Activation/deactivation by the end user

The caller must dial an access code and called number to reach an operator in a foreign country. The operator bills the call and connects to the called party. The called party can be in the same or a foreign country to the operator.

Auto Country Direct (continued)

Normally, a subscriber that travels in a foreign country and wants to call a different country uses this functionality. This functionality allows the subscriber to bill the call at the location of the operator.

Billing

This feature changes module code 311 and creates module code 122.

Module code 311 (changed)

Module code 311 includes an additional value. This value is Originating Call Type. This module records the TOPS call origination. Value 063 is an addition to the range of values for field number 432, Originating Call Type. Value 063 indicates that the call is a Country Direct call.

The system generates module code 311 for all TOPS calls. The data fields appear in the following table:

Module code 311

Information	Field number	Number of characters
Module code	88	4
Originating call type	432	4

Table 88 records the module code name. This field identifies a module code of data fields. This field always contains value 311. A description of the table appears in the following example:

Data field 88 - Module code

Character	Value	Meaning
1 - 3	311	Origination call type
4	hex C	Sign

Auto Country Direct (continued)

Table 432 records the call origination type for a TOPS call. Value 063, is an additional to the range of table 432. Value 063 records the Country Direct call origination. A description of the table appears in the following example:

Data field 432 - Origination call type

Character	Value	Meaning
1 - 3	063	Country direct. This value is a new value.
4	hex C	Sign

A sample AMA record appears in the following example:

Example AMA record for module code 311

```
MODULE CODE:311C  ORIG CALL TYPE:063C
```

Module code 122 (new)

New AMA module code 122, EBAF, phase 2, contains Country Direct information. This module code includes the country of origin and carrier IDs signaled in the Country Direct digit stream.

The system generates module code 122 for country direct calls when datafill sets the TOPS call origination to CDIR. You can enter the CDIR call origination in the following tables:

- TOPS
- TOPSAMA
- QMSTOPS
- AMASRVID
- TDBNORM
- DABILL
- TOPSOIC
- ADACCOPT

The system attaches the module code records with:

- Structure Code 752 and Call Code 192, originating, call completion
- Structure Code 106 and Call Code 192, originating, call completion

Auto Country Direct (continued)

The system generates Structure Code 752 in a North American office. The system generates Structure Code 106 in a GOS office. This module code uses the CRS_SUBRU_POOL1_SIZE parameter in Table OFCENG.

If table CDACCESS, field CTRYCODE = N, the country of origin field in the new AMA record is null filled. If table CDACCESS, field CARRCODE = N, the carrier of origin field in the new AMA record is null filled.

For GOS, the operator can enter the names of the calling and called party that the AMA record must include. Refer to functionality Global TOPS Call Processing, GOS00001 for additional information.

The data fields appear in the following table:

Module code 122

Information	Field number	Number of characters
Module code	88	4
Country direct Originating information	203	8

A description of field 88 appears in the following table.

Data field 88 - Module code

Character	Value	Meaning
1 - 3	122	Country direct service.
4	hex C	Sign

Auto Country Direct (continued)

A description of field 203 appears in the following table:

Data field 203 - Country direct originating information

Character	Value	Meaning
1 - 3	As signaled	Country of origin. The country of origin signaled can be less than three digits. When this condition occurs the three characters have a padding of zeroes from the left. If the Country Direct digit stream does not include a country of origin, the three characters are zeros.
4 - 7	As signaled	Carrier of origin. The carrier of origin signaled can be less than four digits. When this event occurs the four characters have a padding of zeroes from the left. If the Country Direct digit stream does not include a carrier of origin, the four characters are zeros. Note that the carrier of origin is the carrier signaled in the Country Direct digit stream. The signaled carrier in the Country Direct digit stream can relate to the carrier for the call that TOPS Equal Access defines.
8	hex C	Sign

A sample AMA record for module code 122 appears in the following example:

Example AMA record for module code 122

```
MODULE CODE:122C  CDIR ORIG INFO: COUNTRY OF ORIGIN:069
CARRIER OF ORIGIN:0021C
```

Station Message Detail Recording

Auto Country Direct does not affect Station Message Detail Recording.

Auto Country Direct (continued)

Datafilling office parameters

The office parameters that Auto Country Direct uses appear in the following table. Refer to *Office Parameters Reference Manual* for additional information about office parameters.

Office parameters used by Auto Country Direct

Table name	Parameter name	Explanation and action
OFCENG	CRS_SUBRU_POOL1_SIZE	<p>The AMA module code 122 uses this parameter. The system attaches module code 122 to the AMA record only for Country Direct calls. The value of this parameter must increase to accommodate the new module. The system only generates this module for TOPS Country Direct calls. The parameter must increase during the use of the TOPS Country Direct Service functionality only.</p> <p>The formula to calculate the store increase appears below:</p> <p>Number of words * [(% of Country Direct calls in an hour)(number of calls in a peak busy hour)]</p> <p>For example: Eight words are in a recording unit (RU) from CRS_SUBRU_POOL1. If 15% of the calls in an office are Country Direct, and the office receives 25 000 calls in a peak busy hour, the store calculation is as follows:</p> $[8 \text{ words} * (15\%)(25\ 000)]+$ $[8 \text{ words} * (15) (25\ 000)]+$ $[8 \text{ words} * 3\ 750]+$ $= 30,000$ <p>This parameter must increase by 30 000 words.</p>

Auto Country Direct (continued)**Datafill sequence**

The tables that require datafill to activate Auto Country Direct appear in the following table. The tables appear in the correct entry order.

Datafill requirements for Auto Country Direct

Table	Purpose of table
	Set call origination to country direct
TOPS	Defines new country direct call type for TOPS.
QMSTOPS	Queue management system TOPS defines new country direct call type for QMS.
TOPSAMA	TOPS automatic message accounting defines new country direct call type for rating.
AMASRVID	You can enter AMA service identification with country direct call type.
TDBNORM	You can enter TOPSdata base normalization with country direct call type.
BRANDANN	The branding announcement indicates branding for country direct calls.
	Parse digit stream, display country name and rate.
CDACCESS	Definition of country direct access occurs.
CDCTRYNM	Country direct country name defines country names for operator displays.
CDCTRYRT	Definition of country direct country rating names occurs.
CDCARRRT	Definition of country direct carrier rating names occurs.
CDCTRY	Definition of country direct country codes occurs.
CDCARR	Definition of country direct carrier codes occurs.
CDRATE	Country direct rate associates a tariff name with a country rate name.
CDRATEG	Country direct rate associates a schedule name with a country rate name for GOS.
TOPSPARM	The TOPS parameters contains a new parameter to determine the calling number for country direct calls.

Datafilling table TOPS

Table TOPS defines the call origination types. The table includes the Country Direct call origination type and default tuple.

Auto Country Direct (continued)

Datafill for Auto Country Direct for table TOPS appears in the following table. The fields that apply to Auto Country Direct appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TOPS

Field	Subfield or refinement	Entry	Explanation and action
CO		CDIR	Call origination type. You can enter new value CDIR for country direct. An additional default tuple appears in the example datafill.
SERV Typ		TASERV	Service type. The system does not support directory assistance intercept processing for country direct calls. Enter only TASERV when CO = CDIR.

Datafill example for table TOPS

The new default tuple for TOPS appears in the following example.

MAP example for table TOPS

CO	DISPLAY	NOAMA	POSTYPE	SERV Typ
CDIR	S	N	GEN	TASERV

Datafilling table QMSTOPS

Table QMSTOPS defines the first CT4Q for each call origination type. You can enter the new Country Direct call origination type.

Datafill for Auto Country Direct for table QMSTOPS appears in the following table. The fields that apply to Auto Country Direct appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table QMSTOPS

Field	Subfield or refinement	Entry	Explanation and action
CO		CDIR	Call origination type. You can enter value CDIR for country direct. An additional default tuple appears in the example datafill.

Auto Country Direct (continued)

Datafill example for table QMSTOPS

The new default tuple for QMSTOPS appears in the following example.

MAP example for table QMSTOPS

CO	CT4Q

CDIR	UNSPEC

Datafilling table TOPSAMA

Table TOPSAMA allows recording of not answered TOPS calls on NT AMA. This table includes an additional call origination type and default tuple.

Datafill for Auto Country Direct for table TOPSAMA appears in the following table. The fields that apply to Auto Country Direct appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TOPSAMA

Field	Subfield or refinement	Entry	Explanation and action
CO		CDIR	Call origination type. You can enter value CDIR for country direct. An additional default tuple appears in the example datafill.

Datafill example for table TOPSAMA

The new default tuple for TOPSAMA appears in the following example.

MAP example for table TOPSAMA

CO	TOT	RECNOANS

CDIR	00	N

Datafilling table AMASRVID

Table AMASRVID provides information for the service information field of the AMA record. You can enter the new country direct call origination type.

Datafill for Auto Country Direct for table AMASRVID appears in the following table. The fields that apply to Auto Country Direct appear in this

Auto Country Direct (continued)

table. See the data schema section of this document for a description of the other fields.

Datafilling table AMASRVID

Field	Subfield or refinement	Entry	Explanation and action
CO	COTYPE	CDIR	Call origination type. You can enter value CDIR for country direct.
	SERVICE	TASERV	Service. The system does not support directory assistance intercept processing for country direct calls. Enter only TASERV when COTYPE = CDIR.

Datafill example for table AMASRVID

Sample datafill for table AMASRVID appears in the following example.

MAP example for table AMASRVID

COSERV	SERVID

CDIR TASERV	915

Datafilling table TDBNORM

Table TDBNORM provides normalization data for R2 signaled calls. You can enter the new Country Direct call origination type.

Datafill for Auto Country Direct for table TDBNORM appears in the following table. The fields that apply to Auto Country Direct appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TDBNORM

Field	Subfield or refinement	Entry	Explanation and action
CALLORIG		CDIR	Call origination type. You can enter new value CDIR for country direct.

Datafill example for table TDBNORM

Sample datafill for table TDBNORM appears in the following example.

Auto Country Direct (continued)

MAP example for table TDBNORM

INDEX	CALLORIG	CLGSRV	CALLSRC	NOAMA	OVRXLACO	ANIFAIL
1	CDIR	SPECIAL	ORIG	NIL	Y	ANIF

Datafilling table BRANDANN

Table BRANDANN associates a carrier with CLLIs for TA and DA service. The addition of Country Direct service allows association with a carrier.

Datafill for Auto Country Direct for table BRANDANN appears in the following table. The fields that apply to Auto Country Direct appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table BRANDANN

Field	Subfield or refinement	Entry	Explanation and action
CDANN		Y or N	Country direct announcement. This field is a field that indicates if branding is a requirement for CD calls from this company. Enter Y for branding or N for no branding. If set to Y, enter refinement CDCLLI. During dump and restore, this field is to N for datafill before NA005.
	CDCLLI	CLLI entered in table DRAMTRK	Country direct CLLI. If the entry in field CDANN is Y, perform the following actions. Enter the CLLI name of the announcement trunk for the country direct branding announcement of the company in table DRAMTRK.

Datafill example for table BRANDANN

Sample datafill for table BRANDANN appears in the following example.

MAP example for table BRANDANN

CARNBEC	TAANN	TACLLI	DAANN	DACLLI	CDANN	CDCLLI
0111 CARR	Y	TA0111BRND	N		Y	CD0111BRND
1234 NBEC	Y	TA1234BRND	Y	DA1234BRND	Y	TA1234BRND

Auto Country Direct (continued)

Datafilling table CDACCESS

Country Direct Access Codes (CDACCESS) is a table that contains all correct Country Direct access codes. The datafill in this table indicates the expected values in a Country Direct stream that begins with each access code.

There are no datafill sequence requirements.

Datafilling table CDACCESS

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	<p>Key. This field is the key to the table. This field contains subfields FROMDIG and TODIG.</p> <p>For the key, two tuples cannot begin with the same digits, with different digit lengths. System limits cause this restriction. For example, one table cannot contain a tuple 23 23 and a tuple 231 231. A method to distinguish between an access code of 23, followed by a country code of 1, and an access code of 231 is not present. You must define access codes so that there is no need for an access code of 23 and 231.</p> <p>You cannot change the key field. To change the key field FROMDIG and TODIG, delete the tuple and add the tuple again.</p> <p>You enter a range and attempt to change the fields for part of the range. When you perform this action the change affects the whole range. For example, you can enter 91 99 2 Y Y. This change in 93 93 2 Y N affects the range, 91 99 2 Y Y. If you only want to change key 93 93, delete tuple 91 99. Enter the tuple back as 91 92 2 Y Y, 93 93 2 Y N, and 94 99 2 Y Y.</p> <p>For tuples you enter as ranges, when you delete part of the range you delete the whole tuple. The TODIG is larger than FROMDIG. For example, you enter 91 99 2 Y Y. An attempt occurs to delete 91 94 2 Y Y. This action deletes the whole tuple, 91 99 2 Y Y. In this example, you must add back tuple 95 99 2 Y Y to delete 91 94 2 Y Y.</p>
	FROMDIG	a maximum of 18 digits (0 to 9)	From digits. Enter the lower end of the range for the access code digits signaled in the country direct digit stream to TOPS.

Auto Country Direct (continued)**Datafilling table CDACCESS**

Field	Subfield or refinement	Entry	Explanation and action
	TODIG	a maximum of 18 digits (0 to 9)	To digits. Enter the upper end of the range for the access code digits signaled in the country direct digit stream to TOPS.
ACCDIGS		1 to 4	Number of access code digits. When the system parses access code from the Country Direct digit stream, the following occurs. The value of ACCDIGS indicates how many digits to parse as the access code.
CTRYCODE		Y or N	Country code. This field indicates if you expect a Country Direct country code in the Country Direct digit stream. The value Y allows access to table CDCTRY with the country code from the digit stream. The value N allows access to the default tuple in table CDCTRY.
CARRCODE		Y or N	Carrier code. This field indicates if you expect a Country Direct carrier ID in the Country Direct digit stream. The value Y allows access to table CDCARR with the carrier code from the digit stream. The value N allows access to the default tuple in table CDCARR.

Datafill example for table CDACCESS

Sample datafill for table CDACCESS appears in the following example.

Auto Country Direct (continued)

MAP example for table CDACCESS

KEY	ACCDIGS	CTRYCODE	CARRID
171 171	3	Y	Y
172 172	3	Y	N
173 173	3	N	Y
9107 9107	4	N	N

Error messages for table CDACCESS

Error message	Explanation and action
WHEN ADDING A TUPLE, PLEASE ENTER THE SAME NUMBER OF DIGITS FOR THE FROMDIG AND TODIG FIELDS. FOR EXAMPLE, ENTER 515 520 AND NOT 515 52.	<p>This message appears if the following conditions occur:</p> <ul style="list-style-type: none"> you attempt to add a tuple to CDACCESS the number of digits in fields FROMDIG and TODIG are not the same <p>The system does not require that the digits be the same. The quantity of digits must be the same.</p>
THE NUMBER OF DIGITS MUST BE GREATER THAN ZERO.	This message appears if you attempt to add a tuple and enter digits in the FROMDIG and/or TODIG fields.
ERROR: TODIG FIELD LESS THAN FROMDIG	This message appears if you attempt to position on a tuple with the TODIG less than the FROMDIG. This message indicates that you entered wrong values for the position command.
TOO FEW DIGITS IN TODIG FIELD TO IDENTIFY RANGE. AT THIS POSITION, SPECIFY x DIGITS IN THE TODIG FIELD.	For example, this message appears if you enter 110 556 and attempt to position on 11 56.
TOO FEW DIGITS IN FROMDIG FIELD TO IDENTIFY RANGE. AT THIS POSITION, SPECIFY x DIGITS IN THE FROMDIG FIELD.	For example, this message appears if you enter 80 80 and attempt to position on 8 80.

Auto Country Direct (continued)**Error messages for table CDACCESS**

Error message	Explanation and action
ATTEMPT TO POSITION ON TOO LARGE A RANGE. TRY SETTING TODIG FIELD TO x.	For example, this message appears if you enter 110 556 and attempt to position on 11 557.
TABLE CDACCESS IS FULL	This message appears if tuples are not available in the table.
IMPROPER POSITIONING. COULD NOT WRITE CDACCESS TUPLE	This message appears if you attempt to add a tuple with a key that a current entry encompasses in part. If you enter 901 910 and attempt to add 90 90 this message appears. This action displays an error for the following reason. The FROMDIG of the tuple already entered encompasses the TODIG of the tuple to add.
THIS WILL AFFECT TUPLE ENTRY FROM x TO x	This message appears if you attempt to change or delete a tuple with a key that an entry in part encompasses. For example, you enter 90 99 and attempt to change or delete 90 94. This attempt affects 90 99. Note, you do not enter tuple 90 94. You enter key 90 99 in the change or delete command.

Datafilling table CDCTRYNM

Country Direct Country Name (CDCTRYNM) is a table that defines the country names for operator screen displays on positions that comply with TOPS-MP and OPP. Enter all Country Direct country names in this table. The system provides a default tuple.

Auto Country Direct (continued)

Enter data in table CDCTRYNM before you enter data in table CDCTRY.

Datafilling table CDCTRYNM

Field	Subfield or refinement	Entry	Explanation and action
NAMEIDX		0 to 999	Name index. This field is the index to the table. The system sends this value to positions that comply with OPP to indicate a value for the country of origin. The position must contain parallel datafill to map the integer to the appropriate name.
CTRYNAME		a maximum of 8 characters	Country name. The system sends this value to TOPS-MP positions to indicate the country of origin. Table CDCTRY, field CDCTRYNM uses this value.

Datafill example for table CDCTRYNM

Sample datafill for table CDCTRYNM appears in the following example.

MAP example for table CDCTRYNM

NAMEIDX	CTRYNAME
0	CTRYDIR
1	BARBADOS
2	PORTUGAL
15	CHILE

In the preceding example, the first entry is the default tuple. You can change this tuple. You cannot delete this tuple.

Auto Country Direct (continued)

Error messages for table CDCTRYNM

Error messages that apply to table CDCTRYNM appear in the following table.

Error messages for table CDCTRYNM

Error message	Explanation and action
NAMEIDX STILL IN USE. CHECK TABLE CDCTRY.	You cannot delete a country name from table CDCTRYNM if the country name is in use in table CDCTRY. This error message appears if you attempt to delete a country name that is in use.
CDCTRYNM DEFAULT TUPLE MAY NOT BE DELETED.	You can change the default tuple in table CDCTRYNM. You cannot delete this tuple. This error message appears if you attempt to delete the default tuple.

Datafilling table CDCTRYRT

Country Direct Country Rating Names (CDCTRYRT) is a table that defines the rating names to rate a Country Direct call on a country of origin basis. Enter all Country Direct country rating names in this table. The system provides a default country rating name tuple, NOCTRY.

Table CDCTRYRT must define a country rating name before you can enter a country rate name in table CDCTRY, CDRATE or CDRATEG.

Datafilling table CDCTRYRT

Field	Subfield or refinement	Entry	Explanation and action
CTRYRTNM		a maximum of 16 characters	Country rating name. Enter the name to use for rating. Tables CDCTRY, CDRATE and CDRATEG use this value.

Datafill example for table CDCTRYRT

Sample datafill for table CDCTRYRT appears in the following table.

Auto Country Direct (continued)

MAP example for table CDCTRYRT

```

CTRYRTNM
-----
NOCTRY
BARBRATE
CHILRATE
PORTRATE
    
```

In the above example, the first entry is the default tuple. You cannot delete this tuple.

Error messages for table CDCTRYRT

Error messages that apply to table CDCTRYRT appear in the following table.

Error messages for table CDCTRYRT

Error message	Explanation and action
CTRYRTNM STILL IN USE. CHECK TABLES CDCTRY, CDRATE, AND CDRATEG.	You cannot delete a country rating name from table CDCTRYRT if the name is in use in table CDCTRY, CDRATE or CDRATEG. This error message appears if you attempt to delete a rating name in use.
DEFAULT RATING NAME MAY NOT BE DELETED.	You cannot delete the default country rate name, NOCTRY. This error message appears if you attempt to delete default tuple NOCTRY.

Datafilling table CDCARRRT

Country Direct Carrier Rating Name (CDCARRRT) is a table that defines the rating names you use to rate a Country Direct call. The rating names are based on the carrier of origin. Enter all Country Direct carrier rating names in this table. The system provides a default carrier rating name tuple, NOCARR.

Auto Country Direct (continued)

Table CDCARRRT must define a carrier rating name before you can enter the name in table CDCARR, CDRATE or CDRATEG.

Datafilling table CDCARRRT

Field	Subfield or refinement	Entry	Explanation and action
CARRRTNM		a maximum of 16 characters	Carrier rating name. Enter the name to use for rating. Tables CDCARR, CDRATE and CDRATEG use this value.

Datafill example for table CDCARRRT

Sample datafill for table CDCARRRT appears in the following example.

MAP example for table CDCARRRT

```

CARRRTNM
-----
NOCARR
CARR1RATE
CARR2RATE
CARR3RATE
    
```

In the above example, the first entry is the default tuple. You cannot delete this tuple.

Error messages for table CDCARRRT

Error messages that apply to table CDCARRRT appear in the following table:

Error messages for table CDCARRRT

Error message	Explanation and action
CARRRTNM STILL IN USE. CHECK TABLES CDCTRY, CDRATE, AND CDRATEG.	You cannot delete a carrier rating name from table CDCARRRT if the name is in use in table CDCARR, CDRATE or CDRATEG. This error message appears if you attempt to delete a rating name in use.
DEFAULT RATING NAME MAY NOT BE DELETED.	You cannot delete the default carrier rate name, NOCARR. This error message appears if you attempt to delete default tuple NOCARR.

Auto Country Direct (continued)

Datafilling table CDCTRY

Country Direct Country Codes (CDCTRY) is a table that defines billing restrictions, screen displays and rating names for each Country Direct country of origin. The system provides a default country code tuple.

If table CDACCESS, field CTRYCODE = Y, use the digits that follow the access code in the Country Direct digit stream to access table CDCTRY. If CDACCESS, field CTRYCODE = N, you can access the default tuple in CDCTRY.

You must enter a rating name in table CDCTRYRT before you can enter the rating name in field CTRYRATE.

Auto Country Direct (continued)

Table CDCTRYNM must contain a NAMEIDX before you can enter the NAMEDIX in the CDCTRYNM field of table CDCTRY.

Datafilling table CDCTRY

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	<p>Key. This field is the key to the table. This field contains subfields FROMDIG and TODIG.</p> <p>For the key, two tuples cannot begin with the same digits, with different digit lengths. For example, a tuple 23 23 and a tuple 231 231 cannot be present in the same table. The system cannot distinguish between an access code of 231 followed by a country code of 1, and access code 23. You must define access codes so that access codes of 23 and 231 are not a requirement</p> <p>You cannot change the key field. To change the key field, FROMDIG and TODIG, delete the tuple and add the tuple again.</p> <p>You can enter a range, like 91 99 2 ALL 1 BARBRATE. You can change the fields for part of the range, like 93 93 2 CLGCARD 1 BARBRATE. When you perform this action the change affects the whole range, 91 99 2 ALL 1 BARBRATE. If you must change only key 93 93, delete tuple 91 99. Enter the tuple back as follows:</p> <ul style="list-style-type: none"> • 91 92 2 ALL 1 BARBRATE • 93 93 2 CLGCARD 1 BARBRATE • 94 99 2 ALL 1 BARBRATE <p>For tuples you enter as ranges, when you delete part of the range you delete the whole tuple. The TODIG is larger than FROMDIG. For example, you enter 91 99 2 ALL 1 BARBRATE and you attempt to delete 91 94 2 ALL 1 BARBRATE. These actions delete the whole tuple, 91 99 2 ALL 1 BARBRATE. In this event, add tuple 95 99 2 ALL 1 BARBRATE back to delete 91 94 2 ALL 1 BARBRATE.</p>

Auto Country Direct (continued)

Datafilling table CDCTRY

Field	Subfield or refinement	Entry	Explanation and action
	FROMDIG	a maximum of 18 digits (0 to 9)	From digits. Enter the lower end of the range for the country code digits signaled in the country direct digit stream to TOPS.
	TODIG	a maximum of 18 digits (0 to 9)	To digits. Enter the upper end of the range for the country code digits signaled in the country direct digit stream to TOPS. See preceding note in subfield FROMDIG.
CTRYDIGS		1 to 3	Number of country code digits. When the system parses country code from the Country Direct digit stream, the following action occurs. The value of CTRYDIGS indicates how many digits to parse as the country code. When you access the default tuple because table CDACCESS, field CTRYCODE = N, the value in this field is not important. This value is not important because a country code is not parsed from the digit stream.
BILLOPT		Set of {CLGCARD, THIRD, COLLECT}, ALL, or NONE	Billing option. This field is the group of correct billing options for calls from the originating country.
CDCTRYNM		0 to 999	Country direct country name. This field is an index to table CDCTRYNM. This field specifies the name for operator screen displays on positions that comply with TOPS-MP and OPP. You must enter this index before in table CDCTRYNM.
CTRYRATE		name from table CDCTRYRT	Country rating name. Enter a rating name for the originating country. Table CDCTRYRT must contain a definition of the rating name before this action occurs.

Datafill example for table CDCTRY

Sample datafill for table CDCTRY appears in the following example.

Auto Country Direct (continued)**MAP example for table CDCTRY**

KEY	CTRYDIGS	BILLOPT	CDCTRYNM	CTRYRATE
000 000	3	ALL	0	NOCTRY
069 069	3	ALL	1	BARBRATE
30 30	2	THIRD	2	PORTRATE
76 76	2	COLLECT	15	CHLRATE

In the above example, the first entry is the default tuple. You cannot change this tuple. You can delete this tuple.

Error messages for table CDCTRY

Error messages that apply to table CDCTRY appear in the following table.

Error messages for table CDCTRY

Error message	Explanation and action
WHEN ADDING A TUPLE, PLEASE ENTER THE SAME NUMBER OF DIGITS FOR THE FROMDIG AND TODIG FIELDS. FOR EXAMPLE, ENTER 515 520 AND NOT 515 52.	<p>This message appears if the following conditions occur:</p> <ul style="list-style-type: none"> • you add a tuple to CDCTRY • the number of digits in fields FROMDIG and TODIG are not the same <p>The system does not require that the digits be the same. The number of digits must be the same.</p>
THE NUMBER OF DIGITS MUST BE GREATER THAN ZERO.	This message appears if you attempt to add a tuple and do not enter digits in the FROMDIG or TODIG fields.
ERROR: TODIG FIELD LESS THAN FROMDIG	This message appears if you attempt to position on a tuple with the TODIG less than the FROMDIG. This message indicates that you entered wrong values for the position command.
TOO FEW DIGITS IN TODIG FIELD TO IDENTIFY RANGE. AT THIS POSITION, SPECIFY x DIGITS IN THE TODIG FIELD.	For example, this message appears if you enter 110 556 and attempt to position on 11 56.

Auto Country Direct (continued)

Error messages for table CDCTRY

Error message	Explanation and action
TOO FEW DIGITS IN FROMDIG FIELD TO IDENTIFY RANGE. AT THIS POSITION, SPECIFY x DIGITS IN THE FROMDIG FIELD.	For example, this message appears if you enter 80 80 and attempt to position on 8 80.
ATTEMPT TO POSITION ON TOO LARGE A RANGE. TRY SETTING TODIG FIELD TO x.	For example, this message appears if you enter 110 556 and attempt to position on 11 557.
TABLE CDCTRY IS FULL	This message appears if tuples are not available in the table.
IMPROPER POSITIONING. COULD NOT WRITE CDCTRY TUPLE	This message appears if you attempt to add a tuple with a key that an entry partly encompasses. For example, if you enter 901 910 and attempt to add 90 90. This action produces an error, because the FROMDIG of the tuple already entered, encompasses the TODIG of the tuple.
THIS WILL AFFECT TUPLE ENTRY FROM x TO x	This message appears if you attempt to change or delete a tuple with a key that an entry encompasses in part. For example, you enter 90 99 and attempt to change or delete 90 94. This attempt affects 90 99. You do not enter tuple 90 94. You do enter key 90 99 in the change or delete command.
TUPLE x IS NOT DATAFILLED IN TABLE CDCTRYNM	This message appears if you attempt to enter an index, in field CDCTRYNM, that is not present in table CDCTRYNM.

Datafilling table CDCARR

Country Direct Carrier of origin (CDCARR) is a table that defines carrier of origin IDs. The table defines IDs that signaling occurs for in the digit stream of a Country Direct call. Each signaled carrier has a rating name. This carrier is for use only to rate Country Direct calls. This carrier is not for Equal Access call processing. The Country Direct carrier of origin can be a correct Equal Access CIC. The system provides a default carrier code tuple.

If table CDACCESS, field CARRCODE = Y, use the digits that follow the access code and country code in the Country Direct digit stream to access table

Auto Country Direct (continued)

CDCARR. If table CDACCESS, field CARRCODE = N, access to the default tuple in CDCARR occurs.

You must enter a rating name in table CDCARRRT before you enter the rating name in field CARRRATE.

Datafilling table CDCARR

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	<p>Key. This field is the key to the table. This field contains subfields FROMDIG and TODIG.</p> <p>For the key, two tuples cannot begin with the same digits, with different digit lengths. For example, a tuple 23 23 and a tuple 231 231 cannot be present in the same table. The system cannot distinguish between an access code of 231 followed by a country code of 1 and access code 23. You must define access codes so that access codes of 23 and 231 are not a requirement</p> <p>You cannot change the key field. To change the key field, FROMDIG and TODIG, delete the tuple. Add the tuple again.</p> <p>If you enter a range and attempt to change the fields for part of the range. For example, you can enter 91 99 2 CARR1RATE. When this condition occurs a change in the fields for part of the range affects the whole range. The change affects the whole range 91 99 2 CARR2RATE. If you want to change key 93 93 only, delete tuple 91 99. Enter the tuple back as 91 92 2 CARR1RATE, 93 93 2 CARR2RATE and 94 99 2 CARR1RATE.</p> <p>For tuples you enter as ranges, when you delete part of the range you delete the whole tuple. The TODIG is larger than FROMDIG. For example, you enter 91 99 2 CARR1RATE and delete 91 94 2 CARR1RATE. This action deletes the whole tuple, 91 99 2 CARR1RATE. In this example, add back tuple 95 99 2 CARR1RATE to delete 91 94 2 CARR1RATE.</p>
	FROMDIG	a maximum of 18 digits (0 to 9)	From digits. Enter the lower end of the range for the carrier digits that the country direct digit stream signals to TOPS.

Auto Country Direct (continued)

Datafilling table CDCARR

Field	Subfield or refinement	Entry	Explanation and action
CARRDIGS	TODIG	a maximum of 18 digits (0 to 9)	To digits. Enter the upper end of the range for the carrier digits that the country direct digit stream signals to TOPS. See the note above in subfield FROMDIG.
		1 to 3	Number of carrier code digits. When the system parses the access code from the Country Direct digit stream, the following action occurs. The value of CARRDIGS indicates how many digits to parse as the country code. When you access the default tuple because table CDACCESS, field CARRCODE = N, the value in this field is not important. A carrier code is not parsed from the digit stream.
CARRRATE		name from table CDCARRRT	Carrier rating name. Enter a carrier or origin rating name. Table CDCARRRT must already contain a definition for this name.

Datafill example for table CDCARR

Sample datafill for table CDCARR appears in the following example.

MAP example for table CDCARR

KEY	CARRDIGS	CARRRATE
0000 0000	4	NOCARR
11 11	2	CARR1RATE
21 21	2	CARR2RATE
31 31	2	CARR3RATE

In the above example, the first entry is the default tuple. You cannot change this tuple. You can delete this tuple.

Auto Country Direct (continued)**Error messages for table CDCARR**

Error messages that apply to table CDCARR appear in the following table.

Error messages for table CDCARR

Error message	Explanation and action
WHEN ADDING A TUPLE, PLEASE ENTER THE SAME NUMBER OF DIGITS FOR THE FROMDIG AND TODIG FIELDS. FOR EXAMPLE, ENTER 515 520 AND NOT 515 52.	<p>This message appears if the following conditions occur:</p> <ul style="list-style-type: none"> • you attempt to add a tuple to CDCARR • the number of digits in the FROMDIG and TODIG fields are not the same <p>The system does not require that the digits be the same. The quantity of digits must be the same.</p>
THE NUMBER OF DIGITS MUST BE GREATER THAN ZERO.	<p>This message appears if you attempt to add a tuple and do not enter digits in the FROMDIG or TODIG fields.</p>
ERROR: TODIG FIELD LESS THAN FROMDIG	<p>This message appears if you attempt to position on a tuple with the TODIG less than the FROMDIG. This message indicates that you enter wrong values for the position command.</p>
TOO FEW DIGITS IN TODIG FIELD TO IDENTIFY RANGE. AT THIS POSITION, SPECIFY x DIGITS IN THE TODIG FIELD.	<p>For example, this message appears if you enter 110 556 and attempt to position on 11 56.</p>
TOO FEW DIGITS IN FROMDIG FIELD TO IDENTIFY RANGE. AT THIS POSITION, SPECIFY x DIGITS IN THE FROMDIG FIELD.	<p>For example, this message appears if you enter 80 80 and attempt to position on 8 80.</p>
ATTEMPT TO POSITION ON TOO LARGE A RANGE. TRY SETTING TODIG FIELD TO x.	<p>For example, this message appears if you enter 110 556 and attempt to position on 11 557.</p>
TABLE CDCARR IS FULL	<p>This message appears if tuples are not available in the table.</p>

Auto Country Direct (continued)

Error messages for table CDCARR

Error message	Explanation and action
IMPROPER POSITIONING. COULD NOT WRITE CDCARR TUPLE	This message appears if you attempt to add a tuple with a key that an entry encompasses in part. For example, you can enter 901 910 and attempt to add 90 90. This action produces an error because the FROMDIG of the tuple already entered encompasses the TODIG of the tuple to add.
THIS WILL AFFECT TUPLE ENTRY FROM x TO x	This message appears if you attempt to change or delete a tuple with a key that an entry encompasses in part. For example, you enter 90 99 and attempt to change or delete 90 94. This attempt affects 90 99. You do not enter tuple 90 94, but you enter key 90 99 in the change or delete command.

Datafilling table CDRATE

Country Direct Rate (CDRATE) is a new table. This table maps the following rate names to a calling tariff name from table TARIFFP:

- a country code rate name from table CDCTRY
- a carrier rate name from table CDCARR

Use this table to rate Country Direct calls in a North American environment.

Table CDCTRYRT must contain the country rating name before you can enter the country rating name in table CDRATE.

Table CDCARRRT must contain the carrier rating name before you enter that carrier rating name in table CDRATE.

Table TARIFF must contain the tariff name before you can enter that tariff name in table CDRATE.

Note: You can delete a tuple from table TARIFF that is in use by other tables. This action leaves a hole in the other tables. These tables include

Auto Country Direct (continued)

table CDRATE. Use caution and take note of the warning messages when you delete tuples from table TARIFF.

Datafilling table CDRATE

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	Key. This field is the key to the table. This field contains subfields CTRYRATE and CARRRATE.
	CTRYRATE	name from table CDCTRY, field CTRYRATE	Country rate. Enter the rating name for the country of origin of the call you enter in table CDCTRY, field CTRYRATE.
	CARRRATE	name from table CDCTRY, field CARRRATE	Carrier rate. Enter the rating name for the carrier of origin of the call you enter in table CDCARR, field CARRRATE.
CDTRF		name from table TARIFF	Country direct tariff. Enter a tariff name to use for the given country rate name/carrier rate name combination. Table TARIFF must define the tariff name.

Datafill example for table CDRATE

Sample datafill for table CDRATE appears in the following example.

MAP example for table CDRATE

CTRYRATE	CARRRATE	CDTRF
NOCTRY	NOCARR	TRF_CD0
BARBRATE	CARR1RATE	TRF_CD3
BARBRATE	CARR2RATE	TRF_CD5

Datafilling table CDRATEG

Country Direct Rate in a global operating system environment (CDRATEG) is a table. This table maps a country code rate name from table CDCTRY and a carrier rate name from table CDCARR. The table maps these names to a schedule name from table SSETNAME. Use this table to rate Country Direct calls in a GOS environment.

Auto Country Direct (continued)

Table CDCTRYRT must contain the country rating name before you can enter the country rating name in table CDRATEG.

Table CDCARRRT must contain the carrier rating name before you can enter the carrier rating name in table CDRATEG.

Table SSETNAME must contain the schedule before you can enter the schedule in table CDRATEG.

Datafilling table CDRATEG

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	Key. This field is the key to the table. This field contains subfields CTRYRATE and CARRRATE.
	CTRYRATE	name from table CDCTRY, field CTRYRATE	Country rate. Enter the rating name for the country of origin of the call in table CDCTRY, field CTRYRATE.
	CARRRATE	name from table CDCTRY, field CARRRATE	Carrier rate. Enter the rating name for the carrier of origin of the call in table CDCARR, field CARRRATE.
CDSSET		name from table SSETNAME	Country direct schedule set name. Enter a schedule set name to use for the given country rate name/carrier rate name combination. Table SSETNAME must contain a schedule set name.

Datafill example for table CDRATEG

Sample datafill for table CDRATEG appears in the following example.

MAP example for table CDRATEG

CTRYRATE	CARRRATE	CDSSET

NOCTRY	NOCARR	SSET_CD0
BARBRATE	CARR1RATE	SSET_CD3
BARBRATE	CARR2RATE	SSET_CD5

Auto Country Direct (end)

Datafilling table TOPSPARM

Datafill for Auto Country Direct for table TOPSPARM appears in the following table. The table includes an additional parameter.

Datafilling table TOPSPARM

Parameter name	Explanation and action
CDIR_DEDICATED_DN	This parameter is a new parameter that determines the calling number. If set to N, the number is the digit stream. If set to Y, the number is the 10 digit DN that you enter after the Y. With possible changes. This DN is the calling number for Country Direct calls in that office. If the system sends a country code, this country code replaces the last 3 digits of the DN you enter. If the system does not send a country code, the system uses the DN you entered without change.
CDIR_RATING	In a GOS environment, this parameter indicates the signaled codes to base rating of country direct calls. The values are: <ul style="list-style-type: none"> • Y - The value Y, is the default value. Base the rate on the signaled country and carrier codes. Use the special country direct tables to derive an SSETNAME to enter the GOS rating system. • N - Base the rate on the signaled access, country and carrier codes. Use these codes to index table CLGSSET. This table provides an SSETNAME to enter the GOS rating system.

Datafill example for table TOPSPARM

Sample datafill for table TOPSPARM appears in the following example.

MAP example for table TOPSPARM

PARMNAME	PARMVAL
-----	-----
CDIR_DEDICATED_DN	Y 6193200000
CDIR_RATING	Y

Tools for verifying translations

Auto Country Direct does not use tools for verifying translations.

SERVORD

Auto Country Direct does not use SERVORD.

Automatic OIA Session Start

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS15 and later versions

Requirements

To operate, the Automatic OIA Session Start requires the following:

- BAS Generic, BAS00003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- TOPS position controller (TPC) Traffic Operator Position System (TOPS) MC Support, TPC00002
- TPC TOPS MC Support, TPC00001.

Description

The following features provide this functionality:

Feature number	Feature name
AF2703	The OIA (ORDB) Enhancements for Automatic Session Start
59006865	EOL Notification & EOL of TOPS ACD (TOPS12)

This package provides faster database access and saves work time.

Operation

The current OIA (ORDB) installation requires the operator to access the external database. This method of access is not the best method for some conditions.

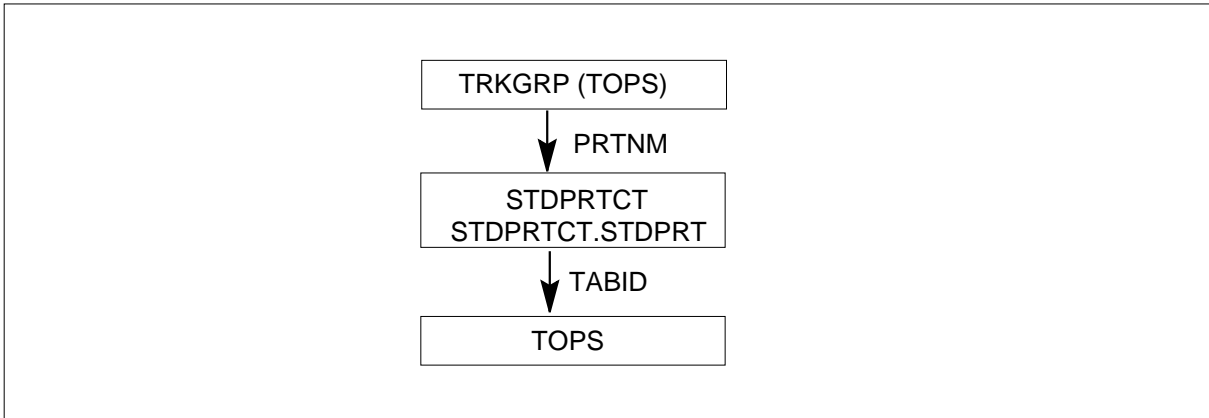
For the first application, the central control (CC) instructs the TPC to begin an automatic session when the called number is 195. Blind and Disabled customers dial 195 for Directory Assistance. A session automatically starts with the personal identification number (PIN) database search for BT DAS. The database search checks that the caller is a correct user of the feature.

Automatic OIA Session Start (continued)

Translations table flow

The Automatic OIA Session Start translation process appears in the following flowchart:

Table flow for Automatic OIA Session Start



Limits

The following limits, apply to Automatic OIA Session Start:

- The system does not support Automatic Session start for Service Assistants that monitor an operator. The system does not support this package when the operator has the system automatically start the session for the current call. The monitoring Service Assistant can hear only the verbal parts of the monitored session between the operator and the database.
- This feature applies for TPC loads in BCS32 and later versions.
- Remote and standalone switches require the installation of this feature.

Interactions

The Automatic OIA Session Start interacts with functionality TOPS MP Open Information Access Interface, OSB00101.

Activation/deactivation by the end user

The Automatic OIA Session Start does not require activation or deactivation by the end user.

Billing

The Automatic OIA Session Start does not affect billing.

Automatic OIA Session Start (continued)

Station Message Detail Recording

The Automatic OIA Session Start does not affect Station Message Detail Recording (SMDR).

Datafilling office parameters

The Automatic OIA Session Start does not affect office parameters.

Datafill sequence

The tables that require datafill for Automatic OIA Session Start appear in the following table. The tables appear in the correct entry order.

Datafill requirements for Automatic OIA Session Start

Table	Purpose of table
TRKGRP (TOPS)	Trunk Group. Contains information about trunk groups.
STDPRTCT.STDPRT	Call routing.
TOPS	Defines operator treatment for call types.

Datafilling table TRKGRP (TOPS)

Datafill example for table TRKGRP (TOPS)

Sample datafill for table TRKGRP (TOPS) appears in the following example:

MAP example for table TRKGRP (TOPS)

```

GRPKEY
      GRPTYP  TRAFSNO  PADGRP  NCCLS          GRPINFO
-----
TBELLIC1
      TOPS      0      TLD   NCRT 2W MIDL 214 PRE1
      NLCA NSCR .....          --- ----
      ---- ----          SNPA/   \PRTNM
LCANAME/   \SCRNCL
    
```

Datafilling table STDPRTCT.STDPRT

Automatic OIA Session Start (end)

MAP example for table STDPRTCT.STDPRT

EXTPRTNM	STDPRT	AMAPRT			
PRE1	(1)	(0)			
Subtable STDPRT					
FROMDIGS		TODIGS			PRETRTE
195		195			
T NP 0 TOPS 121 3 3 NONE					

Datafilling table TOPS

Datafill example for table TOPS

Sample datafill for table TOPS appears in the following example:

MAP example for table TOPS

CO	DISPLAY	NOAMA	POSTYPE	SERV Typ
121	S	N	XFR2	TASERV

Tools for verifying translations

The Automatic OIA Session Start does not use translation verification tools.

SERVORD

The Automatic OIA Session Start does not use SERVORD.

Billing Enhancements for EA Calls

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS13 and up

TOPS13 introduced Billing Enhancements for EA Calls.

Requirements

To operate, Billing Enhancements for EA Calls requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This feature allows generation of a second AMA record on 0- call originations that turn out to be TOPS InterLATA Carrier Service (TICS) calls. TICS calls, functionality OSEA0008, are Equal Access (EA) calls destined for carriers that are SERVED by the Operating Company.

This functionality consists of the feature as follows:

Feature number	Feature name
A59013695	Billing Enhancements for EA Calls to SERVED Carriers

Operation

Background

A 0- call origination that turns out to be a carrier call generates records according to whether the carrier is SERVED in table TOPEACAR field OPSERV subfield OPSERVSEL as follows:

- OPSERVSEL = SERV: The operator collects billing information and then completes the call. The TOPS switch continues monitoring/timing the call until the calling/called parties go on-hook. The TOPS switch generates a billable AMA record (Structure Code 752 with call code 192) with a call completion module (module code 51) indicating that completion service

Billing Enhancements for EA Calls (continued)

was provided for the call. In addition, module code 53 is also included to identify the carrier associated with the call.

If Origination Line Number Screening (OLNS) is in use, then Structure Code 772 is generated instead of Structure Code 752.

- OPSERVSEL = NOSERV: The operator is only allowed to transfer that call to the carrier. All keying actions except POS RLS are blocked for calls to NOSERV carriers. An access record (Structure Code 752 with a call code 190) is generated for these call types. Module Code 53 is included to identify the carrier to whom the call was transferred. Module code 51 is NOT included for these calls.

New functionality

This feature applies only to calls with subfield OPSERVSEL = SERV, as indicated above. This feature is activated by table TOPSPARM new parameter TWO_AMA_REC_FOR_SERVED_0MINUS_EA = Y. When this parameter is set to Y,, two AMA records are produced that are identical except for the differences as follow:

- One record has a call code 190 and the other record has call code 192.
- The call code 190 record does not have a call completion, Module Code 051, nor a Module Code 316.

Also, this feature only applies to 0- dialed calls. 00-, 10XXX0-, and 10XXX00- routed to the TOPS system do not generate the access record.

Translations table flow

Code Removal of TOPS IV does not have a translations table flow.

Limitations and restrictions

The limitations and restrictions that follow apply to Billing Enhancements for EA Calls.

- With this feature activated, there are two AMA records on a call that in the past only had one. Downstream AMA may require changes to accommodate the two records.
- If any statistical information is pulled from the AMA records, the two records have duplicate information and can skew the data.
- This feature does not apply to carrier dialed 0- calls (that is, 00-, 10XXX0-, and 10XXX00-).
- The call code 190 record does not have a call completion module, Module Code 051, nor a Module Code 316. In addition, Module Codes 314, 315,

Billing Enhancements for EA Calls (continued)

184, 186, and 187 are not included on the call code 190 record. These modules are only included on the call code 192, if applicable to the call.

Interactions

The items that follow describe how Billing Enhancements for EA Calls interacts with other functionalities.

- AMA streams

Both EBAF and TDR billing streams are supported for this feature.
- GEN AMA

A GEN AMA function can be performed at an operator position or by the node if using OSSAIN. With this feature active, two AMA records are generated when a GEN AMA function is performed from either an operator position or the node on a 0- call origination that turns out to be an EA call to a SERVED carrier.
- Trigger events

Trigger events can be defined to allow calls to reconnect to a node or to an operator position. An example of such a trigger event is a called party on-hook condition. For 0- call originations that trigger back to an operator or a node and terminate to an EA number handled by a SERVED carrier, result in two AMA records. For example, a 0- call goes to a node for handling and the subscriber enters an EA number to a SERVED carrier. The call is connected and released from node. The calling and called parties talk and the called party goes on-hook. A trigger event is hit when the called party goes on-hook and the calling party is reconnected to the node. At this point, because this feature is active, two AMA records are generated, call codes 192 and 190. The calling party enters another EA number to a SERVED carrier. The parties are connected. The parties talk and both go on-hook. Two AMA records are generated for the second call, call codes 192 and 190.
- For SERVED calls (table TOPEACAR, field OPSERV, subfield OPSERVSEL= SERV) and table TOPSPARM parameter TWO_AMA_REC_FOR_SERVED_0MINUS_EA = Y:
 - One record has a call code 190 and the other record has call code 192. For the record with the call code 192, if the operator enters a carrier ID but no called number and makes no attempt to outputpulse (that is, cancels calls and releases position), then a call code 196 replaces 192.
 - The call code 190 record does not have a call completion module, Module Code 051, nor a Module Code 316. In addition, Module Codes 314, 315, 184, 186, and 187 are not included on the call code 190

Billing Enhancements for EA Calls (continued)

record. These modules are only included on the call code 192, if applicable to the call.

Activation and deactivation by the user

Billing Enhancements for EA Calls does not require activation or deactivation by the user.

Billing

No new additions are made to AMA; however, two AMA records are generated on a call that traditionally only generated one. Refer to the Operation section.

Station Message Detail Recording

Billing Enhancements for EA Calls does not require Station Message Detail Recording.

Office parameters used by Billing Enhancements for EA Calls

Billing Enhancements for EA Calls does not generate office parameters.

Datafill sequence

The table that follows lists the tables that require datafill to put Billing Enhancements for EA Calls into operation. You must enter data into the table in this order.

Datafill requirements for Billing Enhancements for EA Calls

Table	Purpose of table
TOPSPARM	TOPS parameters contains TOPS office wide parameters.

Billing Enhancements for EA Calls (continued)

**Datafill related to Billing Enhancements for EA Calls for table
TOPSPARM**

The table that follows provides the datafill related to Billing Enhancements for EA Calls for table TOPSPARM. This table includes only those fields that apply directly to Billing Enhancements for EA Calls.

Billing Enhancements for EA Calls (continued)

Datafill related to table TOPSPARM

Parameter name	Explanation and action
TWO_AMA_REC_FOR_SERVED_0MINUS_EA	<p>This parameter applies to 0- call originations that turn out to be EA calls destined for carriers that are SERVED by the Operating Company. The term SERVED means table TOPEACAR, field OPSERV, subfield OPSERVSEL= SERV. For these calls, this parameter enables generation of two AMA records that are identical except as follows:</p> <ul style="list-style-type: none"> • One record has a call code 190 and the other record has call code 192. For the record with the call code 192, if the operator enters a carrier ID but no called number and makes no attempt to outpulse (that is, cancels calls and releases position), then a call code 196 replaces 192. • The call code 190 record does not have a call completion module, Module Code 051, nor a Module Code 316. In addition, Module Codes 314, 315, 184, 186, and 187 are not included on the call code 190 record. These modules are only included on the call code 192, if applicable to the call. <p>The values of this parameter are as follows:</p> <ul style="list-style-type: none"> • Y - Enable generation of the two AMA records as described above. This feature only applies to 0- dialed calls. 00-, 10XXX0-, and 10XXX00- routed to the TOPS system do not generate the access record. • N - Generate one AMA record (Structure Code 752 with call code 192) with a call completion module (module code 51) indicating that completion service was provided for the call. In addition, module code 53 is also included to identify the carrier associated with the call. <p>If Origination Line Number Screening (OLNS) is in use, then Structure Code 772 is generated instead of Structure Code 752.</p>

Datafill example for table TOPSPARM

The figure that follows shows sample datafill for table TOPSPARM.

Billing Enhancements for EA Calls (end)

MAP example for table TOPSPARM

PARMNAME	PARMVAL
TWO_AMA_REC_FOR_SERVED_0MINUS_EA	Y

Translation verification tools

Billing Enhancements for EA Calls does not use translation verification tools.

SERVORD

Billing Enhancements for EA Calls does not use the Service Order System (SERVORD).

Carrier Selection

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS12 and up

Carrier Selection was introduced in TOPS08.1.

Prerequisites

To operate, Carrier Selection has the following prerequisites:

- BAS Generic, BAS00003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- Auto Country Direct, OSB00101, and table TOPSFTR parameter COUNTRY_DIRECT = Y

Description

This functionality selects an outgoing carrier for the following call types:

- Country Direct - The carrier is selected according to the originating and terminating zones, and the incoming carrier. Country direct calls are described in functionality Auto Country Direct, OSB00101.
- International calling card for billing of an outbound call - The outgoing carrier is based upon the terminating zone and the calling card issuer ID.

For this functionality, international calling cards are International telephone and telegraph consultative committee (CCITT) calling cards and commercial credit cards as defined in table INTCCFMT. Outbound calls originate inside the country and terminate outside the country. Thus, the calling party is a national number and the called party is a foreign number.

This functionality is provided by the following feature:

Feature number	Feature name
AF7021	TOPS Carrier Selection

Operation

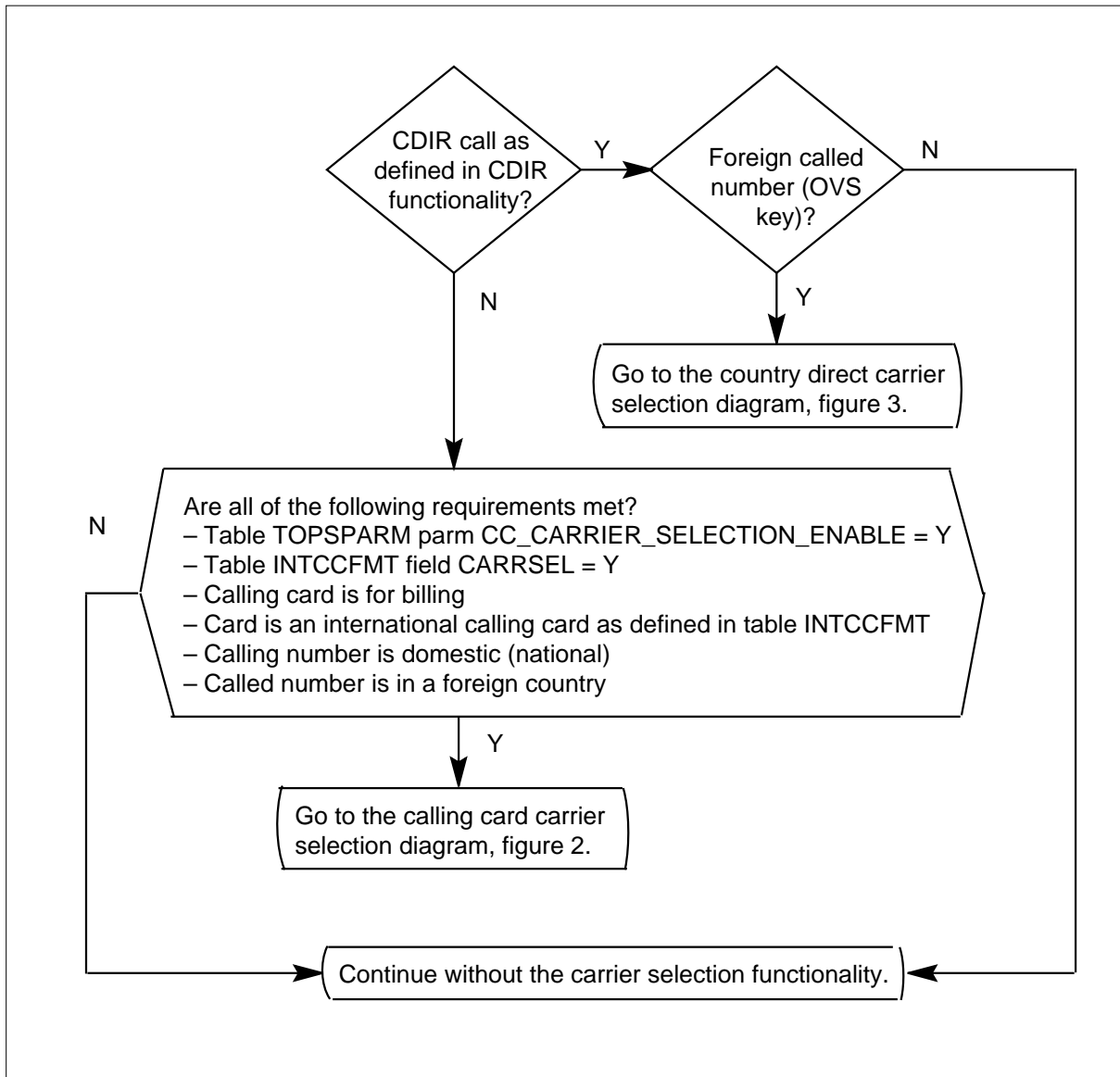
The call type must be identified first.

Carrier Selection (continued)

Call type determination

The following diagram indicates how the call type is determined and if carrier selection should be performed.

1: Call type determination



Carrier selection is performed when translating the called number. This occurs when the called number is entered and again just prior to outputting. Carrier

Carrier Selection (continued)

selection starts by determining the call type, as shown in the above diagram. The following checks are made:

- Is this a country direct (CDIR) call as defined in functionality Auto Country Direct, OSB00101?
 - CDIR: If it is a CDIR call, the called number is checked to see if it is foreign. The called number is marked as foreign when the operator uses the OVS (overseas) key function to enter the number. If the called number is foreign, the call qualifies for carrier selection. If it is not foreign, carrier selection is not performed, so nothing is done.
 - Not CDIR: If it is not a CDIR call, it may be a calling card that qualifies for carrier selection. A calling cards qualifies for carrier selection if it meets all of the following requirements:
 - The card must be an international calling card that is used for billing. International calling cards are CCITT calling cards and commercial credit cards as defined in table INTCCFMT. That is, the card must have an entry in table INTCCFMT and the card length meets the requirements in table INTCCFMT fields ACCIDSIZ and PINSIZE. For further information, refer to functionality TOPS Commercial Credit Card (ABS00008) and table INTCCFMT in the data schema section of this manual.
 - The calling number must be inside the country.
 - The called number must be outside the country.
 - Calling card carrier selection must be enabled on an office-wide basis by table TOPSPARM parameter CC_CARRIER_SELECTION_ENABLE = Y.
 - Calling card carrier selection must be enabled for this card by table INTCCFMT field CARRSEL = Y.

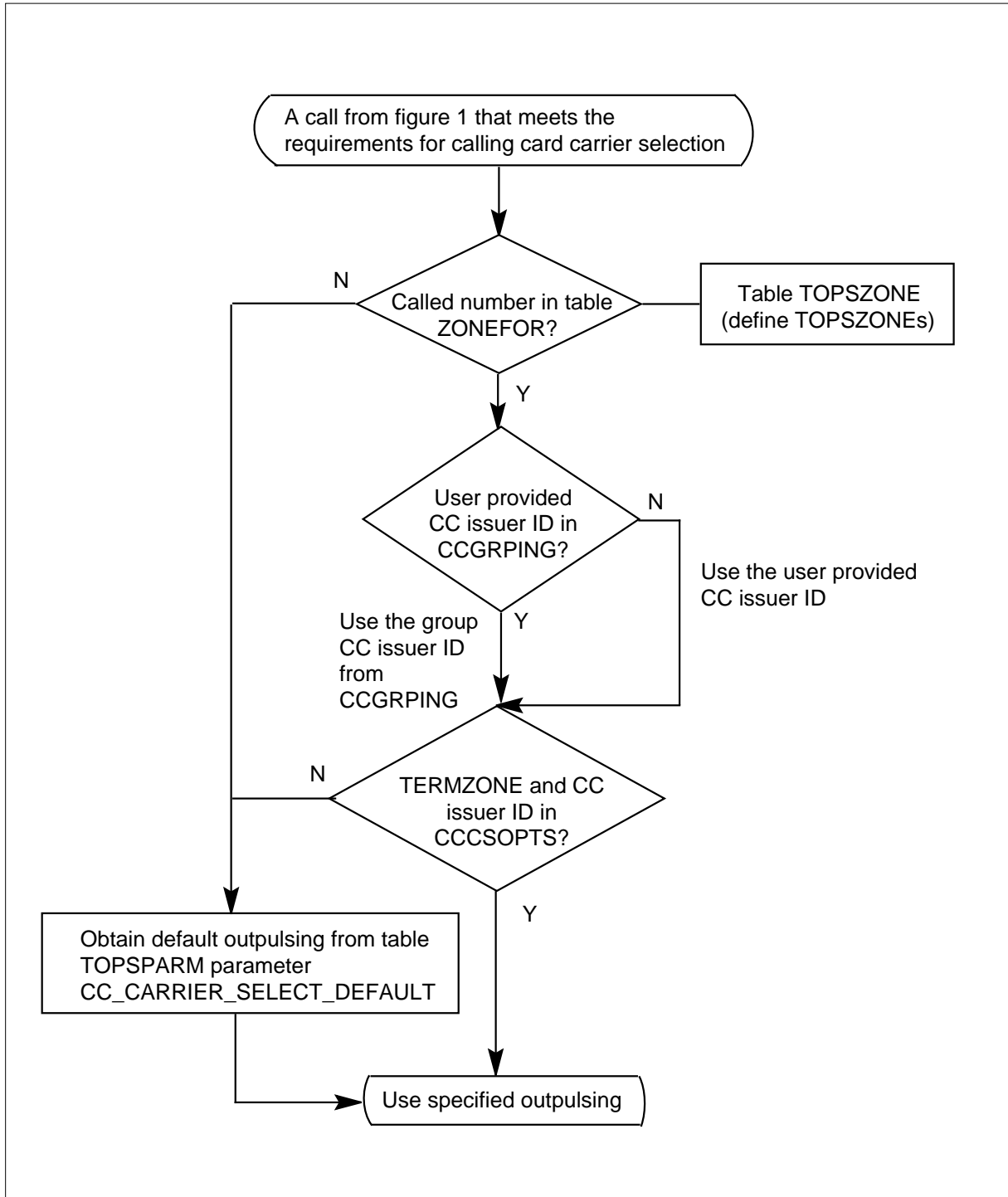
If any of the above calling card requirements are not met, carrier selection is not performed.

Calling card carrier selection

If a calling card meets all of the above requirements, a carrier is selected as shown in the following diagram.

Carrier Selection (continued)

2: Calling card carrier selection



Carrier Selection (continued)

A calling card carrier is selected as follows: (Note, referenced tables are described in the datafill procedure section.)

1. Table ZONEFOR is indexed with the called number to determine the terminating zone. Table ZONEFOR associates called digits with a zone defined in table TOPSZONE. If an entry is found, go to step 2. If no entry is found, use default outpulsing as provided by table TOPSPARM parameter CC_CARRIER_SELECT_DEFAULT.
2. The user provided calling card issuer ID is used to index table CCGRPING (calling card grouping) to check for a group. Grouping is optional and can be used when many calling card issuer IDs require the same carrier selection processing. If the ID falls into a range in the table, a group CC issuer ID is provided for use in step 3. If no entry is found, the operator entered CC issuer ID is used for step 3.

The actual CC issuer ID is obtained from the subscriber in various ways; for example, mechanized calling card service (MCCS) or operator entered.

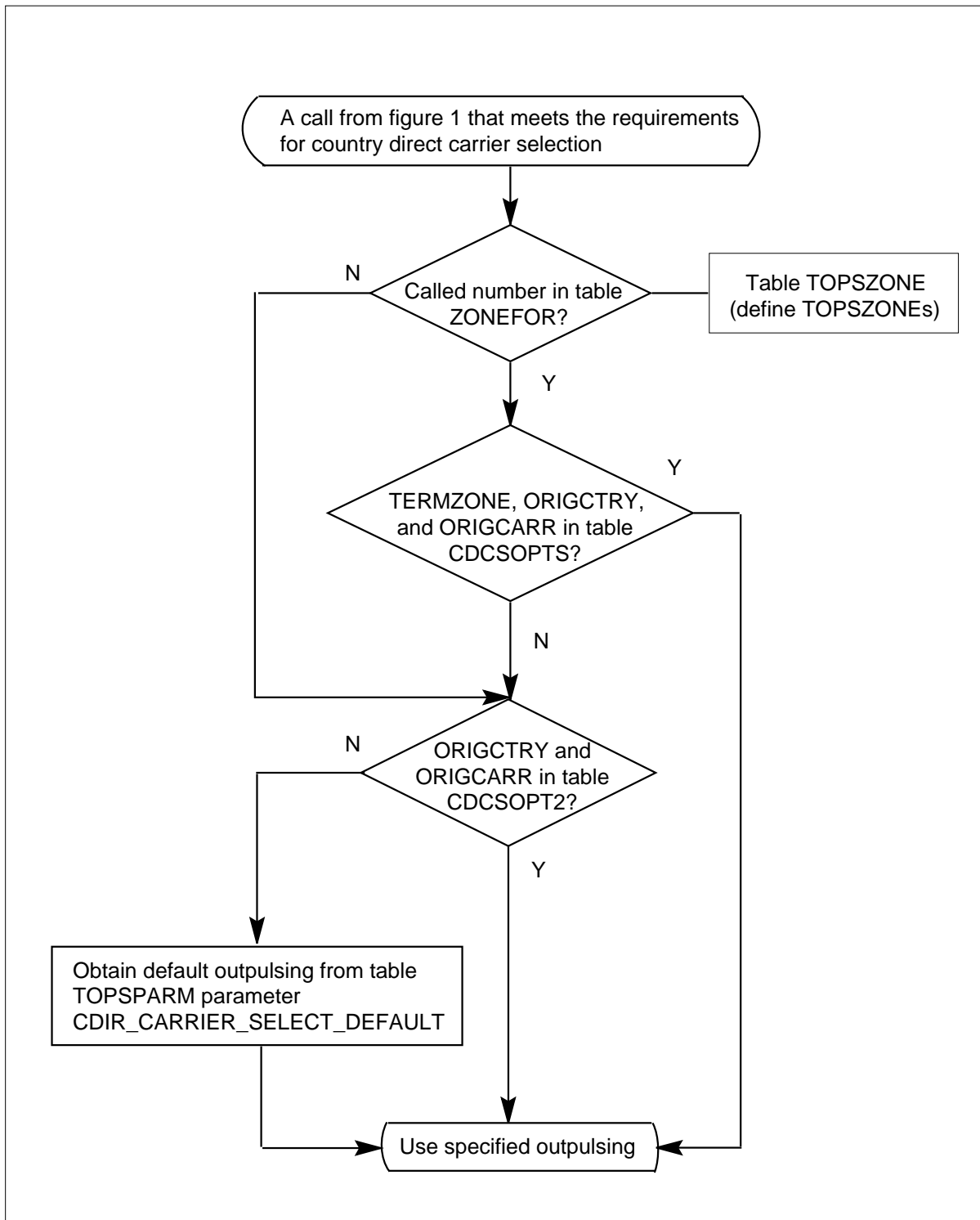
3. The CC issuer ID from step 2 and the TOPSZONE from step 1 are used to index table CCCSOPTS (calling card carrier options). This table specifies outpulsing of the call. If no table entry is found, default outpulsing is provided by table TOPSPARM parameter CC_CARRIER_SELECT_DEFAULT.

Country direct carrier selection

If a call is country direct and the called number is foreign, a carrier is selected as shown in the following diagram.

Carrier Selection (continued)

3: Country direct carrier selection



Carrier Selection (continued)

A country direct carrier is selected as follows. (Note, referenced tables are described in the datafill procedure section.)

1. Table ZONEFOR is indexed with the called number to determine the terminating zone. If an entry is found, go to step 2. If no entry is found, go to step 3.
2. If a terminating zone was found in step 1, use the zone, originating country and originating carrier to index table CDCSOPTS (country direct carrier options) that specifies outpulsing.
3. If there is no specified terminating zone in either table ZONEFOR (step 1) or CDCSOPTS (step 2), use the originating country and originating carrier to index table CDCSOPT2 (country direct carrier options number 2). Table CDCSOPT2 specifies outpulsing. If there is no entry in table CDCSOPT2, use table TOPSPARM parameter CDIR_CARRIER_SELECT_DEFAULT that specifies the default outpulsing.

Distributed carrier selection

Since numerous carriers may service the same terminating country, selection of the carrier is performed using a weighted distribution system. This system allows for a carrier to service all, some, or none of the traffic.

For example, if three carriers service the same country, selection may be distributed with one carrier receiving 70% of the traffic, another receiving 25%, and the third only 5%. Distribution must always add up to 100%.

This weighted distribution system supports up to 16 different carriers under the substitution option in tables CDCSOPTS and CCCSOPTS.

Carrier selection system co-existence

It is not possible for a call to be processed by both carrier selection systems (CDIR and CC). CDIR carrier selection is provided only to CDIR calls originating from a foreign destination while calling card carrier selection is provided to national calling parties only.

If by chance in future development, a call meets both system requirements, then CDIR carrier selection takes priority. Calling card carrier selection will not be performed on CDIR call types.

Software optionality control (SOC)

Country direct carrier selection is dependent upon the Country Direct SOC option, OSB00101. There is no SOC dependency for Calling Card Carrier Selection.

Carrier Selection (continued)

Operational Measurements (OMs)

OM groups CTRYDIR and TOPSINCC are expanded to include the following registers:

- CDCSAL and CCCSAL: The number of calls serviced by Carrier Selection which were ALLOWed existing translations.
- CDCSBL and CCCSBL: The number of calls serviced by Carrier Selection which were BLOCKed.
- CDCSSUB and CCCSSUB: The number of calls serviced by Carrier Selection which were translated to outpulse with SUBSTituted digits.

Translations table flow

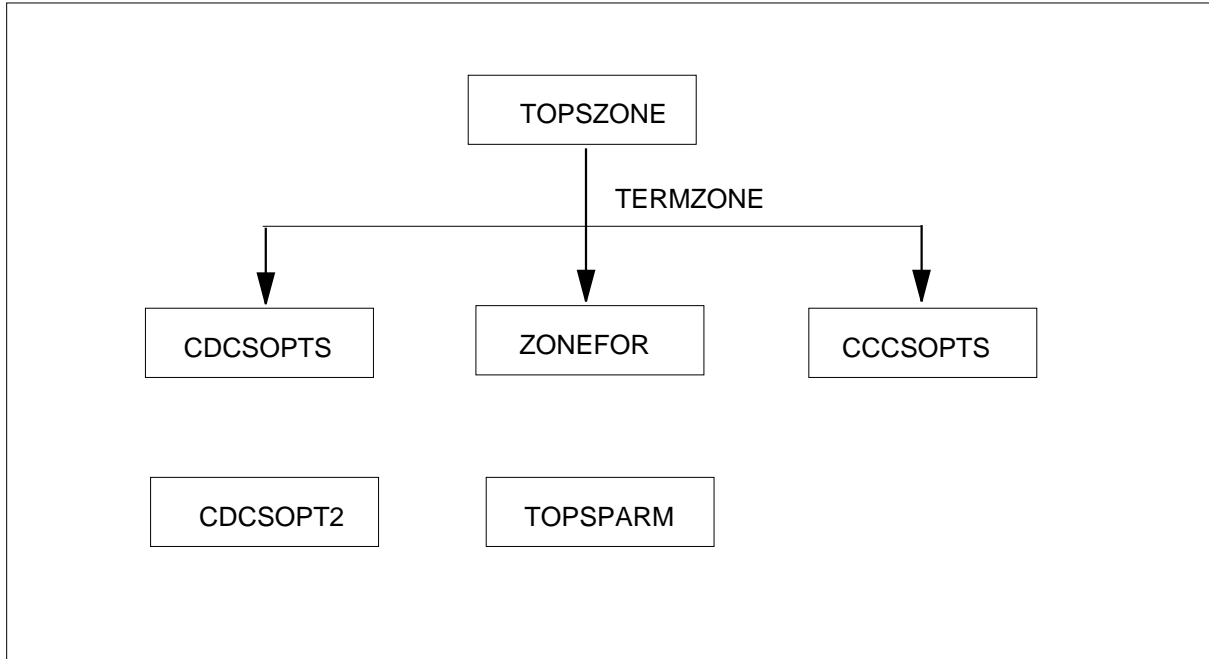
The Carrier Selection translations tables are described in the following list:

- Table TOPSZONE defines TOPS areas/zones for carrier selection.
- Table ZONEFOR assigns a TOPSZONE to the foreign called number.
- Table CDCSOPTS assigns the outpulsing for CDIR carrier selection.
- Table CCCSOPTS assigns the outpulsing for calling card carrier selection.
- Table CDCSOPT2 assigns outpulsing when selecting a terminating carrier for CDIR calls.
- Table TOPSPARM contains office-wide parameters that define default routing.

The Carrier Selection translation process is shown in the flowchart that follows.

Carrier Selection (continued)

Table flow for Carrier Selection



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

Datafill example for Carrier Selection

Datafill table	Example data
TOPSZONE	1 CARIBBEAN
ZONEFOR	180913 180913 CARIBBEAN
CDCSOPTS	CARIBBEAN 42 111 BLOCK
CCCSOPTS	CARIBBEAN 5417 ALLOW

Limitations and restrictions

The following limitations and restrictions apply to Carrier Selection:

- Both carrier selection systems (CDIR and CC) cannot be used for the same call. If a call meets both system requirements, CDIR carrier selection takes priority. Calling card carrier selection is not used for CDIR call types.
- When carrier substitution occurs, the EAMA record called digits field reports the outpulsed digits and thus NOT the terminating country code.
- TOPS-MP positions are not supported by this feature.
- OSSAIN is not supported by this feature.

Carrier Selection (continued)

- DFIL logs contain the outpulsed digits (substitution string plus national number), but TRK logs contain the called number (country code plus national number).
- EAMA records do not contain the called number as it appears on the operator screen when carrier select substitution has occurred.
- Alternate Routes are not supported by this feature.
- Any digit manipulation performed by translations prior to outpulsing is lost when carrier selection substitution occurs. The route selected by translations is used; however, the called digits outpulsed do not contain any digits prefixed (added) by translations. The outpulsed called number only contains the substitution string and the called national number as described in this document.
- The substitution string is not used for translations in the TOPS office. It is only used when outpulsing so the next switch can translate the digits.

Interactions

The following paragraphs describe the interactions between Carrier Selection and other functionalities.

CDIR carrier selection is dependent upon the Country Direct feature (AN1340) activated by SOC option OSB00101. It does not have any effect on CDIR functionality; it only adds functionality.

Activation/deactivation by the end user

Carrier Selection requires no activation or deactivation by the end user.

Billing

The called digits field of EAMA contains the outpulsed string. Thus, if carrier select substitution has occurred, the EAMA record contains the substitution string plus the national number. The terminating country code is not provided in the called digits field of EAMA records when substitution has occurred.

Carrier select substitution is indicated in tables CDCSOPTS and CCCSOPTS.

Carrier Selection (continued)

This change effects the terminating/called number in the following module codes:

- 033 - This module code is used for a called number using the open numbering dialling plan.
- 051 - This module code is used for a called number using the North American dialling plan.
- 151 - This module code is used for an international called number with greater than 12 digits.

While processing a call, the operator can release the forward connection and enter a new called number. This operator action can be recorded in EAMA using EAMA module 315 (Overwritten Number). This action is usually performed when the first number was incorrect.

The outpulsed digits do not appear in the Overwritten Number module. If the operator overwrites the first foreign called number with a second foreign called number, the Overwritten Number module contains the country code and national number of the first number. The outpulsed digits associated with the second number appear in the normal called number field of the EAMA record (for example, module 33 on an international call completion service EAMA record).

The TOPS rating system and the downstream billing processor can identify CDIR carrier select eligible calls by an international called number (the domestic/international indicator in module code 33) and the originating call type in module code 311 (the originating call type indicates CDIR for Country Direct).

Calling Card carrier select eligible calls can be recognized by a national calling number, an international called number (module 33: domestic/international indicator), and an calling card billing number.

A carrier select eligible call does not mean that carrier select substitution has occurred; however, when substitution does occur, the substituted digits are provided in the called digits field as explained above.

The following record example is for a Country Direct call completing to a foreign party with billing to a calling card. The `TERM OPEN DIGITS 1' and `TERM OPEN DIGITS 2' fields of module code 033 are altered by this feature. Note that the overwritten digits fields are NOT effected by this feature.

Carrier Selection (continued)

Example AMA record

```
*HEX ID:AA STRUCTURE CODE:40106C CALL CODE:192C SENSOR TYPE:036C
SENSOR ID:0123456C REC OFFICE TYPE:036C REC OFFICE ID:0123456C
DATE:00302C TIMING IND:00000C STUDY IND:0200000C
SERVICE OBSERVED:0C SIG DIGITS NEXT FIELD:007C
ORIG OPEN DIGITS 1:00009909111C ORIG OPEN DIGITS 2:FFFFFFFF
ORIGINATING CHARGE INFO:FFFF CONNECT TIME:0742549C
ELAPSED TIME:000000271C SERVICE FEATURE:000C
STATION SIGNALING IND:9C SCREENING CODE:000C CALLED NUMBER INPUT:3C
CALLING NUMBER SOURCE:1C MODULE CODE:316C LOCAL INDICATOR:1C
MODULE CODE:311C ORIG CALL TYPE:063C MODULE CODE:032C
OPERATOR IDS:1060696009999C ACC OPERATOR WORK TIME:00320C
MODULE CODE:033C DOMESTIC/INTL INDICATOR:2C
SIG DIGITS NEXT FIELD:012C TERM OPEN DIGITS 1:09211456789C
TERM OPEN DIGITS 2:000000000C COMPLETION IND:001C RATE IND:1C
OSS CALL COMPLETION CONDITIONS:1121110C
ALTERNATE ROUTE NUMBER:FFFF MODULE CODE:052C BILLING TYPE ID:1C
FORMAT ID:2C SIG DIGITS NEXT FIELD:010C BILLABLE DIGITS 1:02012200000C
BILLABLE DIGITS 2:FFFFFFFF RAO NUMBER:234C
CALLING CARD SUBACCOUNT NUMBER:012C BILLING NUMBER TREATMENT:FF
LIDB RESPONSE:405C OSS ACTION:1C MEANS OF INPUT/RESPONSE:223C
SEQUENCE CALL COUNTER:001C MODULE CODE:122C
CDIR ORIG INFO:0000111C MODULE CODE:310C
KEYING ACTIONS:1211111111C MODULE CODE:315C
SIG DIGITS NEXT FIELD:012C OVERWRITTEN DIGITS 1:44123456789C
OVERWRITTEN DIGITS 2:000000000C OVERWRITTEN NUMBER TYPE:6C
OVERWRITTEN NUMBER SEQUENCE:1C MODULE CODE:104C
TRUNK FACILITY ID:104080001C MODULE CODE:000C
```

Station Message Detail Recording

Carrier Selection does not affect Station Message Detail Recording.

Datafilling office parameters

Carrier Selection does not affect office parameters.

Carrier Selection (continued)

Datafill sequence

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

Datafill tables required for Carrier Selection

Table	Purpose of table
TOPSZONE	TOPS zone defines areas/zones for carrier selection.
ZONEFOR	Zone foreign assigns a terminating zone to the foreign called number.
CDCSOPTS	Country Direct Carrier Select Options assigns outpulsing for CDIR carrier selection based on the terminating zone, originating carrier and originating country.
CDCSOPT2	Country Direct Carrier Select Options Number 2 assigns outpulsing for CDIR carrier selection based on the originating country and carrier.
INTCCFMT	International Calling Card Format defines CCITT calling cards and indicates on a card basis whether carrier selection should be performed.
CCGRPING	Calling Card Grouping defines groups of calling card issuer IDs.
CCCSOPTS	Calling Card Carrier Selection Options assigns outpulsing for calling card carrier selection based on the calling card issuer ID and TERMZONE.
TOPSPARM	TOPS Parameters contains office wide parameters for the TOPS system.

Datafilling table TOPSZONE

TOPS zone is a new table that defines areas/zones for country direct and calling card calls. The area/zone is used in tables ZONEFOR, CDCSOPTS, and CCCSOPTS for selecting a terminating carrier. Table TOPSZONE may contain country names, zone names, or both.

No other tables must be datafilled before table TOPSZONE. However, tuples may not be deleted until all references are removed from tables ZONEFOR, CDCSOPTS, and CCCSOPTS.

A tuple may be changed with the change being reflected in other tables that use the TOPSZONE name.

Carrier Selection (continued)

The following table describes the fields.

Datafilling table TOPSZONE

Field	Subfield or refinement	Entry	Explanation and action
INDEX		0 to 255	Index. This field is the index to the table. It allows for ease of table cross-checks and changing field TOPSZONE without having to delete and re-add.
TOPSZONE		up to 32 alphanumeric characters	TOPS zone. Enter a country name or zone name.. A nil TOPSZONE is defined internally with index 256.

Datafill example for table TOPSZONE

The following example shows sample datafill for table TOPSZONE.

MAP display example for table TOPSZONE

INDEX	TOPSZONE
0	BARBADOS
1	CARIBBEAN
2	HAITI
3	JAMAICA

Datafilling table ZONEFOR

Zone foreign is a new table that assigns a TOPSZONE to a foreign called number. Table ZONEFOR is indexed by the carrier selection zone (country code plus any portion of the national number) part of a foreign called number. Table ZONEFOR is accessed for calling card and country direct calls to select a terminating carrier.

The TOPSZONE must be datafilled in table TOPSZONE prior to using it in table ZONEFOR.

Carrier Selection (continued)

The following table describes the fields.

Datafilling table ZONEFOR

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	Key. This field indicates the terminating country zone, which is the called country code plus national number. This field consists of subfields FROMDIG and TODIG. This field is a digilator, similar to subtable STDPRTCT.STDPRT. Therefore, it is not possible to datafill two tuples that begin with the same digits and have different digit lengths. For example, tuples 23 23 and 231 231 cannot be used in the same table.
	FROMDIG	up to 18 digits	From digits. Enter the starting number of the range of the called digits.
	TODIG	up to 18 digits	To digits. Enter the ending number of the range of the called digits.
TOPSZONE		value from table TOPSZONE	TOPS zone. Enter a terminating area/zone to be associated with the called digits (KEY). This value must be defined in table TOPSZONE.

Datafill example for table ZONEFOR

The following example shows sample datafill for table ZONEFOR.

MAP display example for table ZONEFOR

KEY	TOPSZONE
180913 180913	CARIBBEAN
180921 180922	CARIBBEAN
180945 180955	CARIBBEAN
180956 180956	BARBADOS
1809610 1809610	JAMAICA
508 508	HAITI

Datafilling table CDCSOPTS

Country Direct Carrier Select Options is a new table that determines outpulsing when selecting a terminating carrier for country direct (CDIR)

Carrier Selection (continued)

calls. This table is accessed if a CDIR called number is found in table ZONEFOR. If no match is found, table CDCSOPT2 is accessed.

Table TOPSZONE must be datafilled prior to datafilling this table.

The following table describes the fields.

Datafilling table CDCSOPTS

Field	Subfield or refinement	Entry	Explanation and action
TERMZONE		name from table TOPSZONE	Terminating zone. This field is part of the key to the table. Enter a terminating zone name defined in table TOPSZONE. The name in table TOPSZONE must be associated with an INDEX in the range of 0 to 256. A name with an index outside this range results in an error message..
ORIGCTRY		1 to 3 digits	<p>Originating country code. This field is part of the key to the table. Enter an originating country code that is included in table CDCTRY field KEY.</p> <p>Three zeros indicate that no country digits were signalled. Whereas, one or two zeros indicate that one or two zeros (respectively) were signalled.</p> <p>Note: The originating country code is necessary when the carrier code is not signalled or when the same carrier number could be used by two different countries. If the country code is not relevant, a zero entry (000) may be used to ignore this option.</p>
ORIGCARR		1 to 4 digits	<p>Originating carrier code. This field is part of the key to the table. Enter an originating carrier code that is included in table CDCARR field KEY.</p> <p>Four zeros indicate that no carrier digits were signalled. Whereas, one, two, or three zeros indicate that one, two, or three zeros (respectively) were signalled.</p>

Carrier Selection (continued)

Datafilling table CDCSOPTS

Field	Subfield or refinement	Entry	Explanation and action
CDCSOPTS		ALLOW, BLOCK, or SUBST (1-8 digits, 1-100 weighted distribution value)	<p>Country direct carrier select options. This field specifies outpulsing of the call. The values are:</p> <ul style="list-style-type: none"> • ALLOW - Outpulse the existing translations: network prefix + country code + national number. Note that there is no carrier code, so the following network node (international gateway) needs to perform translations to select the carrier. • BLOCK - Deny outpulsing and release from the position. The call is not released even if the operator attempts to release the call before outpulsing. A message is presented on the operator screen. • SUBST - Replace the network prefix and country code as determined by tables CCTR and CTCODE. Datafill refinement VECTOR.
	VECTOR	see subfields	<p>Vector. This refinement is valid only when field CDCSOPTS = SUBST. This refinement consists of subfields DIGITS and WEIGHT. Up to 16 iterations of this refinement can be entered. Repeated substitution strings are allowed.</p>

Carrier Selection (continued)

Datafilling table CDCSOPTS

Field	Subfield or refinement	Entry	Explanation and action
	DIGITS	1 to 8 digits	<p>Digits for substitution - This user defined value replaces the network prefix and country code. This value may contain a routing prefix, carrier code, service code, and so forth. The national number remains intact at all times. Thus, the substitution string and called national number are outpulsed. The substitution string plus national number must be 18 digits or less; otherwise, the national number is truncated and the call does not complete. For example, if the national number is 12 digits, the substitution string can only be 6 digits maximum.</p> <p>There are no limitations on the format of this field. An example 6 digit string (092 + XX + 4) for use with a 12 digit national number is the following:</p> <ul style="list-style-type: none"> • 092 - Prefix to route a call from the TOPS switch through the DMS-100 switch to a DMS-300 switch • XX - 2-digits representing carrier code for use by a DMS-300 switch • 4 - Service code <p>Note: The TOPS switch does not validate the substitution string. For example, an invalid carrier code may be datafilled as part of the substitution string, and the TOPS switch will outpulse this string into the network. It is the responsibility of the other nodes in the network (for example the DMS-300 switch) to route a call with an invalid carrier selection string to the appropriate treatment. It is also the responsibility of the DMS-300 switch to route calls with substitution strings to the correct carriers, and to route calls without substitution strings (that is, the ALLOW option) to the correct carriers.</p>

Carrier Selection (continued)

Datafilling table CDCSOPTS

Field	Subfield or refinement	Entry	Explanation and action
	WEIGHT	1 to 100	Weighted distribution value - The SUBST option randomly selects the substitution string (field DIGITS) based upon this weighted value. The higher the weight, the more often the substitution string is used. All iterations of this weighted value in this tuple must add up to 100.
GCACALL		Y or N	Global competitive access call. This field indicates this country direct call should be processed by GCA. Enter Y to indicate processing by GCA. Enter N for no GCA processing. When GCACALL = Y, the default CIC is selected based on the incoming trunk group in table TOPCATRK.

Datafill example for table CDCSOPTS

The following example shows sample datafill for table CDCSOPTS.

MAP display example for table CDCSOPTS

TERMZONE	ORIGCTRY	ORIGCARR	CDCSOPTS	GCACALL
BARBADOS	0	45	ALLOW	N
BARBADOS	000	45	BLOCK	N
CARIBBEAN	42	111	BLOCK	N
CARIBBEAN	896	3333	SUBST (092611 100)\$	N
JAMAICA	3	0000	SUBST (092241 70)(092341 30)\$	N

Datafilling table CDCSOPT2

Country Direct Carrier Select Options number 2 is a new table that assigns the outpulsing when selecting a terminating carrier for country direct calls. This table is accessed if a match is not found in table CDCSOPTS.

There are no datafill sequence requirements.

No cross-checks are provided for the ORIGCTRY and ORIGCARR fields since table CDCTRY and CDCARR use digit ranges and table CDCSOPT2 uses the actual country code and carrier ID.

Carrier Selection (continued)

The following table describes the fields.

Datafilling table CDCSOPT2

Field	Subfield or refinement	Entry	Explanation and action
ORIGCTRY		1 to 3 digits	<p>Originating country code. This is part of the key to the table. Enter an originating country code that is included in table CDCTRY field KEY.</p> <p>Three zeros indicate that no country digits were signalled. Whereas, one or two zeros indicate that one or two zeros (respectively) were signalled.</p>
ORIGCARR		1 to 4 digits	<p>Originating carrier code. This is part of the key to the table. Enter an originating carrier code that is included in table CDCARR field KEY.</p> <p>Four zeros indicate that no carrier digits were signalled. Whereas, one, two, or three zeros indicate that one, two, or three zeros (respectively) were signalled.</p>
CDCSOPT2		ALLOW or BLOCK	<p>Country direct carrier select options number 2. This field specifies outpulsing of the call. The values are:</p> <ul style="list-style-type: none"> • ALLOW - Outpulse the existing translations: network prefix + country code + national number. Note that there is no carrier code, so the following network node (international gateway) needs to perform translations to select the carrier. • BLOCK - Disallow outpulsing. A display is presented on the operator screen.

Datafill example for table CDCSOPT2

The following example shows sample datafill for table CDCSOPT2.

MAP display example for table CDCSOPT2

ORIGCTRY	ORIGCARR	CDCSOPT2
000	111	ALLOW
2	222	BLOCK
46	0000	ALLOW

Carrier Selection (continued)

Datafilling table INTCCFMT

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

Datafilling table INTCCFMT

Field	Subfield or refinement	Entry	Explanation and action
CARRSEL		N or Y	Carrier selection. This is a new field that enables calling card carrier selection. The values are Y (enable) and N (disable).

Datafill example for table INTCCFMT

The following example shows sample datafill for table INTCCFMT.

MAP display example for table INTCCFMT

ISSUERID	ACCSIDSIZ	PINSIZE	VAL14DIG	LUHNCHK	CARDBRND	CARRIDX
PARMSIDX	CARRSEL					
4251	10	4	N	Y	DEFAULTNAMEM	0
0		N				
5417	12	4	N	Y	DEFAULTNAMEM	0
0		Y				
8911	11	0	N	Y	DEFAULTNAMEM	0
0		Y				
5417	11	4	N	Y	DEFAULTNAMEM	0
0		N				

Datafilling table CCGRPING

Calling Card Grouping is a new table that assigns a group calling card (CC) issuer ID to a range of CC issuer IDs.

This table is optional and used for grouping when many calling card issuer IDs require the same carrier selection processing.

The operator entered CC issuer ID is used to index table CCGRPING to check for a range of CC issuer IDs. If the ID falls into a range in the table, the specified group CC issuer ID is used to access table CCCSOPTS. If no entry is found, the operator entered CC issuer ID is used to access table CCCSOPTS.

There are no datafill sequence requirements.

Carrier Selection (continued)

The following table describes the fields.

Datafilling table CCGRPING

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	Key. This field is the key to the table and indicates a range of CC issuer IDs that require the same carrier selection processing. This field consists of subfields FROMDIG and TODIG. This field is a digilator, similar to subtable STDPRTCT.STDPRT. Therefore, it is not possible to datafill two tuples that begin with the same digits and have different digit lengths. For example, tuples 23 23 and 231 231 cannot be used in the same table.
	FROMDIG	4 to 7 digits	From digits. Enter the starting number of the range of the CC issuer IDs. The MAP display shows up to 18 digits; however, only the indicated entries are allowed.
	TODIG	4 to 7 digits	To digits. Enter the ending number of the range of the CC issuer IDs. The MAP display shows up to 18 digits; however, only the indicated entries are allowed.
ISSUERID		4 to 7 digits	Group CC issuer ID. The MAP display shows up to 18 digits; however, only the indicated entries are allowed.

Datafill example for table CCGRPING

The following example shows sample datafill for table CCGRPING.

MAP display example for table CCGRPING

KEY	ISSUERID
891333 891977	891333
892222 892956	891444
898555 899555	891555

Carrier Selection (continued)

Datafilling table CCCSOPTS

Calling Card Carrier Select Options is a new table that specifies outpulsing for calling card (CC) calls when selecting a carrier. This table is accessed with the TOPSZONE from table TOPSZONE and CC issuer ID.

There are no datafill sequence requirements.

The following table describes the fields.

Datafilling table CDCSOPTS

Field	Subfield or refinement	Entry	Explanation and action
TERMZONE		name from table TOPSZONE	Terminating zone. This is part of the key to the table. Enter a terminating zone name defined in table TOPSZONE.
ISSUERID		4 to 7 digits	CC issuer identification number. This is part of the key to the table. Table CCGRPING may be used to map a range of IDs to a group ID, but is not necessary. If table CCGRPING is not used, the operator entered CC issuer ID is used to index this field.
CCCSOPTS		ALLOW, BLOCK, or SUBST (1-8 digits, 1-100 weighted distribution value)	Country direct carrier select options. This field indicates handling of the call. The values are: <ul style="list-style-type: none"> ALLOW - Outpulse the existing translations: network prefix + country code + national number. Note that there is no carrier code, so the following network node (international gateway) needs to perform translations to select the carrier. BLOCK - Disallow outpulsing. A display is presented on the operator screen. SUBST - Replace the network prefix and country code as determined by translation tables CCTR and CTCODE. Datafill refinement VECTOR.
	VECTOR	see subfields	Vector. This refinement is valid only when field CCCSOPTS = SUBST. This refinement consists of subfields DIGITS and WEIGHT. Up to 16 iterations of this refinement can be entered. Repeated substitution strings are allowed.

Carrier Selection (continued)**Datafilling table CDCSOPTS**

Field	Subfield or refinement	Entry	Explanation and action
	DIGITS	1 to 8 digits	Digits for substitution - This user defined value replaces the network prefix and country code. This value may contain a routing prefix, carrier code, service code, and so forth. The national number remains intact at all times. Thus, the substitution string and called national number are outpulsed. The substitution string plus national number must be 18 digits or less; otherwise, the national number is truncated and the call does not complete.
	WEIGHT	1 to 100	Weighted distribution value - The SUBST option randomly selects the substitution string (field DIGITS) based upon this weighted value. The higher the weight, the more often the substitution string is used. All iterations of this weighted value in this tuple must add up to 100.

Datafill example for table CCCSOPTS

The following example shows sample datafill for table CCCSOPTS.

MAP display example for table CCCSOPTS

TERMZONE	ISSUERID	CCCSOPTS
CARIBBEAN	5417	ALLOW
CARIBBEAN	891444	BLOCK
BARBADOS	8911	SUBST (092611 100)\$

Carrier Selection (continued)**Datafilling table TOPSPARM**

The following table shows the parameters specific to Carrier Selection for table TOPSPARM.

Datafilling table TOPSPARM

Field PARMNAME	Field PARMVAL	Explanation and action
CC_CARRIER_SELECT_DEFAULT	ALLOW or BLOCK	<p>This parameter determines default outpulsing of calling card calls when selecting a terminating carrier. This parameter is used if a match is not found in table CCCSOPTS. The values are:</p> <ul style="list-style-type: none"> • ALLOW - Outpulse the existing translations: network prefix + country code + national number. Note that there is no carrier code, so the following network node (international gateway) needs to perform translations to select the carrier. • BLOCK - Disallow outpulsing. A display is presented on the operator screen. <p>The default is ALLOW.</p>

Carrier Selection (continued)

Datafilling table TOPSPARM

Field PARMNAME	Field PARMVAL	Explanation and action
CC_CARRIER_SELECT_ENABLE	Y or N	<p>This parameter enables calling card carrier selection. The values are Y (enable) and N (disable). This functionality introduces a serious operator outpulsing restriction; therefore, this parameter is required to limit the application of this restriction. The restriction is that an operator is blocked from outpulsing an outbound call until a valid billing method is selected. This restriction is enforced when this parameter is activated and the called number is foreign.</p> <p>The default is N.</p>
CDIR_CARRIER_SELECT_DEFAULT	ALLOW or BLOCK	<p>This parameter determines default outpulsing of country direct calls when selecting a terminating carrier. This parameter is used if a match is not found in either table CDCSOPTS nor CDCSOPT2. The values are:</p> <ul style="list-style-type: none"> • ALLOW - Outpulse the existing translations: network prefix + country code + national number. Note that there is no carrier code, so the following network node (international gateway) needs to perform translations to select the carrier. • BLOCK - Disallow outpulsing. A display is presented on the operator screen. <p>The default is ALLOW.</p>

Datafill example for table TOPSPARM

The following example shows sample datafill for table TOPSPARM.

MAP display example for table TOPSPARM

PARMNAME	PARMVAL
CC_CARRIER_SELECT_DEFAULT	ALLOW
CC_CARRIER_SELECT_ENABLE	Y
CDIR_CARRIER_SELECT_DEFAULT	ALLOW

Translation verification tools

Carrier Selection does not use translation verification tools.

Carrier Selection (end)

SERVORD

Carrier Selection does not use SERVORD.

Code Removal of TOPS IV

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS13 and up

TOPS13 introduced Code Removal of TOPS IV.

Requirements

To operate, Code Removal of TOPS IV requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This feature removes the TOPS Single Purpose (SP) terminal functionality. The TOPS SP is also known as TOPS IV or TOPS 4, and also includes TOPS III or TOPS 3.

This functionality consists of the feature as follows:

Feature number	Feature name
A59012553	EOL of TOPS SP Terminals

Operation

The EOL notification upon usage of this functionality has been in place since TOPS12 (or earlier if patched) by feature 59006865 in functionality MD code Removal and ReEngineering, OSB00101.

It is assumed that all offices have converted to supported terminal types (TOPS MP, TOPS BP, or a TOPS OPP-based terminal) prior to upgrading to TOPS13 or higher. All TOPS SP datafill on a pre-TOPS13 switch is dropped upon a one night process (ONP) to a TOPS13 or higher load. A switch using TOPS SP terminals must not upgrade to TOPS13 or higher without first converting completely to supported terminal types.

EOL Notification

This feature also designates additional functionality as scheduled for removal in TOPS16. (See TOPS12 feature 59006865 for details on the EOL

Code Removal of TOPS IV (continued)

Notification process.) The following areas of functionality are scheduled for EOL in the TOPS16 release:

- BP terminal (The TOPS BP is also known as AOSS, MPX-AOSS, or just MPX (but not MPX-IWS)).
- SA/IC position
- IBM-DA protocol
- Services database (The Services Database (SDB) was only used by Canadian customers while transitioning to CCS7.)
- TOPS OC via DCM

EOL of TOPS ACD (continued from TOPS12)

This feature also follows up on the TOS12 feature 59006865 removal of TOPS ACD by removing some additional parameters that were determined to be ACD-specific too late in TOPS12 to remove them at that time.

Operational measurements (OMs)

The following OMs are deleted since they are EOL of TOPS ACD:

- OGTSP
- OGTMP
- TOPSOCPS
- TOPSQS

OM group TOPSPSZ is not pegged, starting in TOPS12, and scheduled for removal in TOPS14.

Logs

Log TEOL100 is changed by the addition of the TOPS16 schedule, indicated above. This log lists areas of functionality used in the previous week that are scheduled for removal.

Translations table flow

Code Removal of TOPS IV does not have a translations table flow.

Limitations and restrictions

Code Removal of TOPS IV has no limitations or restrictions.

Interactions

Code Removal of TOPS IV does not interact with other functionalities.

Code Removal of TOPS IV (continued)

Activation and deactivation by the user

Code Removal of TOPS IV does not require activation or deactivation by the user.

Billing

Code Removal of TOPS IV does not generate billing records or changes.

Station Message Detail Recording

Code Removal of TOPS IV does not require Station Message Detail Recording.

Office parameters used by Code Removal of TOPS IV

The table that follows lists the office parameters used by Code Removal of TOPS IV. For additional information about office parameters, refer to the *Office Parameters Reference Manual*.

Office parameters used by Code Removal of TOPS IV

Table name	Parameter name	Explanation and action
OFCENG	TOPS_MFADS_PERIOD	This parameter is deleted.
OFCENG	TOPS_OCCUPANCY_CALC_METHOD	This parameter is deleted.
OFCENG	TOPS_STATSPAC_PERIOD	This parameter is deleted.
OFCENG	TOPS_MFADS_POLLING_ID	This parameter is deleted.
OFCENG	TOPS_STATSPAC_POLLING_ID	This parameter is deleted.
OFCENG	TOPS_ZERO_FB_REG	This parameter is deleted.

Datafill sequence

The table that follows lists the tables that require datafill to put Code Removal of TOPS IV into operation. You must enter data into the table in this order.

Datafill requirements for Code Removal of TOPS IV

Table	Purpose of table
TOPSPOS	TOPS Positions defines characteristics of operator positions.
TOPSDEV	TOPS Devices lists devices in the TOPS office that have trunk circuits.

Code Removal of TOPS IV (continued)

Datafill requirements for Code Removal of TOPS IV

Table	Purpose of table
TOPSPARM	TOPS parameters contains TOPS office wide parameters.
VSNOPT	Voice Service Node Options contains parameters required by the TOPS automated alternate billing service (AABS) using the voice service node (VSN).

Datafill related to Code Removal of TOPS IV for table TOPSPOS

The table that follows provides the datafill related to Code Removal of TOPS IV for table TOPSPOS. This table includes only those fields that apply directly to Code Removal of TOPS IV.

Datafill related to table TOPSPOS

Field	Subfield	Entry	Explanation and action
DATAPATH		see subfield DATATYPE.	The changes by this feature affect subfields of DATAPATH.
	DATATYPE	DMODEM, TMS	Datatype. The change affects both DMODEM and TMS
	POSTYPE	MP, SP, BP	Position type. Value SP is no longer valid. This change affects both DMODEM and TMS tuples.

Datafill example for table TOPSPOS

The figure that follows shows sample datafill for table TOPSPOS.

MAP example for table TOPSPOS

POSNO	VCCKT	VCPDGRP	CARDCODE	DATAPATH	POSAREA
100	TMS 1 2 3	NPDGP	DS1SIG	TMS MP OPP 1 0	OPR 6 50
570	TM8 8 20	NPDGP	2X88AA	DMODEM MP ASCII TM8 8 21 NPDGP BELL202	OPR 6 80

Code Removal of TOPS IV (continued)

Tuples with POSTYPE = SP are removed during an ONP. Tuples with POSTYPE = BP or MP are left unchanged

Datafill related to Code Removal of TOPS IV for table TOPSDEV

The table that follows provides the datafill related to Code Removal of TOPS IV for table TOPSDEV. This table includes only those fields that apply directly to Code Removal of TOPS IV.

Datafill related to table TOPSDEV

Field	Subfield	Entry	Explanation and action
	DEVSEL	FMCRT	Device select. This feature changes the subfield for an FMCRT.
	DATATYPE	DMODEM, TMS, EIULAN	Data type. The change applies to DMODEM and TMS.
	POSTYPE	SP, MP, BP	Position type. This field only appears for DMODEM and TMS. Value SP is no longer valid.

Datafill example for table TOPSDEV

The figure that follows shows sample datafill for table TOPSDEV.

MAP example for table TOPSDEV

DEVNO	DEVTYPE
30	FMCRT DMODEM MP ASCII TM8 2X72AC
100	FMCRT TMS MP ASCII 5 38

Code Removal of TOPS IV (continued)

Datafill related to Code Removal of TOPS IV for table TOPSPARM

The table that follows provides the datafill related to Code Removal of TOPS IV for table TOPSPARM. This table includes only those fields that apply directly to Code Removal of TOPS IV.

Datafill related to table TOPSPARM

Parameter name	Explanation and action
ARAN_AUTH_DISPLAY	This parameter is deleted.
BLOCK_SP_PO_PB_CHARS	This parameter is deleted.
INSTITUTION_DISPLAY	This parameter is deleted.
LANG_DIGIT_INTERPRETATION	This parameter is deleted.
NON_PAYMENT_SCREEN_DISPLAY	This parameter is deleted.
QCD_SCREEN_DISPLAY	This parameter is deleted.
QCQ_SCREEN_DISPLAY	This parameter is deleted.
QCT_25_PCT_SCREEN_DISPLAY	This parameter is deleted.
QCW_SCREEN_DISPLAY	This parameter is deleted.
QUERY_FAIL_SCREEN_DISPLAY	This parameter is deleted.
SERV_DENIAL_SCREEN_DISPLAY	This parameter is deleted.
SERV_RESTRICTION_SCREEN_DISPLAY	This parameter is deleted.
SP_GEN_AMA_DISPLAY	This parameter is deleted.
SPLIT_CLG_LOOP1_DISPLAY	This parameter is deleted.
SPLIT_CLG_LOOP2_DISPLAY	This parameter is deleted.
THRESHOLD_EXCDED_SCREEN_DISPLAY	This parameter is deleted.

Datafill example for table TOPSPARM

The figure that follows shows sample datafill for table TOPSPARM.

Code Removal of TOPS IV (end)

MAP example for table TOPSPARM

PARMNAME	PARMVAL
ADASPLUS_ARU_WINK	N

Datafill related to Code Removal of TOPS IV for table VSNOPT

The table that follows provides the datafill related to Code Removal of TOPS IV for table VSNOPT. This table includes only those fields that apply directly to Code Removal of TOPS IV.

Datafill related to table VSNOPT

Parameter name	Explanation and action
HANDOFF_ALLOWED_DISPLAY	This parameter is deleted.
HANDOFF_VALIDATION_DISPLAY	This parameter is deleted.

Datafill example for table VSNOPT

The figure that follows shows sample datafill for table VSNOPT.

MAP example for table VSNOPT

PARM	VALUE
ONHOOK_RECOVER_TIMER	5

Translation verification tools

Code Removal of TOPS IV does not use translation verification tools.

SERVORD

Code Removal of TOPS IV does not use the Service Order System (SERVORD).

Directory Assistance/Toll Branding

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

BCS29 and up

Prerequisites

To operate, Directory Assistance/Toll Branding has the following prerequisites:

- BAS Generic, BAS00003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y

Description

This functionality is provided by the following features:

Feature number	Feature name
AF2019	Directory Assistance/Toll Branding

The TOPS Directory Assistance / Toll Branding feature allows Operating Companies to optionally connect customer definable announcements to directory assistance or toll callers prior to placing them in a queue or connecting them to an available operator or automated operator system.

Operation

TOPS Directory Assistance / Toll Branding provides the functional description and interface message specifications used to optionally connect customer definable announcements to directory assistance or toll callers.

Background

When a subscriber places an operator assisted 0-, 0+ or 1+ call or a directory assisted call, the caller is either connected to an operator, placed in a queue, or connected to an automated system such as Mechanized Calling Card Service (MCCS), Automatic Coin Toll Service (ACTS), or Automated Alternate Billing Service (AABS). Operator services are provided by the Operating Company for its own subscribers and the Operating Company may provide them for contract customers such as interLATA carriers and Non-Bell Exchange Companies (NBECs). A NBEC is any other telephone company providing local and intraLATA service to its subscribers.

Directory Assistance/Toll Branding (continued)

Due to the competitiveness of today's market and potential regulatory pressure, Operating Companies desire to inform the caller the name of the company completing the call. It is desirable to brand the call to the subscriber without requiring operator time to do so. The Operating Company may brand calls from their subscribers by company name and/or prepare the caller for an operator prior to connecting them to an operator or placing the call in queue pending an available operator. This feature also enhances the Operating Company's ability to sell services to interLATA carriers and NBECs by giving them the capability of branding calls based upon the company for whom they are providing operator service.

Phrases such as 'Thank you for using NCT Directory Assistance, an operator will be with you momentarily' brand the type of call as well as the company's name for whom the service is being provided. In addition, phrases such as 'Please have your billing information ready for the operator when the operator answers', assists in speeding call handling, improving service and AWT.

Automated Operator Systems

This feature may optionally be applied to automated operator systems such as MCCS, ACTS, or AABS. The call is branded after collecting of all digits and prior to being connected to the automated system. Table BRANDOPT, indicates which, if any, calls destined for an automated operator system are branded prior to the initial contact with the operator or automated system. The choice of which calls to brand is made on a trunk group basis. For example, calls arriving on the incoming trunk group ICTOPS may have only MCCS and operator calls branded, but not ACTS or AABS.

If branding is not in effect for a particular automated operator system on the incoming trunk group but is in effect for operator calls and the call is transferred from the automated system to an operator, a branding announcement is not played prior to the call being handled by the automated system but is played prior to connecting the subscriber to an operator.

Inwards Calls

Inwards calls are those from distant operators who dialed a special routing code to reach an operator in this operator service office. The routing codes are ones from the following list and datafilled in table TOPS: 121, 131, 141, 151, 161, 171, 181, 191, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, and 1162. Most requests from distant operators are to assist a calling party in their operator service office control area with reaching a called party in this operator service office control area.

The decision to brand inwards calls is determined by a new office parameter, TOPS_BRAND_INWARDS. If the office parameter is set to yes (Y) a branding announcement is played prior to connecting to an operator. The

Directory Assistance/Toll Branding (continued)

company branded is always the name of Operating Company providing the operator services. If TOPS_BRAND_INWARDS is set to (N) no branding announcement is played prior to connecting to an operator.

Overview

When a call arrives on a DMS-200/TOPS switch the called digits are received and translated. If the call is 0-, 0+, or 1+ coin or hotel an operator is required to assist in the call. If available, an automated operator system may handle the call. If the call is destined for an operator or an automated operator system a customized branding announcement may be played to the calling party prior to being connected to an operator or operator system. This determination is made by either office parameters TOPS_BRAND_INWARDS and TOPS_BRAND_OFFICE or datafill in table BRANDOPT.

To brand the call with a customized announcement, the CLLI name of the appropriate announcement is needed. Announcements are known by a phrase name at recording time and a CLLI is associated with the phrase name by datafill in table DRAMTRK. To obtain the announcement trunk CLLI for a particular company's branding announcement during a call, table BRANDANN is accessed. Table BRANDANN is indexed by either code 0000 for the Operating Company providing the operator services, the Carrier Access Code prefixed with a zero if the call is interLATA, or the NBEC code.

For interLATA carriers, the 3-digit carrier access code datafilled in table TOPEACAR, is acquired and prefixed with a zero (0). For carrier calls, this feature applies to only those carriers that are marked as 'SERV' in table TOPEACAR.

For a non-carrier call arriving on a TOPS trunk, table BRANDOPT determines whether to look further in table NBECODE, obtain the company code, or use the default code datafilled in table TRKGRP (type TOPS), field NBECODE. If the call is ONI or ANI fail, the TOPS trunk group default code is used.

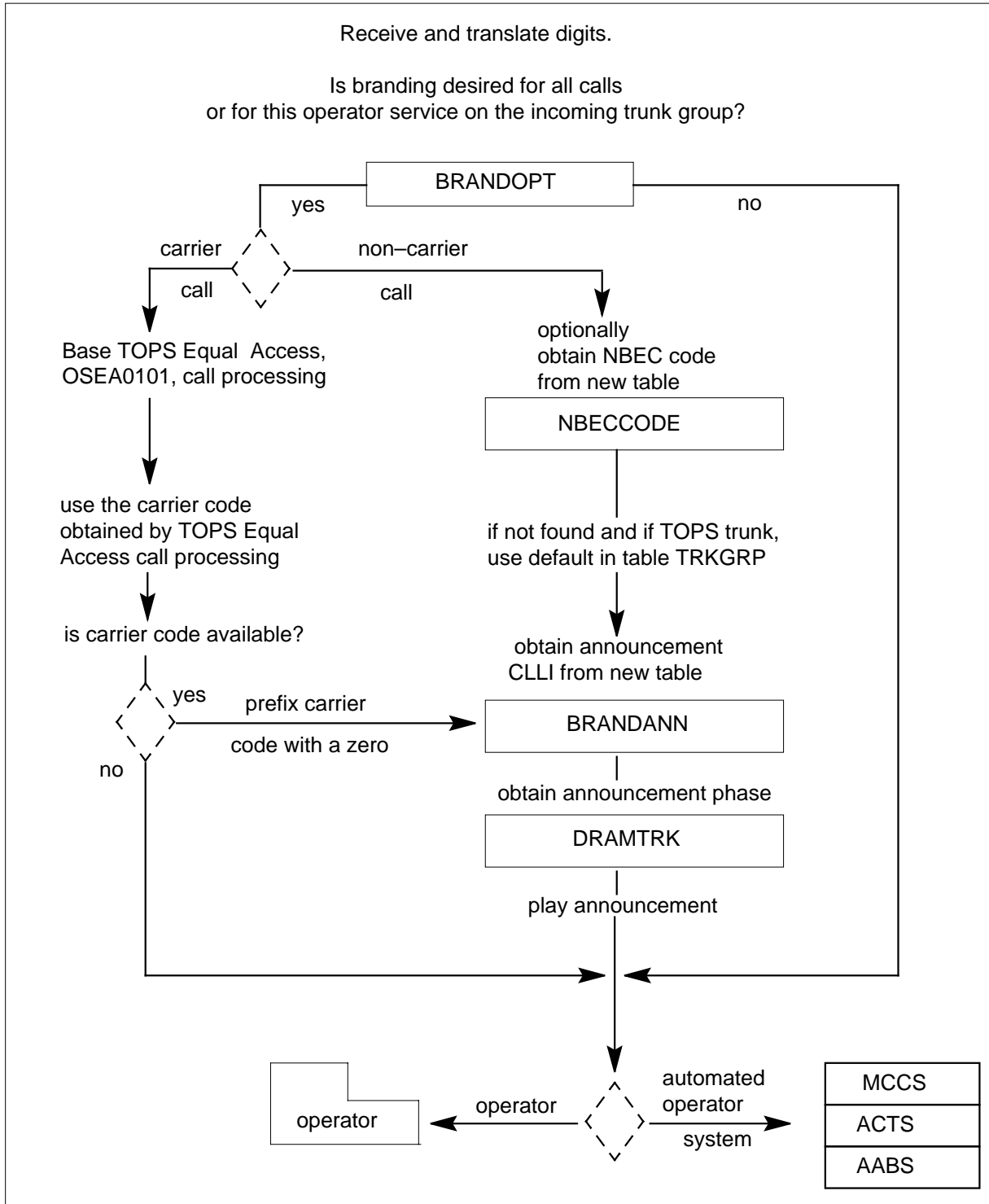
Once the appropriate announcement CLLI name is obtained through table BRANDANN, it accesses table DRAMTRK and requests the announcement phrase, datafilled against the announcement CLLI name, be played to the subscriber. If the company code is not datafilled in table BRANDANN, a "bad datafill" log is produced and the call is not branded.

Two CLLI names may be provided for each company in table BRANDANN, one for DA and one for TA. The announcements may differ in content and only one or both may be provided.

The following flowchart shows in what order data tables are accessed and the decisions made during the branding process.

Directory Assistance/Toll Branding (continued)

Branding Process Flow Chart



Directory Assistance/Toll Branding (continued)

ANI Fail and ONI Calls

For calls arriving on TOPS type trunk groups, the calling number determines the NBEC. However, the calling number is not provided on ANI-fail or ONI calls. Therefore, for intraLATA calls, table NBECODE cannot be accessed since the key to the table consists of a calling number. In order to provide some information to use in branding the call, field NBECODE in table TRKGRP for TOPS trunk groups provides a default company code.

The following is the criteria for branding a call:

- If a call arrives on a TOPS trunk group as ONI or ANI fail, the default company code in table TRKGRP is used.
- If a call arrives on an ATC trunk, the carrier code datafilled in table TRKGRP is used for branding.
- If the call arrives on an INTERTOLL trunk, the Operating Company code of 0000 indexes into table BRANDANN and the announcement associated with this code is played to the calling party.

How to Record a Customized Announcement

Announcements are recorded and played by a Digital Recorded Announcement Machine (DRAM). The number of customized announcements possible is determined by the number of NT1X79AA EEPROM cards installed. Each card has a recording capacity of 31.74 seconds. Diagnostics must be run on each card before it can be used.

To record announcements, perform the following steps at the Maintenance and Administration Position (MAP).

- 1 Ensure the NT1X79AA card is installed properly and diagnostics have been run.
- 2 Datafill table DRAMS. This gives information on the card type and location.
For example:

MAP display example for table DRAMS

DRAMKEY	TMTYPE	TMNO	TMCKT	CARDCODE	CARDINFO

0	2	MTM	7	3	1X79AA EEPROM 1\$

- 3 Determine the text of the announcement and divide it into phrases. Use phrases already existing in the system to maintain the same voice. A single phrase cannot last longer than 18 seconds, the total announcement of phrase combinations cannot last longer than 31.74 seconds.

Directory Assistance/Toll Branding (continued)

- 4 Name each phrase for entry into table DRAMTRK. The name must be unique because all DRAMs in a given office have access to it. Use appropriate DRAMREC commands to determine whether there are any phrase-name conflicts.
- 5 Decide on which DRAM your announcement will be located and how long it will be.
- 6 Datafill the CLLI for the announcement trunk in table CLLI.
For example:

MAP display example for table CLLI

CLLI	TRKGRPSIZ	ADMININF
WESTEXTABRND	<#>	Westex_TA_Branding
NCTDABRND	<#>	NCT_DA_Branding

- 7 Ensure the announcement trunk is added to table ANNS.
For example:

MAP display example for table ANNS

CLLI	ANTYPE	TRAFSNO	MAXCON	CYTIME	MAXCY
WESTEXTABRND	STND	31	30	8	1
NCTDABRND	STND	31	30	5	1

- 8 Add the announcement member to table ANNMEMS. Up to eight trunk circuits may be datafilled.
For example:

MAP display example for table ANNMEMS

ANNMEMBER	HDWTYPE	CARD	TRACKLIST
WESTEXTABRND 1	DRAM	DRA	0 MTM 7 6 \$
NCTDABRND 4	DRAM	DRA	0 MTM 7 7 \$

- 9 Make the phrase data available by using the DRAM recording facility:
 1. Connect the headset to the communications module and to the HSET trunk.
 2. At the MAP enter the DRAM command:
> DRAMREC

Directory Assistance/Toll Branding (continued)

3. Within DRAMREC enter the CONNECT command:

```
> CONNECT <DRAM #> <trunkCLLI> <member>
```

 For example:

```
> CONNECT 0 HSET 0
```
4. Within DRAMREC proceed to record the announcement:

```
> RECORD <phrase name> <length> PAD/NOPAD
```

 For example:

```
> RECORD WESTEXPHRS3 4 NOPAD
```

 The phrase name is arbitrary but must be unique among all DRAMs in each switch. The phrase name is later datafilled in table DRAMTRK against the announcement trunk.
5. After three prompt tones sound, make the announcement by speaking clearly into the mouth piece. Three more prompt tones indicate when the assigned time limit is reached.
6. To replay the announcement through the headset, enter:

```
> PLAYBACK <DRAM #> <phrase name>
```

 For example:

```
> PLAYBACK 0 WESTEXPHRS3
```
7. Before quitting DRAMREC print a display of the announcements using the DISPLAY command:

```
> DISPLAY <DRAM #> <card>
```

 For example:

```
>DISPLAY 0 2
```

 This command displays the speech memory contents of a specific card of a specific DRAM (0).
8. File the printouts for future use upon dump and restore.



DANGER

A printed copy of the announcements recorded during a BCS release is critical to accessing those announcements after application of a new BCS release. The dump and restore procedures for customized announcements depend upon having this information available. Please refer to the dump and restore procedures given below.

Dump and Restore Procedures for Customized Announcements

The dump and restore procedures are performed on the MAP in four steps:

- 1** Ensure the NT1X79AA DRAM card is datafilled in table DRAMS.

Directory Assistance/Toll Branding (continued)

- 2 At the MAP, enter the DRAMREC command. Display the DRAM card on which the customized announcements reside.
- 3 If customized announcements are shown, verify them by using the PLAYBACK command.
- 4 If the announcements are not shown:
 1. Enter the ASSIGN command using the data saved from the display list when the announcement was first recorded.
 2. Connect an HSET and use the PLAYBACK command to play back the announcement.
 3. If the announcements are still not present, re-record them.

No Branding Conditions

A branding announcement is not played on a call for any of the following conditions:

- A "no" is datafilled in table BRANDANN against the company's CARNBEC code for the TA announcement (TAANN) if the call type is TA, or for the DA announcement (DAANN) if the call type is DA.
- The company's code is not datafilled in table BRANDANN and either the company code provided in table TRKGRP for TOPS or ATC trunks (or the Operating Company providing the operator service for INTERTOLL trunks) is also not datafilled or the company has "no" datafilled in table BRANDANN for the appropriate call type.
- Datafill for the indicated CLLI is not datafilled in table DRAMTRK.
- No DRAM circuit is available to play the branding announcement.
- Directory Assistance/Toll branding is not in effect for the office, trunk group or call type (i.e., MCCS, ACTS, AABS, operator).

Whenever one of these conditions occurs the branding announcement is not played and the call is immediately connected to an operator, placed in queue pending an available operator, or sent to an automated operator system. An OM is pegged to record this occurrence.

Optionality

In addition, office parameter TOPS_BRAND_OFFICE, located in table OFCENG, determines on an office-wide basis which operator systems (OPERATOR, MCCS, ACTS, or AABS) are to receive branding announcements for calls arriving on this feature's supported trunk groups. The feature may be activated immediately for all calls of a certain operator system upon including the system in TOPS_BRAND_OFFICE.

Directory Assistance/Toll Branding (continued)

For example, to turn on branding for all ACTS calls arriving over TOPS, ATC, or INTERTOLL trunks, include 'ACTS' in office parameter TOPS_BRAND_OFFICE.

To hear the branding announcements, proper datafill as described above must be present and the announcements recorded on DRAM cards. Branding does not apply to certain kinds of calls or trunk groups. Please refer to the Limitations and Restrictions section located in this document for details.

This feature may be introduced on a trunk group basis and may be turned on selectively for operator and various automated operator systems by trunk group. This is accomplished by table BRANDOPT, which is indexed by trunk CLLI. Table BRANDOPT has a data field which is a set of operator system types for which branding is in effect. This set consists of OPERATOR, MCCS, ACTS, and AABS. The table is accessed only if the office parameter TOPS_BRAND_OFFICE does not include the operator system for which the call is destined. If the incoming trunk group is not datafilled in table BRANDOPT and TOPS_BRAND_OFFICE does not include the operator system for which the call is destined, the call is not branded by a DRAM announcement and is presented to the operator or an automated operator system immediately.

If the office parameter TOPS_BRAND_OFFICE does not include the operator system in its set but the trunk group is datafilled in table BRANDOPT, we look at the operator types datafilled against it to determine whether or not to play a branding announcement. For example, a call arrives on trunk group ICTOPSTK. Office parameter TOPS_BRAND_OFFICE contains only OPERATOR; ICTOPSTK is datafilled in table BRANDOPT with OPERATOR, and MCCS datafilled against it. The call is 0+ and is destined for MCCS handling. Because MCCS calls are branded for trunk group ICTOPSTK, the branding announcement is played prior to sending the call to MCCS.

Therefore, table BRANDOPT, which determines whether to play an announcement, is accessed only if office parameter TOPS_BRAND_OFFICE does not include the call destination operator system. This indicates that branding is not in effect for the office for all calls of that operator system type.

Table BRANDOPT, field NBECLOOK, indicates whether or not to look in table NBECODE to obtain the company code or to use the trunk group default. A "Y" means look in table NBECODE and "N" means use the trunk group default. ANI fail and ONI calls always use the trunk group default since the calling number is not provided to access table NBECODE.

Directory Assistance/Toll Branding (continued)

Operator Display Branding Message Control

Office parameter TOPS_BRAND_DISPLAY controls a message display to the operator that the calling party has, or has not, heard a branding announcement prior to being connected to the operator. This parameter has either value DISPLAY_WHEN_BRANDED or DISPLAY_WHEN_NOT_BRANDED.

If the parameter is set to DISPLAY_WHEN_BRANDED and the calling party has heard a branding announcement, a symbol (tape icon if TOPS MP, or letter "B" if TOPS-04) is displayed. This indicates to the operator that a branding announcement has already been played and the operator should not announce the name of the company they work for to the calling party. If no branding announcement was played, nothing is displayed on the operator's screen when the parameter is set to DISPLAY_WHEN_BRANDED.

If the parameter is set to DISPLAY_WHEN_NOT_BRANDED, a different symbol (operator icon if TOPS MP, or letter "A" if TOPS-04) is displayed when the call could not be branded.

The operator should proceed according to local practice if no indication is displayed on the screen.

The display indicates the exception case to the operator. If most of the calls in the office, both automated and non-automated, are branded, the TOPS_BRAND_DISPLAY should be set to DISPLAY_WHEN_NOT_BRANDED. If branding is turned on for selected trunk groups only and the majority of calls are not branded, then TOPS_BRAND_DISPLAY should be set to DISPLAY_WHEN_BRANDED.

Feature Activation and Deactivation

TOPS Directory Assistance / Toll Branding is controlled by office parameters TOPS_BRAND_INWARDS and TOPS_BRAND_OFFICE; and table BRANDOPT

Datafill examples

The following datafill is assumed for tables BRANDOPT, NBECCODE, BRANDANN, and DRAMTRK. The announcements are assumed to have been recorded as follows:

- Phrase name BLUBONPHRS1: "Bluebonnet Bell, an operator will assist you in a moment."
- Phrase name PINWOODPHRS2: "Welcome to Piney Woods operator services."

Directory Assistance/Toll Branding (continued)

- Phrase name WESTEXPHRS3: "Welcome to Westtex operator services. Please have your billing information ready for the operator when the operator answers."
- Phrase name NCTDAPHRS3: "Welcome to NCT Directory Assistance, an operator will be with you momentarily."
- Phrase name PINWDDAPHRS2: "Welcome to Piney Woods Directory Assistance. Please give the operator the city name when the operator answers."
- Phrase name BIGBNDPHRSTA: "A BigBendTel operator will assist you momentarily."

The following example shows sample datafill for table NBECCODE.

MAP display example for table BRANDOPT

ICTRKGRP	OPERSYS	NBECLOOK
DALICTOPS	OPERATOR ACTS	Y
ICTOPTRK	OPERATOR MCCS ACTS	Y

MAP display example for table NBECCODE

CLGDIGS	NBEC
915555	1386
9157	1142
214	2547
817	2547

MAP display example for table BRANDANN

CARNBEC	TAANN	TACLLI	DAANN	DACLLI
0000 *	Y	BLUBONNETBEL	Y	BLUBONNETBEL
0221	N		Y	NCTDABRAND
1142	Y	WESTEXTEL	N	
1386	N		Y	BIGBENDBRAND
2547	Y	PINEYWOODSTA	Y	PINEYWOODSDA

* reserved for the Operating Company's use.

Directory Assistance/Toll Branding (continued)

MAP display example for table TRKGRP (TOPS)

All previous fields... NBECCODE	
. . .	1386
. . .	0000
. . .	0224
. . .	0000
. . .	0000

MAP display example for table ANNS

CLLI	ANTYPE	TRAFSNO	MAXCONN	CYTIME	MAXCYC
BLUBONNETBEL	STND	31	255	2	1
PINEYWOODSTA	STND	31	30	2	1
WESTTEXTEL	STND	31	30	5	1
NCTDABRAND	STND	31	255	3	1
PINEYWOODSDA	STND	31	30	6	1
BIGBENDBRAND	STND	31	30	2	1

MAP display example for table DRAMTRK

ANN	TRACK	PHRASELT
BLUBONNETBEL	1	BLUBONPHRS1 \$
PINEYWOODSTA	1	PINWOODPHRS2 \$
WESTTEXTEL	1	WESTEXPHRS3 \$
NCTDABRAND	1	NCTDAPHRS3 \$
PINEYWOODSDA	1	PINWDDAPHRS2 \$
BIGBENDBRAND	1	BIGBNDPHRSTA \$

Call Scenario One

Calling number 214-436-1234 dials '0'. Call arrives on the TOPS trunk group DALICTOPS. Translations and routing identifies the call as an operator assisted intraLATA call.

The office parameter TOPS_BRAND_OFFICE is set to "NONE". Check table BRANDOPT to see if an operator assisted call should be branded for trunk group DALICTOPS. The datafill indicates branding is desired for operator calls. Because the NBECLOOK field is "Y", check table NBECCODE to see if the call is from another telephone company receiving operator services. The calling number, 214436, is not found in table NBECCODE. The incoming

Directory Assistance/Toll Branding (continued)

trunk group is type TOPS; so use the default code datafilled in table TRKGRP, "0000".

Look in table BRANDANN for the announcement trunk CLLI name datafilled against code "0000". It is "BLUBONNETBEL" in field TACLLI.

MAP display example for table BRANDANN

CARNBEC	TAANN	TACLLI	DAANN	DACLLI
0000 *	Y	BLUBONNETBEL	Y	BLUBONNETBEL
* reserved for the Operating Company's use.				

MAP display example for table DRAMTRK

ANN	TRACK	PHRASELT	
BLUBONNETBEL	1	BLUBONPHRS1	\$

Call Scenario Two

Calling number 704-234-1234 dials 512-555-1212. The calling party is pre-subscribed to NCT long distance company. The call is routed to the carrier first. However, NCT has contracted with the Operating Company for operator services. Therefore the call is routed to the Operating Company and arrives on the ATC trunk group NCTICATC. After arriving at the TOPS switch, translations and routing identifies the call as an interLATA Directory Assisted call for the interLATA carrier 221 (NCT).

Office parameter TOPS_BRAND_OFFICE is set to "OPERATOR" indicating all operator calls receive a branding announcement. Table BRANDOPT is used only if the TOPS_BRAND_OFFICE does not include the operator system for which the call is destined. To determine which branding announcement to play, first prefix the carrier access code "221" with a zero and use the resulting 4-digit code to index table BRANDANN. Because the call type is DA, use the DAANN data field in table BRANDANN to see if the company completing the call desires branding for DA calls. In this example, the datafill indicates "Yes" so obtain the CLLI name from the DACLLI field.

Directory Assistance/Toll Branding (continued)

MAP display example for table BRANDANN

CARNBEC	TAANN	TACLLI	DAANN	DACLLI
0221	N			Y NCTDABRAND

MAP display example for table DRAMTRK

ANN	TRACK	PHRASELT
NCTDABRAND	1	NCTDAPHRS3 \$

The subscriber then hears phrase name "NCTDAPHRS3", "Welcome to NCT Directory Assistance, an operator will be with you momentarily."

When the branding announcement is complete, the subscriber is connected to a DA operator or placed in queue for the next available operator.

Call Scenario Three

Calling number 915-726-1234 dials 0-582-4321. Translations and routing identifies the call as an operator assisted intraLATA call, a candidate for MCCS handling. The call arrives on trunk group ICTOPTRK.

The office parameter TOPS_BRAND_OFFICE does not include MCCS, but datafill in table BRANDOPT indicates branding is in effect for trunk group ICTOPTRK for MCCS.

To determine which branding announcement to play, first look in table NBECCODE. Identify the company code with which to brand the call.

MAP display example for table NBECCODE

CLGDIGS	NBEC
9157	1142

Use the NBEC code in table BRANDANN to identify the announcement CLLI. Then determine the announcement phrase from table DRAMTRK. Because this example is a type TA call, use the TAANN data field in table BRANDANN for deciding whether the company completing the call desires branding. In the example, the datafill indicates yes ("Y") and the CLLI is WESTTEXTTEL meaning Operating Company Westtex wants its TA calls branded.

Directory Assistance/Toll Branding (continued)

MAP display example for table BRANDANN

CARNBEC	TAANN	TACLLI	DAANN	DACLLI
1142	Y	WESTEXTEL		N

Identify the name of the announcement phrase using the CLLI in table DRAMTRK:

MAP display example for table DRAMTRK

ANN	TRACK	PHRASELT	
WESTEXTEL	1	WESTEXPHRS3	\$

The subscriber hears the phrase "WESTEXPHRS3", "Welcome to Westex operator services. Please have your billing information ready for the operator when the operator answers." After the branding announcement is complete, the subscriber is connected to MCCS. A tone or tone and announcement is generated indicating to the subscriber to enter a calling card number for billing. MCCS handles the call as described in package Exchange Alternate Billing Service (MCCS), ABS00101. If the subscriber requests an operator or times out before entering the calling card number, the subscriber is connected to an operator without playing another branding announcement.

If branding is not in effect for MCCS on trunk group ICTOPTRK but is in effect for operator handled calls, a branding announcement would not have been played prior to the call being handled by MCCS but would have been played before the operator connection. Determining the branding company is done the same way as described above.

Call Scenario Four

Calling number 512-231-1234 dials 0-573-4321. Translations and routing identifies the call as an operator assisted intraLATA call. The call arrives on trunk group TOPSTKIC.

The office parameter TOPS_BRAND_OFFICE is set to "NONE". Look in table BRANDOPT to determine if branding is in effect for trunk group TOPSTKIC.

Directory Assistance/Toll Branding (continued)

MAP display example for table BRANDOPT

ICTRKGRP	OPERSYS	NBECLOOK
Data not found for TOPSTKIC		

Datafill is absent for the incoming trunk group in table BRANDOPT. Processing continues without branding the call. The call is either sent to an operator, an automated operator system or placed in queue pending an available operator.

Call Scenario Five

Calling number 915-726-1234 dials 411. Translations and routing identifies the call as intraLATA Directory Assisted. The call arrives on trunk group ICTOPTRK. Office parameter TOPS_BRAND_OFFICE is set to "OPERATOR, MCCS, ACTS, AABS", indicating all operator type calls are branded.

ICTOPTRK is datafilled in table BRANDOPT. It is unnecessary to identify operator systems datafilled against the trunk group because the office parameter already indicates to brand the call. The NBECLOOK field determines the need to obtain the company code from table NBECCODE. Trunk group ICTOPTRK is set to "Y". Use the calling number to identify the company code from table NBECCODE with which to brand the call to the subscriber:

MAP display example for table NBECCODE

CLGDIGS	NBEC
9157	1142

Datafill in table NBECCODE indicates that the company represented by code 1142 brands the call to the subscriber.

Use the NBEC code in table BRANDANN for obtaining the announcement CLI for table DRAMTRK. The DAANN data field in table BRANDANN indicates if the company wants their DA calls branded. Field DAANN in this example is set to "N".

Directory Assistance/Toll Branding (continued)

MAP display example for table BRANDANN

CARNBEC	TAANN	TACLLI	DAANN	DACLLI
1142	Y	WESTEXTEL		N

This call is not branded. Immediately connect the subscriber to a DA operator or place the call in queue pending an available operator.

Translations table flow

The translations table flow is not provided for Directory Assistance/Toll Branding.

Limitations and restrictions

The following limitations and restrictions apply to Directory Assistance/Toll Branding:

- Company branding announcements are provided for calls arriving on TOPS, ATC, or INTERTOLL trunks only.
- A maximum of 200 entries may be made datafilled in table BRANDANN and a maximum of 2048 entries may be datafilled in table BRANDOPT. Table NBECODE is limited by digilator blocks.
- It is recommended that *all* announcements in an office be recorded in the same voice.
- Branding of operator calls does not apply to RONI and CAMA calls, intercept, recalls, or operator transfers. It also does not apply to calls over direct lines to TOPS.
- Calls arriving on an intertoll trunk may be branded with Operating Company announcements only. The reason for this is that a carrier code is not signalled or datafilled for intertoll trunks. Because ANI digits are not received on intertoll trunks, neither the carrier nor the NBEC can be determined.
- Recalls from a coin phone, time and charges, and sequence calls for MCCS are not branded.
- Flash supervision is not provided during the playing of an announcement. The subscriber must wait to be connected to an operator or flash hook after being connected to an automated operator system to reach an operator.

Interactions

The following paragraphs describe the interactions between Directory Assistance/Toll Branding and other functionalities.

Directory Assistance/Toll Branding (continued)

Interactions with existing features

There is no change to the functionality of existing features. This new feature can work in conjunction with all TOPS calls, except RONI, CAMA, intercept and recalls including OPERATOR, MCCS, AABS, and ACTS. Once it is determined the call is bound for an operator or an automated operator system, this feature determines if a branding announcement is to be played. If so, DRAM plays it to the calling party and then normal call processing resumes. If for any reason the announcement cannot be played, or if branding is not desired, then regular call processing continues.

Automated Call Handling Transferred to an Operator

There are certain points and situations during automated operator handling when a subscriber may be transferred to an operator.

Refer to the documentation in the following packages for a description of these cases:

- Exchange Alternate Billing Service (MCCS), ABS00101
- Automatic Coin Toll Service, ENSV0102
- Automated Alternate Billing Service, ABS00101

Office parameter TOPS_BRAND_OFFICE or datafill in table BRANDOPT allows the Operating Company to choose to brand a call prior to being handed to an automated operator system. If a call is branded prior to automated handling and the call is transferred to an operator, the call does not receive a second branding announcement.

If the office parameter TOPS_BRAND_OFFICE or datafill in table BRANDOPT indicates a call arriving on a particular trunk group does not receive a branding announcement, a branding announcement is played anyway if the call is transferred to an operator.

The following example shows sample datafill for table BRANDOPT office parameter TOPS_BRAND_OFFICE.

MAP display example for table BRANDOPT

ICTRKGRP	OPERSYS	NBECLOOK
FTWICTOPS	OPERATOR	Y
ICTOPTRK	OPERATOR MCCS AABS	Y

Scenario 1: A 0+ call arrives on trunk group ICTOPSTRK and is handled by MCCS. A branding announcement is played to the calling party prior to being

Directory Assistance/Toll Branding (continued)

connected to M CCS. The M CCS tone is then given but the calling party desires an operator and presses 0. The call is then transferred to an operator. Because the call has already been branded, a second branding announcement is not played even though datafill in table BRANDOPT indicates that operator calls on trunk group ICTOPSTRK are to be branded.

Scenario 2: A 0+ call arrives on trunk group FTWICTOPS and is handled by M CCS. Datafill in table BRANDOPT indicates M CCS calls on this trunk group are not branded, therefore the call immediately receives the M CCS tone for entry of a calling card. The calling party requires the assistance of an operator, pressing 0. The call is transferred to an operator. However, operator calls on trunk group FTWICTOPS are to receive a branding announcement. Because the call has not already been branded, an announcement is played to the calling party prior to connecting them to an operator.

Interactions with Equal Access

For interLATA calls that the Operating Company handles for the carrier, the Carrier Access Code is obtained from Equal Access call processing and datafill.

Interactions with Automatic DA Call Completion

Whether or not the call has been branded prior to DA handling, it is branded again provided the appropriate datafill is present indicating the TA call type (OPERATOR or automated system) should be branded.

Interactions with trunk group types

Branding operator assisted or automated operator handled calls may occur for those arriving on incoming TOPS trunks for TA or DA calls for the Operating Company and for NBECs and interLATA carriers whom the Operating Company has contracted to provide operator services. Branding is also supported for TA and DA calls arriving over INTERTOLL trunks for Operating Company calls only. Finally, branding is supported for calls arriving over ATC trunks from interLATA carriers for whom the Operating Company is providing operator services.

Branding calls is not supported for intercept calls, CAMA, recalls, M CCS sequence calls, or RONI.

Interactions with TOPS Alternate Announcement, ENSV0101

The TOPS Alternate Announcements feature, introduced in BCS25, provides the capability to play differing "Thank you" announcements for the Operating Company for interLATA carriers. If TOPS Alternate Announcement is already in effect in an office then datafill may be entered to prevent duplicate branding. The office parameter should not include M CCS or ACTS, assuming the

Directory Assistance/Toll Branding (continued)

"Thank you" announcements are already branded for MCCS and ACTS. Table BRANDOPT may include MCCS and ACTS for those trunks coming from NBECs only. This results in an initial branding announcement played for intraLATA NBEC users but the thank you branding announcement played for Operating Company users and all interLATA calls.

Activation/deactivation by the end user

Directory Assistance/Toll Branding requires no activation or deactivation by the end user.

Billing

Directory Assistance/Toll Branding does not affect billing.

Station Message Detail Recording

Directory Assistance/Toll Branding does not affect Station Message Detail Recording.

Datafilling office parameters

The following table shows the office parameters used by Directory Assistance/Toll Branding. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by Directory Assistance/Toll Branding

Table name	Parameter name	Explanation and action
OFCENG	TOPS_BRAND_DISPLAY	This parameter controls display of the branding icon. The display indicates the exception case to the operator. If most of the calls in the office, both automated and non-automated, are branded, the TOPS_BRAND_DISPLAY should be set to DISPLAY_WHEN_NOT_BRANDED. If branding is turned on for selected trunk groups only and the majority of calls are not branded, then TOPS_BRAND_DISPLAY should be set to DISPLAY_WHEN_BRANDED.

Directory Assistance/Toll Branding (continued)

Office parameters used by Directory Assistance/Toll Branding

Table name	Parameter name	Explanation and action
OFCENG	TOPS_BRAND_INWARDS	This parameter determines if inward operator calls receive a branding announcement prior to connection to an operator. Valid values are Y or N. The default is N.
OFCENG	TOPS_BRAND_OFFICE	This parameter and table BRANDOPT determine the type of operator and automated operator calls to receive a branding announcement prior to handling by an operator. If the set of inputs does not include the destined operator system for the call, then table BRANDOPT indicates the incoming trunk groups and operator call type to receive a branding announcement. Valid values are the set of OPERATOR, MCCA, ACTS, AABS, ALL, and NONE. The default is NONE.

Datafill sequence

The following table lists the tables that require datafill to implement Directory Assistance/Toll Branding. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Directory Assistance/Toll Branding

Table	Purpose of table
CLLI	Common Language Location Identifier. Uniquely identifies the far end of each announcement, tone, trunk group, test trunk, national milliwatt test lines, and service circuit.
ANNS	Announcement.
ANNMEMS	Announcement Member.
TRKGRP.TOP	Trunk Group Type TOPS. Required in a toll office with a TOPS DMS-200 switching unit or in a combined local/toll office with a TOPS DMS-100/200 switching unit.
DRAMS	Digital Recorded Announcement Machine.
DRAMTRK	Digital Recorded Announcement Machine Track.

Directory Assistance/Toll Branding (continued)

Datafill tables required for Directory Assistance/Toll Branding

Table	Purpose of table
BRANDANN	Branding Announcements. Table BRANDANN provides the DRAMTRK announcement CLLIs for both TA and DA calls on a per-company basis.
BRANDOPT	Branding Options. Table BRANDOPT serves a dual purpose. <ul style="list-style-type: none"> • It indicates the operator systems for which branding is in effect. • It indicates whether or not to look in table NBECCODE to obtain the company code for the call.
NBECCODE	Non-Bell Exchange Company Code. Table NBECCODE provides the NBEC codes for non-Bell companies for whom the Operating Company is providing either Toll and Assist or Directory Assistance service or both.

Datafilling table CLLI

The following table shows the datafill specific to Directory Assistance/Toll Branding for table CLLI. Only those fields that apply directly to Directory Assistance/Toll Branding are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table CLLI

Field	Subfield or refinement	Entry	Explanation and action
			Datafill new announcements

Datafill example for table CLLI

The following example shows sample datafill for table CLLI.

MAP display example for table CLLI

CLLI	TRKGRPSIZ	ADMININF
WESTEXTABRND	<#>	Westex_TA_Branding
NCTDABRND	<#>	NCT_DA_Branding

Datafilling table ANNS

The following table shows the datafill specific to Directory Assistance/Toll Branding for table ANNS. Only those fields that apply directly to Directory

Directory Assistance/Toll Branding (continued)

Assistance/Toll Branding are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table ANNS

Field	Subfield or refinement	Entry	Explanation and action
			Datafill new announcements

Datafill example for table ANNS

The following example shows sample datafill for table ANNS.

MAP display example for table ANNS

CLLI	ANTYPE	TRAFSNO	MAXCONN	CYTIME	MAXCYC
BLUBONNETBEL	STND	31	255	2	1
PINEYWOODSTA	STND	31	30	2	1
WESTTEXTEL	STND	31	30	5	1
NCTDABRAND	STND	31	255	3	1
PINEYWOODSDA	STND	31	30	6	1
BIGBENDBRAND	STND	31	30	2	1

Datafilling table ANNMEMS

The following table shows the datafill specific to Directory Assistance/Toll Branding for table ANNMEMS. Only those fields that apply directly to Directory Assistance/Toll Branding are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table ANNMEMS

Field	Subfield or refinement	Entry	Explanation and action
			Datafill new announcements

Datafill example for table ANNMEMS

The following example shows sample datafill for table ANNMEMS.

Directory Assistance/Toll Branding (continued)

MAP display example for table ANNMEMS

ANNMEMBER	HDWTYPE	CARD	TRACKLIST
WESTEXTABRND 1	DRAM	DRA	0 MTM 7 6 \$
NCTDABRND 4	DRAM	DRA	0 MTM 7 7 \$

Datafilling table TRKGRP.TOPS

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

Datafilling table TRKGRP.TOPS

Field	Subfield or refinement	Entry	Explanation and action
NBECCODE		0000-9999	NBECCODE is added to provide default NBEC codes for non-Bell companies on TOPS trunks only. This default code is used if the datafill in table NBECCODE is not present or if the call is ANI fail or ONI. Value 0000 is reserved to represent the operating company,

Datafill example for table TRKGRP.TOPS

The following example shows sample datafill for table .

MAP display example for table TRKGRP (TOPS)

All previous fields... NBECCODE	
. . .	1386
. . .	0000
. . .	0224
. . .	0000
. . .	0000

Datafilling table DRAMS

The following table shows the datafill specific to Directory Assistance/Toll Branding for table DRAMS. Only those fields that apply directly to Directory

Directory Assistance/Toll Branding (continued)

Assistance/Toll Branding are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table DRAMS

Field	Subfield or refinement	Entry	Explanation and action
			Datafill new announcements

Datafill example for table DRAMS

The following example shows sample datafill for table DRAMS.

MAP display example for table DRAMS

DRAMKEY	TMTYPE	TMNO	TMCKT	CARDCODE	CARDINFO
0 2	MTM	7	3	1X79AA	EEPROM 1\$

Datafilling table DRAMTRK

The following table shows the datafill specific to Directory Assistance/Toll Branding for table DRAMTRK. Only those fields that apply directly to Directory Assistance/Toll Branding are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table DRAMTRK

Field	Subfield or refinement	Entry	Explanation and action
			Datafill new announcements

Datafill example for table DRAMTRK

The following example shows sample datafill for table .

Directory Assistance/Toll Branding (continued)

MAP display example for table DRAMTRK

ANN	TRACK	PHRASELT	
BLUBONNETBEL	1	BLUBONPHRS1	\$
PINEYWOODSTA	1	PINWOODPHRS2	\$
WESTTEXTTEL	1	WESTEXPHRS3	\$
NCTDABRAND	1	NCTDAPHRS3	\$
PINEYWOODSDA	1	PINWDDAPHRS2	\$
BIGBENDBRAND	1	BIGBNDPHRSTA	\$

Datafilling table BRANDANN

The following table shows the datafill specific to Directory Assistance/Toll Branding for table BRANDANN. Only those fields that apply directly to Directory Assistance/Toll Branding are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table BRANDANN

Field	Subfield or refinement	Entry	Explanation and action
CARNBEC		0000-9999	Carrier NBEC code. Value 0000 is reserved for the operating company.
TAANN		Y or N	Brand toll and assist calls? If Y, datafill field TACLLI.
TACLLI		alphanumeric	Incoming trunk with TA calls for branding.
DAANN		Y or N	Brand DA calls? If Y, datafill field DACLLI.
DACLLI		alphanumeric	Incoming trunk with DA calls for branding.

Datafill example for table BRANDANN

The following example shows sample datafill for table BRANDANN.

Directory Assistance/Toll Branding (continued)

MAP display example for table BRANDANN

CARNBEC	TAANN	TACLLI	DAANN	DACLLI
0000 *	Y	BLUBONNETBEL	Y	BLUBONNETBEL
0221	N		Y	NCTDABRAND
1142	Y	WESTEXTEL	N	
1386	N		Y	BIGBENDBRAND
2547	Y	PINEYWOODSTA	Y	PINEYWOODSDA

* reserved for the Operating Company's use.

Datafilling table BRANDOPT

The following table shows the datafill specific to Directory Assistance/Toll Branding for table BRANDOPT. Only those fields that apply directly to Directory Assistance/Toll Branding are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table BRANDOPT

Field	Subfield or refinement	Entry	Explanation and action
ICTRKGRP		alphanumeric	Enter incoming trunk groups to receive branding announcements.
OPERSYS		AABS, ACTS, ADAS, MCCS, OPERATOR, ALL, or NONE	Enter the operator call types to receive branding announcements.
NBECLOOK		Y or N	Enter Y to obtain the NBEC code from table NBECODE. Enter N to obtain the default code from table TRKGRP.

Datafill example for table BRANDOPT

The following example shows sample datafill for table BRANDOPT.

MAP display example for table BRANDOPT

ICTRKGRP	OPERSYS	NBECLOOK
DALICTOPS	OPERATOR ACTS	Y
ICTOPTRK	OPERATOR MCCS ACTS	Y

Directory Assistance/Toll Branding (end)

Datafilling table NBECCODE

The following table shows the datafill specific to Directory Assistance/Toll Branding for table NBECCODE. Only those fields that apply directly to Directory Assistance/Toll Branding are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table NBECCODE

Field	Subfield or refinement	Entry	Explanation and action
CLGDIGS		up to 10 digits	Calling number
NBEC		1000-9999	Non-Bell exchange company identification code.

Datafill example for table NBECCODE

The following example shows sample datafill for table NBECCODE.

MAP display example for table NBECCODE

CLGDIGS	NBEC
915555	1386
9157	1142
214	2547
817	2547

Translation verification tools

Directory Assistance/Toll Branding does not use translation verification tools.

SERVORD

Directory Assistance/Toll Branding does not use SERVORD.

DNSCRN Enhancements

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS07 and up

DNSCRN Enhancements was introduced in TOPS07.

Prerequisites

To operate, DNSCRN Enhancements requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

New station class NCSCREEN (non-coin screen) is provided for traffic operator position system (TOPS) type trunks.

This functionality is provided by the following feature:

Feature number	Feature name
AF6369	New TOPS Trunk Station Class Functionality

Operation

This section describes in more detail the capabilities provided by this functionality.

Provide new station class NCSCREEN

Background

Prior to Originating Line Number Screening (OLNS), marking a call as restricted was the only way to display an operator message based on the calling directory number (DN). For example, "PRISON" can be displayed for calls from prison phones which are restricted to collect billing only. Some operating companies mark station calls as restricted, but allow all billing types so that a specific screen display can be presented to the operator. Operating companies that provide service reselling of local exchange carrier (LEC) operator services use these displays to identify the resell customer. This approach has an added benefit since restricted calls have an associated billing index. The restricted

DNSCRN Enhancements (continued)

billing index is passed to an automated systems over the open automated protocol (OAP) and automated alternate billing system (AABS) protocol.

Within some networks, using the above method leads to some interesting challenges. For example, some older end offices send traffic to the TOPS office over combined non-coin (NONCOIN) trunks. Although the TOPS office interprets this as station traffic, it does not perform a DN lookup for station traffic over NONCOIN trunks. The DN lookup is necessary to mark the call as restricted. The operating companies have attempted to correct this problem using the following methods, but neither method addresses all of the issues.

- Change the NONCOIN trunks to RESTBIL trunks:

This failed since RESTBIL trunks support combined start signals. The start signals sent by the older end offices were interpreted as coin traffic.

- Change the NONCOIN trunks to DNLOOKUP trunks:

This approach allows the station traffic to be marked as restricted. However, DNLOOKUP trunks do not support non-station ANI ID digit(s) such as hotel and special which are supported on NONCOIN trunks. This approach caused hotel and special traffic to be marked as ANI fail.

New functionality

New station class NCSCREEN (non-coin screen) is provided for TOPS type trunks. This new station class supports non-coin traffic from end offices (for example, some older ones) that cannot send combined start signals, but support the full range of automatic number identification (ANI) ID digit(s). Table BELLCAT or OSSCAT is used to map the ANI ID digit(s) to an initial calling station class. This functionality has been implemented in previous software releases as DMS source patch CDK47.

Combined start signals are not supported. They are only used to indicate either direct dialed (ST or ST2P) or operator assisted (STP or ST3P). The start signals are not used to determine between coin and non-coin station classes.

NCSCREEN can be used by the service analysis system to monitor TOPS traffic. Existing service analysis MAP displays are utilized. There are no new MAP displays.

Screen station and special calls using tables SPLDNID And DNSCRN Background

Tables SPLDNID and DNSCRN are used to screen station and special calls. Special calls may be marked as restricted with billing restrictions. Operating companies may mark station calls as restricted, but allow all billing types so that a specific screen display is presented to the operator.

DNSCRN Enhancements (continued)

New functionality

Station class NCSCREEN provides screening of calls signalled as station or special as determined by the ANI ID digit(s) using tables SPLDNID and DNSCRN.

Station class NCSCREEN provides indexing into table FXDNMAP for traffic signalled as station. Table FXDNMAP substitutes an actual number for a foreign exchange number.

Provide ANI screening for NCSCREEN

Background

Special or hotel traffic arriving on TOPS trunks using OSS, BELL or MODBELL signalling with a station class of DNLOOKUP appear at the operator position as ANI fail.

New functionality

ANI screening is provided for signalling types BELL, MODBELL and OSS based upon station class NCSCREEN. Handling of signalling types is the same as for RESTBIL trunks.

ANI screening is not provided for signalling types ONI, DANI, AMR5, EAOSS, EAOSSIC, AIS, EAFGD, COMFGD, OPENNUM, and R2 based upon station class NCSCREEN. Table control prevents datafilling table TRKGRP field STATCLAS with station class NCSCREEN for these signalling types.

Note: OPENNUM and R2 signalling are only available in the Global Operator System environment.

Convert appropriate trunks to new station class during an ONP

Background

This functionality has been implemented in previous software releases in the form of DMS source patch CDK47. The patch is password activated.

New functionality

This functionality automatically converts DNLOOKUP trunks using OSS signalling to the new station class if patch CDK47 is active during the software upgrade one night process (ONP).

The station class remains the same as it is datafilled on the dump side load if patch CDK47 is not active.

Translations table flow

The DNSCRN Enhancements has no translations table flow.

DNSCRN Enhancements (continued)

Limitations and restrictions

The following limitations and restrictions apply to DNSCRN Enhancements:

This functionality replaces patch CDK47 by providing a new station class that supports operator displays based on the calling DN. However, the patch was also used by operating companies to provide service reselling for LEC operator services. This additional use was not intentionally designed into this functionality. Therefore, using a restricted billing index for service reselling has the following known limitations. Other limitations and restrictions may apply depending on the circumstances.

- Coin traffic is not supported.
- TOPS branding does not key on the restricted billing index. Traffic over a single trunk group requiring different branding announcements according to a restricted billing index is not supported.
- TOPS ACTS does not key on the restricted billing index.
- TOPS ACCS/MCCS does not key on the restricted billing index.
- Tables SPLDNID and DNSCRN are not associated with the Service Ordering (SERVORD) process. These tables may require extensive and frequent modifications depending on the amount of traffic subjected to service reselling.
- Hotel traffic does not have a restricted billing index. Therefore, limitations may exist when attempting to provide operator services reselling for hotel traffic.
- ANI screening is provided for signalling types BELL, MODBELL and OSS based upon the new station class NCSCREEN.
- ANI screening is not provided for signalling types ONI, DANI, AMR5, EAOSS, EAOSSIC, AIS, EAFGD, COMFGD, OPENNUM, and R2 based upon the new station class NCSCREEN. (Note, OPENNUM and R2 signalling are only available in the Global Operator System environment.)
- Table control does not allow datafill of station class NCSCREEN for signalling types ONI, DANI, AMR5, EAOSS, EAOSSIC, AIS, EAFGD, COMFGD, OPENNUM, and R2. (Note, OPENNUM and R2 signalling are only available in the Global Operator System environment.)
- Only calls signalled as station or special as determined by the ANI ID digit(s) are screened by tables SPLDNID and DNSCRN.

Interactions

The following paragraphs describe the interactions between DNSCRN Enhancements and other functionalities.

DNSCRN Enhancements (continued)

Special or hotel traffic arriving on TOPS trunks using OSS, BELL or MODBELL signalling with a station class of NCSCREEN appear at the operator position as successful ANI calls (if all ANI digits are present).

Station or special traffic arriving on TOPS trunks using OSS, BELL or MODBELL signalling with a station class of NCSCREEN are screened according to tables SPLDNID and DNSCRN.

Station traffic arriving on TOPS trunks using OSS, BELL or MODBELL signalling with a station class of NCSCREEN indexes into table FXDNMAP.

Activation/deactivation by the end user

DNSCRN Enhancements requires no activation or deactivation by the end user.

Billing

DNSCRN Enhancements does not affect billing.

Station Message Detail Recording

DNSCRN Enhancements does not affect Station Message Detail Recording.

Datafilling office parameters

DNSCRN Enhancements does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement DNSCRN Enhancements. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for DNSCRN Enhancements

Table	Purpose of table
TRKGRP	Trunk group defines characteristics of trunk groups.

Datafilling table TRKGRP

The following table shows the datafill specific to DNSCRN Enhancements for table TRKGRP. Only those fields that apply directly to DNSCRN

DNSCRN Enhancements (continued)

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

Datafilling table TRKGRP

Field	Subfield or refinement	Entry	Explanation and action
	GRPTYP	TOPS	Group type. The following changes are applicable to TOPS trunk groups.
	STATCLAS	NCSCREEN	Station class. New value NCSCREEN can be datafilled for non-coin traffic from end offices that are not capable of sending combined start signals, but are capable of supporting the full range of ANI ID digit(s). Table BELLCAT or OSSCAT is used to map the ANI ID digit(s) to an initial calling station class.
	SIGTYPE	OSS, MODBELL, BELL	<p>Signalling type. For station class NCSCREEN, ANI screening is available for signalling types BELL, MODBELL, and OSS.</p> <p>ANI screening is not provided for signalling types ONI, DAN1, AMR5, EAOSS, EAOSSIC, AIS, EAFGD, COMFGD, OPENNUM, and R2 when the station class is NCSCREEN. Table control prevents datafilling field STATCLAS with station class NCSCREEN for these signalling types.</p> <p>Note, OPENNUM and R2 signalling are only available in the Global Operator System environment.</p>

Datafill example for table TRKGRP

The following example shows sample datafill for table TRKGRP.

MAP display example for table TRKGRP

GRPKEY	GRPINFO
TOSSIC	TOPS 0 TLD NCRT IC MIDL 619 PTOP NLCA NSCR Y SP NCSCREEN N Y 0 0000 NONE OSS 16 10 10 Y OFFHK N N
TBELLIC	TOPS 0 TLD NCRT IC MIDL 619 PTOP NLCA NSCR Y SP NCSCREEN N Y 0 0000 NONE BELL 16 10 10 Y N OFFHK N N
TMODBELLIC	TOPS 0 TLD NCRT IC MIDL 619 PTOP NLCA NSCR Y SP NCSCREEN N Y 0 0000 NONE MODBELL 16 10 10 Y OFFHK N N

DNSCRN Enhancements (end)

Translation verification tools

DNSCRN Enhancements does not use translation verification tools.

SERVORD

DNSCRN Enhancements does not use SERVORD.

Enhanced MFADS

Ordering codes

Functional group ordering code: OSB00001

Functionality ordering code: not applicable

Release applicability

BCS31 to TOPS11

Prerequisites

To operate, Enhanced MFADS requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

ATTENTION

MFADS and Automatic Call Distribution (ACD) are manufacturer discontinued (MD) in release TOPS12. Therefore, this function (Enhanced MFADS) is no longer valid. MFADS is replaced by QMFADS and ACD is replaced by the Queue Management System (QMS). Both of these replacement capabilities are in functionality QMS Host/Remote Queueing, ADVQ0009. For further information on removal of MFADS and ACD, refer to functionality MD Code Removal and ReEngineering, OSB00001.

This functionality is provided by the following features:

Feature number	Feature name
AF2529	Enhanced MFADS

This optional feature provides enhancements to the TOPS Mechanized Force Administration Data System (MFADS) interface. These enhancements provide detailed by queue and by traffic office data necessary to accurately calculate work force statistics (e.g., %Occupancy, Average Occupied Positions, Board Hours, etc.) in an environment of operator support for multiple queues and services.

Enhanced MFADS (continued)

The changes introduced by this feature address Operating Company requests for improvements in current measurements of calls transferred by operators, and the addition of new measurements. General enhancements include:

- Improved Position Seizure and Work Volume measurements.
- The introduction of Service Measurements.
- Expansion of the Traffic Office reports to include all queue types.

Operation

The following paragraphs describe the operation of Enhanced MFADS.

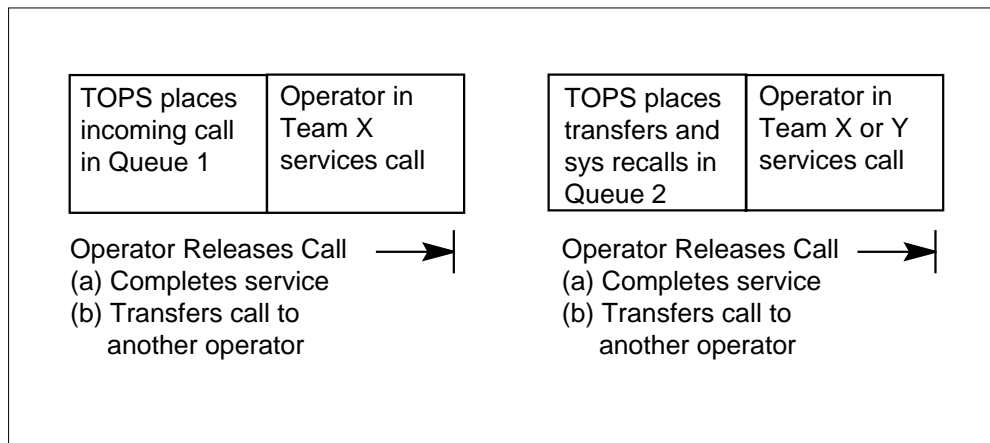
Background

The following paragraphs describe the background of Enhanced MFADS.

TOPS ACD

A simple view of TOPS ACD is illustrated in the following figure. When a call is received by TOPS (determined by the dialed digits and/or datafill) the call is placed in a FIFO (First In, First Out) queue until an operator is available to service the call. When an operator is available, the call is removed from the queue, and routed to the operator's position. The operator then performs the service required by the customer, and releases the call. In the typical case, no further TOPS action is required for the call.

TOPS Call Queuing



Two situations exist in which further TOPS action is required:

- When an operator transfers a call to another operator (e.g., a different language operator is required)
- When a recall (e.g., coin notify, coin overtime, etc.) is detected by the system

Enhanced MFADS (continued)

In both cases the call is placed in a second, higher priority queue until an operator in the original team (Traffic Office), or another team, is available to service the call (transfers and recalls are placed in higher priority queues to minimize customer delays). When an operator is available, the operator will perform the required service, and release the call (subsequent transfers and recalls may again occur).

Actual TOPS ACD uses nine call distribution queues. These queues are grouped into 5 queue types (GEN, XFR1, XFR2, DA, and CAMA). With the exception of CAMA, each of these queue types are further divided into non recall (Queue 1 in the figure above) and recall (Queue 2 in the figure above) queues.

Discussion of the criteria for call distribution to these queues is beyond the scope of this document. Important concepts to be noted are:

- Force Management/MFADS measurements are reported on the basis of the queue types listed above.
- Recall queues (also referred to as transfer queues) are higher priority queues, and receive transfers and recalls.
- Incoming calls are generally placed in a non recall (non transfer) queue. However, datafill may route some incoming calls to recall queues for higher priority (e.g., AABS calls returned with the Billing Party connected). See References for further details.
- Recalls generally return to the queue type (recall queue) of the original call. However, the initial operator can direct recalls to specific queue types.

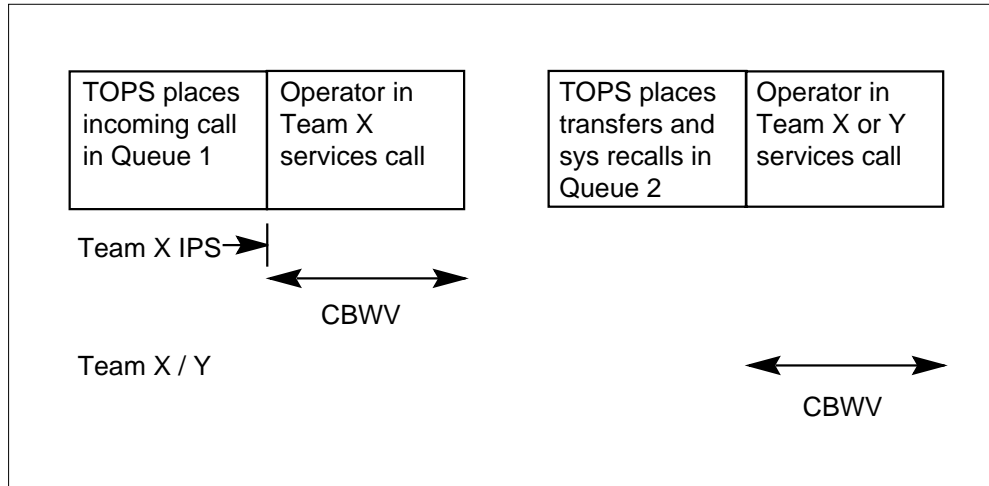
Force Management Measurements

Two methods of data collection are used by Force Management. The typical method is to dynamically count (peg) each event as the event occurs. The second method is to sample internal state maps at fixed intervals or scan points. For the measurements used by MFADS, 10 second scans are used. Measurements obtained by 10 second scans are assumed to represent an average value for the interval, and are denoted as XCS (Unit = 10 Call Seconds) measurements.

The following figure illustrates a partial set of Queue Type (GEN, XFR1, XFR2, DA and CAMA) measurements currently collected by Force Management for each Traffic Office (team).

Enhanced MFADS (continued)

Basic Queue Measurements



When a call is first removed from a queue and assigned to an operator, Force Management will peg this seizure as an Initial Position Seizure (IPS) for the queue type and Traffic Office. This feature expands position seizure measurements. Refer to "Position Seizures" for further information.

Similarly, the time that an operator spends in each operator session is pegged as Call Busy Work Volume (CBWV). CBWV is measured in seconds, and is collected for each of the Traffic Office queue types.

Note: Transfers and recalls are routed to the first available operator for the Queue Type. This operator may be in the original team (Team X), or another team (Team Y).

In addition to the data above, the Force Management also collects the following measurements for the current MFADS interface:

- **Calls Waiting (CW):** CW is discussed in "Changes Introduced by This Feature" is the number of calls waiting to be queued.
- **Work Volume (WV):** Time that an operator is handling a call (CBWV), or otherwise unable to handle a call (NCWV - Noncall Work Volume). WV excludes operator idle time, IDLT.
- **Average Occupied Positions (AOP):** Average number of operators occupying positions over an MFADS period.

Force Management measurements are collected during 15 minute reporting periods. Following each period, this data is available to the MFADS interface as either 15 or 30 minute reports (30 minute reports represent even half hour

Enhanced MFADS (continued)

collection periods, and are available in the 15 minute period immediately following data collection). The formats of these reports are identical.

Force Management Calculations

The measurements described in the previous section are used by Force Management as a source for MFADS data, and in the calculation of the statistics listed below. These statistics are then used in queue control, and presented in TOPS reports (e.g., FADS/TADS).

- **Board Hours (BDH):** The number of operator hours per team (AOP converted to person hours for the period)
- **Percent Occupancy (%OCC):** The ratio of operator time spent handling calls, and the total time an operator is assigned to a position
- **Average Work Time (AWT):** The average length of time required to handle a call
- **Average Speed Of Answer (ANS):** The number of seconds that the average call waits to reach an operator

Changes Introduced by This Feature

The changes introduced by the feature impact both the MFADS interface, and Force Management. These changes fall into two categories:

- The introduction of a new MFADS message format
- Improvements in Force Management data collection

The new message format emphasizes Traffic Office (team) reporting for all queue types (GEN, XFR1, XFR2, DA and CAMA), and is described in "Message Format." Other than to identify new data presented in these messages, the format will not be discussed in this section.

The non-format changes introduced by this feature are listed below, and are discussed in the referenced sections.

- Call based (IPS only) position seizure pegging is replaced with measurements for all position seizures. This seizure based pegging expands the per queue data available to the MFADS interface.
- Associated with this change, position seizure and work volume measurements will be applied to the source queue type, rather than the

Enhanced MFADS (continued)

destination queue. This change will improve the position seizure and work volume measurements for calls transferred by operators.

- A new set of measurements, Service Measurements (e.g., Directory Service), are introduced for more accurate measurement of work performed by operators providing multiple services.
- Noncall Work Volume and Idle Time are separately reported for each Traffic Office queue type. This data is only partially provided in current MFADS. This change allows the Operating Company generation of statistics for each Traffic Office queue type.
- A new work volume measurement, Non Queue Work Volume, is added for each Traffic Office. This measurement identifies Operator Position work volume not attributable to an operator or queue.
- System Calls Waiting are presented for each queue type. Current MFADS provides a system total for the non transfer queues, and separate totals for XFR1, XFR2, and DA. This change allows the Operating Company calculation of ANS(s) for all queue types.
- The improvements in Position Seizure and Work Volume measurements may optionally be applied to existing Force Management reports. Refer to "Optional Extension of PS Measurements" for further discussion.

Position Seizures

The following paragraphs describe position seizures of Enhanced MFADS.

Current PS Measurements

Force Management currently measures Operator Position seizures from the perspective of a call. That is, rather than pegging the individual seizures that occur when a call passes through multiple queues (transfers/recalls), only the first seizure is pegged. This seizure is called an Initial Position Seizure (IPS). IPS measurements are maintained for all active queue types (GEN, XFR1, XFR2, DA, and CAMA) on a per Traffic Office (team) basis.

IPS pegging occurs the first time a call is released from an Operator Position. The pegging procedure is dependent upon whether the operator transfers the call (or directs a recall to a specific queue type).

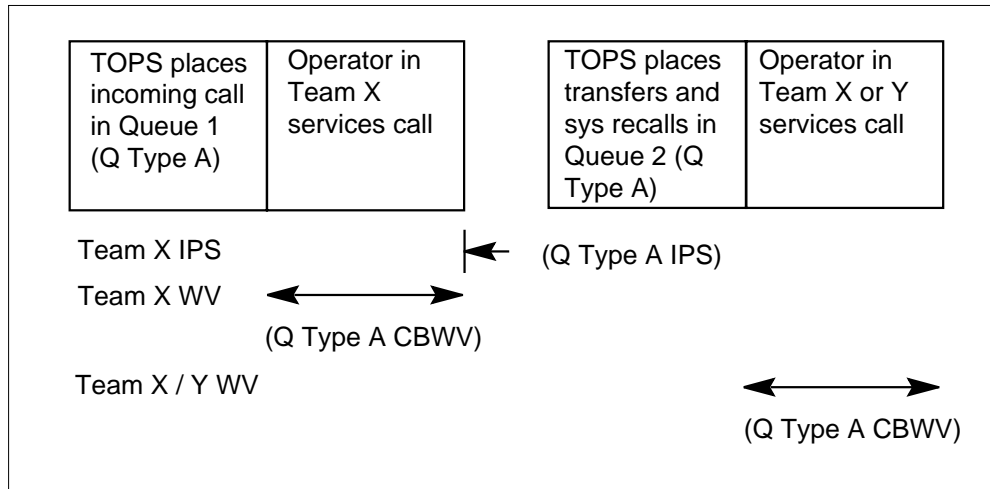
For calls that are not transferred, Force Management pegs IPS and associated CBWV as shown below. In this example, an incoming call is initially placed in a non recall queue (Queue Type A). When an operator serving Queue Type A is available, the operator will receive the call. Upon operator release, an IPS

Enhanced MFADS (continued)

and CBWV for the first seizure are pegged for Queue Type A of the Operator's Traffic Office (Team X).

Note: With the exception of CAMA, each Queue Type contains separate physical non recall and recall queues.

Current MFADS IPS/CBWV

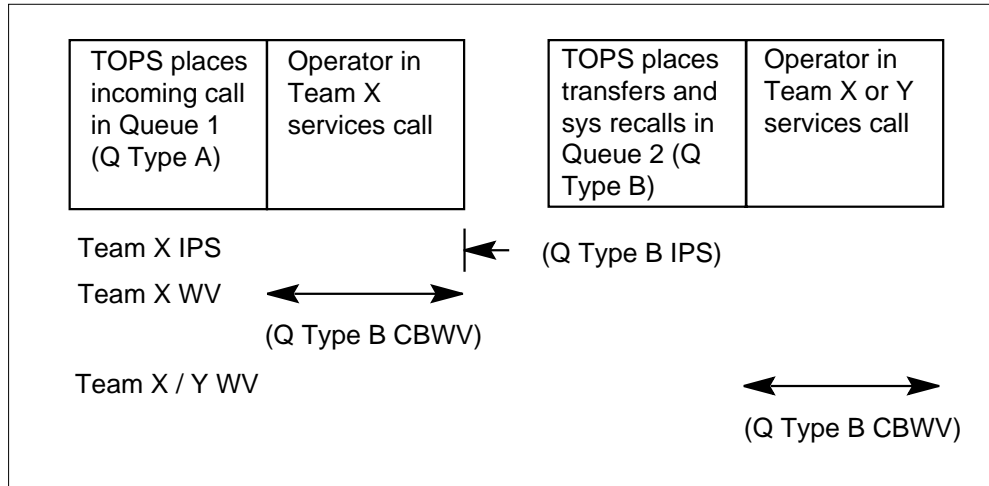


If the call recalls, the call is placed in a recall queue for Queue Type A. After this call is serviced, the CBWV associated with the recall is pegged against Queue Type A for the second operator's team. The second operator could be in the original team, Team X, or another team, Team Y.

In the example above, IPS and CBWV are pegged against the source Queue Type. However, if a call is transferred by an operator, the IPS and work volume associated with the call are pegged against the destination Queue Type as indicated in the following figure.

Enhanced MFADS (continued)

Current MFADS with Transfers



For example, if a call arrives as a general (GEN) call and is transferred by the operator to a DA queue, the IPS and CBWV for the first seizure will be pegged against the DA queue type (Queue Type B) for the original Traffic Office (team).

The current method of IPS based pegging has two limitations:

1. Position Seizures and Work Volume are assigned to the destination queue type, rather than the source queue type for transfers. Referring to the figure above, the first operator performs work for Queue Type A (GEN). However, rather than pegging Queue Type A, Queue Type B (DA) receives the IPS and CBWV for the Traffic Office (Team X).

Note: The operators in Team X may not serve the DA queue type.

Continuing with this example, when the second operator receives the transferred call from Queue 2, the CBWV for this seizure is pegged against Queue Type B for Team X or Y. Note that a position seizure is not pegged for the second operator.

2. IPS based pegging does not measure all position seizures (Team X or Y does not receive a PS for Queue 2). This precludes the generation of queue statistics based on position seizures. Since calls may pass through more than one queue, position seizure based statistics provide a better indication of customer wait times and team performance.

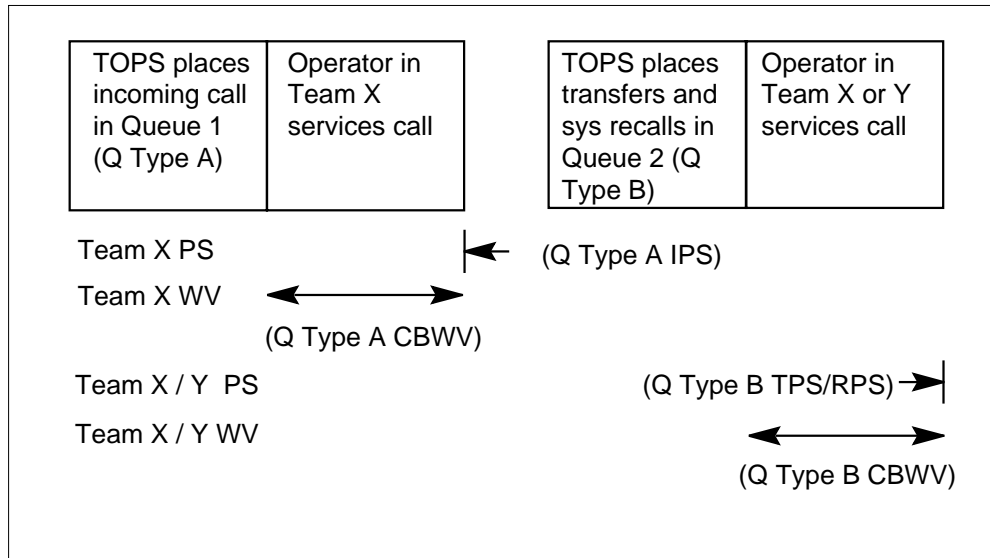
Enhanced MFADS PS Measurements

Enhanced MFADS removes the limitations of IPS only pegging by providing Position Seizure and Work Volume data for each queue used by a TOPS call.

Enhanced MFADS (continued)

As indicated in the following figure, these measurements are generated when an operator releases a call.

Enhanced MFADS PS/WV



On a per Traffic Office basis, three types of Position Seizure/Work Volume measurements are collected for each queue type (GEN, XFR1, XFR2, DA, and CAMA):

- Initial Seizure: If the position seizure is the first for the call, an Initial Position Seizure (IPS) and Call Busy Work Volume (CBWV) are pegged for the Traffic Office queue types.
- Transfer Seizure: If the position seizure is the result of an operator transfer, a Transfer Position Seizure (TPS) and Call Busy Work Volume (CBWV) are pegged for the Traffic Office queue types (excluding CAMA).
- Recall Seizure: If the position seizure is the result of a system recall, a Recall Position Seizure (RPS) and Call Busy Work Volume (CBWV) are pegged for the Traffic Office queue types (excluding CAMA).

Note: Total Position Seizures (PS) are the sum, $IPS + TPS + RPS$.

Comparing the example above to the previous example, Team X will now have a PS and CBWV pegged against Queue Type A for the work performed by the first operator. Similarly, Team X or Y will receive a Queue Type B PS and CBWV for the work performed by the second operator.

For example, IPS based measurements only allow the calculation of AWT for a total call. Since calls may pass through several queues, a better indication of

Enhanced MFADS (continued)

team performance is AWT calculation on the basis of individual seizures. The PS measurements of this feature extend Traffic Office AWT calculations to the position seizure level for each Queue Type.

Note: Since IPS are also provided by this feature, the Operating Company may continue with IPS based AWTs.

Queue Thresholding

When the rate that TOPS calls arrive exceeds operator capacities, calls accumulate in queues. As the number of calls waiting in a queue increases, so does the time that a customer waits before being connected to an operator. To minimize customer wait times, TOPS provides a thresholding mechanism.

TOPS thresholding monitors the number of operators (AOP), the number of Calls Waiting (CW) in queues, and the Average Work Time (AWT) per call. These variables are applied to Queue Thresholding (QT) tables, which control the generation of traffic warning messages and call deflections (e.g., announcement or busy response to customer).

The AWT used in TOPS thresholding is calculated by dividing the Work Volume by the number of IPS for each queue. As discussed in "Position Seizures," current pegging of IPS and CBWV is based on the destination queue type for transfers. This results in a reduction in the IPS and CBWV for the first Queue Type, and an increase in measurements for the second Queue Type.

Enhanced MFADS Reports

The sections below define the Operating Company polling procedure for Enhanced MFADS reports, and the new MFADS message format.

Operating Company Polling Procedure

The polling procedure for MFADS report transmission is unchanged by this feature.

If the Operating Company data is correct, MFADS will evaluate the time of the message request. If transmission cannot be completed in the current MFADS reporting period, or if the a 30 report is requested and the request did not occur in the first 15 minutes of the period, MFADS will respond with the ASCII characters TIME.

Otherwise, MFADS will respond with the report described in the next section.

Note: As indicated above, this feature will reject Operating Company polling requests when the MFADS report transmission cannot be completed in the current Force Management period. Since the data collection buffers are switched between periods, MFADS reports spanning periods would

Enhanced MFADS (continued)

result in corrupted data. The time required to transmit an MFADS report is dependent upon the baud rate, the number of active Traffic Offices, and system loading. For maximum configurations (30 Traffic Offices), this transfer time will be approximately 5 minutes at 300 baud.

Message Format

In response to the Operating Company request described above, Enhanced MFADS will transmit the message illustrated in the following figure.

Enhanced MFADS Message Format

FIELD ORDER	NUMBER CHARS.	FIELD DESCRIPTION
1	1	Start of MFADS Transmission Character
2	6	TOPS Office Identifier
3	4	Time of Report Transmission (hhmm)
4	4	Date of Report Transmission (ddmm)
5	4	MFADS Period
6	3	Number of 10 Second Scans
7	5 X 6	Calls Waiting Per Queue
8	2	Number of Traffic Offices
		Traffic Office 1 Measurement
		Traffic Office 2 Measurement
		(216 characters per Traffic Office)
		Traffic Office n Measurements
9	1	End of MFADS Transmission Character

Field Definitions

The following paragraphs describe translation related field definitions.

TOPS Office Identifier - The TOPS Office Identifier field contains the office identifier datafilled in parameter OFFICE_ID_ON_AMA_TAPE in table OFCENG.

Time of Transmission - This field identifies the starting time of an MFADS transmission in 24 hour [hour][minute] format. The data transmitted will reflect measurements collected in the preceding 15 or 30 minute MFADS period.

Number of Traffic Offices - The Traffic Office reports described in the following section are only presented for active Traffic Offices. This field identifies the number of Traffic Office reports included in the current message.

Enhanced MFADS (continued)

The value in this field is indirectly based on parameter TOPS_NUM_TRAFFIC_OFFICES in table OFCENG (maximum of 30 Traffic Offices).

Service Reports

Following the queue reports described above, Enhanced MFADS presents the service reports for the Toll and Assist, Directory Assistance, and Intercept services. As is the case for Queue Reports, the order of the Service Reports is fixed, and the reports are only presented for active services. Since Toll and Assist is always active, the minimum number of Service Reports is one. Transmission of the optional Directory Assistance and Intercept reports is determined by datafill in table SERVICES.

Translations table flow

Enhanced MFADS does not affect Translations table flow.

Limitations and Restrictions

The following limitations and restrictions apply to Enhanced MFADS:

- If this feature is installed in an OC configuration in which the remotes are not upgraded to BCS 31 (or later), the queue enhancements of this feature will perform correctly, however, service measurements will be inaccurate, and should not be used.
- The new parameters added by this feature are only available when this feature is installed. In addition, only the host will have access to these parameters in OC configurations.
- Force management collects Noncall Work Volume (NCWV) and idle time (IDLT) in team and system pegging registers. These registers are used in the calculation of the system and team AWTs presented in FADS, TADS, and SADS reports.

In addition, Force Management prorates the team NCWV and IDLT times over the queue types supported by the various teams. These per queue NCWV and IDLT measurements are presented to the MFADS interface.

Since the per queue allocation of NCWV and IDLT is subject to rounding, the AWTs displayed in FADS/TADS/SADS reports, and the AWTs calculated from MFADS reports may not be identical.

- 30 minute MFADS reports may only be requested in the 15 minute period immediately following data collection. Refer to "Operating Company Polling Procedure" for additional details.
- Position Seizures (IPS, TPS and RPS) are not pegged for delay calls. However, the work volume (CBWV) associated with a delay call is pegged against the position's current queue type. In addition, a service initiation

Enhanced MFADS (continued)

and service work volume are pegged for the current service type of the loop accessed by the delay call.

- Work Volumes are presented in Enhanced MFADS as 6 digit fields. This size restricts the maximum number of operators supported by the MFADS format to 555 per Traffic Office (team).
- Extension of the Position Seizure and Work Volume measurements of this feature does not include:
 - STATSPAC Measurements
 - Study Registers Refer to “Optional Extension of PS Measurements” for further discussion.

Interactions

The following paragraphs describe the interactions between Enhanced MFADS and other functionalities.

This feature can be installed in all TOPS software configurations valid for the current MFADS interface. The new data structures introduced by this feature are unique to this feature, and will not impact other TOPS features. This feature is dependent upon some of the Force Management statistics generated for the current MFADS interface, and upon the current MFADS feature for part of the interface to MFADS devices.

Data collection for the current MFADS will occur in parallel with this feature. Functional interaction between these features is limited to the MFADS device FORMAT field discussed in “Datafilling office parameters.”

Activation/deactivation by the end user

Enhanced MFADS requires no activation or deactivation by the end user.

Billing

Enhanced MFADS does not affect billing.

Station Message Detail Recording

Enhanced MFADS does not affect Station Message Detail Recording.

Enhanced MFADS (continued)

Datafilling office parameters

The following table shows the office parameters used by Enhanced MFADS. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by Enhanced MFADS

Table name	Parameter name	Explanation and action
OFCENG	OFFICE_ID_ON_AMA_TAPE	
OFCENG	TOPS_NUM_TRAFFIC_OFFICES	
OFCVAR	TOPS_OUTPUT_XFR_NUMBER	

If this feature is installed, Enhanced MFADS data collection will start automatically, and will continue in parallel with data collection for current MFADS reports. Control of the use of this data is accomplished through the new parameters listed below, and illustrated in the subsequent table.

- Parameter field, FORMAT, for the MFADS device type in table TOPSDEV

Datafill sequence

The following table lists the tables that require datafill to implement Enhanced MFADS. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Enhanced MFADS

Table	Purpose of table
TOPSDEV	TOPS Device. This table specifies the MFADS data format.

Datafilling table TOPSDEV

The following table shows the datafill specific to Enhanced MFADS for table TOPSDEV. Only those fields that apply directly to Enhanced MFADS are

Enhanced MFADS (end)

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

Datafilling table TOPSDEV

Field	Subfield or refinement	Entry	Explanation and action
FORMAT		FORMAT1 or FORMAT2	The FORMAT field determines the type of data presented to the MFADS interface. If this parameter is set to FORMAT1, current MFADS reports are presented to Operating Company computers. If this parameter is set to FORMAT2, Enhanced MFADS reports are presented. Changes in this parameter will become effective in the Force Management period following a change.

Datafill example for table TOPSDEV

The following example shows sample datafill for table TOPSDEV.

MAP display example for table TOPSDEV

DEVNO	DEVTYPE
1	AQ E LF17 VER TM8 0 0 2X72AC BELL108
15	FADS E TM8 2 0 2X72AC BELL108
25	MFADS FORMAT2 TM8 3 10 2X72AC BELL108

Translation verification tools

Enhanced MFADS does not use translation verification tools.

SERVORD

Enhanced MFADS does not use SERVORD.

Enhanced TOPS OC and Increased Remote Support

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering codes: not applicable

Release applicability

TOPS04 and later versions

Enhanced TOPS OC and Increased Remote Support were introduced in TOPS04.

Requirements

To operate, Enhanced TOPS OC and Increased Remote Support have the following requirements:

- TMS Processor Upgrade, OSB00101
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- BAS Generic, BAS00003

Description

The following features provide this functionality:

Feature number	Feature name
AF5930	ETMS OC: Table Changes and Maintenance
AN1129	ETMS OC: Static Data and TEI Link Manager (no xla)
AN1130	ETMS OC: EISP Link Maintenance and LAPD Protocol (no xla)
AN1132	ETMS OC: OC Protocol (no xla)
AN1133	ETMS OC: Table Control
AN1134	ETMS OC: Maintenance and Logs (no xla)
BX83869	DA database warning for table VROPT, parm SWITCH_ID

This functionality supports Operator Centralization (OC) through the Enhanced TOPS Message Switch (ETMS OC). Functionality TMS Processor Upgrade, function code EWSS0007 provided Enhanced TMS (non-OC).

Enhanced TOPS OC and Increased Remote Support (continued)

Operation

Before ETMS OC, the Digital Carrier Modules (DCMs) gave support to the TOPS OC network. The change in business needs caused the requirement for greater capacity of the TOPS OC network. The ETMS OC provides the following improvements:

- To increase the maximum number of supported OC nodes from 15 to 31.
 - The maximum number of OC nodes that use DCM data links remains at 15. Connections to other offices that use DCM data links require an office number of a maximum of 15. Table OCOFC must contain this number. Connections to other offices that use ETMS OC data links can have an office number from 1 to 31. Tables OCOFC, OCGRP, and OCPARMS control the office number.
 - An OC node refers to a host or remote office in an OC network. With Basic OC, a single office can communicate with a maximum of 31 other OC nodes. If an office uses Host/Remote Networking by Queue Type (HRNQT), table OCOFC must define that office as an OC node. This condition limits the number of other OC nodes that the office can communicate with to 30.
 - The system supports the following protocols:
 - Open Position Protocol (OPP)
 - Personal Audio Response System (PARS)
 - Queue Management System Management Information System (QSMIS)
 - Standard Directory Assistance (Std DA)
 - IBM DA
- Increase the maximum number of operator positions for each remote from 150 to an engineerable traffic level. Data link provisioning determines this level.
- Increase the maximum distance between the host and remote from 1,500 miles to an engineerable limit.
- Provide a backup to the DCM OC data link interface of one data link for each DCM. You can provide maximum of 32 ETMS OC data links between a host and remote. You can provide a maximum of 256 ETMS OC data links in an office. Definition of ETMS OC data links are as follows:
 - Table OCDLGRP defines data link group names.
 - Table OCGRP contains data link groups entered for an OC office.
 - Table TMXOCDL defines data links.

Enhanced TOPS OC and Increased Remote Support (continued)

- Increase the maximum number of OC voice links for each OC group from 255 to 2047 voice link members in table VLMEM. Except for this change, this functionality does not change the method of data entry or maintenance for OC voice links.
- Support DS-1 or PCM-30 interfaces.
- Support the current OC feature set. This set contains Base OC, OC Night Closedown (OCNC) and Host/Remote Networking by Queue Type (HRNQT).
- Extend the Operational Measurements (OMs) groups TOPSOC and TOPSVC. These OM groups increase OMs according to the OC office number. The expansion of the maximum number of offices in table OCOFC increases the number of entries in these OM groups.

Before this functionality, the ETMS was in use only as a server for operator positions and operator databases. The ETMS provided the interface between the switch Computing Module (CM) and the operator positions subtending the ETMS. The ETMS also provided an interface between the operator positions and different databases. An example of this type of database is directory support. With this new functionality, the entry and engineering of the ETMS occurs as an OC ETMS. The peripheral functions as an OC data link interface. The peripheral provides the communications interface between the host and remote TOPS offices. Available DS-1 or PCM-30 ports on the ETMS also support OC voice links.

The differences in the engineering limits for the ETMS and DCM peripherals in an OC environment appear in the following table.

OC Limits

Limits	DCM	ETMS
Maximum data links for each peripheral	1	31 (see note 1)
Maximum data links for each OC group	4	32
Maximum OC nodes	15	31
Maximum operators for each remote	150	Engineerable (see note 2)

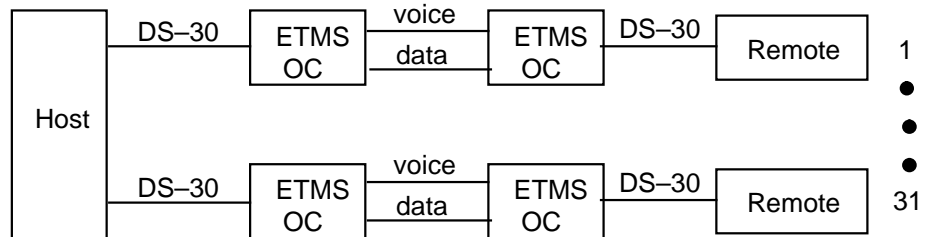
Note 1: This number is the total number of OC data links a single ETMS can support. You cannot always provision the maximum of 31 links for each ETMS because of message capacity restrictions. See the provisioning section for a detailed explanation on how to configure an OC network.

Enhanced TOPS OC and Increased Remote Support (continued)

Note 2: The number of OC data links and voice links provisioned for a specified remote determines this number.

A simplified network diagram appears in the following figure.

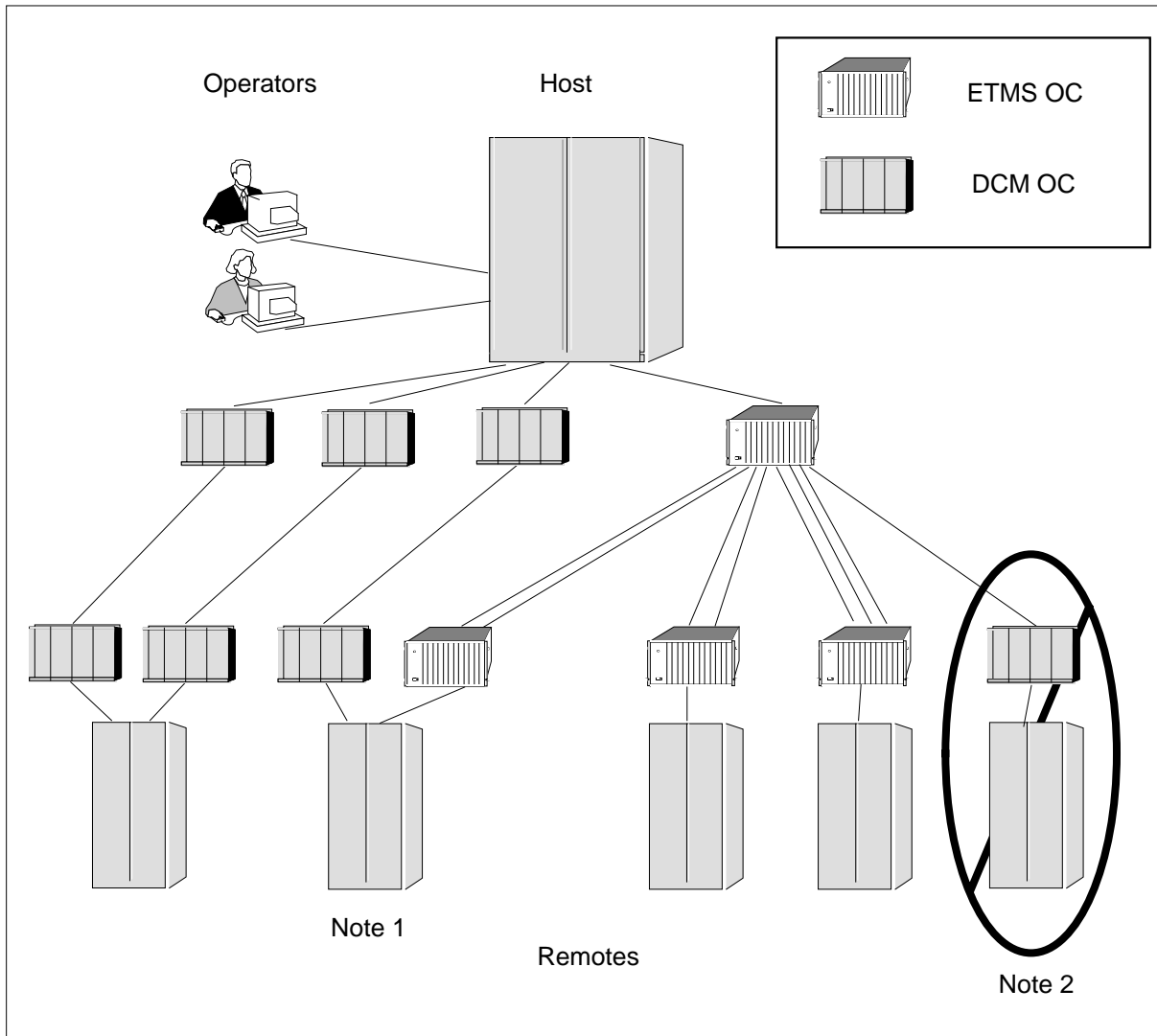
OC Datalinks



A network summary of possible configurations the system supports with the DCM OC and ETMS OC platforms appears in the following figure. The DCM OC configuration limits do not change with this project. The ETMS OC interface provides additional flexibility. This flexibility allows the ETMS OC interface to support more than one OC data link for each ETMS peripheral.

Enhanced TOPS OC and Increased Remote Support (continued)

OC Configuration



Note 1: You must configure an office with DCM OC data links and ETMS OC data links to use separate entries in table OCGRP. A single entry in OCGRP can use only one type of data link. The value of the DLSEL field determines the type of link in use. The value of the DLSEL field can be HDLC or LAPD.

Note 2: Do not connect an OC ETMS to an OC DCM. Do not connect an OC DCM to an OC ETMS.

Hardware

The operating company does not require additional hardware. The current ETMS is the basic platform. This ETMS is a TMS with UP and EISP. Remove

Enhanced TOPS OC and Increased Remote Support (continued)

and replace all EDCHs (BX02xx) with DS-1 (NT6x50xx) or PCM-30 (NT6X27xx) cards as provisioned.

The packfill for an OC ETMS that uses the DS-1 and PCM-30 interfaces appears in the following diagrams. You can provision the DS-1 (NT6X50xx) and PCM-30 (NT6X27xx) Interface cards. The more cards configured, the more OC data and voice links you can configure. See the provisioning section for information on how to configure the links. You can equip an ETMS OC with a maximum of ten DS-1 (6X50xx) or eight PCM-30 (NT6X27xx) Interface cards. The ETMS platform can interface to the CM with networks the system supports.

When the ETMS is in the OC mode of operation, use of the EDCHs (BX02xx) does not occur. You can replace the EDCHs with NT6X50xx (DS-1 interface) or NT6X27xx (PCM-30 interface) circuit packs.

The E in ETMS refers to enhanced. This term indicates that the TMS has the XPM Plus processors. These processors are UP and EISP. The system does not support the ETMS OC functionality on the TMS platform with the MP/SP and ISP processors.

ETMS OC Pack fill using the DS-1 Interface

Slot	Unit 0	Unit 1
1	DS-1 I/F 6X50xx	DS-1 I/F 6X50xx
2	DS-1 I/F 6X50xx	DS-1 I/F 6X50xx
3	DS-1 I/F 6X50xx	DS-1 I/F 6X50xx
4	DS-1 I/F 6X50xx	DS-1 I/F 6X50xx
5	DS-1 I/F 6X50xx	DS-1 I/F 6X50xx
6	filler	filler
7	filler	filler
8	filler	filler
9	filler	filler
10	filler	filler
11	filler	filler
12	UP MX77AA	UP MX77AA

Enhanced TOPS OC and Increased Remote Support (continued)

ETMS OC Pack fill using the DS-1 Interface

Slot	Unit 0	Unit 1
13	filler	filler
14	Timeswitch 6X44AA	Timeswitch 6X44AA
15	filler	filler
16	EISP BX01AB	EISP BX01AB
17	filler	filler
18	MSG/TONE 6X69xx	MSG/TONE 6X69xx
19	filler	filler
20	CSM 6X42AA	CSM 6X42AA
21	Formatter 6X41AA	Formatter 6X41AA
22	DS-30 Card 6X40xx	DS-30 Card 6X40xx
23	DS-30 Card 6X40xx	DS-30 Card 6X40xx
24	filler	filler
25- 27	Power Converter 2X70AE	Power Converter 2X70AE

ETMS OC Pack fill using the PCM-30 Interface

Slot	Unit 0	Unit 1
1	filler	filler
2	PCM-30 I/F 6X27xx	PCM-30 I/F 6X27xx
3	PCM-30 I/F 6X27xx	PCM-30 I/F 6X27xx
4	PCM-30 I/F 6X27xx	PCM-30 I/F 6X27xx
5	PCM-30 I/F 6X27xx	PCM-30 I/F 6X27xx
6	filler	filler
7	filler	filler
8	filler	filler
9	filler	filler

Enhanced TOPS OC and Increased Remote Support (continued)

ETMS OC Pack fill using the PCM-30 Interface

Slot	Unit 0	Unit 1
10	filler	filler
11	filler	filler
12	UP MX77AA	UP MX77AA
13	filler	filler
14	Timeswitch 6X44EA	Timeswitch 6X44EA
15	filler	filler
16	EISP BX01AB	EISP BX01AB
17	filler	filler
18	MSG/TONE 6X69Lx	MSG/TONE 6X69Lx
19	PCM SIG 6X28AA/B	PCM SIG 6X28AA/B
20	CSM 6X42AA	CSM 6X42AA
21	Formatter 6X41AA	Formatter 6X41AA
22	DS-30 Card 6X40xx	DS-30 Card 6X40xx
23	DS-30 Card 6X40xx	DS-30 Card 6X40xx
24	filler	filler
25- 27	Power Converter 2X70AE	Power Converter 2X70AE

Logs

When you enter a new link in table TMSOCDL, the system generates a TOPS500 log. This log records the state change from Uneq to OffL. When you delete a link from table TMSOCDL, the system generates a TOPS500 log. This log records the state change from OffL to Uneq.

Upgrade

You must consider many conditions when you introduce ETMS OC. The current primary OC features are Basic OC, OC Night Closedown (OCNC) and Host/Remote Networking by Queue Type (HRNQT). Some offices use more than one of these features.

Enhanced TOPS OC and Increased Remote Support (continued)

Some of the suggested upgrade strategies for an office that use each of the preceding OC features follows. The two categories for the strategies are Flash-Cut and Phase-In. The Phase-In strategy transitions the smallest amount of OC traffic to the ETMS OC data links at a time. This strategy is the safer of the two strategies.

All of the following strategies require a definition of a new office name in table OCOFC. An office can have 15 offices in OCOFC. When this condition occurs, the office requires the Enhanced OC - Increase Remote Support SOC for an upgrade to ETMS OC. This SOC allows operating company personnel to bring links in service. These links connect to office numbers that exceed 15.

The following strategies list the general steps required to perform the upgrades. See the datafill section for additional information on how to add or delete OC components in datafill.

Flash-cut data link strategies

The strategies for flash-cutting OC data links from the DCM to the ETMS platform follow. You can use more than one of these strategies.

Basic OC: This example describes the high level procedures to perform a flash cut for OC offices with Basic OC. These offices convert from DCM OC data links to ETMS OC data links. This example assumes that use of the same OC voice links occurs.

The upgrade strategy for basic OC is as follows:

- 1 In the HOST office:
 - a Enter a new remote office name in OCOFC. An example of a new remote office name is REMOTE2.
 - b Enter the new ETMS OC data links in tables OCDLGRP and TMSOCDL. In table OCDLGRP, make sure that the connecting ends have opposite field LAPDATTR values NT and TE. See the datafill section for additional information.
 - c Enter a new tuple in OCGRP for REMOTE2 with the same voice link group as the current remote tuple. Enter the new ETMS OC data link group you defined in step 1b.
- 2 In the REMOTE office:
 - a Enter a new host office name in OCOFC. An example of a new host office name is HOST2.
 - b Enter new ETMS OC data links in tables OCDLGRP and TMSOCDL.

Enhanced TOPS OC and Increased Remote Support (continued)

- c Enter a new tuple in OCGRP for HOST2 with the same voice link group as the current host tuple. Enter the new ETMS OC data link group you define in step 2b.
- 3 In the HOST and REMOTE, busy (BSY) and return to service (RTS) the defined ETMS OC data links. This action brings the links in service. Perform standard link continuity tests according to operating company practices. Use the OCPING command for additional verification of the continuity of the data links.
- 4 In the REMOTE, change the value of HOST to HOST2 in table OCHOST. This action replaces the current host.

When you complete step 4, new OC calls use the ETMS OC data links you defined. Calls in progress continue to use the old DCM data links until the call completely releases from the operator position. Verify that the system handles OC calls over the ETMS OC data links correctly. After you complete the verification, delete all datafill in the remote that applies to the current host office. Delete all datafill in the host that applies to the current remote office.

After you delete the old tuples in table OCOFC, you can change the new tuples to the original office names.

OC Night Closedown (OCNC): This example describes the high level procedures to perform a flash cut for OC offices using OCNC. These offices convert from DCM OC data links to ETMS OC data links. This example assumes that use of the same OC voice links occurs.

Upgrade to ETMS OC data links during the time period when the office does not route OC traffic to the OCNC host. If the office uses Basic OC, perform the following procedure. Upgrade to the ETMS OC data links while the system routes to the OC traffic to the OCNC host.

The upgrade strategy for OCNC is as follows:

- 1 In the HOST office:
 - 1. Enter a new remote office name in table OCOFC. An example of a remote office name is REMOTE2.
 - 2. Enter the new ETMS OC data links in tables OCDLGRP and TMSOCDL. In table OCDLGRP, make sure that the connecting ends have opposite field LAPDATTR values NT and TE. See the datafill section for additional information.
 - 3. Enter a new tuple in OCGRP for REMOTE2 with routes the same voice link group as the current remote tuple. Enter the new ETMS OC data link group defined in step 1b.
- 2 In the REMOTE office:

Enhanced TOPS OC and Increased Remote Support (continued)

- a Enter a new host office name in table OCOFC. For example, HOST 2.
 - b Enter the new ETMS OC data links in tables OCDLGRP and TMSOCDL.
 - c Enter a new tuple in OCGRP for HOST2 with the same voice link group as the current host tuple. Enter the new ETMS OC data link group you defined in step 2b.
- 3 In the HOST and REMOTE, BSY and RTS the ETMS OC data links you defined. This action brings the links in service. Perform standard link continuity tests according to operating company practices. Use the OCPING command for additional verification of the continuity of the data links.
 - 4 In the REMOTE office, issue the command OCNCHOST HOST2 from the OCNC MAP increment.

When you complete step 4, new OC calls use the ETMS OC data links you defined. This action occurs when the remote switch is in the closedown mode. Calls in progress continue to use the old DCM data links until the call release from the operator position. Verify that the system correctly handles OC calls over the ETMS OC data links. After you complete the verification, delete all datafill in the remote that applies to the current host office. Delete all datafill in the host that applies to the current remote office.

When you delete the old tuples in table OCOFC, you can change the new tuples to the original office names.

OC Host/Remote Networking by Queue Type (HRNQT): This example explains the high level procedures to perform a flash cut for OC offices using HRNQT. These offices convert from DCM OC data links to ETMS OC data links. This example assumes that use of the same OC voice links occurs.

The upgrade strategy for HRNQT is as follows:

- 1 In the HOST office:
 - a Enter a new remote office name in OCOFC. An example of a remote office name is REMOTE2
 - b Enter the new ETMS OC data links in tables OCDLGRP and TMSOCDL. In table OCDLGRP, make sure that the connecting ends have different field LAPDATTR values NT and TE. See the datafill section for additional information.
 - c Enter a new tuple in OCGRP for REMOTE2 with the same voice link group as the current remote tuple. Enter the new ETMS OC data link group you defined in step 1b.
- 2 In the REMOTE office:
 - a Enter a new host office name in table OCOFC. An example of a new host office name is HOST2.

Enhanced TOPS OC and Increased Remote Support (continued)

- b Enter the new ETMS OC data links in tables OCDLGRP and TMSOCDL.
 - c Enter a new tuple in OCGRP for HOST2 with the same voice link group as the current host tuple. Enter the new ETMS OC data link group you defined in step 2b.
- 3 In the HOST and REMOTE, BSY and RTS the ETMS OC data links you defined. This action brings the links in service. Perform standard link continuity tests according to operating company practices. Use the OCPING command for additional verification of the continuity of the data links.
 - 4 In the REMOTE, change the value of the primary or alternate host for the desired call queue from HOST to HOST2 in table OCHOSTQ. This action replaces the current host.

When you complete step 4, new OC calls with queue types in table OCHOSTQ use the ETMS OC data links you defined. Calls in progress continue to use the old DCM data links until the calls release from the operator position. Verify that the system correctly handles OC calls over the ETMS OC data links. After you complete the verification, delete all datafill in the remote that applies to the current host office. Delete all datafill in the host that applies to the current remote office.

When you delete the old tuples in table OCOFC, you can change the new tuples in OCOFC to the original office names.

Phase-in data link strategy

The phase-in strategy to upgrade to ETMS OC data links uses the flash-cut method. This method allows the smallest amount of OC traffic to ETMS data links to occur at one time to change. The HRNQT feature allows the change of OC traffic for one call queue type to occur at one time. This strategy is the safest upgrade strategy because this strategy transitions the smallest amount of OC traffic at one time.

Offices that do not use HRNQT can require this feature to change OC traffic. The traffic changes from using DCM data link to using ETMS data links. Use of this feature allows a remote office to change OC traffic to a host office one call queue type at a time.

Voice link options

Options for deciding how to configure the voice links for the OC network appear in the following list.

- 1 If you retain the DCM or other voice link facilities, do not perform any action.

Enhanced TOPS OC and Increased Remote Support (continued)

- 2 If you provision for additional carriers and run all voice links over the ETMSs, you can define a new voice link group. To define a voice link group, enter data in the following tables:
- CLLI
 - TRKGRP
 - TRKSGRP
 - TRKMEM
 - OCGRP
 - VLMEM
- The tables appear in the correct entry order. You must make the preceding changes before changes to tables OCHOST, OCNCHOST, or OCHOSTQ in the preceding upgrade strategies. If you do not perform the operation in this order, you cannot change tuples in OCGRP. If you do not use this order, you must delete tuples in table OCGRP and add the tuples again.
- 3 If switching voice links from current facilities to the ETMS, you must perform an incremental switch. Incremental switching involves switching one voice link at a time from the current facilities to the ETMS platform. Use the following procedure to perform an incremental switch:
- a You must BSY INB all circuits defined on the carriers that move to the ETMS at the TTP level of MAPCI.
 - b Delete the entries in tables VLMEM and TRKMEM for the voice link group you busied.
 - c Move the carrier from the current hardware to the ETMS. Connect the carrier to a DS-1 or PCM-30 port.
 - d Add the tuples to TRKMEM again. Specify the ETMS, DS-1/PCM-30 port, and channel.
 - e Add the tuples to VLMEM again.
 - f Repeat the preceding steps for all the voice link group members as necessary.
- 4 You can require additional voice links. When this condition occur, in this event, an increase of the TRKGRSIZE field for the voice link group in table CLLI can be necessary. You can add datafill for the additional voice links in tables TRKGRP, TRKSGRP, TRKMEM, and VLMEM. You can bring the voice links into service at the TTP level of MAPCI.

Provisioning

Provision the ETMS OC voice and data links according to the following considerations:

- Provide enough data links. If half the links fail, the remaining half must be able to carry all the traffic.
- Install a minimum of two fully independent transmission routes to connect any OC host - remote pair. This action makes sure that any single failure does not affect more than half the data links. Each host-remote pair must always have a minimum of two data links. The state of the traffic does not affect this requirement.

Enhanced TOPS OC and Increased Remote Support (continued)

- Each data links can carry a maximum of 25 messages for each second in normal use. Each data link can carry a maximum of 50 messages for each second when other links fail. Messages experience additional delay if the traffic increases from 25 to 50 messages for each second.
- The sum of the traffic on all the data links on a single ETMS must not exceed 50 messages for each second. This condition applies for normal use. This sum must not exceed 100 messages for each second when other ETMSs fail. Messages experience additional delay if the traffic increases from 50 to 100 messages for each second.

Note: An ETMS can support only two data links. This condition applies if the links carry the maximum load of 25 messages for each second. If the provisioning of the links is for less traffic, the ETMS can support more links.

- Voice links must be engineered for the following conditions:
 - to allow for changes in traffic from the remotes
 - to make sure that calls served in a standalone office are not lost in an OC environment

The measurement of the capacity of the ETMS and the OC data links is in messages for each second. As the message traffic increases above the specified limits, the delay of messages occurs. At higher traffic levels, the system loses messages.

To provision OC data links, you must estimate the following information:

- the number of TOPS calls each hour
- the number of messages for each call that originates in an OC remote

The mix of call types determines the number of messages for each call. The estimates in section "Provisioning Data Links Based on Operator Traffic" are satisfactory for planning purposes. You must monitor the OMs when an installation is in-service. You must check the OMs during high day busy hour traffic to make sure the data links operate in capacity. The message traffic is proportional to the number of calls served. This conditions applies as long as the mix of call types and the Average Work Time (AWT) do not change. The traffic mix varies with traffic load.

Using OMs to verify data link usage

The data rate on an OC data link must not exceed 25 messages for each second. One data link can carry a maximum of 45 000 messages in half an hour. An OC office can use a set of data links that table OCGRP specifies. Table

Enhanced TOPS OC and Increased Remote Support (continued)

OCOFC contains the OC offices. The total message traffic the office can support in half an hour is:

$$\text{Max messages for office} = 45000 \times \text{number of office links}$$

Each DMS OC switch increases register VCNMSG in OM group TOPSVC. An increase occurs when the switch sends a message on an OC data link. Table OCOFC contains an OM group for each office. You can determine the total traffic in a half hour period on the set of links between two OC offices. To calculate the traffic, add the values of the VCNMSG registers in the host and remote offices. You must check the registers during high day busy hour periods. The total for any link set can exceed the maximum from the preceding equation. In this event, not enough data links are present for the traffic between the host and remote offices.

Provisioning data links based on operator traffic

The data link traffic a given volume of operator traffic generates is:

$$\text{Messages per second per Erlang} = \frac{\text{Number of messages per call}}{\text{Average work time}}$$

You must relate the number of data links to the number of TOPS positions required to serve traffic in the remote office. The real number of positions that a data link can support depends on the traffic mix and average work time (AWT) of calls. The AWT of calls varies from site to site.

At 100% operator occupancy, each operator handles 1 erlang*¹ of traffic. In practice, operator occupancy is less than 100%. Message rates for a specified number of positions are lower. Large offices can run above 90%. Small offices require two data links. The message rate in a small office does not affect this requirement.

For the preceding large and small office types, assume that an MPX-IWS that uses OPP generates:

- 15 OC messages for a normal TOPS TA call
- 10 OC messages for a normal DA call

¹* An erlang is the traffic carried by a circuit under continuous use. An erlang is the same as 36 half hourly CCS or 18 hourly CCS.

Enhanced TOPS OC and Increased Remote Support (continued)

The following conditions determine the message rate:

- the local call handling practices
- the mix of call types
- the application of OPP by the position vendor

The examples also assume an AWT of 22 s for TA calls and 18 s for DA calls. From the preceding equation:

- 1 erlang of TA traffic from a remote office generates 0.682 messages each second
- 1 erlang of DA traffic from a remote office generates 0.555 messages each second

If you estimate the TA and DA traffic separately, determine the total traffic on the OC data links. Use the following equation to determine the traffic:

$$\text{Total messages per second} = (0.682 \times \text{TA traffic in erlangs}) + (0.555 \times \text{DA traffic in erlangs})$$

The number of positions that a set of data links can support appears in the following table. These positions operate at 100% occupancy. The following conditions apply:

- 15 messages for each DA call at an AWT of 22 s
- 10 messages for each DA call at an AWT of 18 s

For mixed TA and DA traffic, the number of positions is between the maximum TA and maximum DA.

OC data link capacity

Number of data links	Maximum number of positions (TA traffic only)	Maximum number of positions (DA traffic only)	Maximum number of ETMSs needed
2	73	90	2 (note 1)
4	146	180	2
<p>Note 1: One ETMS can handle the traffic. Robustness requires two ETMSs.</p> <p>Note 2: The maximum number of positions a DMS TOPS Host currently supports is 1022.</p>			

Enhanced TOPS OC and Increased Remote Support (continued)

OC data link capacity

Number of data links	Maximum number of positions (TA traffic only)	Maximum number of positions (DA traffic only)	Maximum number of ETMSs needed
6	219	270	3
8	293	360	4
10	366	450	5
12	439	540	6
14	513	630	7
16	586	720	8
18	659	810	9
20	733	900	10
22	806	990	11
24	879	1081 (note 2)	12
26	953	1171 (note 2)	13
28	1026 (note 2)	1261 (note 2)	14
30	1099 (note 2)	1351 (note 2)	15
32	1173 (note 2)	1441 (note 2)	16
Note 1: One ETMS can handle the traffic. Robustness requires two ETMSs.			
Note 2: The maximum number of positions a DMS TOPS Host currently supports is 1022.			

To plan new DMS TOPS offices, the following NTPs explain the method that determines the required number of TOPS positions:

- 297-2281-155, *DMS-100 Family TOPS MP Planning and Engineering Guide*
- 297-2291-154, *TOPS MPX NT DA Planning - Engineering Guide*
- 297-2291-155, *TOPS MPX Planning - Engineering Guide*

Enhanced TOPS OC and Increased Remote Support (continued)

Provisioning voice links

Assignment of a voice link occurs in the host when the host allocates a position to serve a call. The voice link provides a speech path between the operator in the host and the calling and called parties in the remote. You can install voice links as trunks on the ETMS. In this event, the voice links share facilities with the data links. You can install voice links on any DMS peripheral that can support TOPS or Intertoll trunks.

Note: You cannot install links that are not OC data links and OC voice links on an OC ETMS. This condition applies because TMS software does not support trunk signaling. Supervision messages for these trunks reduces the message bandwidth available for OC.

The following two factors determine how to provision voice links:

- You must provision enough voice links to connect all calls from a remote that require an operator. The standard Poisson blocking tables contain this number.
- When provisioning, you must account for changes in operator traffic from different remotes. Queues in the host accept calls if the expected wait for an operator is less than the value in table QMSCQDEF, field CQCETIME..

The following conditions can occur:

- A surge of traffic can occur in one remote.
- The number of operators the host assigns exceeds the number the number of voice links.

The ECM 606 - TOPS Engineering, issue 13 explains how to provision voice links. The provisioning occurs according to HDBH (high day busy hour) operator traffic in the remotes. The HDBH traffic in CCS originating at a remote determines the number of trunks required with a Poisson table at 0.001 blocking. Add approximately 5%. Telephone company practice for assistance traffic determines this value. This assistance traffic does not include call monitoring. Round up to the next multiple of 24 and add one additional T1 span (24 DS-0 channels) for redundancy. Spans for OC voice links that route over separate facilities are recommended for maximum reliability.

The HDBH traffic also determines the number of operator positions required if the office is standalone TOPS and not an OC remote. See "Provisioning data links based on operator traffic" for additional information on how to determine the number of positions.

The relationship between the number of positions and the number of voice links needed to carry a few representative levels of traffic appear in the

Enhanced TOPS OC and Increased Remote Support (continued)

following table. Use the Erlang delay model to determine the number of TOPS positions. Use the following information in the calculation:

- an 18 second AWT
- a 4 second average answer delay objective
- a 92% average operator occupancy ceiling

These values are normal for DA traffic. With a 92% occupancy ceiling, the number of positions does not depend on AWT or answer objective above approximately 60 Erlangs. The Poisson 0.001 blocking table provides the number of voice links. The following table does not include the additional circuits for Assistance positions and the extra T1 recommended for redundancy. The following table indicates that the ratio of voice links to positions is larger at low traffic levels than at high traffic levels.

TOPS positions and OC voice links as a function of traffic

Erlangs	8.2	17.9	37.1	55.2	73.6	92	138	184	276	368
Positions	10	20	40	60	80	100	150	200	300	400
Voice links	19	33	58	80	102	125	177	228	330	430
Ratio	1.9	1.65	1.45	1.33	1.28	1.25	1.18	1.14	1.10	1.08
Threshold	1.1	1.2	1.4	1.50	1.56	1.6	1.69	1.8	1.8	1.9

Strategy for redundancy

Normally, operator service was treated as an essential service. The subscriber receiving operator services from an OC remote does not have a significantly higher probability of failing to reach an operator than the following. There is no higher probability of failing to reach an operator than a subscriber served by a standalone TOPS switch. This condition applies when engineering an OC network. You must protect against failures of any of the components linking a host and a remote.

The ETMS is an XPM. The ETMS contains duplicates of all the components of the XPM. Examples of these components are processors and interfaces to the DMS network. The ETMS does not contain duplicates of the T1 interface circuits. Each host or remote office in a TOPS OC network should have a minimum of 2 OC ETMSs. This condition makes sure that a very high availability of operator services occurs.

The transmission facilities between a host and a remote are normally multiplexed on a high bandwidth carrier. An example of this type of carrier is fiber. A single cable cut can affect multiple T1s. To connect any host and

Enhanced TOPS OC and Increased Remote Support (continued)

remote with a minimum of two separately routed carrier facilities is a recommendation. Allocate the voice and data links evenly across the routes. To make sure minimum congestion in the event of a cable cut, spread the voice and data circuits from each route over as many ETMSs as possible. This action makes sure that distribution of the traffic on the remaining carrier occurs across multiple ETMSs.

The data links must be engineered for a maximum of 25 messages for each second. The ETMSs must be engineered for a maximum of 50 messages for each second. See "Provisioning data links based on operator traffic" for information on the engineering. For these conditions, this hardware performs well under normal load. The hardware has enough capacity for half the links or ETMSs to handle all the load if an outage removes the other half from service. Provisioning examples are in table "Tops positions and OC voice links as a function of traffic." These examples are engineered so that half the data links can handle the traffic during an outage of the other half.

The voice link engineering rules do not provide enough trunks to handle the full load if half the facilities are out of service. The traffic that the system cannot handle is routed to an alternate host or to treatment, depending upon datafill in the remote. To improve availability of operator services in an OC remote, perform the following action. Use a minimum of two separate routes or increase the total number of voice links.

Some rules of thumb

Message rates determines provisioning of OC data links. Call volumes, in CCS or Erlangs, determines provisioning of voice links. Use Operational Measurements and Force Management data to determine these quantities. Other methods can determine these estimates. The estimates are useful for planning.

Voice links are often in increments of 24. This value represents a T1 span. Many sites only need one pair of OC ETMSs. For these reasons, the estimates can provision an office. Make sure that the estimate does not fall on the boundary that determines the following. The boundary determines when you need an additional T1 span or OC ETMS. When this condition occurs the estimates cannot provision an office.

The following information determines what rules apply when relating messages to calls:

- the information that appears at call arrival
- key functions the operators can use for the call types encountered

Enhanced TOPS OC and Increased Remote Support (continued)

The following values are standard in an OPP environment:

- 10 messages for each DA call
- 15 messages for each TA call

The OPP normally uses more messages than the older position protocols. The call mix and local datafill cause part of the increase. The engineering rules can be close to the point where the operating company requires additional OC ETMSs or facilities. If a site does not use OPP positions, the site does not require these additional OC EMTSs and facilities. In this event, check the current message traffic again using the Operational Measurements. Make sure that engineering of the site is correct. You must consider that the data links represent a small part of the OC facility requirement compared with voice links.

Voice links appear to be over provisioned for traffic compared with most trunking. This condition occurs because each available operator requires a voice link to handle a call. An operator that cannot connect to a call spends some time idle. This condition defeats the purpose of combining traffic from multiple remotes to a large team. A tradeoff occurs between the cost of operator time and the cost of additional voice links.

The operating company can know the number of positions that an OC remote requires for standalone operation. In this event, you can estimate the number of voice links required for OC. Use table "Tops positions and OC voice links as a function of traffic" to estimate the number required. If the number of positions does not exceed 150, see if the number matches one of the entries in the table. Use the corresponding number of voice links from the table. If the number does not match exactly, estimate a value between the two closest entries in the table. If the number of positions exceeds 150, multiply the number of positions by 1.2. Increase the resulting number by 5% to allow for voice links required for assistance positions. Round the number to the next higher multiple of 24. Add an extra T1 span for redundancy. A T1 span contains 24 additional links.

The operating company can know the number of DA and TA calls (busy hour IPS). In this event, you can estimate the message rate. Multiply the DA calls by 10 and the TA calls by 15. Add the results to obtain the total messages in one hour. Divide by 3600 for hourly IPS or 1800 for half hour IPS to obtain the number of messages for each second. Divide this number by 25 and round up to obtain the number of data links required. You must provision a minimum of two data links for redundancy.

You can estimate the number of voice links from the busy hour IPS call rate and AWT. This information is the only requirement for the calculation of the

Enhanced TOPS OC and Increased Remote Support (continued)

traffic and the one use of the real provisioning tables. If you cannot obtain this information, use the IPS for all or half of the busy hour. Multiply the IPS by the system AWT for the same period. Divide the result by 1800 for half hourly data or 3600 for hourly data to obtain the traffic in Erlangs. See table "Tops positions and OC voice links as a function of traffic" to obtain the number of voice links. Use an estimate of the nearest values if necessary. If the value for "Ratio" in the table does not exceed 1.2, divide the number of trunks by the ratio. Multiply this number by 1.2 to provide a margin for traffic peaks between OC remotes that are synchronized. Increase the number 5% to allow for voice links required for assistance positions. Round the number to the next higher multiple of 24. Add an additional T1 span for redundancy. A T1 span contains 24 additional links.

Example OC network configurations

The provisioning for different sizes and configurations of OC networks appears in the following example. In each example, the TA calls have an AWT of 22 s and generate 15 messages. The DA calls have an AWT of 18 s and generate 10 messages. See "Provisioning Data Links Based on Operator Traffic" for additional information. This information provides the following values:

- 0.682 messages for each erlang of TA traffic
- 0.555 messages for each erlang of DA traffic

The following examples use these values.

A small OC network that contains a host and 3 remote offices appears in figure "Small OC Network." The total traffic the system serves is 198 erlangs. The traffic contains 66 erlangs of DA traffic and 132 erlangs of TA traffic. The DA traffic requires 72 positions and the TA traffic requires 144 positions, for a total of 216 positions. The standard provisioning tables provide these values.

The host serves traffic from end offices with direct connections. These offices generate 10 erlangs of TA traffic and 22 erlangs of DA traffic. The remaining traffic comes from the 3 remotes. The 56 erlangs of TA traffic generate 38.19 messages for each second. The 110 erlangs of DA traffic generate 61.05 messages for each second. Two OC ETMSs can handle the total 99.24 messages for each second. You can connect all the OC remotes to one pair of ETMSs in the host. The distribution of traffic in the remotes does not affect this condition.

Each remote requires a pair of ETMSs. A remote requires one pair of data links if the remote generates less than 50 messages for each second. The remote requires one data link for each ETMS. If a remote generates more than 50 messages for each second, the remote requires two pairs of data links. The

Enhanced TOPS OC and Increased Remote Support (continued)

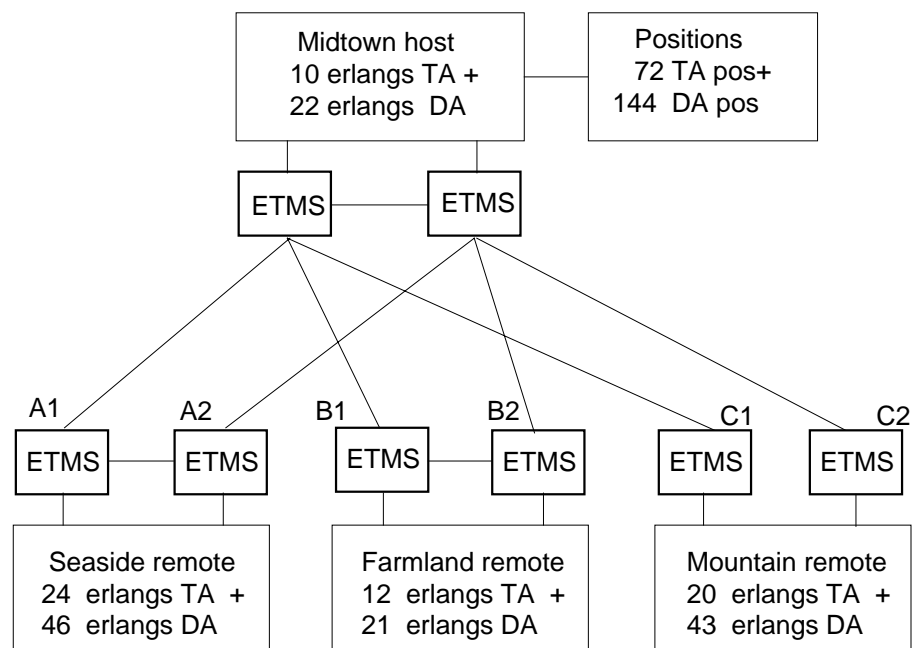
additional pair of data links makes sure the remote has enough capacity during outages involving half of the available routes.

The following information applies to the following figure:

- the Seaside remote office generates $24 * 0.682 + 46 * 0.555 = 41.90$ messages for each second
- the Farmland remote office generates $12 * 0.682 + 21 * 0.555 = 19.84$ messages for each second
- the Mountain remote office generates $20 * 0.682 + 43 * 0.555 = 37.5$ messages for each second

One pair of data links can serve each office. Each remote office requires two OC ETMSs for redundancy.

Small OC Network



The Seaside office generates 70 erlangs total traffic. From the Poisson.001 blocking table, this office requires 91 voice links. When you add 5% for Assistant Position traffic, the total requirement for the office is 96 voice links.

Enhanced TOPS OC and Increased Remote Support (continued)

This number represents 4 T1 spans. The office requires a minimum of 1 additional T1 span for the following reasons:

- to provide some redundancy
- to provide the two additional DS0 channels for the data links

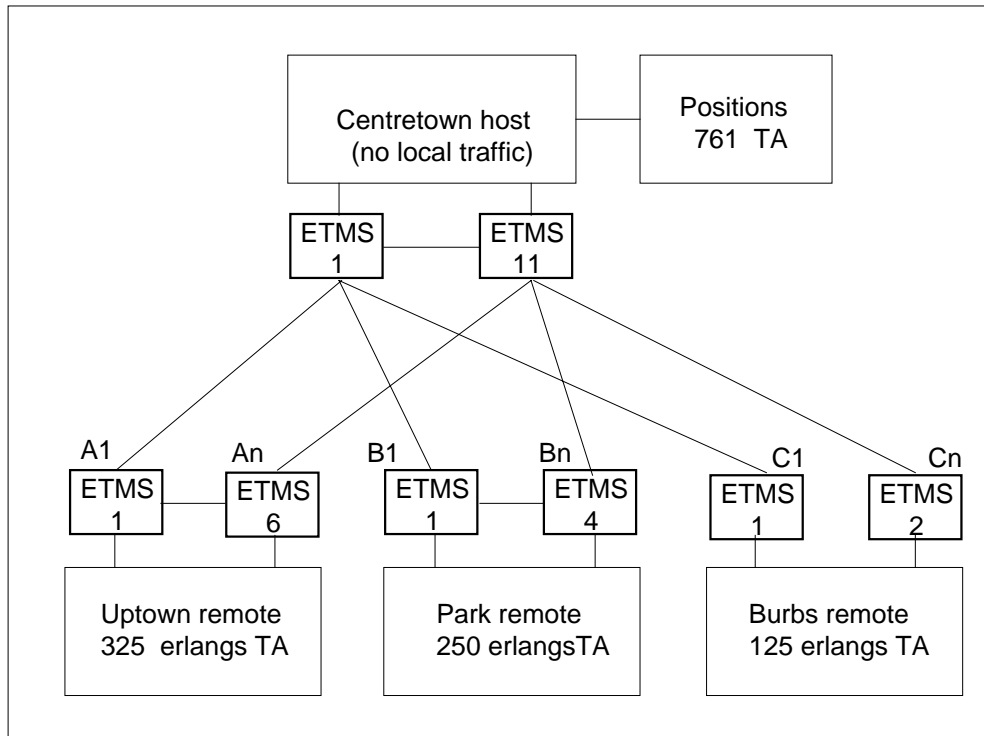
The Farmland remote office requires 51 voice links and two data links. Three T1 links can serve these links. This office requires one additional T1 link for redundancy. The Mountain remote requires 98 voice links and two data links. Five T1 links can serve these links T1 links. This office also requires one additional T1 link for redundancy.

In the previous figure, links A1 and A2 represent the 5 T1s that carry OC voice and data links between Seaside and Midtown. The A1 can have 2 T1s and A2 can have 3 T1s. The B1 and B2 each represent 2 T1s between Farmland and Midtown. The C1 and C2 each represent 3 T1s. If route A2 fails, Seaside only has 47 voice links and one data link left. When this event occurs, Seaside cannot handle the engineered maximum traffic. Engineer an additional T1 span for route A1 unless another form of backup carrier is present. If Seaside has host remote queueing by call type, Seaside can attempt to route the call to an alternate host.

A configuration with larger offices appears in figure "OC Network with large remotes" that follows. The Centretown host handles 700 erlangs of TA traffic from 3 remotes. The three remotes are Uptown, Park and Burbs. At 92% operator occupancy this traffic requires 761 positions. The message traffic at this host is $700 * 0.682 = 477.4$ messages for each second. The minimum number of ETMSs required to support this traffic is $477.4 / 50 = 9.5$ ETMSs. This number indicates that Centretown requires 10 ETMSs.

Enhanced TOPS OC and Increased Remote Support (continued)

OC Network with large remotes



The Uptown remote generates 325 erlangs of traffic. The Uptown remote generates $325 * 0.682 = 221.6$ messages for each second. This remote requires $221.6 / 50 = 4.4$ ETMSs. Uptown requires six ETMSs because provisioning of ETMSs must occur in pairs. Uptown requires a minimum of $221.6 / 25 = 9$ data links because data links can carry 25 messages for each second. The traffic on each data link is $221.6 / 9 = 24.6$ messages for each second. The operating company must spread the links over two separate transmission facilities.

If operating company splits the links, failure of the group of five links puts $221.6 / 4 = 55.4$ messages for each second on the remaining links. An example of a split is four links for one ETMS and five for the other ETMS. The number of messages for each second that results exceeds the maximum rating. A failure occurs when the number of messages for each second exceeds 50 messages for each second. When this event occurs, the operating company must provide 10 data links. Four of the ETMSs have two data links, one link on each of the two transmission facilities. The remaining 2 ETMSs have one data link each. The 10 links generate a maximum of $221.6 / 10 = 22.1$ messages for each second each.

Enhanced TOPS OC and Increased Remote Support (continued)

The Park remote generates 170.5 messages for each second and requires four ETMSs. This remote requires seven links for traffic. The operating company must provide eight links for full redundancy. These data links each generate a maximum of $170.5 / 8 = 21.3$ messages for each second.

The Burbs remote generates 85.2 messages for each second and requires two ETMSs and four data links. The data links generate $85.2 / 4 = 21.3$ messages for each second.

The total number of data links from all the remotes to Centretown is $10 + 8 + 4 = 22$ data links. The operating company cannot combine the message rates to allow three data links on any ETMS in Centretown. The message rates are 22.1, 21.3 and 21.3. Centretown requires 11 ETMSs to terminate the 22 data links without exceeding 50 messages at any ETMS. Each ETMS in Centretown must have one of the following:

- links from two different remotes
- links carried on separate transmission facilities from the same remote

This condition makes sure that a minimum impact on service occurs if a cable is cut.

In figure "OC Network with large remotes," the facility requirements include voice links and data links.

From the Poisson tables, the 325 erlangs of traffic from Uptown require 383 voice links. Add 5% for Assistance traffic for a result of 402 circuits. Add 10 data links for a total of 412 circuits. This number indicates that Uptown requires 18 T1 spans. The operating company must provide a minimum of one additional T1 span for redundancy. The operating company must distribute these T1 spans over the possible connection paths. These paths appear as A1 to An between Uptown and Centretown in the figure.

The 250 erlangs from Park require 301 circuits. This number increases to 324 with addition of the 5% for assistance traffic and the eight data links. This remote requires 14 T1 spans and a minimum of one for redundancy. The operating company can distribute the T1 spans over the paths B1 to Bn between Park and Centretown

The 125 erlangs from Burbs require 162 circuits. This number increases to 174 with addition of the 5% for assistance and the four data links. This remote requires eight T1 spans and a minimum of one for redundancy. The operating company must distribute these T1 spans over paths C1 to Cn between Burbs and Centretown.

Enhanced TOPS OC and Increased Remote Support (continued)

The 11 ETMSs in Centretown can terminate the total of 43 T1s.

Software optionality control (SOC)

SOC OSB00101 controls this functionality. The functionality contains ETMS OC and ETMS Increased Remote Support.

Addition/deletion of ETMS OC components

This section explains the steps to perform when you add and delete the different components in an OC connection.

Adding an ETMS OC office

To add a new ETMS OC office, follow the datafill order that appears in the datafill procedure section.

Deleting an ETMS OC office

The steps required to remove datafill from an OC office using ETMS OC data links follow.

- 1 Remove the reference to the office from tables OCHOST and OCHOSTQ, if necessary. Check the OCNC MAP increment to make sure the OCNCHOST command does not list the office as host during OC closedown.
- 2 Make sure all data links are off-lined and all voice links are in the INB state from the MAP.
- 3 Delete associated tuples from table VLMEM.
- 4 Delete the associated tuple in table OCGRP. Delete the associated tuple in table OCOFC.
- 5 Delete the associated voice link tuples in tables TRKMEM, TRKSGRP, TRKGRP, and CLLI in this order.
- 6 Delete the associated data link tuples in tables TMSOCDL and OCDLGRP in this order.
- 7 Delete TMS ports in table LTCPSINV if this condition applies.

Adding ETMS OC data links

To add new ETMS OC data links to a current data link set, add tuples to table TMSOCDL. After you complete this procedure, you can bring the data links in-service (InSv) at the OCDL MAP level. After the data links are InSv, use the OCPING command to verify communications on the data links.

Deleting ETMS OC data links

The steps required to delete an ETMS OC data link from a current data link set are as follows.

Enhanced TOPS OC and Increased Remote Support (continued)

- 1 Make sure the data link is busied and off-lined from OCDL MAPCI level.
- 2 Remove the corresponding tuple from table TMSOCDL.

Adding OC voice links

The steps required to add additional OC voice links to a current voice link set are as follows.

- 1 Make sure the TRKGRSIZ field in table CLLI for the voice link group is large enough to accommodate the additional VLMEM entries. If the field is not large enough, change the TRKGRSIZ field in table CLLI to the new maximum.
- 2 Add tuples to tables TRKMEM. Add tuples to table VLMEM.
- 3 You must BSY and RTS the new voice links.

Deleting OC voice links

The steps required to delete an OC voice link from a current voice link set are as follows.

- 1 Make sure the voice link is in the INB state from the MAP.
- 2 Remove the corresponding tuples from table VLMEM and table TRKMEM in this order.

Adding a TMS as an OC server

The steps required to add a TMS as an OC data link server are as follows.

- 1 Add a tuple to table LTCINV. Enter OC in the OPTATTR field. The peripheral must be an ETMS. The DCH cards for the peripheral in table LTCPSINV cannot be present.
- 2 Add a tuple to table LTCPSINV to add the p-side ports. You cannot add DCH (BX02xx) cards.
- 3 Add correct OC data and voice links. See the preceding sections for additional information.

Enhanced TOPS OC and Increased Remote Support (continued)

Deleting a TMS as an OC server

The steps required to delete a TMS as an OC data link server follow.

- 1 Delete correct OC data and voice links on the specified TMS.
- 2 Delete all ports in table LTCPSINV.
- 3 Delete the TMS tuple in table LTCINV.
- 4 Add the TMS tuple in table LTCINV again. You do not have to add the OC optional attribute, and other datafill on the TMS.

Translations table flow

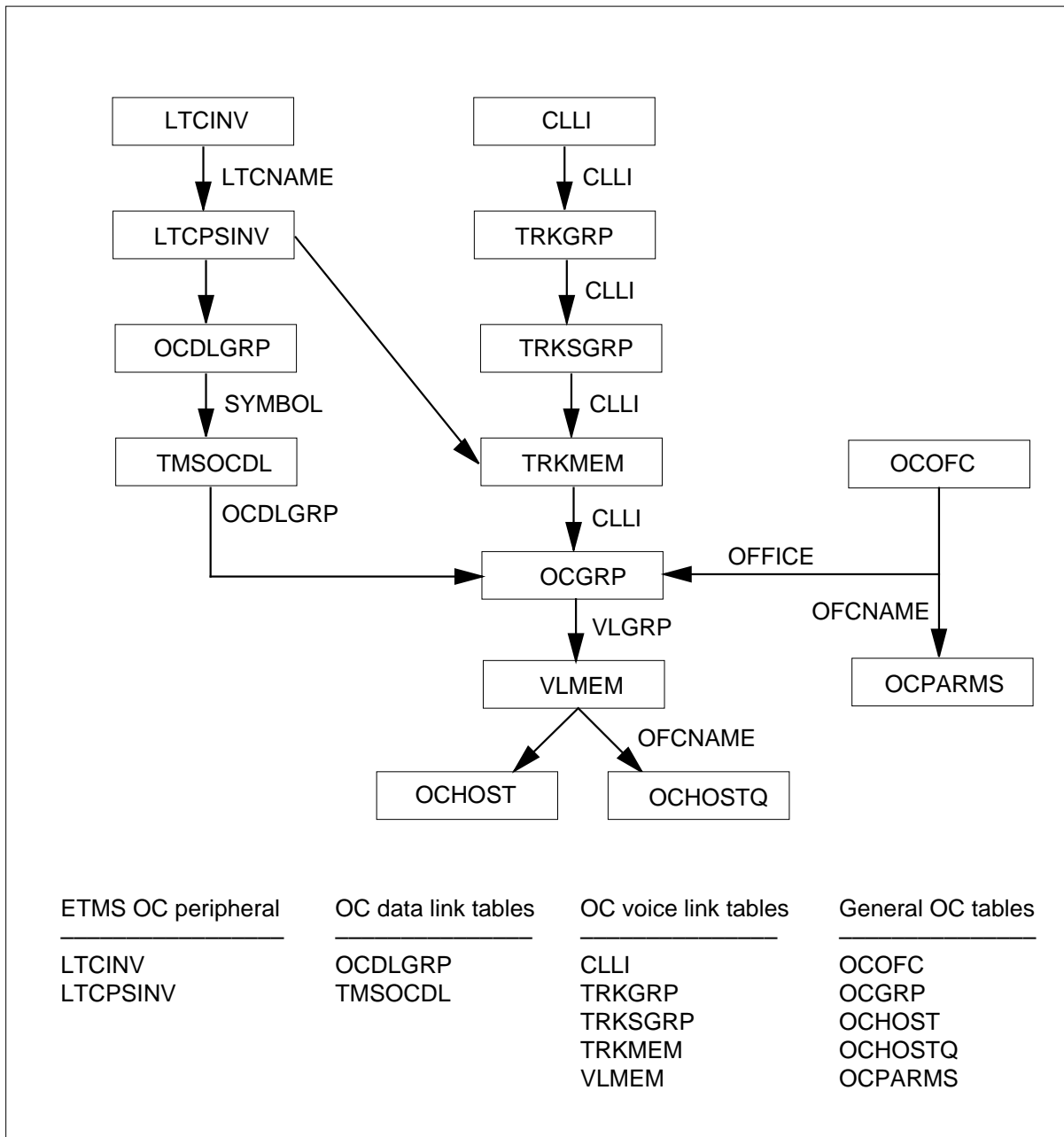
The following list explains the Enhanced TOPS OC and Increased Remote Support translations tables:

- Table LTCINV - Defines LTC based PMs.
- Table LTCPSINV - Defines p-side links for LTC based PMs.
- Table OCDLGRP - Defines ETMS OC data link group names.
- Table TMSOCDL - Associates a data link with a TMS, DS-1/PCM-30.
- Table CLLI - Defines voice link name.
- Table TRKGRP - Defines trunk group data for voice link.
- Table TRKSGRP - Defines voice link data for each subgroup.
- Table TRKMEM - Defines group of voice links and the physical links.
- Table OCOFC - Defines office names.
- Table OCGRP - Specifies host/remote, voice and data links.
- Table VLMEM - Provides indexes to voice links.
- Table OCHOST - Defines host office for a remote office.
- Table OCHOSTQ - Table HRNQT (Host/Remote Networking by Queue Type) uses this table to define the primary and alternate hosts.

The Enhanced TOPS OC and Increased Remote Support translation process appears in the following flowchart.

Enhanced TOPS OC and Increased Remote Support (continued)

Table flow for Enhanced TOPS OC and Increased Remote Support



Enhanced TOPS OC and Increased Remote Support (continued)

The datafill content of the flowchart appears in the following table.

Datafill example for Enhanced TOPS OC and Increased Remote Support

Datafill table	Example data
LTCINV	TMS 1 .....OC..
LTCPSINV	TMS 1.....
OCDLGRP	0 CARYDL1 TE
TMSOCDL	CARYDL1 0 HIGH 1 5 11 0
CLLI	CARYVL1 300 64 REMOTE_VOICE_LINK_INCOMING
TRKGRP	CARYVL1 IT 99 EML6 NCTC IC 1AMIDL 316 NPRT NSCR 316 000 N N
TRKSGRP	CARYVL1 0 DS1SIG STD IC NP IM 0- 0 NO NO N N Y 70
TRKMEM	CARYVL1 3701 0 TMS 0 0 21
OCOFC	1 CARY
OCGRP	CARY REMOTE CARYVL1 LAPD CARYDL1 39
VLMEM	CARY 0 CARYVL1 1000
OCHOST	HOST RALEIGH
OCHOSTQ	CQ0 RALEIGH N

Limits

The following limits apply to Enhanced TOPS OC and Increased Remote Support:

- You cannot interface a DCM OC data link to an ETMS OC data link because of differences in protocol. An OC data link must terminate on DCMs at both ends or on ETMSs at both ends.
- A single ETMS peripheral cannot serve as an OC server and a position/database server at the same time. This condition applies because of the hardware configuration and download data difference.
- The current maximum of 15 OC nodes does not change for DCM OC configurations. Only the ETMS OC platform can support the extension to 31 OC nodes. An office that uses only Base OC can connect a maximum of 31 OC nodes. The OC connections that uses DCM data links must use OC office numbers between 1 and 15. The OC connections using ETMS data links can use OC office numbers between 1 and 31.

Enhanced TOPS OC and Increased Remote Support (continued)

- This product does not change the current maximum of 1022 operator positions in the host office.
- You must apply the correct engineering analysis and follow the provisioning rules for correct OC network operation. This condition applies to the current TMS platform. For example, the ETMS OC peripheral can support a maximum of 31 OC data links. You must configure the ETMS to make sure that the message capacity is not exceeded. The amount of operator traffic and number of links configured determine the correct engineering and provisioning of the ETMS OC peripheral. See the provisioning section for additional information.
- The previous limit for the number of OC voice links was 255 members. This project increases this limit to 2047 OC voice link members. You are not restricted from increasing the number of OC voice links associated with DCM OC data links. An increase in this number does not benefit the operating company. This condition applies because the limit to the number of DCM OC data links provisionable does not change.
- The ETMS OC product limits include:
 - A maximum of 31 OC nodes. Control of these nodes occurs through table OCOFC.
 - A maximum of 32 ETMS OC data links between a host and remote. Control of these links occurs through table TMSOCDL.
 - A maximum of 256 ETMS OC data links in an office. Control of these links occurs through table TMSOCDL.
 - A maximum of 2047 OC voice links for each OC voice link group. Each entry in table OCGRP is an OC voice link group. Control of these links occurs through table VLMEM.
- To allow other TOPS applications to support more than 15 OC nodes, changes to the far end configuration can be necessary. The switch id or office id field in the following application protocols were extended from 15 to 31.
 - PARS (Personal Audio Response System)
 - QMSMIS (Queue Management System Management Information System)
 - OPP (Open Position Protocol)
 - Std DA (Standard Directory Assistance)
 - IBM DA (International Business Machines Directory Assistance)

Enhanced TOPS OC and Increased Remote Support (continued)

Verify that the DA database system can support office numbers greater than 15. Perform this action before you extend the switch id or office id field in table VROPT, parameter SWITCH_ID

- With the introduction of ETMS OC, the following can occur. The DCM OC data links and ETMS OC data links can interface from the same remote to the same host office. The same far-end office appears as two different offices in the OCGRP datafill for each office. In this design, you must use the Host/Remote Networking by Queue Type. Use the Host/Remote Networking by Queue Type to separate traffic between the DCM OC data link set and ETMS OC data link set. The system cannot share the same OC traffic across different platforms. This condition applies when the traffic originates from the same remote to the same host. This condition applies because all data links in an OC data link group must use the same platform. The DLSEL field value in table OCGRP indicates this platform.
- One of the following conditions can be present in the host that serves the positions:
 - The system routes traffic to the OPP-compatible positions from a remote. This remote is in the OCOFC table of the host and has a value that exceeds 15.
 - The system routes standalone traffic in the host to the OPP-compatible positions. This action occurs when the SWITCH_NAME tuple of the host in table OCPARMS points to an OCOFC value that exceeds 15.

If one of these condition is present, you must upgrade the OPP-compatible positions. You must upgrade the positions to a software version that complies with OPP Issue 4.

- You can enter data in a tuple in table OCGRP with an OFFICE defined in table OCOFC. This OFFICE has a value that exceeds 15. Before you perform this action, set field BCSLEVEL of that tuple to 39 (TOPS04). Field BCSLEVEL represents the software load of the lower of the two connected switches. You must upgrade both switches (OC nodes) that this tuple connects in table OCGRP to TOP04. Perform this action before you set field BCSLEVEL to 39 (TOPS04).

Interactions

The following paragraphs explain the interactions between Enhanced TOPS OC and Increased Remote Support and other functionalities.

This feature does not change the current application or execution of current software. This feature does not negatively impact any current feature functionality.

Enhanced TOPS OC and Increased Remote Support (continued)

This feature and the other ETMS OC features expand the capabilities of the current Operator Centralization network. These features allow OC communication that uses ETMS data links.

Activation/deactivation by the end user

Enhanced TOPS OC and Increased Remote Support does not require activation or deactivation by the end user.

Billing

Enhanced TOPS OC and Increased Remote Support does not affect billing.

Station Message Detail Recording

Enhanced TOPS OC and Increased Remote Support does not affect Station Message Detail Recording.

Datafilling office parameters

Enhanced TOPS OC and Increased Remote Support does not affect office parameters.

Datafill sequence

The tables that require datafill to implement Enhanced TOPS OC and Increased Remote Support appear in the following table. The tables appear in the correct entry order.

Datafill requirements for Enhanced TOPS OC and Increased Remote Support

Table	Purpose of table
LTCINV	Line Trunk Controller Inventory defines LTC based PMs.
LTCPSINV	Line Trunk Controller P-Side Inventory defines p-side links for LTC-based PMs.
OCDLGRP	Operator Centralization Data Link Group defines ETMS OC data link group names.
TMSOCDL	TOPS Message Switch Operator Centralization Data Link associates a data link with a TMS, DS-1/PCM-30.
CLLI	Common Language Location Identifier defines voice link names.
TRKGRP	Trunk Group defines trunk group data for voice link.
TRKSGRP	Trunk Subgroup defines voice link data for each subgroup.

Note: Complete all datafill before you issue the OCNCHOST command in the OCNC MAP level.

Enhanced TOPS OC and Increased Remote Support (continued)

Datafill requirements for Enhanced TOPS OC and Increased Remote Support

Table	Purpose of table
TRKMEM	Trunk Member defines group of voice links and physical links.
OCOFC	Operator Centralization Office defines office names.
OCGRP	Operator Centralization Group specifies host/remote, voice and data links.
OCPARMS	Operator Centralization Parameters specifies the switch name
VLMEM	Voice Link Member provides indices to voice links.
OCHOST	Operator Centralization Host defines host office for a remote office.
OCHOSTQ	Operator Centralization Host Queue. The HRNQT (Host/Remote Networking by Queue Type) uses this table to define the primary and alternate hosts.
TPCINV	TOPS Position Controller Inventory identifies TPCs.
TMSPSDEV	TOPS Message Switch P-Side Device defines TMS p-side devices
VROPT	Voice Response Options. Used to identify switch ID.

Note: Complete all datafill before you issue the OCNCHOST command in the OCNC MAP level.

Datafilling table LTCINV

This table defines Line/Trunk Controller (LTC) based Peripheral Modules (PMs).

Datafill for Enhanced TOPS OC and Increased Remote Support for table LTCINV appears in the following table. The fields that apply to Enhanced

Enhanced TOPS OC and Increased Remote Support (continued)

TOPS OC and Increased Remote Support appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table LTCINV

Field	Subfield or refinement	Entry	Explanation and action
OPTATTR		OC	<p>Optional Attribute. Field OPTATTR had Value OC added. Use of this value can occur only when the following conditions are present:</p> <ul style="list-style-type: none"> • Field PMTYPE = TMS • Field PECS6X45 = MX77AA • EDCHs (BX02BA) are not in a corresponding tuple of table LTCPSINV • The SOC for ETMS OC (ENSV0101) is in the IDLE or ON state. • Carriers of type REMOTE are not defined on the TMS. Tables TPCINV and TMSPSDEV determine if these types of carriers are present. These tables enforce this restriction. See these tables in this section for additional information. <p>You cannot add or remove the OC OPTATTR from a current tuple. To convert a TMS from an OC TMS to a position server TMS, delete the TMS tuple in table LTCINV. After you delete the tuple, you must add the tuple again. This condition also applies when you convert a TMS from a position server TMS to an OC TMS.</p>

Datafill example for table LTCINV

Sample datafill for table LTCINV appears in the following examples.

Enhanced TOPS OC and Increased Remote Support (continued)

Example of MAP for table LTCINV in a North American office

```

LTCNAME ADNUM FRTYPE FRNO SHPOS FLOOR ROW FRPOS EQPEC
LOAD      EXECTAB
CSLNKTAB
OPTCARD      TONESET PECS6X45 E2LOAD
OPTATTR PEC6X40 EXTINFO
-----
TMS 1    1001   LTE    0    1    0    L    2    6X02AA
ETM05BB (ABTRK DTCEX) $
(0 20) (0 52) (1 20) (1 52) (2 20) (2 52) (3 20) (3 52) $
(MSG6X69 ) $ NORTHAM MX77AA  MX77AA  MX77NB05 (OC)
$      6X40AA      N
  
```

Example of MAP for table LTCINV in a non-North American office

```

LTCNAME ADNUM FRTYPE FRNO SHPOS FLOOR ROW FRPOS EQPEC
LOAD      EXECTAB
CSLNKTAB
OPTCARD
TONESET PECS6X45  E2LOAD          OPTATTR      PEC6X40
-----
TMS 1    11    LTEI    4    18    1    E    6    6X02UC
EUT03BO (ABTRK DTCEX) $
(0 16) (0 37) (1 7)(1 39) (0 48) (0 5) (1 23) (1 55) $
(RAM6X69 ) (NT6X44EA ) (NT6X28 ) $
AUS100  MX77AA  MX77AA  MX77NB05 (PCM30) (OC) $ 6X40AC
  
```

Datafill sequence

The data entry order for this table does not change. You must enter data in this table before you enter data in table LTCPSINV.

Table size

Table size does not change.

Dump and restore

A dump and restore from an earlier load to the current load transfers tuples correctly with the OC optional attribute not set. This condition applies because the LTCINV tuples did not have the OC optional attribute in previous software loads.

Datafilling table LTCPSINV

This table defines the p-side links for LTC based PMs.

Enhanced TOPS OC and Increased Remote Support (continued)

Datafill for Enhanced TOPS OC and Increased Remote Support for table LTCPSINV appears in the following table. The fields that apply to Enhanced TOPS OC and Increased Remote Support appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table LTCPSINV

Field	Subfield or refinement	Entry	Explanation and action
PSLNKTAB	AREASELECT		<p>This subfield prevents entry of DCH ports on an ETMS OC (field OPTATTR = OC in table LTCINV). This condition applies because use of an ETMS can occur as an ETMS OC or a terminal server. You cannot use an ETMS as an ETMS OC and a terminal server.</p> <p>You cannot remove the DS-1/PCM-30 ports if table TMSOCDL defines an ETMS OC data link on that ETMS. You must first remove all ETMS OC data links defined on the specified port from table TMSOCDL first.</p>

Datafill example for table LTCPSINV

Sample datafill for table LTCPSINV appears in the following examples.

Example of MAP for table LTCPSINV in a North American office

```

LTCNAME
PSLNKTAB
-----
TMS 1
N (0 DS1 DEFAULT N) (1 DS1 DEFAULT N) (2 DS1 DEFAULT N)
(3 DS1 DEFAULT N) (4 DS1 DEFAULT N) (5 DS1 DEFAULT N)
(6 DS1 DEFAULT N) (7 DS1 DEFAULT N) (8 DS1 DEFAULT N)
(9 DS1 DEFAULT N) (10 DS1 DEFAULT N) (11 DS1 DEFAULT N)
(12 DS1 DEFAULT N) (13 DS1 DEFAULT N) (14 DS1 DEFAULT N)
(15 DS1 DEFAULT N) (16 DS1 DEFAULT N) (17 DS1 DEFAULT N)
(18 DS1 DEFAULT N) (19 DS1 DEFAULT N)
    
```

Enhanced TOPS OC and Increased Remote Support (continued)

Example of MAP for table LTCPSINV in a non-North American office

```
LTCNAME
PSLNKTAB
-----
TMS 1
(0 D30 TMSD30 N) (1 D30 TMSD30 N) (2 D30 TMSD30 N)
(3 D30 TMSD30 N) (4 D30 TMSD30 N) (5 D30 TMSD30 N)
(6 D30 TMSD30 N) (7 D30 TMSD30 N) (8 D30 TMSD30 N)
(9 D30 TMSD30 N) (10 D30 TMSD30 N) (11 D30 TMSD30 N)
(12 D30 TMSD30 N) (13 D30 TMSD30 N) (14 D30 TMSD30 N)
(15 D30 TMSD30 N) (16 NILTYPE ) (17 NILTYPE )
(18 NILTYPE ) (19 NILTYPE ) $
```

Datafill sequence

The data entry order for this table does not change. Enter data in table LTCINV before you enter data in this table. Enter data in this table before you enter data in table TMSOCDL.

Table size

Table size does not change.

Dump and restore

This feature does not affect a dump and restore for table LTCPSINV. This condition applies for the following reasons:

- new fields were not added to the table
- changes to the values of current fields did not occur

Datafilling table OCDLGRP

This table defines the OC data link group names and type of LAPD endpoints for ETMS OC data links. This table is new. Data in this table defines ETMS OC data link group names. Data in table CLLI defines DCM OC data link group names. The fields for table OCDLGRP appear in the following table.

Datafilling table OCDLGRP

Field	Subfield or refinement	Entry	Explanation and action
VALUE		0 to 31	Value. Index to table.

Enhanced TOPS OC and Increased Remote Support (continued)

Datafilling table OCDLGRP

Field	Subfield or refinement	Entry	Explanation and action
SYMBOL		A maximum of 16 characters.	Symbol. Name of ETMS OC data link group.
LAPDATTR		NT or TE	<p>Link access protocol on the D-channel. This field determines if this set of data links is a network (NT) or terminal (TE) endpoint in the LAPD environment.</p> <p>When you connect two OCDLGRP data link sets, make sure the sets have opposite values for this LAPDATTR field. If the sets do not have opposite values, the data links cannot communicate. The data links cannot come InSv.</p> <p>You can use NT for entries associated with HOST tuples in table OCGRP and TE for REMOTE tuples in table OCGRP. Use of this method is not a requirement. You can use this procedure to set opposite values.</p>

Datafill example for table OCDLGRP

Sample datafill for table OCDLGRP appears in the following example.

Example of MAP for table OCDLGRP

VALUE	SYMBOL	LAPDATTR
0	CARYDL1	TE
1	RALEIGHDL1	NT
2	DURHAMDL1	TE

Datafill sequence

Enter data in this table before you enter data in table TMSOCDL.

Table size

You can enter a maximum of 32 tuples.

Datafilling table TMSOCDL

This table associates a data link with a TMS, DS-1/PCM-30 port and channel number. This table contains the level of the LAPD protocol parameters and the

Enhanced TOPS OC and Increased Remote Support (continued)

OCDL (EISP) number for each ETMS OC data link. The fields for table TMSOCDL appear in the following table.

Datafilling table TMSOCDL

Field	Subfield or refinement	Entry	Explanation and action
OCDLGRP		Table OCDLGRP defines this entry	Operator Centralization Data Link Group. Enter the OC data link group for this data link.
DLINDEX		0 to 31	Data Link Index. Enter the data link number in the data link group.
PROTLEVEL		LOW, MEDIUM, or HIGH	<p>Protocol Level. Enter the level of the LAPD parameters for the data link:</p> <ul style="list-style-type: none"> • LOW: You can use this setting when the following conditions apply: <ul style="list-style-type: none"> — land based connections that are less than 1000 miles — good link conditions between endpoints. An example of a good link condition occurs when minimal Cyclical Redundancy Check (CRC) errors occur • MEDIUM: You can use this setting when the following conditions apply: <ul style="list-style-type: none"> — land based connections that are less than 3000 miles — fair to good link conditions between endpoints • HIGH: You can use this setting when the following conditions apply: <ul style="list-style-type: none"> — land or satellite based connections that exceed 3000 miles — good conditions between endpoints
TMS		0 to 255	TOPS Message Switch. Enter the TMS number for the data link.

Enhanced TOPS OC and Increased Remote Support (continued)

Datafilling table TMSOCDL

Field	Subfield or refinement	Entry	Explanation and action
PORT		0 to 19 for an ETMS with DS-1 I/F cards. 0 to 15 for an ETMS with PCM-30 I/F cards.	Port. Enter the DS-1 or PCM-30 port number on the TMS for the data link. See the preceding field for information on the TMS.
CHANNEL		1 to 24 for an ETMS with DS-1 I/F cards. 1 to 15 and 17 to 31 for an ETMS with PCM-30 I/F cards.	Channel. Enter the channel on the DS-1 or PCM-30 port for the data link. See the preceding field for information on the DS-1 or PCM-30.
OCDL		0 to 14 and 16 to 31	Operator Centralization Data Link. Enter the OCDL (EISP channel) selected for this data link on the specified TMS. This number is for use to perform maintenance on the data link in the new OCDL level of MAPCI.

Datafill example for table TMSOCDL

Sample datafill for table TMSOCDL appears in the following example.

Example of MAP for table TMSOCDL

OCDLGRP	DLINDEX	PROTLEVL	TMS	PORT	CHANNEL	OCDL
CARYDL1	0	HIGH	1	5	11	0
CARYDL1	1	HIGH	0	2	9	0
RALEIGHDL1	0	LOW	0	8	13	1
RALEIGHDL1	1	LOW	1	1	2	2
DURHAMDL1	0	MEDIUM	1	7	8	1
DURHAMDL1	1	MEDIUM	0	19	24	2

Enhanced TOPS OC and Increased Remote Support (continued)

Datafill sequence

Enter data in tables LTCINV, LTCPSINV, and OCDLGRP before you enter data in table TMSOCDL. Enter data in table OCGRP after you enter data in table TMSOCDL.

Table size

You can define a maximum of 32 data links for each data link group name in table OCDLGRP. You can define a maximum of 256 data links in an complete office.

Datafilling table CLLI

This table identifies a textual name to associate with a group of voice links. This table contains ETMS OC voice link group names and DCM OC data and voice link group names. This feature does not require changes to table CLLI.

Datafill for Enhanced TOPS OC and Increased Remote Support for table CLLI appears in the following table. The fields that apply to Enhanced TOPS OC and Increased Remote Support appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table CLLI

Field	Subfield or refinement	Entry	Explanation and action
			This table does not require changes. Enter the ETMS OC voice links. Table OCDLGRP contains the ETMS OC data link group names.

Datafill example for table CLLI

Sample datafill for table CLLI appears in the following example.

Example of MAP for table CLLI

CLLI	ADNUM	TRKGRSIZ	ADMININF
CARYVL1	123	64	REMOTE_VOICE_LINK_OUTGOING
RALEIGHVL1	125	64	REMOTE_VOICE_LINK_OUTGOING
DURHAMVL1	127	64	REMOTE_VOICE_LINK_OUTGOING

Datafilling table TRKGRP

This table defines customer related data associated with each trunk group in the switch. This feature does not require changes to table TRKGRP.

Enhanced TOPS OC and Increased Remote Support (continued)

Datafill for Enhanced TOPS OC and Increased Remote Support for table TRKGRP appears in the following table. The fields that apply to Enhanced TOPS OC and Increased Remote Support appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TRKGRP

Field	Subfield or refinement	Entry	Explanation and action
			This table does not require changes. Enter OC voice links.

Datafill example for table TRKGRP

Sample datafill for table TRKGRP appears in the following example.

Example of MAP for table TRKGRP

GRPKEY			GRPINFO
<hr/>			
CARYVL1			
	IT	63 TLD NCRT IC NIL MIDL 518 NPRT NSCR 518 000 Y N \$	

Datafilling table TRKSGRP

This table defines the supplementary information for each subgroup assigned to a trunk group in table TRKGRP. This feature does not require changes to table TRKSGRP.

Datafill for Enhanced TOPS OC and Increased Remote Support for table TRKSGRP appears in the following table. The fields that apply to Enhanced TOPS OC and Increased Remote Support appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TRKSGRP

Field	Subfield or refinement	Entry	Explanation and action
			This table does not require changes. Enter the OC voice links.

Datafill example for table TRKSGRP

Sample datafill for table TRKSGRP appears in the following example.

Enhanced TOPS OC and Increased Remote Support (continued)

Example of MAP for table TRKSGRP

SGRPKEY	CARDCODE	SGRPVAR
CARYVL1	0 DS1SIG STD IC MF WK N 30 30 NO NO N N N M	UNEQ

Datafilling table TRKMEM

This table defines a group of voice links and the associated physical link. The table includes the peripheral type and number, port, and channel information for the physical link. This feature does not require changes to table TRKMEM.

Datafill for Enhanced TOPS OC and Increased Remote Support for table TRKMEM appears in the following table. The fields that apply to Enhanced TOPS OC and Increased Remote Support appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TRKMEM

Field	Subfield or refinement	Entry	Explanation and action
			This table does not require changes. Enter OC voice links.

Datafill example for table TRKMEM

Sample datafill for table TRKMEM appears in the following example.

Example of MAP for table TRKMEM

CLLI	EXTRKNM	SGRP	MEMVAR
CARYVL1	0	0 DTC	0 5 2
CARYVL1	1	0 DTC	0 5 3
CARYVL1	2	0 DTC	0 5 4
CARYVL1	3	0 DTC	0 5 5

Datafilling table OCOFC

This table associates an office name with an integer key. This table now allows you to define a maximum of 31 OC nodes.

Enhanced TOPS OC and Increased Remote Support (continued)

The number of entries in OM groups TOPSOC and TOPSVC increases as these OM groups increase OMs. The OM groups increase OMs according to the office number. This condition applies because of the increase in the maximum office number from 15 to 31.

Datafill for Enhanced TOPS OC and Increased Remote Support for table OCOFC appears in the following table. The fields that apply to Enhanced TOPS OC and Increased Remote Support appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table OCOFC

Field	Subfield or refinement	Entry	Explanation and action
VALUE		1 to 31 for OC offices that uses ETMS OC data links. 1 to 15 for for OC offices that uses DCM OC data links.	Value. The range of this field increases from 1-15 to 1-31 for ETMS OC data links. For DCM data links, the range remains 1-15. This table allows you to define office names for office numbers 0 to 63. You must use office numbers 1 to 31 in other OC tables.

Datafill example for table OCOFC

Sample datafill for table OCOFC appears in the following example.

Example of MAP for table OCOFC

VALUE	SYMBOL
1	CARY
2	RALEIGH
3	DURHAM

Datafill sequence

You must enter data in this table before you enter data in tables OCGRP and OCPARMS.

Table size

You can enter a maximum of 31 tuples. A maximum of 64 locations are present. You can use only 31 of these locations.

Enhanced TOPS OC and Increased Remote Support (continued)

Dump and restore

Dump and restore changes are not required because all current tuples remain correct in new loads.

Datafilling table OCGRP

This table specifies the following information:

- if an office is a host or remote office
- the voice link group
- the data link group
- the OC protocol version to use

This table can contain a maximum of 31 tuples because of the changes to table OCOFC.

Datafill for Enhanced TOPS OC and Increased Remote Support for table OCGRP appears in the following table. The fields that apply to Enhanced TOPS OC and Increased Remote Support appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table OCGRP

Field	Subfield or refinement	Entry	Explanation and action
OFFICE		Name from table OCOFC	Office. Tuples are not allowed with an OFFICE in table OCOFC with the following entries: <ul style="list-style-type: none"> • value of 0 • value in the range 32-63
DLOVRLAY	DLSEL	HDLC, LAPD	Data Link Select. Added new value LAPD for ETMS data link groups. DCM data link groups use the previous value HDLC. If the value is HDLC, enter data in refinement DLGRP. If the value is LAPD, enter data in refinement OCDLGRP. For DCM data link groups, the system checks table OCOFC. The system verifies that the corresponding office index is in the range 1 to 15. For ETMS data link groups, the system checks table OCOFC. The system verifies that the corresponding office index is in the range 1 to 31. Removed value STUB.

Enhanced TOPS OC and Increased Remote Support (continued)

Datafilling table OCGRP

Field	Subfield or refinement	Entry	Explanation and action
	DLGRP	CLLI name from table TOPSHDLC	Data link group. If subfield DLSEL = HDLC, enter the data link group CLLI associated with a specific office. Table TOPSHDLC must contains the CLLI.
	OCDLGRP	Name from table OCDLGRP	OC data link group. If subfield DLSEL = LAPD, enter the name that table OCDLGRP, field SYMBOL defines.

Datafill example for table OCGRP

Sample datafill for table OCGRP appears in the following example.

Example of MAP for table OCGRP

OFFICE	OFCTYPE	VLGRP	DLOVRLAY		BCSLEVEL
CARY	REMOTE	CARYVL1	LAPD	CARYDL1	39
RALEIGH	HOST	RALEIGHVL1	LAPD	RALEIGHDL1	39
DURHAM	REMOTE	DURHAMVL1	LAPD	DURHAMDL1	39
CHAPELHILL	REMOTE	CHAPELHILLVL1	HDLC	CHAPEHILLDL1	39

Datafill sequence

Enter data in the following tables before you enter data in table OCGRP:

- LTCINV
- LTCPSINV
- OCDLGRP
- TMSOCDL
- CLLI
- TRKGRP
- TRKSGRP
- TRKMEM
- OCOFC

Enhanced TOPS OC and Increased Remote Support (continued)

Enter data in table OCGRP before you enter data in tables VLMEM, OCHOST, and OCHOSTQ. You must enter data in table OCGRP before you issue the OCNHOST command in the OCNC MAP increment.

Table size

You can enter a maximum of 31 tuples.

Dump and restore

The system cannot move all tuples with STUB in the DLSEL field during a dump and restore. This condition causes VLMEM tuples for this office to drop out during dump and restore.

Datafilling table OCPARMS

This table defines the switch name for an office.

Datafill for Enhanced TOPS OC and Increased Remote Support for table OCPARMS appears in the following table. The fields that apply to Enhanced TOPS OC and Increased Remote Support appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table OCPARMS

Field	Subfield or refinement	Entry	Explanation and action
OFCNAME		Office name defined in table OCOFC	This field performs a check. This check verifies that the office name in table OCOFC has an index in the range of 1 to 31.

Datafill example for table OCPARMS

Sample datafill for table OCPARMS appears in the following example.

Example of MAP for table OCPARMS

PARMNAME	OFCNAME

SWITCH_NAME	RALEIGH

Datafilling table VLMEM

This OC table provides correct indexes to voice links. The number of voice links you can define for a group increases from 255 to 2047. This change allows a single OC remote to use a maximum of 1022 operator positions in the host. This number is the current maximum for a host.

Enhanced TOPS OC and Increased Remote Support (continued)

The system dynamically allocates storage as the addition of tuples occurs. Before this improvement, you had to delete all tuples for an office before you increased field TRKGRPSIZ in table CLLI. After you increased the field you had to add the tuples again.

Datafill for Enhanced TOPS OC and Increased Remote Support for table VLMEM appears in the following table. The fields that apply to Enhanced TOPS OC and Increased Remote Support appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table VLMEM

Field	Subfield or refinement	Entry	Explanation and action
OFCINDEX		0 to 2046	Office Index. The range increases from 0-254 to 0-2046.

Datafill example for table VLMEM

Sample datafill for table VLMEM appears in the following example.

Example of MAP for table VLMEM

OFCNAME	OFCINDEX	VLGRP	VLEXTRK
CARY	0	CARYVL1	1000
CARY	1	CARYVL1	1001
RALEIGH	0	RALEIGHVL1	5000
RALEIGH	1	RALEIGHVL1	5001
DURHAM	0	DURHAMVL1	8000
DURHAM	1	DURHAMVL1	8001

Datafill sequence

Enter data in the following tables before you enter data in table VLMEM:

- CLLI
- TRKGRP
- TRKSGRP
- TRKMEM
- OCGRP

Enter data in table VLMEM before you enter data in tables OCHOST and OCHOSTQ. You must enter data in table VLMEM before you issue the OCNCHOST command in the OCNC MAP increment.

Enhanced TOPS OC and Increased Remote Support (continued)

The maximum number of voice links for a group is the value of the TRKGRSIZ field for that group in table CLLI. To increase the number of voice links you can enter in a group in table VLMEM, perform the following action. Increase the TRKGRPSIZ field in table CLLI. After you increase the size of this field, enter the new voice link members in tables TRKMEM and VLMEM. Before this feature, you had to increase the TRKGRPSIZ field first. After you increased the size of the field, you had to delete all the tuples from table VLMEM. After you deleted all the tuples, you had to add the tuples to table VLMEM again. The system deallocates store in VLMEM only when you delete all the tuples for an office.

Table size

To calculate the maximum size, multiply the number of voice link tuples allowed for each group by the number of possible groups (31). The maximum number of voice link tuples allowed is 2047. The number of possible groups is 31.

Dump and restore

The change to table VLMEM only increases the number of voice links in a voice link group. This action does not affect a dump and restore for table VLMEM.

Datafilling table OCHOST

This table defines the host office for a remote office that uses Basic OC. This feature does not require changes to table OCHOST.

Datafill for Enhanced TOPS OC and Increased Remote Support for table OCHOST appears in the following table. The fields that apply to Enhanced TOPS OC and Increased Remote Support appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table OCHOST

Field	Subfield or refinement	Entry	Explanation and action
This table does not require changes.			

Datafill example for table OCHOST

Sample datafill for table OCHOST appears in the following example.

Enhanced TOPS OC and Increased Remote Support (continued)

Example of MAP for table OCHOST

OFCTYPE	HOSTOFC

HOST	RALEIGH

Datafilling table OCHOSTQ

The Queue Type (HRNQT) functionality (ADVQ0005) uses this table with the Host/Remote Networking to define the primary and alternate hosts for a specified call queue. This feature does not require changes to table OCHOSTQ.

Datafill for Enhanced TOPS OC and Increased Remote Support for table OCHOSTQ appears in the following table. The fields that apply to Enhanced TOPS OC and Increased Remote Support appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table OCHOSTQ

Field	Subfield or refinement	Entry	Explanation and action
This table does not require changes.			

Datafill example for table OCHOSTQ

Sample datafill for table OCHOSTQ appears in the following example.

Example of MAP for table OCHOSTQ

QTYPE	PRIHOST	RRDATA

CQ0	RALEIGH	N

Datafilling table TPCINV

Table TPCINV defines TPCs.

Datafill for Enhanced TOPS OC and Increased Remote Support for table TPCINV appears in the following table. The fields that apply to Enhanced

Enhanced TOPS OC and Increased Remote Support (continued)

TOPS OC and Increased Remote Support appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TPCINV

Field	Subfield or refinement	Entry	Explanation and action
TMSNO		0 to 255	This field performs a check. This check prevents entry of a TPC on a TMS with the OC optional attribute set in table LTCINV.

Datafill example for table TPCINV

Sample datafill for table TPCINV appears in the following example.

Example of MAP for table TPCINV

```

TPCNAME FRTYPE FRNO SHPOS FLOOR ROW FRPOS LOAD TMSNO
TMSCKTNO TMSCKTTS TPCTYPE RSTIMR CLUSTRSZ
-----
TPC 0      PCE    0      0      0      AA    0      0      0
      0      23 24$  IBMMPX16  1      16
    
```

Datafilling table TMSPSDEV

This table defines devices on the P-side of the TMS.

Datafill for Enhanced TOPS OC and Increased Remote Support for table TMSPSDEV appears in the following table. The fields that apply to Enhanced TOPS OC and Increased Remote Support appear in the table. See the data schema section of this document for a description of the other fields.

Datafilling table TMSPSDEV

Field	Subfield or refinement	Entry	Explanation and action
TMSNO		0 to 255	This field now contains a check to prevent entry of a TMS with the OC optional attribute set in table LTCINV.

Datafill example for table TMSPSDEV

Sample datafill for table TMSPSDEV appears in the following example.

Enhanced TOPS OC and Increased Remote Support (end)

Example of MAP for table TMSPSDEV

```
DEVNAME  TMSNO  CKTTAB
-----
DA 201    40      (0 ALL) (1 CHNLS 1 2 12 20$)$
```

Datafilling table VROPT

Datafill for Enhanced TOPS OC and Increased Remote Support for table VROPT appears in the following table. The fields that apply to Enhanced TOPS OC and Increased Remote Support appear in the table. See the data schema section of this document for a description of the other fields.

Datafilling table VROPT

Parameter name	Explanation and action
SWITCH_ID	The range for this parameter increases from 0-15 to 0-31. WARNING: The DA database must support office numbers greater than 15. If the DA database cannot support these office numbers, calls are affected.

Datafill example for table VROPT

Sample datafill for table TMSPSDEV appears in the following example.

Example of MAP for table VROPT

```
PARAM          VALUE
-----
SWITCH_ID      18
```

Tools for verifying translations

Enhanced TOPS OC and Increased Remote Support does not use tools for verifying translations.

SERVORD

Enhanced TOPS OC and Increased Remote Support does not use SERVORD.

EOL for TOPS14

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS14 and up

TOPS14 introduced EOL for TOPS14.

Requirements

To operate, EOL for TOPS14 requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This feature provides the following:

- Removal of the following functionalities in TOPS14:
 - Delayed Outpulsing
 - Inward Validation
Inward validation is a 1161 or 1162 call from an operator on one switch to the mechanized calling card service (MCCS) (or equivalent) of another switch for validating a special number by proxy.
 - AMR5 Signaling
- Notification of removal of the following functionalities in TOPS17:
 - Table TOPSBC
 - Table SPLDNID
Table SPLDNID was originally scheduled for end of life (EOL) removal in TOPS14, but this was predicated on the possibility of an automated conversion to a SPLDNID replacement across a one night process (ONP). It has instead been decided that a manual conversion be done by Operating Companies sometime before the removal of SPLDNID in TOPS17, hence the EOL notification for SPLDNID begins in TOPS14.
 - DANI Signaling
 - Operator Centralization (OC) Night Closedown

EOL for TOPS14 (continued)

This functionality is provided by the following feature:

Feature number	Feature name
59015901	EOL for TOPS 14

Operation

The end of life (EOL) notification upon usage of these functionalities has been in place since TOPS12 (or earlier if patched). Operating Companies must not upgrade to TOPS14 or higher if they are reliant upon any of the above functionalities. All related datafill on a pre-TOPS14 switch is dropped upon a one night process (ONP) to a TOPS14 or higher load. Operating Companies are responsible for taking the proper measures to replace the above functionalities with supported functionalities (where necessary) before upgrading to TOPS14 or higher.

Log TEOL100 is updated to indicate the TOPS17 functionalities scheduled for EOL.

The previous EOL functionalities contain additional information on the EOL program, especially the TOPS12 release. These functionalities are as follows:

- TOPS12: MD Code Removal and ReEngineering, OSB00101
- TOPS13: Code Removal of TOPS IV, OSB00101

Translations table flow

This feature does not have a translations table flow.

Limitations and restrictions

If a CLLI is defined in table TRKGRP as a TOPS AMR5 trunk, certain datafill against that CLLI is dropped (without error) across an ONP. However the CLLI itself remains datafilled in table CLLI, and other tables may still reference that CLLI after the ONP.

Interactions

EOL for TOPS14 does not interact with other functionalities.

Activation and deactivation by the user

EOL for TOPS14 does not require activation or deactivation by the user.

Billing

EOL for TOPS14 does not generate billing records or changes.

EOL for TOPS14 (continued)

Station Message Detail Recording

EOL for TOPS14 does not require Station Message Detail Recording.

Office parameters used by EOL for TOPS14

EOL for TOPS14 does not generate office parameters.

Datafill sequence

The table that follows lists the tables that are affected by EOL for TOPS14.

Datafill requirements for EOL for TOPS14

Table	Purpose of table
DELAYOP	Delay outpulsing specifies whether delayed outpulsing is required for plus-dialed (0+, 1+) calls that arrive at an operator position.
TRKGRP	Trunk group defines characteristics of trunk groups

Datafill related to EOL for TOPS14 for table DELAYOP

Table DELAYOP is deleted.

Datafill example for table DELAYOP

The figure that follows shows sample datafill for table DELAYOP.

MAP example for table DELAYOP

```

DELAYOP  NCNOPDLY HTLOPDLY CNOPDLY HTL1PDLY CN1PDLY
-----
DELAYOP  NCNOPDLY HTLOPDLY CNOPDLY HTL1PDLY CN1PDLY
DPINTTOL   Y 3      Y 4      Y 6      Y 5      Y 0
    
```


EOL for TOPS14 (continued)

Datafill related to EOL for TOPS14 for table TRKGRP

The table that follows provides the datafill related to EOL for TOPS14 for table TRKGRP. This table includes only those fields that apply directly to EOL for TOPS14.

Datafill related to table TRKGRP

Field	Subfield	Entry	Explanation and action
	GRPTYP	TOPS	Group type. The following change applies to TOPS type trunks.
	SIGTYPE	AIS, BELL, COMFGD, DANI, EAFGD, EAOSS, EAOSSIC, GOSS7, MODBELL, NILSIGTYPEO NI, OPENNUM, OSS, or R2	Signalling type. Value AMR5 is deleted.

Datafill example for table TRKGRP

The figure that follows shows sample datafill for table TRKGRP.

MAP example for table TRKGRP

GRPKEY	GRPINFO

ICTOPS	TOPS 31 NPDGP NCRT IC MIDL 214 214 TXLA NCLA NSCR N RC
COMBINED	N N 0 0000 NONE OPENNUM 20 2 2 N OFFHK N \$

For an ONP, tuples are deleted from the following tables that have a CLLI that is all or part of the key and the CLLI is a TOPS trunk with a signalling type of AMR5:

- TRKGRP
- TRKSGRP

EOL for TOPS14 (end)

- TRKMEM
- AABSOST
- TOPSACTS
- BRANDOPT
- TOPCATRK
- COMPCODE
- TCLG7DIG
- TCLGVER
- DATRKOPT
- TOPEATRK
- MCCSOST
- TOPSCOIN
- TOPSBC
- TOPSTOPT

Translation verification tools

EOL for TOPS14 does not use translation verification tools.

SERVORD

EOL for TOPS14 does not use the Service Order System (SERVORD).

EOL for TOPS15

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS15 and up

TOPS15 introduced EOL for TOPS15.

Requirements

To operate, EOL for TOPS15 requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y

Description

This feature indicates the end of life (EOL) for 4 TOPS capabilities in TOPS 15.

This functionality consists of the following feature:

Feature number	Feature name
59022361	EOL for TOPS15

Operation

This feature removes the following TOPS capabilities in TOPS15:

- Senior Operator in functionality QMS Host/Remote Queueing, OSB00101
- Table TOPSTERM

This table defines the TOPS operator keying sequence to forward the call to the Overseas Operator Centre (OOC), which has not been supported since TOPS04.

- Tone Repeat operator key is no longer supported.

EOL for TOPS15 (continued)

The initial tones from an end office may still be heard (e.g. if a call arrives at an operator without any queuing). Only the ability to repeat the tones after call arrival via the tone repeat function is being removed.

- Request CAMA operator key is no longer supported.

CAMA calls are still supported. Only the ability to request specifically a CAMA call out of queue via the request CAMA function is being removed.

The EOL notification upon usage of these functionalities (except for the last two listed) has been in place since TOPS12.

EOL notification

This feature also designates additional functionality for removal in TOPS18. (See functionality MD Code Removal and ReEngineering, OSB00001, for details on the EOL Notification process.) The following areas of functionality are scheduled for EOL in the TOPS18 release:

- TOPS OC via ETMS
- Position via ETMS
- Authorization Code
- EAOSSIC Signaling
- MODBELL Signaling
- EAFGD Signaling

Log TEOL100 is updated to indicate the above areas.

Translations table flow

This feature does not have a translations table flow.

Limitations and restrictions

EOL for TOPS15 has no limitations or restrictions.

Interactions

Support for initial tones is not changed by this feature. Only the capability for operators to hear delayed tones is being removed.

Support for CAMA calls is not changed by this feature. Only the capability for operators to specifically request a CAMA call out of queue is being removed.

OPP positions attempting a tone repeat or a request CAMA will now always receive a no-action reason indicating an invalid operation action.

EOL for TOPS15 (continued)

Activation and deactivation by the user

EOL for TOPS15 does not require activation or deactivation by the user.

Billing

EOL for TOPS15 does not generate billing records or changes.

Station Message Detail Recording

EOL for TOPS15 does not require Station Message Detail Recording.

Office parameters used by EOL for TOPS15

EOL for TOPS15 does not generate nor change office parameters.

Datafill

The table that follows lists the tables that are affected by EOL for TOPS15.

Datafill requirements for EOL for TOPS15

Table	Purpose of table
TOPSTERM	TOPS Termination defines the TOPS operator keying sequence to forward calls to the Overseas Operator Centre (OOC), which has not been supported since TOPS04.
TQOGTKEY	TOPS Queue Outgoing Trunk Key allows the operator to change the CT4Q of a call while the call is at an operator position.

Datafill related to EOL for TOPS15 for table TOPSTERM.

Table TOPSTERM is deleted. This table defined the TOPS operator keying sequence to forward the call to the Overseas Operator Centre (OOC), which has not been supported since TOPS04. The figure that follows show sample datafill..

MAP example for table TOPSTERM

CLDNUM	TERMKIND
514197	OOC

EOL for TOPS15 (end)

Datafill related to EOL for TOPS15 for table TQOGTKEY

The table that follows provides the datafill related to EOL for TOPS15 for table TQOGTKEY. This table includes only those fields that apply directly to EOL for TOPS15.

Datafill related to table TQOGTKEY

Field	Subfield	Entry	Explanation and action
	KEYTYPE	ASST, CT4Q, DUALANG, LANG, OT, or SO	Key type. Value SO is removed. During an ONP from TOPS14 (or earlier) to TOPS15 (or later), tuples containing SO are deleted.

Datafill example for table TQOGTKEY

The figure that follows shows sample datafill for table TQOGTKEY.

MAP example for table TQOGTKEY

KENUM	LABEL		KEYINFO
0	HELP		FIRE
3	FIRE	OT	2122204444 OPER N 4

Translation verification tools

EOL for TOPS15 does not use translation verification tools.

SERVORD

EOL for TOPS15 does not use the Service Order System (SERVORD).

Estimated Call Charges

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS07 and later versions

Estimated Call Charges was introduced in TOPS07.

Requirements

To operate, Screened Service Routing has the following requirements:

- BAS Generic, BAS00003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- Table TOPSFTR parameter ESTIMATE_OF_CHARGES = Y

Description

This functionality allows a subscriber to provide details to an operator about a call under consideration. The operator responds with an estimate of charges. For example:

- the cost of a call at different times
- the cost difference between calls from a coin telephone billed to a credit card and calls billed to a residential telephone number
- the cheapest city that is to call for a specified period of time for companies with offices in two different cities.

The following features provide this functionality:

Feature number	Feature name
AF6426	TOPS Estimate of Charges
AF6431	TOPS (CCM) Global AMA Enhancements

Operation

The accuracy of the estimate depends on how current is the rating data. Surcharges applied to a call during call setup do not appear in the charge estimation.

Estimated Call Charges (continued)

This functionality is not compatible with External Rater. Calls that use Open Numbering or the North American dialing plan use internal rating data tables for the estimate of charges.

A charge calculation can fail if the following events occur:

- the operator does not enter all of the information
- the rating tables do not contain required data

The position notifies the operator if a calculation fails.

When the subscriber provides the information, the operator enters it and keys a request for a charge estimate. This request causes the system to append new automatic message accounting (AMA) Module Code 611 to the enhanced AMA (EAMA) record. The successful completion of the charge estimation does not affect this condition.

When a general (GEN) AMA occurs, the system normally generates a HOBIC record if the calling party number, not the measured number, is a hotel line. If this event occurs the HOBIC record does not indicate that the operator performed an estimate of charges on the call. The EAMA record indicates that the operator performed an estimate of charges on the call.

The operator can perform more than one estimate on a call. The operating company can require an EAMA record for each estimate. If this event occurs the system must use GEN AMA to generate an EAMA record when each estimate is complete. The last estimate does not require a GEN AMA. The system generates the record when the call releases from the position.

This functionality only applies to open position protocol (OPP) compatible positions.

The system blocks the GEN AMA key function in the following conditions:

- A mark to cancel appears on the call. If an estimate occurs but does not complete and parameter UNANS_TOPS = ON in table AMAOPTS that the system generates an EAMA record.
- Input has not changed from the last GEN AMA.
- The call is a recall time and charges, coin call, and notify.
- The system blocks caller identification.
- Timing starts on the call.
- An AMA check is in progress.

Estimated Call Charges (continued)

Refer to the *TOPS IWS NTOA/NTOA Plus Application Guide*, 297-2251-016, for additional information on operating keying.

Activation

The software optionality control (SOC) utility activates this functionality office-wide. You must set the SOC option OSB00101 to ON for this functionality to operate. If the SOC option is IDLE, keying sequences related to this functionality do not affect the functionality.

Translations table flow

Estimated Call Charges does not have translations table flow.

Limits

The following limits apply to Estimated Call Charges:

- The operating company can perform datafill changes to the rating table system. If this event occurs the estimate of charges is not always the same as the correct charges. For example, the operator can perform an estimate request in December for a January date in the following year. If the operator company changes the rating data for the new year, the estimate and correct charges can differ.
- A hotel or office with a private branch exchange (PBX) can use the PBX to calculate charges for calls. If the operating company does not bill the call, the estimate the operator provides can be different from the correct charges.
- This functionality does not allow addition of surcharges or discounts applied during the call setup phase. For example, the operating company can charge \$.50 to book a call. Discounts for booked calls occur when the calls complete. If the operator estimates a booked call, the correct charge, that includes discount, is calculated. The estimate does not include the \$.50 setup charge. Booked calls are only available in an Open Numbering plan environment.
- This functionality is not compatible with External Rater. Calls that use Open Numbering and the North American dialing plan use internal rating data tables to perform the estimate of charges.
- If the calling number is not serviced by the switch, then an estimate cannot be performed.
- In an Operator Centralization (OC) environment, the host switch does not always service the calling party number. If this event occurs calculation is incorrect or not possible. The operator can perform a charge estimate on an operator initiated call. The host switch contains the tables used to calculate the charges.

Estimated Call Charges (continued)

- An estimate of charges occurs for OPP-compatible positions only.
- The following limits exist if a duration is not given:
 - Taxes and surcharges are not considered on call completion and caller identification blocked calls.
 - If the time moves across a rate boundary, the rate is based on the start time of the call.

Interactions

A description of the interactions between Estimated Call Charges and other functionalities appears in the following paragraphs.

This functionality interacts with Booked Call Data Base (BCDB). Restrictions that associate with BCDB apply.

This feature is not compatible with External Rater.

Activation/deactivation by the end user

The subscriber must request this service. The subscriber must provide details about the call to the operator.

Billing

The system appends Module Code 611 to the EAMA when an operator performs an estimate of charges calculation. A not successful charge estimation does not affect. A charge estimation that is not successful does not affect this condition.

Module Code 611 is a generic module that different applications can use. The analysis of the data depends on the information.

Module Code 611 uses CRS_SUBRU_POOL2 extension blocks. The CRS_SUBRU_POOL2_SIZE parameter in table OFCENG provisions CRS_SUBRU_POOL2 extension blocks.

The system does not append the module if the operator cancels and releases a call, and parameter UNANS_TOPS = OFF in table AMAOPTS. This parameter must be ON or the operator must GEN AMA before the operator cancels and releases the call. The operator cancels and releases the call to append the module.

Estimated Call Charges (continued)

Information for module code 611 appears in the following table:

Module code 611 format

Information	Field number	Number of characters
Module Code	88	4
Generic Context Identifier	237	8
Digits String	126	16

Information for Table 237 appears in the following table. The Generic Context Identifier for this functionality is 80001.

237 - Generic Context Identifier field

Character	Value	Meaning
1-5		Parse Rules and Type of Data for Next Field
	00001	Continuous digit string for MDR
	00002	Chargeable party identifier for ATM
	00003	Default ATM address
	00004	Not correct ATM address
	00005	ATM E.164 address end system information
	80001	Extended operator keying action. For this functionality, this value is always 80001.
6-7	digits	This field specifies the number of important digits in the Digits String Field (Table 126). The Digits String Field can be one or more instances of Table 126. This field does not apply when characters 1-5 are 80001. When characters 1-5 are 80001, characters 6-7 are set to 00.
8	C	Sign (hex-C)

How to analyze table 126 when Table 237 is set to 80001, appears in the following table. Table 126 contains a set of operator keying actions. Table 126

Estimated Call Charges (continued)

is like Table 431 - Keying Actions. The length of the Digits String does not apply. Characters 6-7 of Table 237 are 00.

126 - Digits String field

Character	Value	Meaning
1	1	Calculate estimate charges not keyed
	2	Calculate estimate charges keyed
2-15	0	Future use
16	C	Sign (hex-C)

Note, Module code 611 contains only one Table 126.

An example of an AMA record that the system generates with module code 611 appended appears in the following figure:

Example AMA record with module code 611

```
*HEX ID:AA  STRUCTURE CODE:40752C  CALL CODE:192C
SENSOR TYPE:036C  SENSOR ID:0123456C  REC OFFICE TYPE:036C
REC OFFICE ID:0123456C  DATE:61122C  TIMING IND:00000C
STUDY IND:0200000C  SERVICE OBSERVED:0C  ORIG NPA:619C
ORIG NUMBER:3201234C  CONNECTTIME:1952288C
ELAPSED TIME:000000000C  OPERATOR IDS:1050540009999C
ACC OPERATOR WORK TIME:00130C  SERVICE FEATURE:000C
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:001C  MODULE CODE:051C  OVERSEAS IND:0C
TERM NPA:00202C  TERM NUMBER:2201234C
COMPLETION IND:008C  RATE IND:1C  OSS
CALL COMPLETION CONDITIONS:1111110C  MODULE CODE:611C
GENERIC CONTEXT ID:8000100C
GENERIC DIGIT STRING: 20000000000000000C  MODULE CODE: 310C
KEYING ACTIONS: 121112111C  MODULE CODE: 104C
TRUNK FACILITY ID: 103000001C  MODULE CODE: 000C
```

Station Message Detail Recording

Estimated Call Charges does not affect Station Message Detail Recording (SMDR).

Estimated Call Charges (continued)

Datafilling office parameters

Estimated Call Charges does not affect office parameters.

The office parameters for Estimated Call Charges appear in the following table. Refer to *Office Parameters Reference Manual* for more information about office parameters .

Office parameters that are used by Estimated Call Charges

Table name	Parameter name	Explanation and action
OFCENG	CRS_SUBRU_POOL2_SIZE	Indicates module Code 611 uses CRS_SUBRU_POOL2 extension blocks, that the CRS_SUBRU_POOL2_SIZES parameter provisions.

Datafill sequence

The tables that require datafill to implement Estimated Call Charges appear in the following table. The tables appear in the correct entry order.

Datafill requirements for Estimated Call Charges

Table	Purpose of table
AMAOPT	Automatic Message Accounting Options

Datafilling table AMAOPTS

Datafill for Estimated Call Charges for table AMAOPTS appears in the following table. The fields that apply to Estimated Call Charges appear in this table. Refer to the data schema section of this document for a description of the other fields.

Datafilling table AMAOPTS

OPTION	Explanation
UNANS_TOPS	Indicates that this parameter must be ON to append module code 611 if the operator cancels and releases a call.

Datafill example for table AMAOPTS

Sample datafill for table AMAOPTS appears in the following example:

Estimated Call Charges (end)

MAP example for table AMAOPTS

OPTION	SCHEDULE
UNANS_TOPS	ON

Tools for verifying translations

Estimated Call Charges does not use tools for verifying translations.

SERVORD

Estimated Call Charges does not use SERVORD.

External Audio Response Host and Remote

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

The BCS31 later versions

Requirements

To operate, Screened Service Routing has the following requirements:

- BAS Generic, BAS00003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- Table TOPSFTR parameter OPERATOR_CENTRALIZATION = Y

Description

This feature provides the Central Control (CC) implementation of the TOPS Personal Audio Response System (PARS) in Host, Standalone, and Remote Operator Centralization (CC) offices. The TOPS PARS allows custom announcements to play to a subscriber when call presentation at a TOPS position occurs. These announcements are given in the voice of the operator.

The following features provide this functionality:

Feature number	Feature name
NC0003	TOPS Personal Audio Response System (PARS)
AF2601	PARS OC Remote

These features provide the following:

- NC0003: This feature covers PARS functionality in a Host, Standalone and Remote superset environment.
- AF2601: This feature covers Remote packaging for a complete TOPS PARS system.

Operation

The PARS announcements are derived from call attributes that TOPS gives to PARS. A PARS protocol defines these call attributes. Modifications to attributes can reflect changes in call presentation attributes. Other schemes cannot adapt to changes. An example of these schemes is decoding the ASCII

External Audio Response Host and Remote (continued)

byte stream that goes to a TOPS IV position when call presentation occurs. The TOPS IV are not available on the TOPS MP, and future terminals, because of new hardware and software technologies. The flexibility a protocol provides is necessary because of the known improvement of call presentation attributes. For example, an indication that call branding occurred before call presentation.

This feature covers Host, Standalone and Remote superset packaging for a complete TOPS PARS system.

Background

PARS functionality

The PARS provides custom announcements to a subscriber when call presentation to a TOPS position occurs. The operator also hears these announcements. Call attributes sent from TOPS to PARS determine the announcements. The system gives the announcements in the voice of the operator that occupies the TOPS position. These prerecorded announcements allow the operator a period of time to rest between calls. This time reduces the fatigue of the operator. The announcements also provide a consistent tone of voice for call presentation.

For example, a Directory Assistance (DA) call can arrive at a TOPS MP position. From the call attributes that go to the position, PARS can play the announcement "What city, please?" to the subscriber. The operator does not repeat the same phrase for each call because of the announcement. This condition provides a brief rest between calls. In addition, the PARS gives the operator an indication of the type of call.

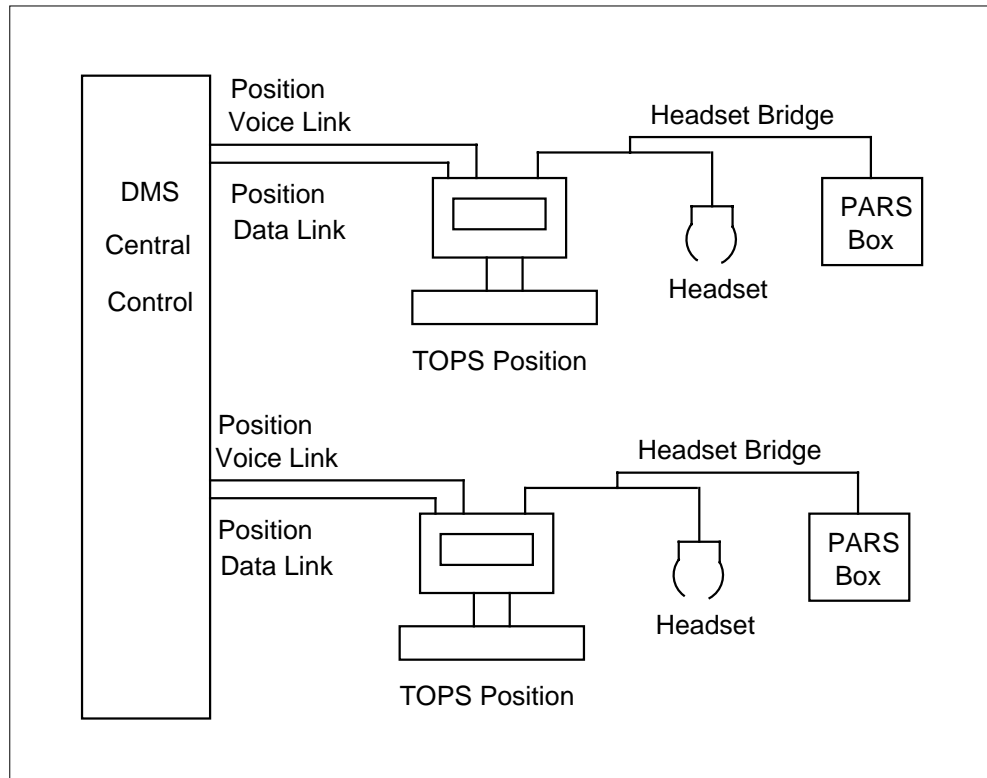
PARS connectivity to a DMS and TOPS positions

The Digital Multiplex System (DMS) and PARS communicate with messages sent over Multiprotocol Controller (MPC) data links. The PARS contains a set of PARS nodes, where each PARS node services a set of TOPS positions. A PARS node and the served TOPS positions connect with PARS links. These PARS links connect to PARS boxes that interface to the operator headset. One PARS box is for each position. A functional view of the connectivity between the DMS and PARS, and between PARS and TOPS positions, appears in the following figure.

Note: See the section "Multiprotocol controller utility" in this document for background on the MPC utility.

External Audio Response Host and Remote (continued)

Functional view of PARS connectivity



In the above figure the system sends Call Information and Audit messages over MPC data links. These links connect the DMS and PARS node. The PARS node takes the Call Information messages, processes the messages, and sends the results to the PARS boxes. These boxes play an announcement over the operator headset.

This figure does not indicate which PARS node services which TOPS positions. One explanation is that one PARS node services all TOPS positions. This condition is like Application 1 in the "MPC Link Sets and DMS Connectivity" figure that appears below. Another explanation is that several PARS nodes each service a set of TOPS positions. This condition is like Application 2 or Application 3 in the "MPC Link Sets and DMS Connectivity" figure. Application 3 does not provide extra links for redundancy.

The connectivity between the DMS and PARS depends on the vendor. Datafill in the DMS maps an individual TOPS position to a separate PARS node. How

External Audio Response Host and Remote (continued)

to enter data into table MPCFASTA describes how the system accomplishes mapping from a TOPS position to a PARS node.

Note: A standard PARS implementation appears in the previous figure. Vendor equipment (PARS node, box, and headset bridge) are vendor-specific.

Call information messaging

Call information messaging sends two types of call information messages:

- Call Begins
- Call Ends

A Call Begin contains information on specified call that the PARS system uses to determine a call type. Information includes position number, loop number, operator number, and other attributes. The PARS uses the call type that PARS determines to select a PARS announcement. A Call End signifies that PARS processing of a particular call is over. Only the DMS can initiate call information messages.

When a call marked as receiving PARS service arrives at a TOPS position, the system sends a Call Begin message. The system sends the message from the DMS to the PARS node entered in table PARSMBR that services position. When the PARS node receives the Call Begin message, the call determines the call type and plays a correct announcement. The announcement plays to the subscriber and operator through the operators headset.

When the call leaves the TOPS position, a Call End goes from the DMS to the PARS node. Data entry of the node occurs in table PARSMBR that services that position.

Audit messaging

Audit messaging sends and receives two types of audit messages:

- Audit Requests
- Audit Replies

The system sends an Audit Request when the DMS or PARS node wants to audit a particular data link. An Audit Reply goes from the recipient of the Audit Request to the sender of the Audit Request. The audit reply goes over the *same* data link that sent the Audit Request. Both the DMS and PARS node can initiate audit messages.

External Audio Response Host and Remote (continued)

The DMS can initiate Audit Requests for two reasons:

- the audit timer for the TOPSPARS application datafilled in table MPCFASTA expired (an idle-link audit)
- the TOPSPARS application wants to send an audit (an active audit)

For the data link to be considered sane, the Audit Reply must pass two levels of sanity checks. The first level is at the MPC level. The MPC utility checks if any message returns over the audited data link. The utility does *not* verify the message content. If this check passes a second check occurs at the TOPSPARS application level. The TOPSPARS application verifies the message type is for an audit message and that the protocol version is correct. If the message type is not for an audit message, the system generates a PARS102 log.

Note: Audits the TOPSPARS application initiates (active audits) are not currently implemented.

The PARS protocol version in the audit message can be different than PARS protocol version in the DMS. When this condition occurs, the system generates a PARS103 log. The system can generate only one PARS103 log.

If both the message type and protocol version checks succeed, the system does not generate logs.

The PARS node can generate Audit Requests. The PARS node determines:

- the frequency of Audit Requests
- the required action if a sane Audit Reply is not received from the DMS

Call presentation tones and PARS service

The system can present an Operator Number Identification (ONI) call (1+DD, non-coin, non-hotel) or Intercept call (if TOPS is providing the DA/Intercept service) at a TOPS position. When this condition occurs, a two-beep call presentation tone plays to the subscriber and operator. This tone signifies that the calling number must be collected. For all other types of calls, a one-beep call presentation tone plays only to the operator. This tone informs the operator of call presentation.

When a call designated as receiving PARS service can arrive at a TOPS position. When this condition occurs, the system does *not* generate a call presentation tone for the operator or the subscriber. The PARS announcement replaces the call presentation tone. If a call presentation tone is necessary, the tone must be part of the PARS announcement.

External Audio Response Host and Remote (continued)

The call the system presents at the TOPS position has the designation of receiving PARS service. When this condition occurs, in-service links can be present between the DMS and the PARS node that services the TOPS position. When this condition occurs, the system generates the call presentation tones.

Multiprotocol controller utility

The Digital Multiplex System (DMS) and PARS communicate with messages over Multiprotocol Controller (MPC) data links. Use of the MPC utility allows the DMS and PARS to send and receive the messages. This section gives a brief introduction to the MPC utility so that DMS/PARS connectivity can be more readily known. Refer to the *Translations Guide*. This applies only to Batch Change Supplement (BCS) 30.

The MPC utility allows call processing and other applications to communicate with remote nodes. The MPC utility provides an intermediate level of software. This software manages application messages and link traffic loads through the use of queues. This software manages link selection and transfer mechanisms.

The term data link refers to an MPC connection between the DMS and a remote processor. The MPC number, Link number and Channel number (MLC) specify connections (data links) in table Multiprotocol Controller Fast Application (MPCFASTA). Each MLC combination is a logical link from the entered application to a remote application. In this document, the term link refers to one logical MLC connection. The local (datafill) application is the software on the DMS which interfaces that the MPC software to communicate with the remote application.

The MPC utility provides the following capabilities:

- sends messages
- receives messages
- queues messages on logical links and does not suspend the application software
- allows the application to specify a logical link for an outgoing message
- allows the application to choose the most idle logical link for an outgoing message if the application does not specify one
- provides distribution/link sharing of messages over each of the logical links of the applicant, as possible
- supplies audits of logical links. The links are idle for a specified time interval (0 seconds to 255 Minutes). The logical links are available for separate applications. The timer period can expire, and the logical link can

External Audio Response Host and Remote (continued)

be idle for the timer period. When this condition occurs, the MPC utility sends a message to the remote application. The message requires a response for this logical link to remain available.

- detects link faults that result in a link marked as not available for messages. The application is aware when this condition occurs.
- automatic logical link transfer of messages. The transfer occurs from a logical link that is out of operation to a logical link for that application that is operational. The system notifies the application of this action.
- allows the application to specify links as belonging to sets for selective transfer and application grouping of logical links
- provides enhanced error recovery action when link audit failure occurs

A list of the applications that use the MPC utility appears in table MPCFASTA. Table MPCLSET allows application MLCs already in table MPCFASTA to be grouped in link-sets. Refer to the Datafill Procedure section for more information on these tables.

PARS in a TOPS operator centralization environment

The TOPS Operator Centralization (OC) environment saves operating expenses through the reduction of the number of operators to employ.

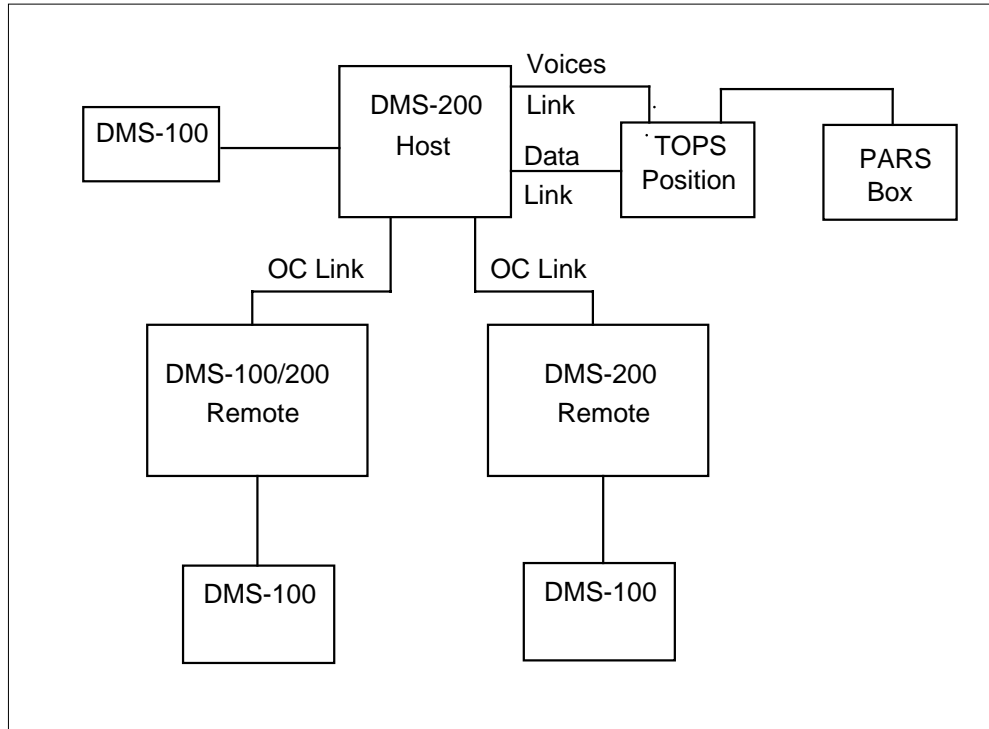
In an OC environment, there are two types of switches:

- host switches, where the operator positions are located
- remote switches, which obtain operator services through messaging the Host switch over the OC links.

A possible implementation of the PARS application in an OC environment appears in the following figure.

External Audio Response Host and Remote (continued)

Example of PARS application in an OC environment



The operator positions connect to PARS. This condition requires a PARS node to be present in the Host for PARS service to be available. The PARS node includes DMS PARS software. Tables PARSMBR and PARSDENY are present in the Host. The DMS PARS software must be present in a Remote if calls that originate in the Remote are to receive PARS service. Table PARSDENY are present in the Remote. Table PARSMBR is not present. If the call originates in the Host, the Host table PARSDENY determines if offers of PARS service. The Remote table PARSDENY is for calls that originate in the Remote.

Note: The *Host* datafill in table PARSMBR determines the TOPS positions that receive PARS service.

When a call originates in one of the Remotes, the system requests a position from the Host over the OC link. When the host obtains a position in the Host, the Remote sends call attributes over the OC link to the Host. The Remote stores the call attributes. The Host relays the attributes to PARS over the MPC data links. When a call originates in the Host, the call attributes are present in the Host. The system sends the attributes to PARS over the MPC data links. Messaging over the OC links is not a requirement.

External Audio Response Host and Remote (continued)

If a Host switch is Closed, this switch becomes a Remote to a Super Host switch. If the Host switch Closed, the switch becomes a Remote. The PARS that connects to the host is *not* used. The *Super Host* switch must connect to PARS for PARS service to be available.

Normally, any switch that acts as a Host switch must have PARS connected to the switch. The switch must also have the DMS PARS software. In addition, any Remotes that are to receive PARS service must also have the DMS PARS software present in the Remote. If this software is not present, PARS service is not available for the Remote.

Translations table flow

Translations table flow is not provided for External Response Host and Remote.

Limits

The following limits apply to External Response Host and Remote:

- This feature supports only General TOPS positions. A TOPS position is General if field POS in table TOPSPOS is equal to value OPR.
- Entry of a TOPS position must occur in table PARSMBR to cancel the call arrival tone. Tone cancellation occurs when a new call arrives at position. Entry of IC and ASST positions cannot occur in table PARSMBR, the positions continue to hear the call arrival tone. The positions hear the PARS announcement when monitoring a General position that has PARS.
- As the PARS box connects to the TOPS position headset, the operator must not change loops during a PARS announcement. The change of loops during an announcement can cause the subscriber on one loop to hear another announcement. The announcement can be all or part of the announcement that is for the other loop.
- The call presentation tone is not heard for calls marked as receiving PARS service. This condition can cause a failure in playing a PARS announcement can occur. This condition causes the system to present a call at a position without an indication of the presentation given to the operator. The only indication is the position display. Operator training must take this condition into account.
- Each time the system presents a receiving PARS service call to a TOPS position, a Call Begin message goes to a PARS node. This condition occurs despite any previous handling by an automated system or other operator.
- The Average Work Time (AWT) of the operator time the PARS announcement plays.

External Audio Response Host and Remote (continued)

- Certain end offices signal coin calls to an operator with tones when the system presents calls at a TOPS position. If these calls are marked as receiving PARS service, the end office tones are not always heard. The calls cannot be heard because of the PARS announcement. Entry of the trunk groups that carry these calls must occur in table PARSDENY. This condition guarantees that the system does *not* provide PARS for these calls.
- Before you delete a link-set for a TOPSPARS application from, delete all tuples in table PARSMBR that use that link-set.
- Northern Telecom and PARS vendors must be current with the PARS protocol. As TOPS and PARS evolve, the protocol evolves to reflect changes in call presentation attributes. Compatibility continues for BCS N, BCS N-1, and BCS N-2. The protocol improves in an upwards-compatible manner.

Interactions

The following paragraphs describe the interactions between External Response Host and Remote and other functionalities.

This functionality is optional. This functionality interacts with all TOPS calls marked for receiving PARS service. These calls can receive branding. The automated operator system can also have the calls. An example of the calls is the VSN.

If this package is present in a host office, this package must also be present in the remote offices that wish to offer PARS service.

Activation/deactivation by the end user

External Response Host and Remote does not require activation or deactivation by the end user.

Billing

External Response Host and Remote does not affect billing.

Station Message Detail Recording

External Response Host and Remote does not affect Station Message Detail Recording.

Datafilling office parameters

External Response Host and Remote does not affect office parameters.

External Audio Response Host and Remote (continued)

Datafill sequence

The tables that require datafill to implement External Response Host and Remote appear in the following table. The tables appear in the correct entry order.

Datafill requirements for External Response Host and Remote

Table	Purpose of table
TOPSPOS	TOPS position. This table defines TOPS positions to the switch. This table specifies the services that a position can provide.
SFWALARM	Software alarm. This table provides an indication of the data link failure to the craftsperson.
MPCFASTA	Multiprotocol controller fast application. This table identifies applications that use the MPC fast utility, a fast input/output interface through the MPC.
MPCLSET	Multiprotocol controller link-set. This table allows grouping of an MPC fast applications logical links to link-sets for selective link transfers.
PARSDENY	PARS denial. This table denies PARS service based on the calls originating trunk group.
PARSMBR	PARS member. This table associates a TOPS position with a particular PARS node.

Datafilling table TOPSPOS

Entry of the TOPS position must occur in table TOPS Position (TOPSPOS) before table PARSMBR. The position type must be General. The TOPS position number must not be present in table PARSMBR to delete the number from table TOPSPOS.

Datafilling table SFWALARM

A data link failure between the DMS and PARS can occur in PARS service to be not available for TOPS calls. The unavailability is for calls marked as receiving PARS service. Some indication of the data link failure must be given to the craftsperson. This notification can occur with software alarms, or with logs.

Three new software alarms are added to table Software Alarm (SFWALARM):

- TOPS_PARS_LINK
- TOPS_PARS_NODE
- TOPS_PARS_APPL

External Audio Response Host and Remote (continued)

Refer to the data schema section of this document and *DMS-100 Alarm Clearing Procedures*, 297-8021-543 for more details on software alarms.

Datafill for External Response Host and Remote for table SFWALARM appears in the following table. The fields that apply to External Response Host and Remote appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table SFWALARM

Field	Value	Explanation and action
FUNCTION	TOPS_PARS_LINK	Alarm TOPS_PARS_LINK activates when the removal of <i>any</i> MPC data link for the TOPSPARS application out of service occurs. The system deactivates the alarm when <i>all</i> data links for the TOPSPARS application. The data links entered in table MPCFASTA, are in service. This condition occurs when the operating company deactivates, which is not recommended.
	TOPS_PARS_NODE	Alarm TOPS_PARS_NODE activates when <i>all</i> MPC data links to <i>any</i> PARS node are taken out of service. The alarm deactivates when <i>at minimum of one</i> data link is in service between the DMS and <i>each</i> PARS node. Deactivation also occurs when the operating company personnel deactivates, which is not recommended.
	TOPS_PARS_APPL	Alarm TOPS_PARS_APPL raises when <i>all</i> MPC data links for the TOPSPARS application are taken out of service. The alarm deactivates when <i>one</i> data link is in service for the TOPSPARS application. Deactivation also occurs manually by operating company personnel, which is not recommended.

Datafill example for table SFWALARM

Sample datafill for table SFWALARM for PARS Application appears in the following table. Note that the datafill the customer can modify determines the value of the alarm and other alarm logic.

External Audio Response Host and Remote (continued)

MAP example for table SFWALARM

FUNCTION	REPORT	ALM	LOGIC

TOPS_PARS_LINK			
	Y	MN	(MNALMVIS N N) (MNALMAUD N N) (EXPILDMS N N) (PREFLRMN N N) (SUCFLRMN Y N) (MNVISLOOP N N) (COMAUD1 N N) \$
TOPS_PARS_NODE			
	Y	MN	(MNALMVIS N N) (MNALMAUD N N) (EXPILDMS N N) (PREFLRMN N N) (SUCFLRMN Y N) (MNVISLOOP N N) (COMAUD1 N N) \$
TOPS_PARS_APPL			
	Y	MJ	(MJALMVIS N N) (MJALMAUD N N) (MJALMAUD1 N N) (MJALMAUD2 N N) (EXPILDMS N N) (PREFLRMJ N N) (SUCFLRMJ Y N) (MJVISLOOP N N) (COMAUD1 N N) \$

For each of the above alarms, the system can generate an associated EXT log based on the datafill in table SFWALARM. The EXT log does not contain information on specified PARS data links and nodes that are out of service. The system creates two PARS logs that apply to PARS.

- The system generates PARS100 log when any MPC data link for the TOPSPARS application goes out of service.
- The system generates PARS101 log when any MPC link-set for the TOPSPARS application goes out of service.

Datafilling table MPCFASTA

Datafill for External Response Host and Remote for table MPCFASTA appears in the following table. The fields that apply to External Response Host and

External Audio Response Host and Remote (continued)

Remote appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table MPCFASTA

Field	Value	Explanation and action
INDEX	TOPSPARS	In order for the TOPS PARS application to use the MPC utility, the system adds a new index, TOPSPARS, to the range of indexes of table Multiprotocol Controller Fast Application (MPCFASTA). The addition allows the datafill of audit frequency, type of recovery, and MLCs (MPC, Link, Channel) for the TOPS PARS application.
RECOVERY	ENHANCED	Set field RECOVERY to ENHANCED for the TOPSPARS application.

Datafill examples for table MPCFASTA

Sample datafill for table MPCFASTA for PARS Application appears in the following table.

MAP example for table MPCFASTA for PARS application

INDEX	AUDITFRQ MLCLIST	UNITS	RECOVERY
TOPSPARS	5	MINUTES	ENHANCED
	(6 2 1)	(5 3 1)	(4 2 1) (3 2 1)\$

Note: Table MPCFASTA relies on datafill in tables Multiprotocol Controller (MPC) and Multiprotocol Controller Link (MPCLINK). This datafill must follow recommended values. Parallel datafill must be present between the DMS and the PARS node. See the Data Schema (DS) section of this document for details on the recommended datafill.

Multiprotocol Controller Utility

Table MPCFASTA contains a list of the applications that use the MPC utility. Each entry in the table contains the application name, and an application dependent link audit frequency. Each entry also contains the type of error recovery to use. Each entry also contains a list of the MLCs (logical links) associated with this application.

Sample datafill for table MPCFASTA appears in the following table.

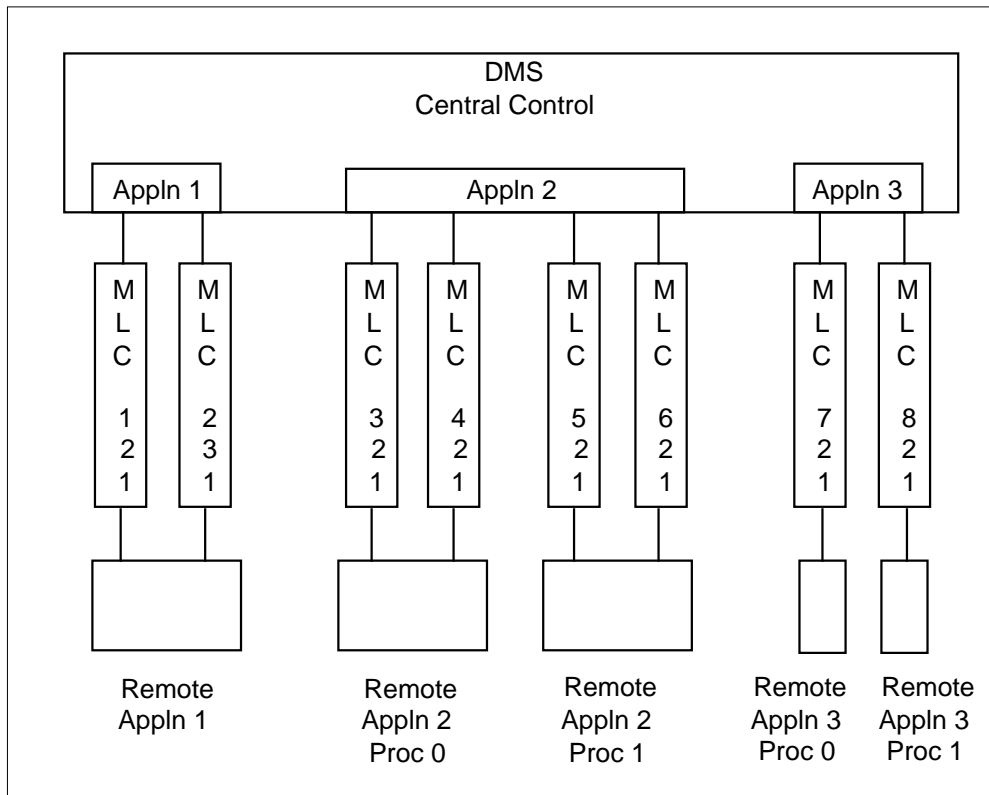
External Audio Response Host and Remote (continued)

MAP example for table MPCFASTA for the MPC utility

INDEX	AUDITFRQ MLCLIST	UNITS	RECOVERY
APPLN1	30 (1 2 1)	SECONDS	REGULAR
APPLN2	45 (6 2 1) (5 3 1) (4 2 1) (3 2 1)	SECONDS	ENHANCED
APPLN3	2 (7 2 1) (8 2 1)	MINUTES	ENHANCED

Several possible connectivities between the DMS and remote applications appear in the following figure. This figure uses datafill in the previous example and Table MPCLSET datafill that follows the figure.

MPC Link Sets and DMS Connectivity



Application 1 does not require subgrouping of logical links. All links are in one link-set. Application 2 has two remote processors. This application supports transfer of messages between specified links for specified processors.

External Audio Response Host and Remote (continued)

Links 3 and 4 are for processor 1. Links 5 and 6 are for processor 2.
Application 3 has two remote processors, and does not support transfer of messages between links. This application does not support transfer since each link-set for each processor has only one element.

Datafilling table MPCLSET

With the addition of new index TOPSPARS in table MPCFASTA, entry of the link-sets that correspond to PARS nodes must occur in table Multiprotocol Controller Link-Set (MPCLSET). Each link-set (PARS node) services a set of TOPS positions.

Datafill examples for table MPCLSET

Sample tuples for table MPCLSET for PARS Application appear in the following example.

MAP example for table MPCLSET for PARS application

LSETKEY		MLCLIST								
-----		-----								
TOPSPARS	0	(	4	2	1)	(	3	2	1)	\$
TOPSPARS	1	(	5	3	1)	(	6	2	1)	\$

Note: If one PARS node services all TOPS positions, you must define a link-set for that PARS node. The link-set contains all MPC data links for the PARS application.

Multiprotocol Controller Utility

Table MPCLSET also allows application MLCs to group into link-sets. The MLCs are in table MPCFASTA. Each application datafilled in table MPCFASTA can associate with a maximum of 16 link-sets. Entries in table MPCLSET contain the application name, the link-set number for that application, and the MLCs in that set.

The link-set number is a unique identifier that corresponds to an applications grouping of logical links. Logical links support message transfer between the DMS and the remote application.

This table allows the assignment of logical links to a link-set based on specified office configurations and connections. These link-set identifiers can change dynamically with table control. Office configuration can also change dynamically.

Sample datafill for table MPCLSET for the MPC utility appears in the following example.

External Audio Response Host and Remote (continued)

MAP example for table MPCLSET

LSETKEY	MLCLIST
APPLN1	0(1 2 1) (2 3 1)\$
APPLN2	0(4 2 1) (3 2 1)\$
APPLN2	1(5 3 1) (6 2 1)\$
APPLN3	0(7 2 1)\$
APPLN3	1(8 2 1)\$

Datafilling table PARSDENY

When the system presents a call at a TOPS position, the system must determine if an offer of PARS service occurs for the call. As operator-originated Delay calls do not have a subscriber present on call presentation. This condition causes the PARS service to not be available for these calls. In addition, some calls that originate on certain trunk groups do not receive PARS service.

New table PARS Denial (PARSDENY) denies PARS service based on the calls originating trunk group. Entry of the originating trunk group of the call can occur in this table. In this event, PARS service is not available for the call. An example of table PARSDENY appears in the following figure.

Datafill for External Response Host and Remote for table PARSDENY appears in the following table. The fields that apply to External Response Host and Remote appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table PARSDENY

Field	Value	Explanation and action
CLLI	alphanumeric	Field Common Language Location Identifier (CLLI) defines originating trunk groups that interface to TOPS must <i>not</i> receive PARS service. Entry of the field can occur with incoming or two-way TOPS, Intertoll (IT), Access Tandem to Carrier (ATC), and Remote Operator Number Identification (RONI) trunk groups.

Datafill example for table PARSDENY

An example of table PARSDENY for PARS Application appears in the following example.

External Audio Response Host and Remote (continued)

MAP example for table PARSDENY

```
CLLI  
-----  
TOPSIC  
RONIIC  
ATCIC  
IT2W  
TOPS2W
```

An offer of PARS service occurs if all of the following conditions occur:

- the call is not an operator-originated Delay call
- the originating trunk group of the call is *not* entered in table PARSDENY
- the position the call is entered in table PARSMBR

The above list defines the conditions necessary to offer PARS service. Service cannot be possible. The data links to a PARS node can be out of service.

Datafilling table PARSMBR

Each TOPS position that is to receive PARS service must have a definition in new table PARS Member (PARSMBR). This table associates a TOPS position with a particular PARS node. This table also associates an application option with each position in the table. The application option associates certain attributes with the position. The application option is present to allow for the orderly introduction of new capabilities in the future. Only entry of the positions that are to receive PARS service must occur in this table.

Datafill for External Response Host and Remote for table PARSMBR appears in the following table. The fields that apply to External Response Host and

External Audio Response Host and Remote (continued)

Remote appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table PARSMBR

Field	Value	Explanation and action
TOPSPNUM	0-9999	Field TOPS Position Number (TOPSPNUM) is the key to the table. The field contains the TOPS position number that receives PARS service. The TOPS position must be entered in table TOPS Position (TOPSPOS) before table PARSMBR. The position type must be General. The TOPS position number must not be present in table PARSMBR to delete it from table TOPSPOS.
PARSNUM	0-15	Field PARS Node Number (PARSNUM) corresponds to a link-set number that table MPCLSET defines. Entry of table MPCLSET must define the link-set for application TOPSPARS before the link-set can occur in table PARSMBR.
APPLNOPT	0-32767	Field Application Option (APPLNOPT) associates specified attributes to calls that arrive at the position. This field is now not in use.

Datafill example for table PARSMBR

Sample datafill for table PARSMBR for PARS Application appears in the following example.

MAP example for table PARSMBR for PARS application

TOPSPNUM	PARSNUM	APPLNOPT
100	0	0
101	0	0
...
350	0	0
351	1	0
...
1000	1	0
1001	1	0

In the above datafill example and in the example for Table MPCLSET, the TOPS PARS application contains two PARS nodes. The PARS nodes have

External Audio Response Host and Remote (end)

redundant MPC links for reliability. Each node services a set of TOPS positions.

Tools for verifying translations

External Response Host and Remote does not use tools for verifying translations.

SERVORD

External Response Host and Remote does not use SERVORD.

FMCRT Elimination

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS13 and up

TOPS13 introduced FMCRT Elimination.

Requirements

To operate, FMCRT Elimination requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This feature allows a personal computer (PC) or workstation to serve as a Force Manager's CRT (FMCRT).

This functionality consists of the feature as follows:

Feature number	Feature name
A59006812	TOPS FMCRT Elimination

Operation

Background

The FMCRT displays status summaries and alarm information for all of the positions and queues in a TOPS office. The information is updated every 10 seconds by the TOPS switch. Prior to this feature, the FMCRT had to be a TOPS SP (Single Purpose) or MP (Multi Purpose) position because the data sent from the DMS switch was formatted using proprietary control sequences to position the cursor and display certain fixed text strings.

Note, support for TOPS SPs is dropped in TOPS13 by functionality Code Removal of TOPS IV, OSB00101 (feature A5901253).

TOPS11 feature AF7827 in functionality Position/Device Evolution IP, OSB00101, uses IP (Internet Protocol) over the EIULAN to connect TOPS devices to the DMS switch. This functionality provided an alternative to the

FMCRT Elimination (continued)

TOPS Message Switch (TMS) or DMODEM, but did not change the way the DMS switch formatted the data.

New functionality

This feature (FMCRT Elimination) uses a new set of control sequences when the FMCRT is connected by the EIULAN. These control sequences were defined in ANSI standard X3.64, and are more widely known as the VT100 control sequences. Many telnet programs available for PCs and Unix workstations can interpret these control sequences, so it is now possible to use a PC or workstation for the EIULAN based FMCRT. An EIULAN based FMCRT is referred to as an ANSI FMCRT device.

This feature does not affect the operation of an existing MP FMCRT which is connected by a DMODEM or TMS.

Layout of FMCRT display

The TOPS SP (supported in prior releases) and TOPS MP FMCRT displays use different formats. The MP supports more teams than the SP. The MP FMCRT is used as the basis for this feature. However, the ANSI FMCRT does not support softkeys since they are specific to the MP/TPC implementation. Moreover, the MP screen allows 90 characters per line, while a telnet session normally provides 80 characters. However, functionality MD Code Removal and ReEngineering, OSB00101, (feature 59006865, EOL of TOPS ACD) in TOPS 12 removed all support for TOPS ACD, so all TOPS offices now use QMS. This change means that the OC1, MB1, OC2, MB2, OC3 and MB3 fields as well as some of the alarms in the MP FMCRT display are no longer required. This change allows the ANSI FMCRT to display the QMS information in the available space.

Position type of FMCRT device in table TOPSDEV

The FMCRT is the only TOPS device that has a position type (MP, BP, and formerly SP). The position type of an FMCRT controls the formatting of data for display. With this feature, the ANSI FMCRT always formats data using the ANSI/VT100 control codes, so the position type and protocol fields are not present in FMCRT datafill when EIULAN transport is selected.

Language and display attributes

The MP FMCRT supports language selection at the TPC Administration and Maintenance Interface (TAMI). Some other TOPS devices support a language selector in table TOPSDEV in the DMS switch. Since there is no TAMI for an EIULAN based FMCRT, this feature adds a language selector for the ANSI FMCRT in table TOPSDEV. The selector is only used for the ANSI FMCRT, and does not affect other FMCRT device types. Supported languages are English, French and Spanish. The ANSI FMCRT uses the same text for the

FMCRT Elimination (continued)

headers and alarms that the MP FMCRT uses. The text strings are hard coded in the DMS switch.

The MP FMCRT uses a blink attribute to call attention to alarm displays. An EIULAN based FMCRT has datafill to support a limited selection of display attributes for use with alarm displays. The display attributes supported by the switch are Bold, Blink, Reverse, and Underline.

Control codes

This feature uses the following ANSI/VT100 control codes. Users of this feature should verify that the telnet client they select for use as an ANSI FMCRT device supports these control codes.

In these definitions, {Pn} represents a numeric parameter, which is transmitted as a sequence of numbers in ASCII. {Ps} represents a symbolic parameter which also is transmitted as a number in ASCII.

Commands are introduced by the two character sequence <esc> followed by one or more parameters separated by semi-colons and terminated by a letter which identifies the command. Examples are given in hexadecimal notation.

- CUP Cursor Position

<ESC>[{Pn} ; {Pn} H Default Value: 1

The CUP sequence moves the cursor to the position specified by the parameters. The first parameter specifies the line, and the second specifies the column. A value of zero for either line or column moves the cursor to the first line or column in the display.

Example: 1b 5b 32 3b 31 35 48 positions the cursor at row 2, column 15.

- ED Erase in Display

<ESC>[{Ps} J Default: 0

This sequence erases some or all of the characters in the display according to the parameter as follows:

- 0 - Erase from the cursor to the end of the screen
- 1 - Erase from the start of the screen to the cursor
- 2 - Erase the entire screen

Example: 1b 5b 32 4a clears the screen.

- EL Erase in Line

<ESC>[{Ps} K Default: 0

FMCRT Elimination (continued)

Erase some or all characters in the active line, according to the parameter.

- 0 — Erase from the cursor to the end of the line
- 1 — Erase from the start of the line to the cursor
- 2 — Erase the entire line

Example: 1b 5b 32 4b clears the line the cursor is on.

- **SGR** Select Graphic Rendition

<ESC>[{PS} ; {PS} m

Invoke the graphic rendition specified by the parameter(s). All following characters transmitted to the terminal are rendered according to the parameter(s) until the next occurrence of an SGR.

- 0 — Attributes Off
- 1 — Bold or increased intensity
- 4 — Underscore
- 5 — Blink
- 7 — Negative (reverse) image
- other — ignored

Example: 1b 5b 35 6d sets blink mode for subsequent characters.

A sample ANSI FMCRT screen layout is shown in the following figure.

FMCRT Elimination (continued)**Sample ANSI FMCRT screen**

```

<===== Broadcast Message =====>
      OC  MB  CT  OD  UCP  UCD  ACS
      0   0   0   0   0   0   0
Team  OC  MB  ACS      Team  OC  MB  ACS
  1   0   0   0      16   0   0   0
  2   0   0   0      17   0   0   0
  3   0   0   0      18   0   0   0
  4   0   0   0      19   0   0   0
  5   0   0   0      20   0   0   0
  6   0   0   0      21   0   0   0
  7   0   0   0      22   0   0   0
  8   0   0   0      23   0   0   0
  9   0   0   0      24   0   0   0
 10   0   0   0      25   0   0   0
 11   0   0   0      26   0   0   0
 12   0   0   0      27   0   0   0
 13   0   0   0      28   0   0   0
 14   0   0   0      29   0   0   0
 15   0   0   0      30   0   0   0
QCW      QCQ      T&C POS OD
QCDC      25% QCT      NO QST REG      CAMA SUSPEND

```

The ANSI FMCRT display occupies 24 lines of 60 characters (to accommodate the broadcast message). The actual appearance depends on the telnet client program used for the FMCRT device. Since many such programs use resizable windows, the display is aligned on the left side of the screen to allow users to reduce the size of such a window.

Translations table flow

FMCRT Elimination does not have a translations table flow.

Limitations and restrictions

The limitations and restrictions that follow apply to FMCRT Elimination.

- The FMCRT “sonalert on” control sequence (hex 07, the ASCII BEL character) only causes a short beep on telnet clients with BEL support. For the alarm displays that are accompanied by sonalert for an MP FMCRT, an

FMCRT Elimination (continued)

ANSI FMCRT causes the telnet client to beep at the beginning of the alarm condition.

- The ANSI FMCRT uses the ANSI/VT100 SGR control sequences to highlight the alarm displays. However, many telnet clients do not support blinking although they may use inverse video, color or other methods to highlight these displays. It is recommended that the ANSI FMCRT device be datafilled in table TOPSDEV to use a Reverse video display attribute for alarm displays. If this does not work properly with the telnet client being used, then try the other display attributes. Note that this feature only supports the ANSI SGR display attributes required to support FMCRT displays. Foreground and Background color control is not supported.
- Note that the CM assumes the size of the telnet client window is at least 24 lines by 60 columns. If a smaller window is used, the ANSI FMCRT display does not have the proper appearance.
- If the number of operator teams change while the ANSI FMCRT device is in service, the device must be busied and returned to service for the display to reflect the new number of operator teams.
- While an ANSI FMCRT device is in service with an active telnet session, any keyboard input to the telnet session will overwrite a portion of the FMCRT display. This is due to the echo settings for telnet and cannot be controlled from the CM. Should the FMCRT display be overwritten, close the window in which the telnet session resides. In another window (or a new one) reestablish the telnet connection to create a clean FMCRT display. When using telnet on a PC or UNIX workstation supporting a windowing environment, keeping the mouse/keyboard focus out of the ANSI FMCRT window will prevent accidental overwrite of the FMCRT display.
- The alerting displays for CAMA suspension and all time and charges positions being out of service have been changed slightly for an ANSI FMCRT. The following table gives the English, French and Spanish message text for these two alerting displays.

Alerting display changes>

Language/Display	CAMA SUSPENDED text	All T&C POS OD text
English	CAMA SUSPEND	TAC POS OD
French	CCA SUSPEND	POS D&F HS
Spanish	CAC SUSPEND	POS TyC FS

FMCRT Elimination (continued)

Interactions

The paragraphs that follow describe how FMCRT Elimination interacts with other functionalities.

Because functionality MD Code Removal and ReEngineering (OSB00001) has removed support for TOPS ACD, this feature (FMCRT Elimination) does not support displays that were specific to TOPS ACD; that is, OC1, MB1, OC2, MB2, OC3, MB3, CD, CD1, CD2, CD3, CW, CW1, CW2, CW3, and 25%CT.

It is possible to use a single PC for both the ANSI FMCRT device provided by this feature and the IP QFADS device provided with AF7827 by running two telnet sessions on the same PC.

Activation and deactivation by the user

FMCRT Elimination does not require activation or deactivation by the user.

Billing

FMCRT Elimination does not generate billing records or changes.

Station Message Detail Recording

FMCRT Elimination does not require Station Message Detail Recording.

Office parameters used by FMCRT Elimination

FMCRT Elimination does not generate office parameters.

Datafill sequence

The table that follows lists the tables that require datafill to put FMCRT Elimination into operation. You must enter data into the table in this order.

Datafill requirements for FMCRT Elimination

Table	Purpose of table
TOPSDEV	TOPS Device lists devices in the TOPS office that use trunk circuits.

FMCRT Elimination (continued)

Datafill related to FMCRT Elimination for table TOPSDEV

The table that follows provides the datafill related to FMCRT Elimination for table TOPSDEV. This table includes only those fields that apply directly to FMCRT Elimination.

Datafill related to table TOPSDEV

Field	Subfield	Entry	Explanation and action
	DEVSEL	FMCRT	Device select. This feature changes the subfields for an FMCRT.
	DATATYPE	DMODEM, TMS, EIULAN	Data type. The change applies to an EIULAN.
	POSTYPE	SP, MP, BP	Position type. This field is removed when DATATYPE = EIULAN
	PROTOCOL	ASCII, OPP	Protocol. This field is removed when DATATYPE = EIULAN.
	LANG	E, F, S	Language. This field is new when DATATYPE = EIULAN. The values are E (English), F (French), and S (Spanish).
	DISPATTR	Bold, Blink Reverse, Underline	Display pattern. This field is new when DATATYPE = EIULAN. Value Reverse means video.
	PORT	8000 - 8095	Port number on the EIULAN This field is new when DATATYPE = EIULAN.

Datafill example for table TOPSDEV

The figure that follows shows sample datafill for table TOPSDEV.

MAP example for table TOPSDEV

DEVNO	DEVTYPE
30	FMCRT EIULAN E REVERSE 8009

FMCRT Elimination (end)

The following examples show the reformatting during a one night process (ONP) from pre-TOPS13 to TOPS13 (or later). Dropped or added fields are highlighted

Example ONP changes

Pre-TOPS13 tuple	Reformatted tuple for TOPS13 or later
30 FMCRT EIULAN MP ASCII 8009	30 FMCRT EIULAN E REVERSE 8009
30 FMCRT EIULAN SP ASCII 8009	30 FMCRT EIULAN E REVERSE 8009
30 FMCR TMS MP ASCII 0 2	30 FMCR TMS MP ASCII 0 2
30 FMCRT DMODEM SP ASCII TM8 0 0 2X72AA BELL108	30 FMCRT DMODEM SP ASCII TM8 0 0 2X72AA BELL108 (see note)
	(Note, this SP tuple is dropped by feature A59012553, EOL of TOPS SP terminals)
30 FMCRT DMODEM MP ASCII TM8 2 2 2X72AA BELL202	30 FMCRT DMODEM SP ASCII TM8 0 0 2X72AA BELL202

Translation verification tools

FMCRT Elimination does not use translation verification tools.

SERVORD

FMCRT Elimination does not use the Service Order System (SERVORD).

GDP Support Location Digit Type

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS14 and up

TOPS14 introduced GDP Support Location Digit Type.

Requirements

To operate, GDP Support Location Digit Type requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This feature allows the TOPS switch to receive a Location Identification Number (LIN) from an incoming cellular Directory Assistance (DA) call and pass this number to the operator position by an Open Position Protocol (OPP) message. The operator can then use this number to provide services such as directions or travel assistance.

This functionality is provided by the following feature:

Feature number	Feature name
59021112	Generic Digits Parameters Support Location Digit Type (TOPS14)

Operation

The main components of this feature are as follows:

- LIN
The LIN is a 10 digit number that uniquely identifies the cell and sector of the cellular caller. The TOPS switch receives this number in a Generic Digits Parameter (GDP) of an SS7 ANSI ISUP IAM message.
The TOPS switch sends the LIN to the operator position in a Data Identifier (DID) using the OPP protocol. The operator uses the LIN to identify the location of the cellular caller so services can be provided.
- Generic Digits Parameter

GDP Support Location Digit Type (continued)

The GDP is an optional parameter of the Initial Address Message (IAM) containing the following fields: the generic digit type, encoding scheme, and digits. The LIN is one generic digit type that uses the GDP. The LIN is delivered as a 10 digit Binary Coded Decimal (BCD) number. These digits represent the location of the cellular caller. When an incoming cellular DA call is presented to the TOPS switch, the IAM is decoded and the LIN is stored in a data block for use later in the call.

- **Generic Digits DID**

A new DID called the Generic Digits DID is created by this activity to deliver the LIN to the operator position. When an incoming cellular DA call is presented to the operator position, the LIN, which was stored earlier in the call, is populated in the Generic Digits DID and delivered to the position through normal OPP messaging. For more details about the new DID, please refer to NIS:Q214-1 Open Position Protocol Specification.

Operational measurements

OM groups TOPPDID1 through TOPPDID6 have new field GENDIGD to peg the new Generic DID that is sent to the position.

Translations table flow

This feature does not have a translations table flow.

Limitations and restrictions

The limitations and restrictions that follow apply to GDP Support Location Digit Type.

- This feature is only supported for operator positions using OPP.
- While most LINs consist of 10 digits, this activity supports a maximum of 15 digits.

Interactions

The paragraph that follows describes how GDP Support Location Digit Type interacts with other functionalities.

The TOPS switch delivers the LIN to the operator position. The position must then interact with some other application server or database using the delivered LIN. Any interaction with other applications is not part of this activity.

Activation and deactivation by the user

GDP Support Location Digit Type does not require activation or deactivation by the user.

GDP Support Location Digit Type (end)

Billing

GDP Support Location Digit Type does not change or create billing records.

Station Message Detail Recording

GDP Support Location Digit Type does not require Station Message Detail Recording.

Office parameters used by GDP Support Location Digit Type

GDP Support Location Digit Type does not generate office parameters.

Datafill sequence

This feature does not require datafill.

Translation verification tools

GDP Support Location Digit Type does not use translation verification tools.

SERVORD

GDP Support Location Digit Type does not use the Service Order System (SERVORD).

Host MP OC Data Link

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: does not apply

Release applicability

BCS26 and later versions

Requirements

To operate, Host MP OC Data Link requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

The following feature provides this functionality:

Feature number	Feature name
AF0808	Host TOPS MP PC Data Link Handling

The Operator Centralization (OC) feature provides the Operating Company with the capability to traffic for several remote toll centers at one central operator location. This feature creates an optional software package for TOPS MP applications to DMS-200 TOPS OC Host offices. The feature uses TOPS MP positions to remote toll centers to allow the host office to provide Operator Services. The remote toll centers, are equipped with software, to communicate with TOPS MP positions.

Operation

To understand this document you require the information in the following documents:

- Host OC Data Link Handling, OSB00101
- Remote OC Data Link Handling, OSB00101
- TOPS Position Controller (TPC) Version I, TPC0002
- TOPS Closedown, OSB00101
- TOPS MP Interface, OSB00101

An OC data link carries all call processing information between a host and remote TOPS offices. The TOPS MP positions require different messaging

Host MP OC Data Link (continued)

between the host and remote offices to support TOPS MP capability. The messages for monitor displays and key functions on TOPS MP differ from messages that earlier versions of TOPS used.

Note: The remote office must have the optional remote that corresponds in Remote MP OC Datalink, OSB00101. The remote office must have the remote that corresponds to communicate with a TOPS MP position in the host.

Calls that originate from a remote TOPS office have an assigned operator position to serve the call. The host office assigns the operator position. The system requires the separate optional TOPS MP software package, TOPS MP Interface, OSB00101, to enter data in TOPS MP positions. The TOPS MP positions require datafill for the host to select the positions to service calls from remote offices.

The optional Host TOPS MP package that this feature provides, supplies the software required to support the new TOPS MP control messages. The package supports the control messages over the OC data link that the host office uses to serve calls from remote offices.

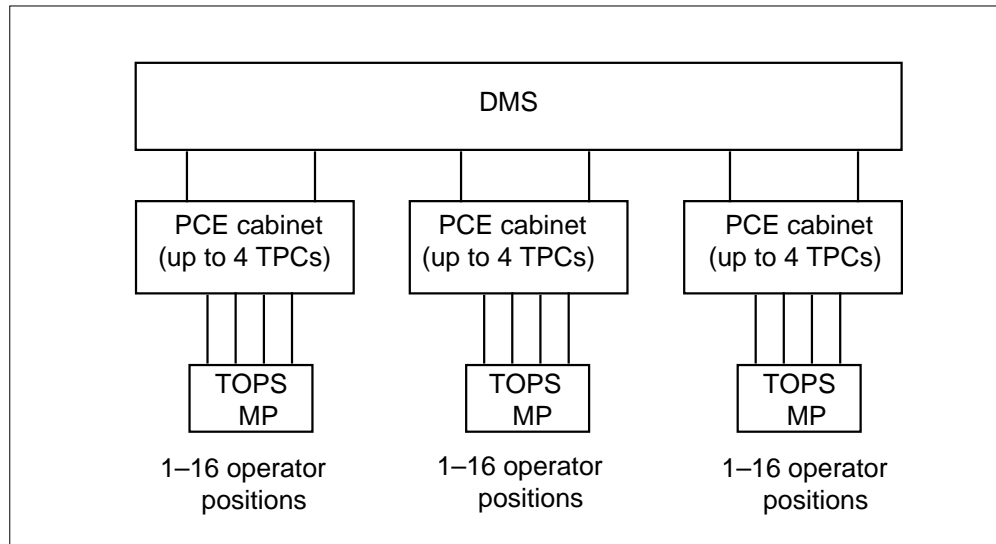
This package is transparent to the Operating Company. This package allows OC and TOPS closedown to operate like earlier versions of TOPS..

TOPS MP Overview

The TOPS MP is a call processing system that automates operator support functions. The TOPS MP provides the resources of the toll switching system to the traffic operator.

The TOPS MP System is a Position Controller Equipment (PCE) cabinet that contains a maximum of four TPCs. Each PCE cabinet provides control for a maximum of 16 TOPS MP Operator Positions. The TOPS MP system appears in the following figure:

Host MP OC Data Link (continued)

TOPS MP system office

Each TPC receives the voice and data calls that the digital multiplex system (DMS) Central Control (CC) distributes. The TPC manages the screen display for each TOPS MP Operator Position. These actions provide each TOPS MP Operator Position with call processing ability.

TOPS MP OC call process

The OC establishes communication links between the remote offices and the host offices. The calls originate from the remote offices. The location of the operators are the host offices. The two types of links are data and voice.

Data links provide a messaging mechanism for the two switches to communicate during the call. Tasks divide between the two switches so that the remote switch performs most of the work. The remote switch processes calls and executes the operator key functions. The host switch sends messages to the remote switch to indicate the operator keys pressed. The host messages update the operator screen in response to messages from the remote switch. More than one call in progress can share one data link.

The voice links allow the voice of the operator to connect to the call circuits at the remote switch. Each call must have a dedicated voice link while the operator services the call.

The operators handle calls that that the subscriber originates, that appear at the host or remote switch in the same method. This feature does not change the current methods of TOPS operating practices.

Host MP OC Data Link (continued)

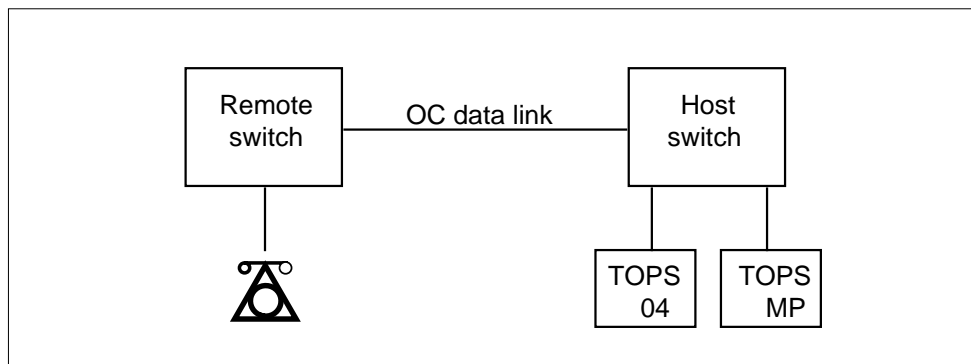
When a subscriber originates a call, the remote switch recognizes that the call requires an operator. The remote switch assigns a virtual circuit to the call. A virtual circuit is a logical identifier that links calls in the host and remote switches. When the switch assigns a virtual circuit, the virtual circuit has a data link number assigned. The remote switch sends a request for operator message to the host switch over the data link. The remote switch uses the assigned virtual circuit to send the request.

The TOPS 04 and TOPS MP Operator Positions are attached to the host switch. When the host switch receives the request for operator, the host switch obtains an idle operator. The host switch sends a message to the remote switch over the data link. The message indicates that the host switch obtains an Operator Position. The message also indicates the position type, the position controller type, and the data link rate. The position type can be TOPS 04 or TOPS MP. The position controller type can be TPC TOPS MP or NT4X71 TOPS 04. This information determines if the remote switch sends the TOPS MP commands or TOPS 04 commands to the TPC.

The remote switch stores this position information for the length of the call. The remote switch uses this information to send and process messages and commands for the correct position type. The remote switch TOPS software handles the call. This software sends messages over the data link to the host switch. The messages tell the host switch what to display at the TOPS position that handle the call. The host switch updates the operator screen as the remote switch directs.

The operator releases the call from the position after the call is complete. A direct connection occurs between the calling and called trunks. A release message transmits to the host switch. The host switch releases the position. The host switch sends a message to the remote switch to indicate the switch releases resources. The remote switch releases the virtual circuit.

Host and remote switches



Host MP OC Data Link (continued)

Compatibility of host and remote switch software

Host and remote switches with different versions of TOPS software can be incompatible. For example, a remote switch with TOPS MP software cannot communicate with a host switch with TOPS 04 software. The remote switch cannot inform the remote switch what type of positions the remote switch has. Without communication, the remote switch cannot know to send TOPS MP or TOPS 04 commands. A TOPS 04 remote switch and a TOPS MP host switch cannot communicate if a TOPS MP position is associated with the call. The switches cannot communicate because the remote switch cannot send TOPS MP commands.

Host and remote switches with different versions of TOPS software can be incompatible. For example, a remote switch with TOPS MP software cannot communicate with a host switch with TOPS 04 software. The switches cannot communicate because the host switch cannot tell the remote switch the type of positions the remote switch has. The remote switch does not know to send TOPS MP or TOPS 04 commands. A TOPS 04 remote switch and a TOPS MP host switch cannot communicate if the call has an associated TOPS MP position. In this event, the remote switch cannot send TOPS MP commands.

Translations table flow

This package does not require datafill.

Limits

The following limits, apply to Host MP OC Data Link. Host and remote switches with different versions of TOPS software can be incompatible.

The following procedure describes how to upgrade OC offices to TOPS MP.

Upgrading OC offices to TOPS MP

At your current location:

1. Update the software in the host without any TOPS MP positions in service (INSV).
2. Update the software in all the remotes.
3. Put the TOPS MP positions on the host INSV.

Interactions

The Host MP OC Data Link does not have functionality interactions.

Activation/deactivation by the end user

The Host MP OC Data Link does not require activation or deactivation by the end user.

Host MP OC Data Link (end)

Billing

The Host MP OC Data Link does not affect billing.

Station Message Detail Recording

The Host MP OC Data Link does not affect Station Message Detail Recording (SMDR).

Datafilling office parameters

The Host MP OC Data Link does not affect office parameters.

Datafill sequence

The Host MP OC Data Link does not require datafill.

Tools for verifying translations

The Host MP OC Data Link does not use translation verification tools.

SERVORD

The Host MP OC Data Link does not use SERVORD.

Host OC Data Link

Ordering codes

Functional group ordering code: OSB00001

Functionality ordering code: not applicable

Release applicability

BCS36 and up

Prerequisites

To operate, Host OC Data Link requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This functionality is provided by the following features:

Feature number	Feature name
F0559	Operator Centralization - Host (F0559 = BV0775, BC0564, BC0565, BC0694-BC0696, BC0698- BC0700, BC0743, BV1125-BC1130)
UV000432	Unexpected Release Call Message
UT312449	(BCS36)
50039957	DA positions in an OC network
59006865	EOL Notification & EOL of TOPS ACD (TOPS12)

F0559 - Operator Centralization - Host

Operator Centralization (OC) allows one DMS-200 or DMS-100/200 TOPS switch to perform the operator functions for up to 15 remotely located DMS-200 or DMS-100/200 switches. Operator Centralization is provided by the following functionalities:

- Host OC Data Link, OSB00001
- Remote OC Data Link, OSB00001

Host OC Data Link (continued)

The maximum of 15 switches indicated above is affected by later functionalities as follows:

- Functionality Enhanced TOPS OC and Increased Remote Support (ETMS OC), ENSV0008 and ENSV0011, changes the limit to 31 switches for ETMS OC data links. For DCM data links, the 15 limit is not changed.
- Functionality Host/Remote Networking by Queue Type (HRNQT), OSB00101, changes the limit to 30 switches, except for DCM data links, which is still 15. HRNQT has precedence over ETMS OC, so the 30 limit is not changed with the presence of ETMS OC.

A difference of up to three BCS levels (for example, BCS28 to BCS31) between the TOPS host and remote OC switches is permitted. However, Northern Telecom recommends that the host and remote TOPS switches be maintained at the same BCS.

Prior to BCS32, the host switch must be the first switch in a TOPS operator centralization network to be upgraded to the higher BCS release. With BCS32, functionality HRNQT removes this restriction by allowing a TOPS office to serve as either a host or a remote, depending on queue type. Thus, the restriction that the host office be the first switch to be upgraded to the higher BCS release is removed once both the host and the remotes are at BCS32 or greater. This restriction is removed if functionality HRNQT is present.

UV000432 - Unexpected Release Call message

Problem

An Operating Company reported its operators were receiving numerous calls that are dropping off before being handled. These calls are originating from remote OC switches in BCS28. Reloading the DCMs clears the problem, but the problem reoccurs the next evening.

Solution

A total outage of OC data links had occurred, caused by the Operating Company removing the data links from service inadvertently or purposely. This should not have been done, especially since the Operating Company has all data links over a single facility. Secondly, incorrect datafill (voice links not set for RMB:Table TRKSGRP, field REMBSY=N) results in the voice trunks going into lockout at the host causing unexpected message logs to be generated.

F0559 - Operator Centralization - Host

The OC feature provides the Operating Company the capability of handling traffic for several remote toll centers at one centralized operator location. A DMS-200 or DMS-100/200 TOPS host switch extends operator services to remote DMS-200 or DMS-100/200 toll centers.

Host OC Data Link (continued)

UT312449 (BCS36)

The following restriction is lifted: Remote voice and data links cannot be datafilled in table OCGRP when TOPS_OC_ENVIRONMENT is set to REMOTE when functionality HRNQT is present. Therefore, reference to this restriction is deleted from the table OCGRP section.

50039957 - DA positions in an OC network

In a TOPS OC network, operator positions that provide directory assistance (DA) or intercept services must have unique position numbers in table TOPSPOS. This applies across the network and to all software releases. Position numbers must be different between the host and its remotes, and between remotes off the same host.

Operation**TOPS Standalone Configuration**

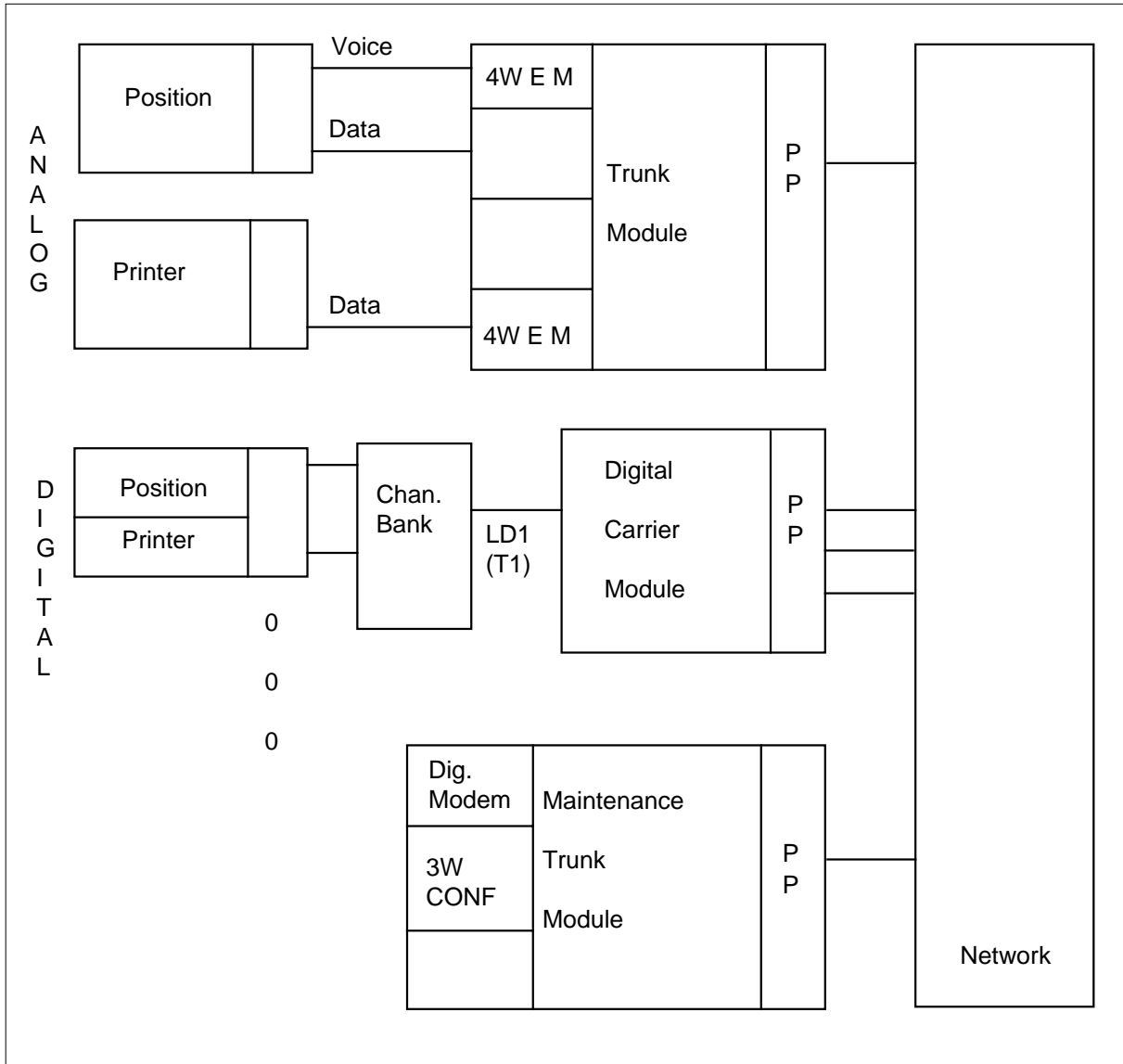
TOPS comprises Operator Positions, management and supervisory positions, printers, and service circuits, all of which are terminated on the DMS-200 peripheral subsystem.

Voice and data circuits of the Operator Positions are terminated on the peripherals of the DMS-200 that are appropriate to the type of transmission facilities used. For example, trunk modules for analog trunks or Digital Carrier Modules (DCM) or Digital Trunk Controllers (DTC) for DS-1 digital trunks.

Where analog facilities are used, each position is terminated through 4-wire trunk circuits. A TOPS position requires one 4-wire trunk circuit for voice and one for data. If digital facilities are used, a maximum of 12 positions can share one 24-channel DCM or DTC input (two channels per position). See the following figure.

Host OC Data Link (continued)

Termination of TOPS Components on the DMS-200

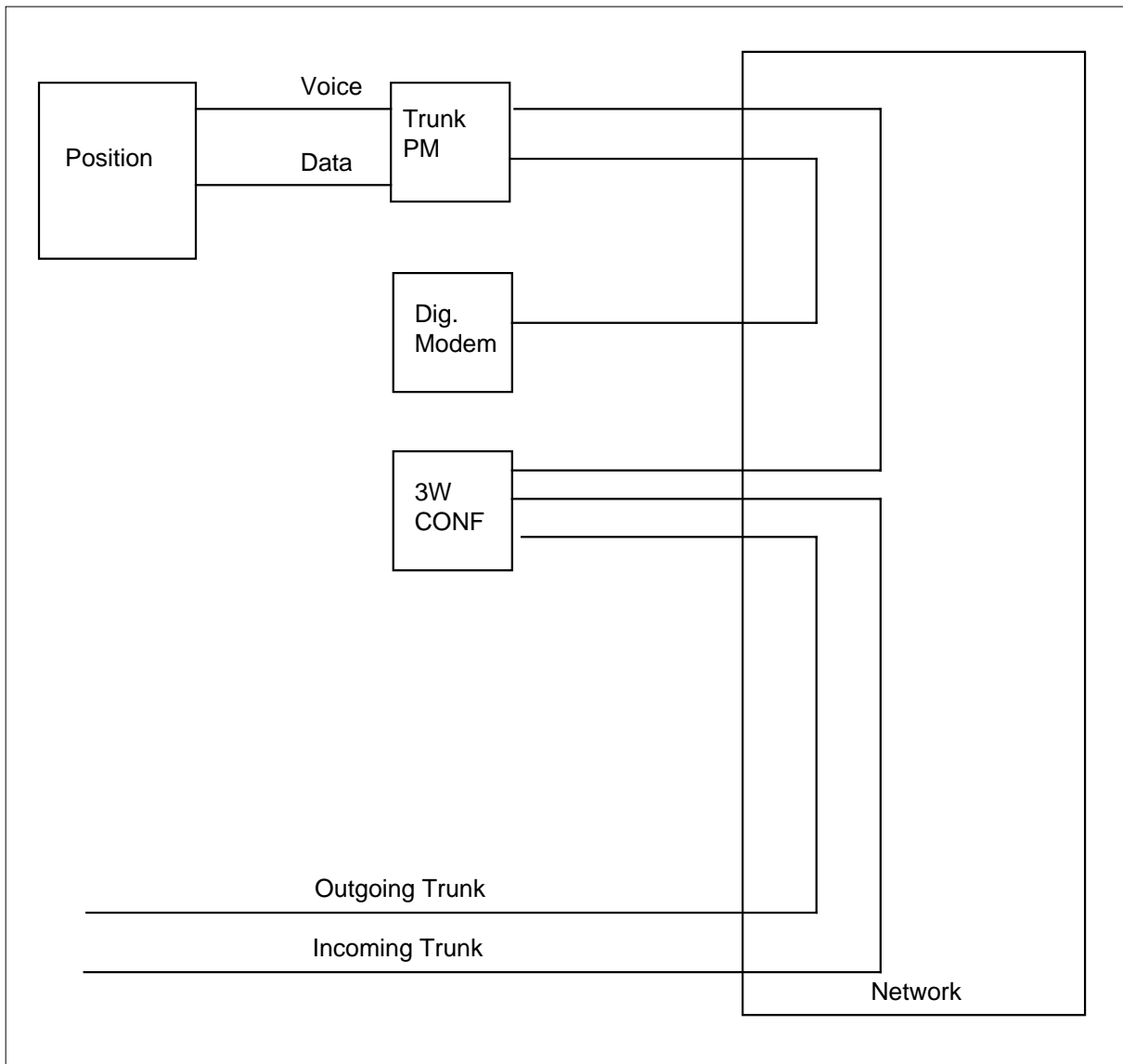


The data channels of the Operator Positions, supervisory positions, and printers are connected through the switching network to digital modems on the Maintenance Trunk Module (MTM). The connections between the Operator Position and the digital modem associated with the position are not reestablished on every call, but are dedicated to the network at position initialization.

When a call is delivered to the Operator Position, the voice channel of the Operator Position is connected through the switching network to a dedicated

Host OC Data Link (continued)

port of a 3-port conference circuit. The other two ports are connected to the calling and called parties when a call is routed to the position. See the following figure.

Operator Position Ready to Receive Calls**TOPS OC Configuration**

Two types of links are required between the host and remote switches. The links are data and voice.

Host OC Data Link (continued)

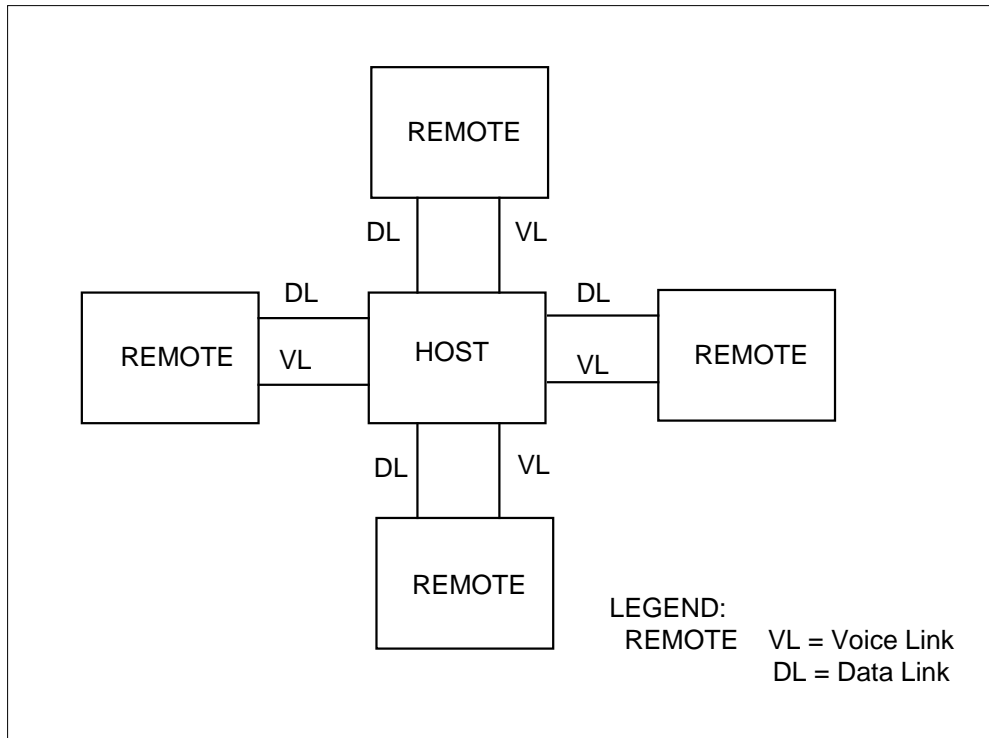
Data links carry all call processing information between the two switches. The data link handles all messages during call establishment and any recalls. Each data link can be shared by several calls. This is accomplished by considering each data link to be composed of virtual circuits.

Voice links are provided to connect the host operator to the calling party. The connection is made by a 3-port conference circuit at the remote switch. Voice links are required on a per call basis.

Voice and data links are common controlled equipment. One data link can serve up to 50 positions of traffic load, whereas one voice circuit is required for each position load. See the following figure for an example of an OC configuration.

New OC configurations can exist with optional functionality HRNQT (ADVQ0005). See the functionality description for further information if this package is present.

Standard TOPS OC Configuration



Host OC Data Link (continued)

TOPS OC Successful Call Process

Subscriber-originated calls appearing at the host or remote switch are handled in exactly the same manner by the operators. There is no change in the existing methods of TOPS operating practices.

When a subscriber originates a call, the remote switch recognizes that an operator is required and a virtual circuit is assigned to the call. A virtual circuit is a logical identifier that links the calls in the host and remote switches together. When a virtual circuit is allocated to a call, it is assigned a physical data link member on a round-robin basis. The remote switch sends a request for operator to the host switch over a data link using the virtual circuit that has been assigned.

When the request for operator is received by the host switch, an idle Operator Position is obtained. A voice link is then selected and connected to the Operator Position. The host switch sends a message to the remote switch over the data link indicating that an Operator Position and voice have been obtained.

The remote switch connects the selected voice link to the incoming subscriber trunk using a 3-port conference circuit. The remote switch then sends an update screen message indicating that the remote connections have been made.

TOPS operators at the host switch press position keys to service the call. Messages are sent to the remote switch, indicating the keys pressed.

The remote switch processes the messages received by executing the key functions corresponding to the position keys. Messages are sent to the host switch to update the operator screen with key function results. The host switch updates the screen as directed by messages sent by the remote switch.

When the operator obtains enough information to connect the called party, the remote switch connects the outgoing trunk to a 3-port conference circuit and the forward number is outpulsed.

When the operator releases the call from the position by pressing the Position Release key (POS RLS), a direct connection is made between the calling and called trunks freeing the 3-port conference circuit. The voice link is then released and a release message is sent to the host switch.

The host switch releases the voice link, the Operator Position, and the virtual circuit, and sends a message to the remote switch indicating that resources have been released.

The remote switch releases the virtual circuit. When the call terminates, an Automatic Message Accounting (AMA) record is generated.

Host OC Data Link (continued)

TOPS OC Resource Allocation

Several resources are required for successful OC call processing. The resources are listed below.

- Virtual Circuit
- Operator Position
- Voice Link
- Voice Link Connections
- 3-Port Conference Circuit
- 3-Port Conference Circuit Connection
- Direct Connection between Called and Calling Trunks.

Each resource is described identifying possible resource allocation deficiencies that could affect successful OC call processing.

When a resource cannot be obtained, the general response is to send the call to treatment. The treatments used are EMR4 for 0- call types and EMR3 for all other 0+ call types. If a call cannot be queued because there is no room in the call waiting queue, the call queue overflow (CQOV) treatment is used. These treatments are datafilled in table TMTCNTL to provide a proper announcement or default announcement (reorder). Calls of type 0- can be retried by datafilling the treatment to route the call back to the operator queue after the announcement has been applied.

OC datafill

All tables required for rating and routing normally found in a TOPS office should be datafilled in the TOPS OC remote office, with the exception of the following tables:

- Table OPRDAT
- Table TOPSPOS

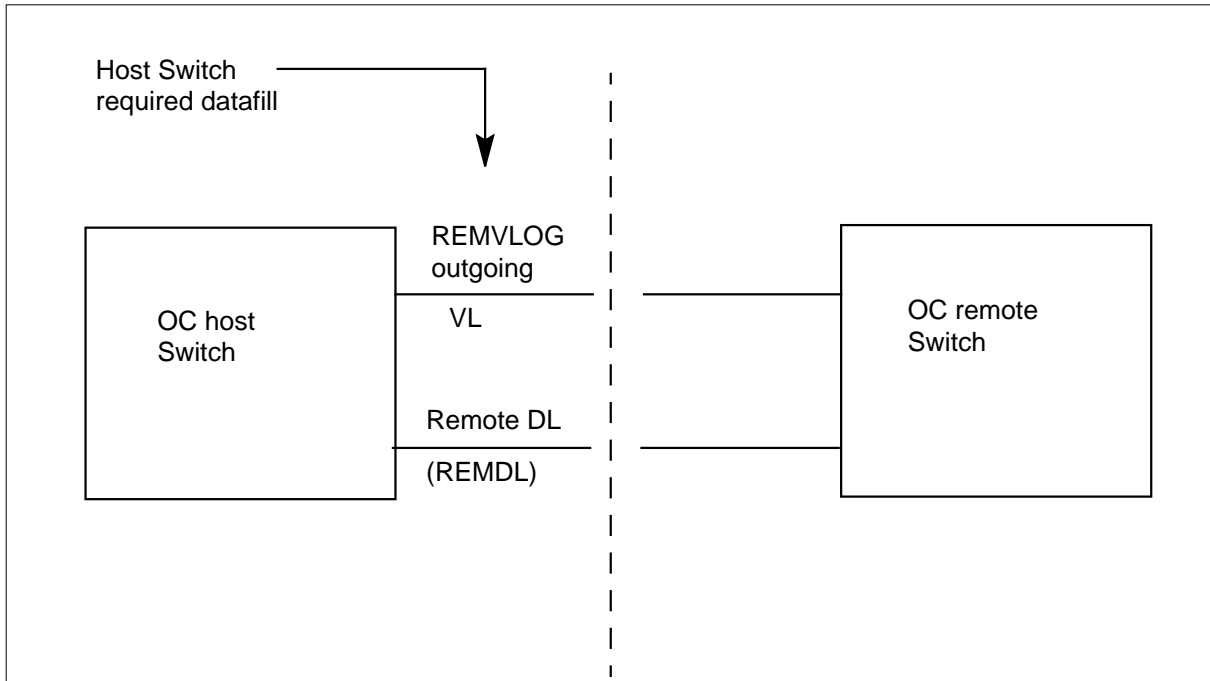
All routing is done exactly as if the TOPS positions were located at the remote switch. The delay call route to operators is still done using pseudo CLI TOPSPOS.

The following datafill is required in a host switch to identify its remote switch(es) and their associated links.

- Remote switch name(s)
- Outgoing voice links
- Remote data links.

Host OC Data Link (continued)

Refer to the following figure for an example of the OC configuration.

Operator Centralization Configuration**Supplementary Operator Centralization Trunk Group**

The Supplementary Operator Centralization (SOC) trunk group (IT trunk group type) allows an Operating Company to provide the following services between a TOPS host switch and remote(s) switch.

- Busy Line Verification (BLV)
- Bill-to-Third Acceptance (Delay Calls).

The SOC trunk group is used for operator originated calls only if no trunk groups exist between the host and remote switches. Where local practice allows, delay call trunks and verify trunks can be combined on a single SOC trunk group from the host switch to a remote OC switch.

Virtual Circuit

A virtual circuit is a logical identifier that links calls in the host and remote switches together.

When the remote switch obtains a virtual circuit, a request for an operator message is sent to the host switch. See figure A (boxes numbered R3 and R5). When the remote switch attempts to obtain a virtual circuit, but is

Host OC Data Link (continued)

unsuccessful, the remote switch routes the call to treatment. See figure A (boxes numbered R3 and R4).

Operator Position

When the request for an operator message is received at the host switch, a free operator is obtained. See figure A (box numbered H6).

If no operator is available, the call waiting queue is checked. If there is room in the call waiting queue, the call is added to the queue and a message is sent to the remote switch indicating that the call is queued for an operator. The remote switch returns ringing to the subscriber indicating that the subscriber is in the call waiting queue. When a position becomes available, the position is obtained for the call. See figure B (boxes numbered H3, H5, and R7).

If there is no room in the call waiting queue, the host switch takes down the virtual circuit and sends a message to the remote switch indicating that there is no room in the call waiting queue. The remote switch then routes the call to treatment. See figure B (boxes numbered H3, H4, and R6).

Voice Link

When an Operator Position is available, the host switch selects a voice link. If a voice link is unavailable, the Operator Position is released, the call is taken down at the host switch, and a message is sent to the remote switch indicating the problem. The remote switch routes the call to treatment (EMR4 for 0-, EMR3 for 0+). See figure C (boxes numbered H8 and R8).

Voice Link Connections

When a voice link is connected to an Operator Position, the host switch sends a message to the remote switch indicating that the connection has been made. See figure A (box numbered H10).

If the voice link connection fails and it is the first attempt to make connection, the host switch releases the operator, releases the voice link, and attempts to obtain a new position and voice link. See figure D (boxes numbered H11 and H13).

If the voice link connection fails and it is not the first attempt to make connection, the host switch takes down the virtual circuit and sends a message to the remote switch indicating the resource failure. The remote switch releases the virtual circuit and routes the call to treatment. See figure D (boxes numbered H11, H12, and R9).

Host OC Data Link (continued)

3-Port Conference Circuit

When the remote switch receives the message from the host switch indicating that the operator and voice link connections have been completed, the remote switch selects a 3-port conference circuit and a recording unit (RU).

If a 3-port conference circuit or RU is unavailable, the remote switch outputs a TOPS107 log report indicating the resource failure, releases the voice link, and sends a no resources available message to the host switch. The host switch releases the voice link, makes the Operator Position busy and places the call back in the call waiting queue. The Operator Position is made busy to prevent a loop that could occur from resources not being available in the remote switch, from the position being released, from the call going back into queue, and from the call coming out of queue by obtaining the same position just released. See figure E (boxes numbered R10, R11, and H14).

3-Port Conference Circuit Connection

When the 3-port conference circuit and RU have been successfully obtained, the remote switch connects the voice link to the subscriber trunk using the 3-port conference circuit.

If the connection fails and it is the first attempt to make connection, the remote switch releases the 3-port conference circuit, the RU, and the voice link. A message is sent to the host switch, indicating connection failure. The host switch then releases the voice link and tries to get another voice link to connect successfully. See figure F (boxes numbered R12, R14, R16, and H16).

If this is not the first failed attempt to connect the voice link to the subscriber trunk using the 3-port conference circuit, the remote switch takes down the call and sends a release operator message to the host switch. The host switch then releases the Operator Position and takes down the call. See figure F (boxes numbered R14, R15, and H15).

Called and Calling Trunk Connection

When the operator releases the call, the remote switch releases the voice link and sends a released operator message to the host switch. The host switch responds to the message by releasing all its resources and sends a released message back to the remote switch. The remote switch then frees its virtual circuit.

After the remote switch releases its voice link, it attempts to make a direct connection between the called and calling parties to free the 3-port conference circuit. If the direct connection between the called and calling trunks fails, the remote switch retries to make the connection every 30 seconds, until

Host OC Data Link (continued)

successful or until the call is terminated. See figure A (boxes numbered R22 and R23).

When the call is terminated, an AMA record is generated by the remote switch. See figure A (box numbered R26).

Resource Failures

The following describes the various routes for an OC call if resource failures occur. Resources described are listed below.

- Data Links
- Voice Links.

Data Links

If a data link is not operating, all messaging is shifted to a healthy data link. However, if a data link failure occurs after the operator has been connected to the call, the call is terminated and the subscriber receives proper treatment from the End Office (such as dial tone or reorder).

If there are not enough active data links to accomplish the message load, some messages may be lost. If there are no active data links, communication between the host and remote switches cannot occur. When a TOPS call originates at the remote switch and there are no data links available, the call is terminated.

If you datafill 4 data links, they will all be used on a load sharing basis. Each new call selects the next link on a round robin basis and will continue to use that link as long as it remains in service.

If a datalink fails, the switch will automatically reassign calls in progress to the links that are still in service. When the link is returned to service, new calls will again start selecting it as described above.

We strongly recommend that if the traffic at a remote OC office requires 150 (or greater if ETMS OC) positions, 4 data links should be provided so that there will still be sufficient capacity if a single link fails. If only three links are datafilled, the limit should be 100 positions, and if two links are provided the limit is 50. We do not recommend installation of only one link.

Note: Functionality ETMS OC increases the maximum number of operator positions to an engineerable traffic level.

We strongly recommend that if the traffic at a remote OC office requires 150 positions, 4 data links should be provided so that there will still be sufficient capacity if a single link fails. If only three links are datafilled, the limit should

Host OC Data Link (continued)

be 100 positions, and if two links are provided the limit is 50. We do not recommend installation of only one link.

Ideally, we would also recommend that facilities be independantly routed for all data links, so a single facility failure can only take one link out of service. Alternatively, all the links could be provided with duplicated facilities with protection switching. In that case, the data links would recover quickly after a facility outage. It would be best if the facilities were normally set up so that half of the links were on each route, so that a failure of either route would only interrupt service on half of the links, while the others continued uninterrupted.

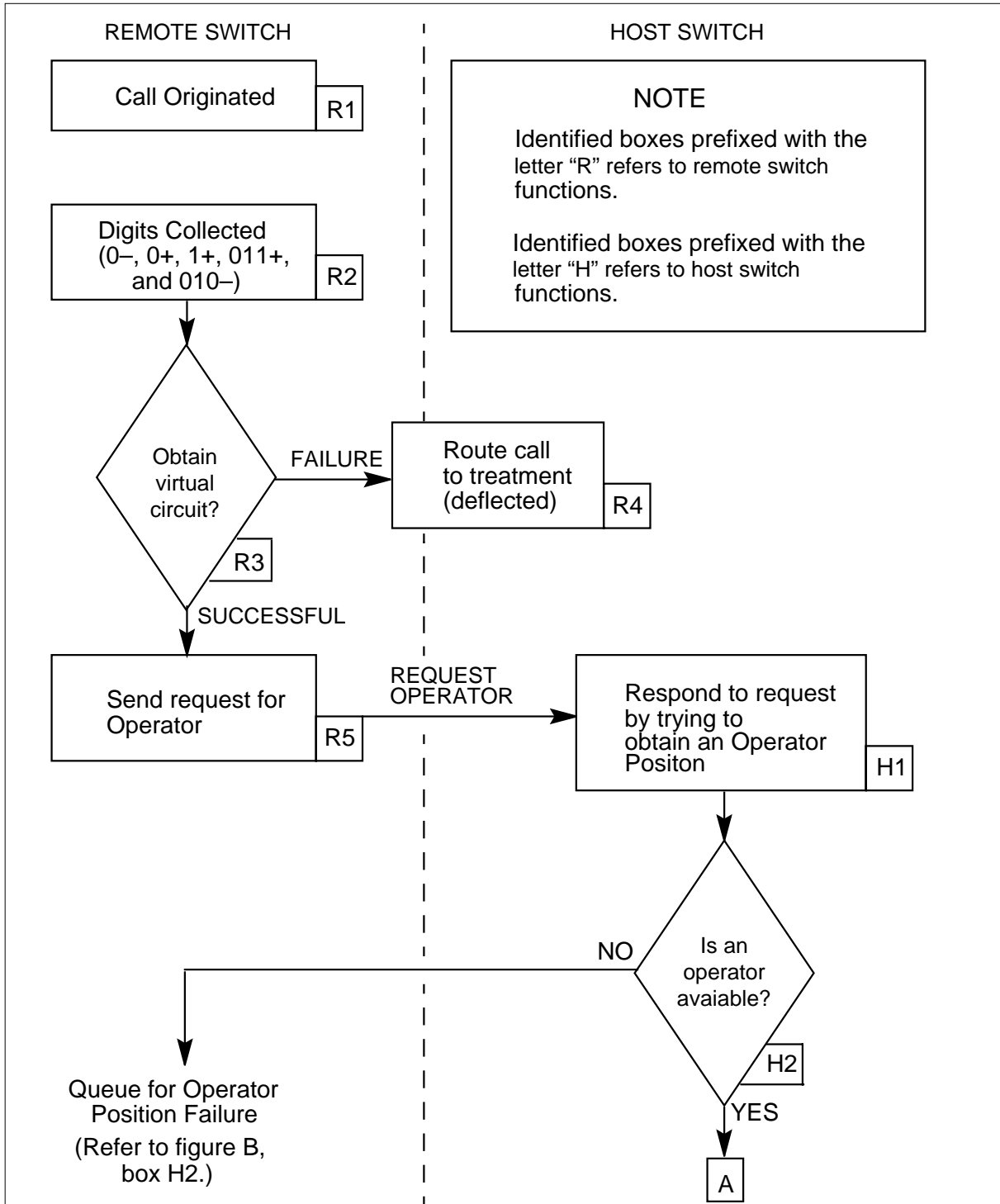
Unless there is adequate backup for the facilities, so that a single failure will only cause one link to fail (or alternatively a single failure will only interrupt half of the facilities for a few seconds), an OC remote with 4 OC datalinks should be rated for 100 positions, not 150.

Voice Links

If a voice link fails after it has been connected, voice communications are lost. If the system detects the failure, the call is terminated and the subscriber receives proper treatment from the End Office (such as dial tone or reorder). If the system does not detect failure, the operator or the subscriber should recognize the loss of voice and either party can terminate the call.

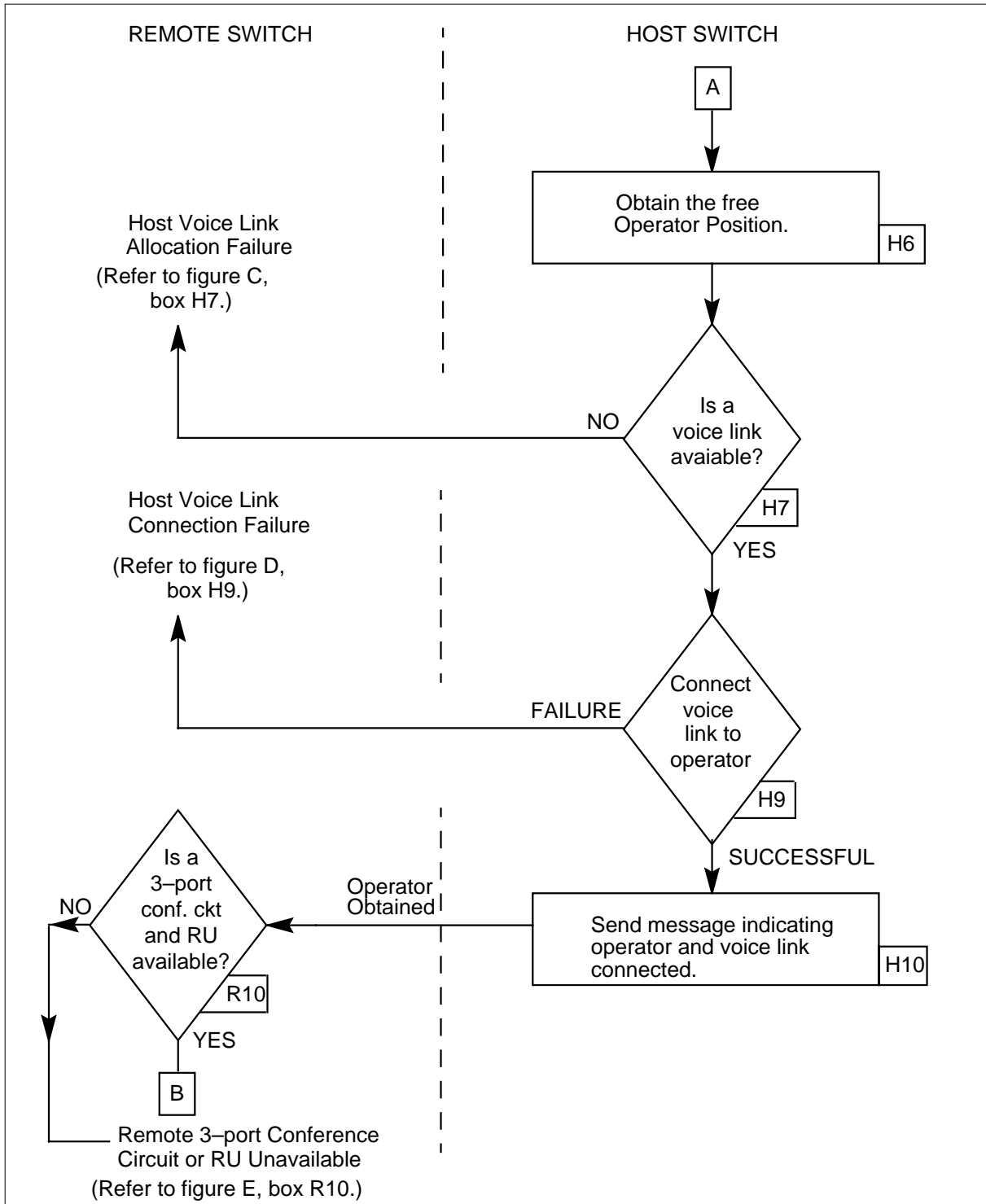
Host OC Data Link (continued)

A: Possible Resource Allocation Failures (Part 1 of 4)



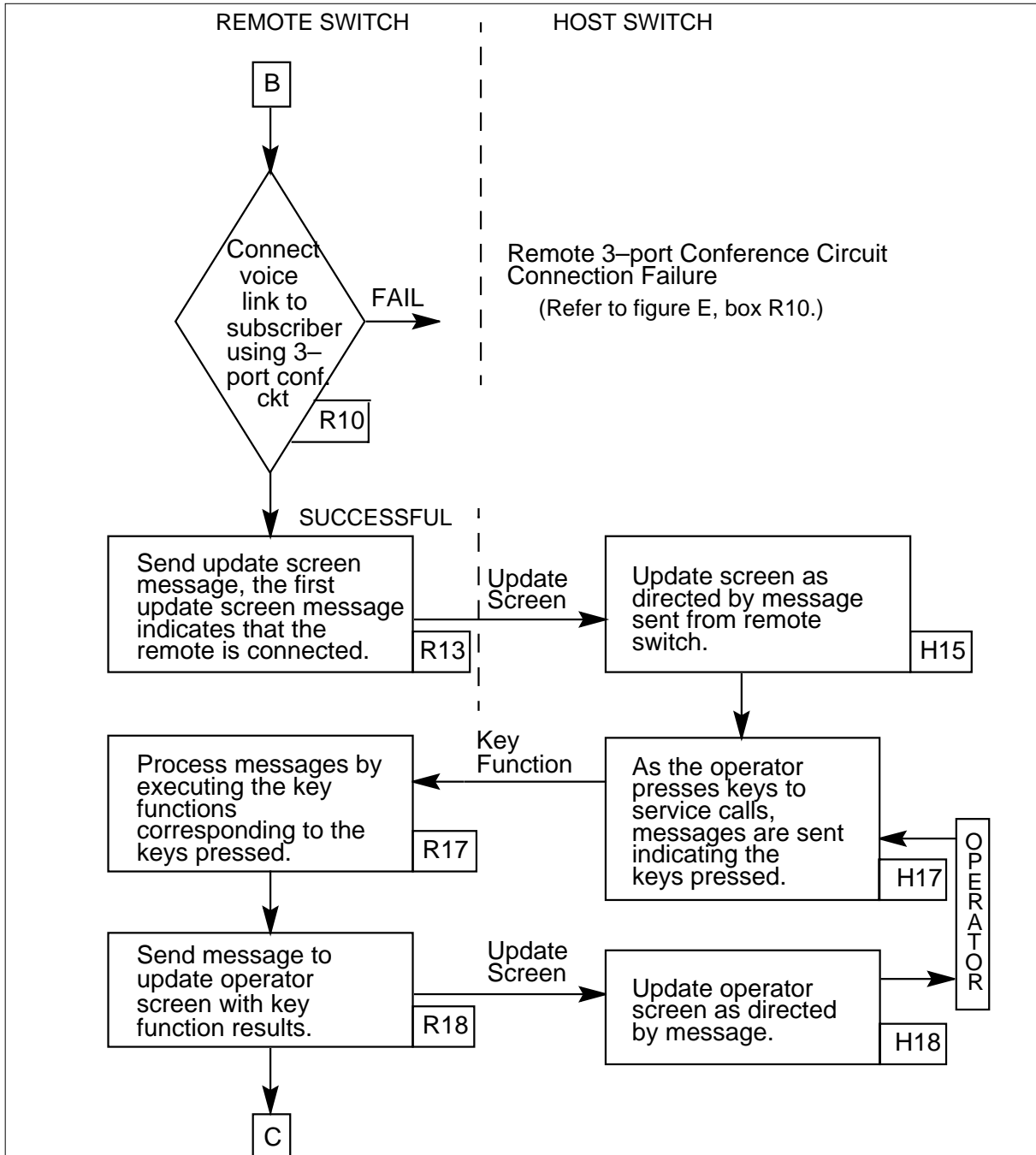
Host OC Data Link (continued)

A: Possible Resource Allocation Failures (Part 2 of 4)



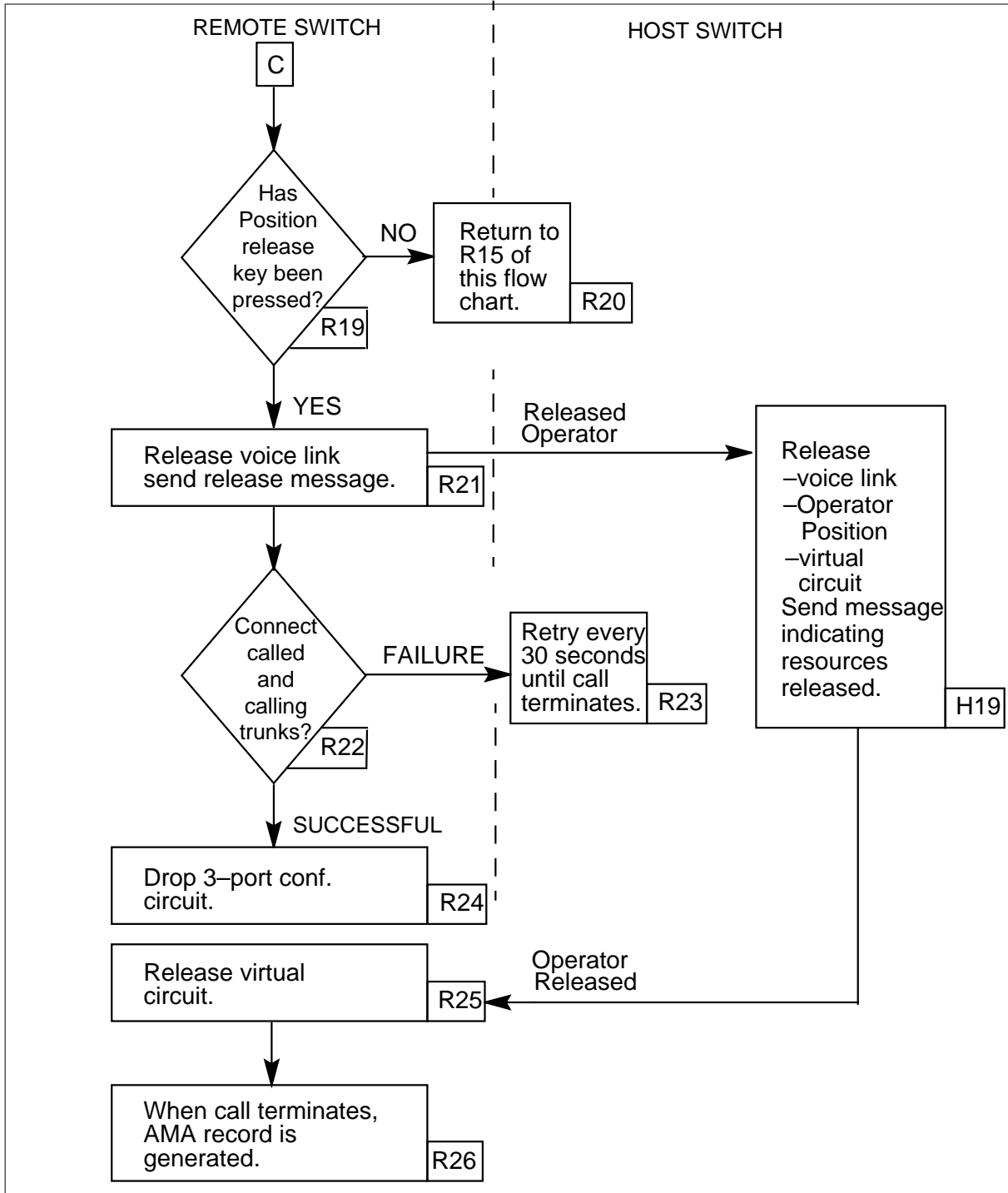
Host OC Data Link (continued)

A: Possible Resource Allocation Failures (Part 3 of 4)



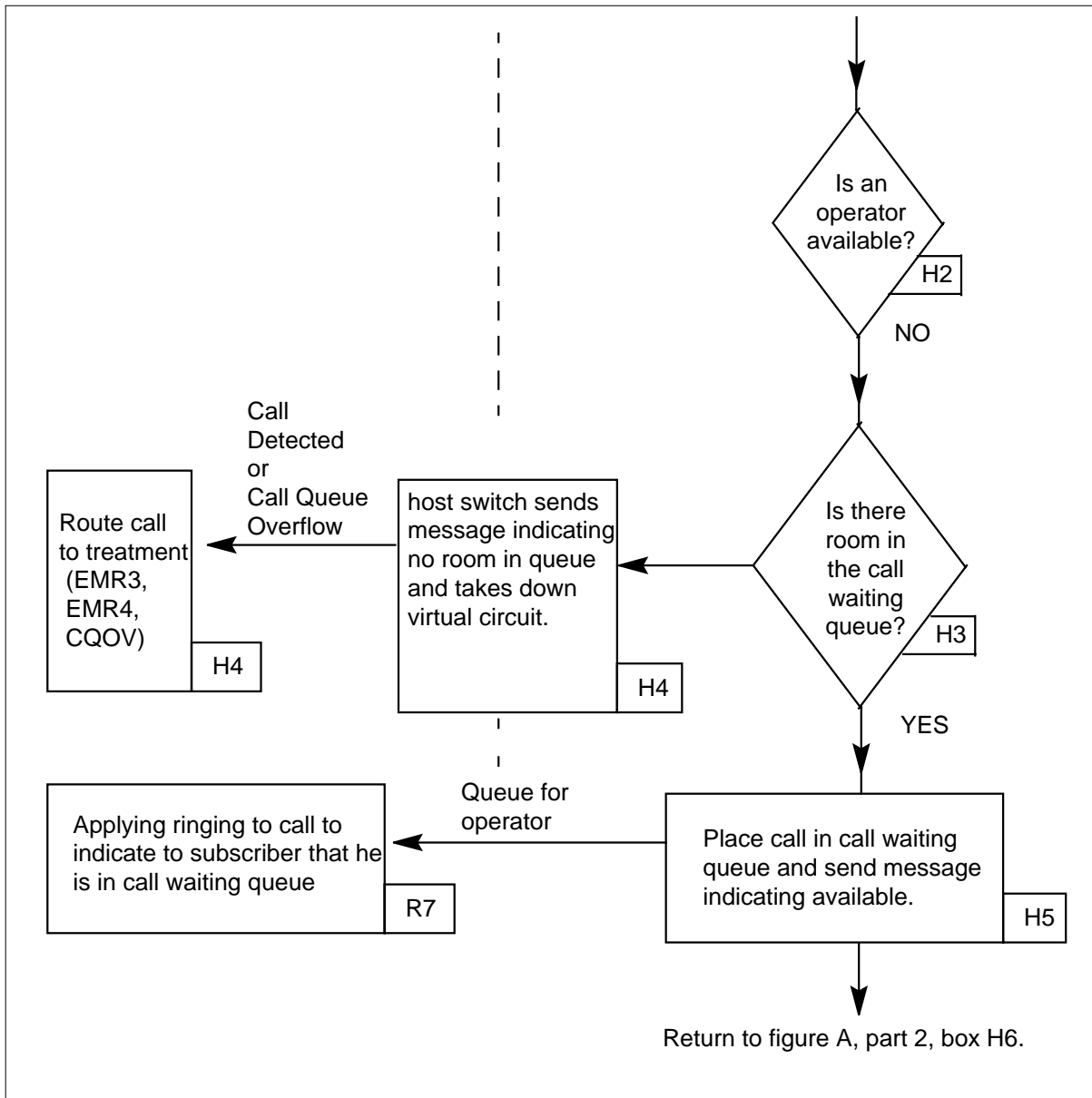
Host OC Data Link (continued)

A: Possible Resource Allocation Failures (Part 4 of 4)



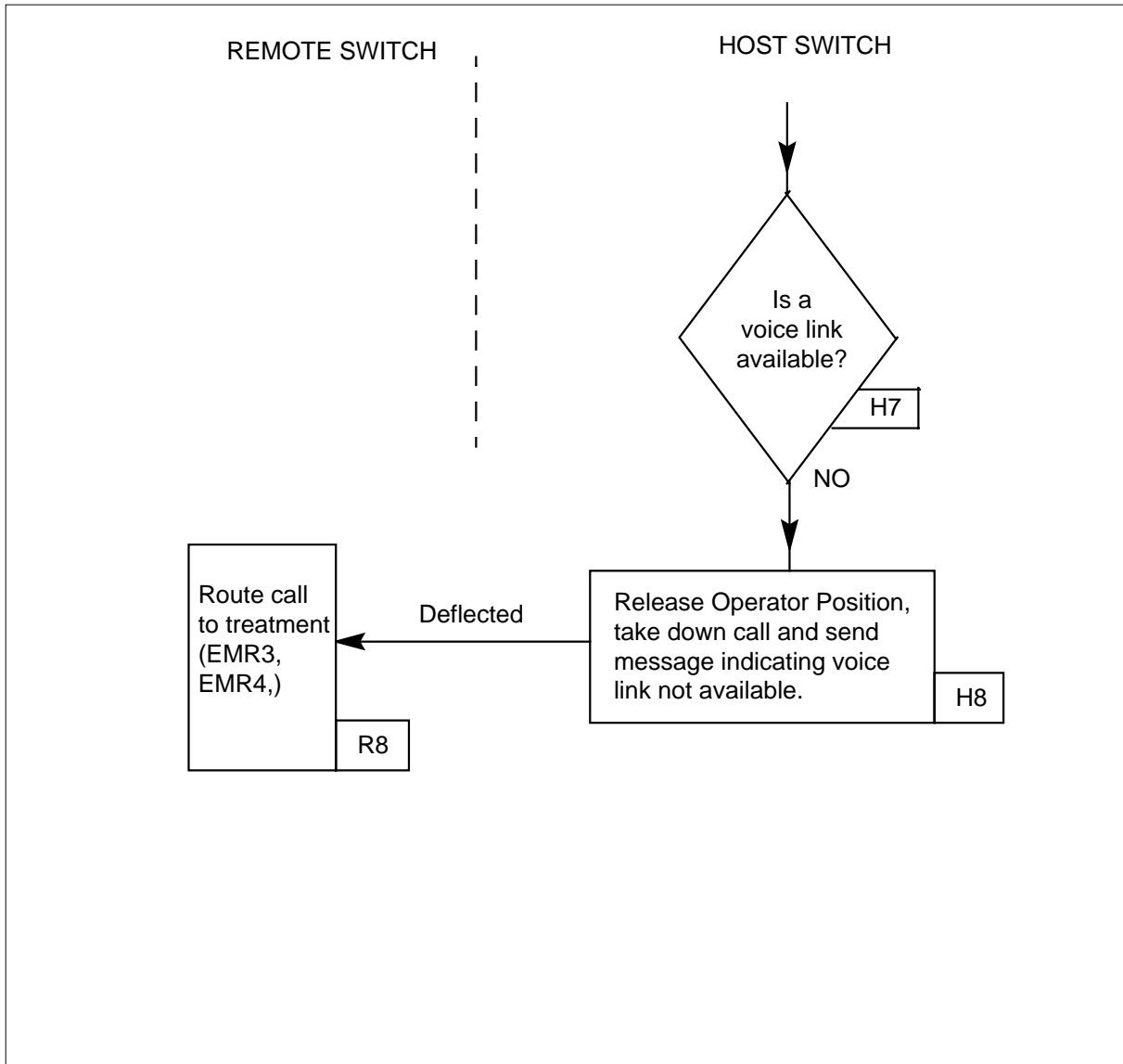
Host OC Data Link (continued)

B: Queue for Operator Position Failure



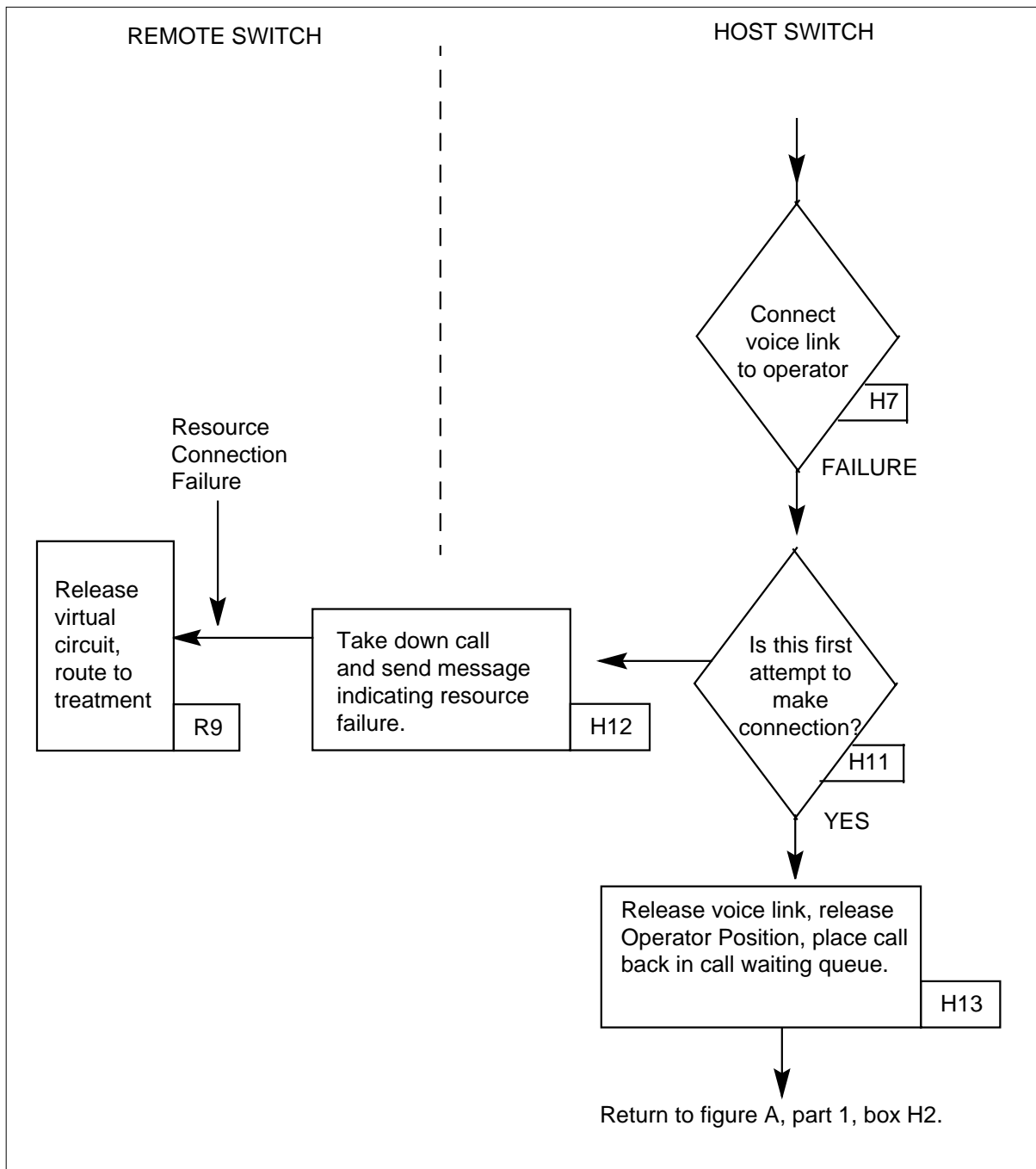
Host OC Data Link (continued)

C: Host Voice Link Allocation Failure



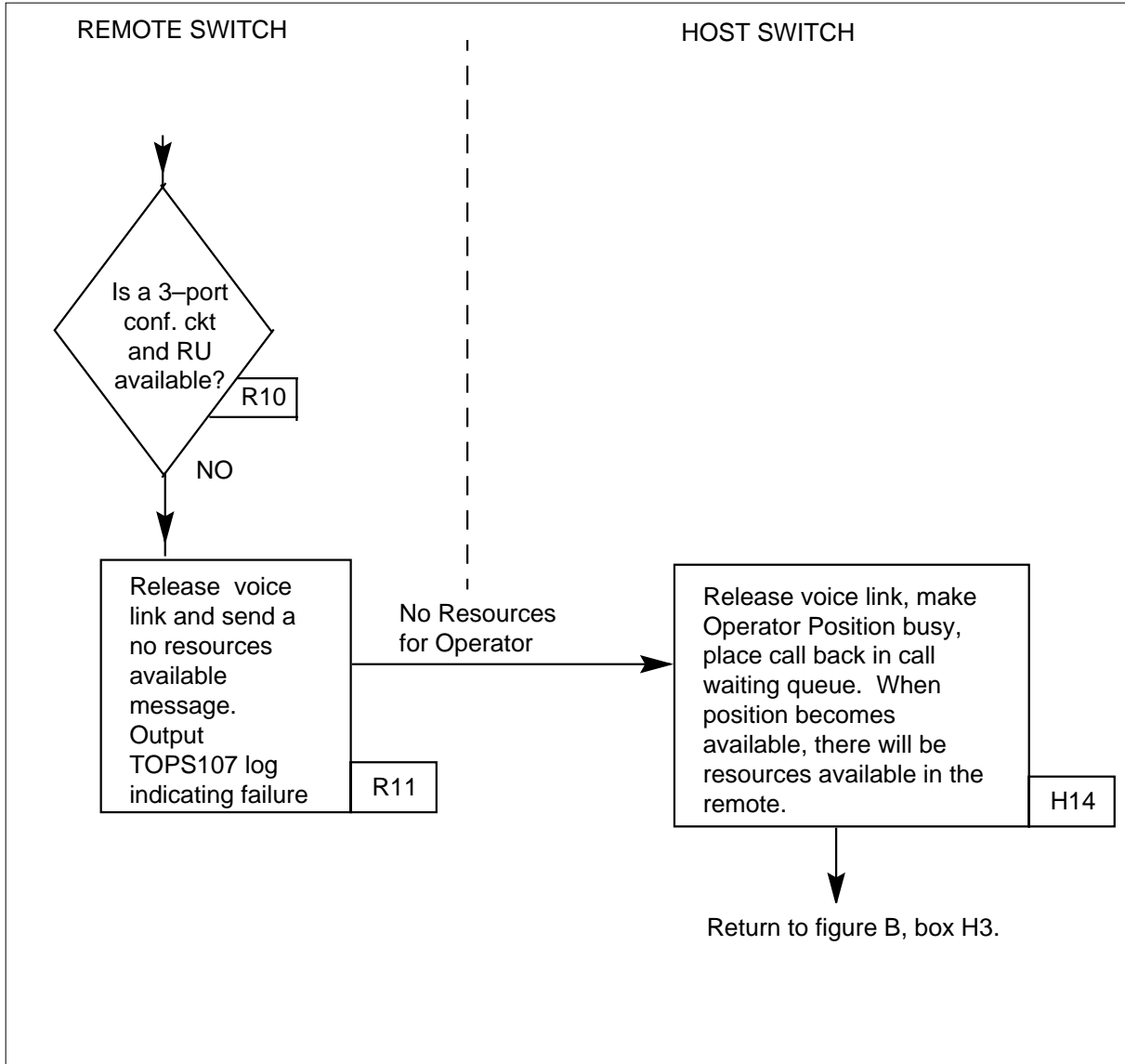
Host OC Data Link (continued)

D: Host Voice Link Connection Failure



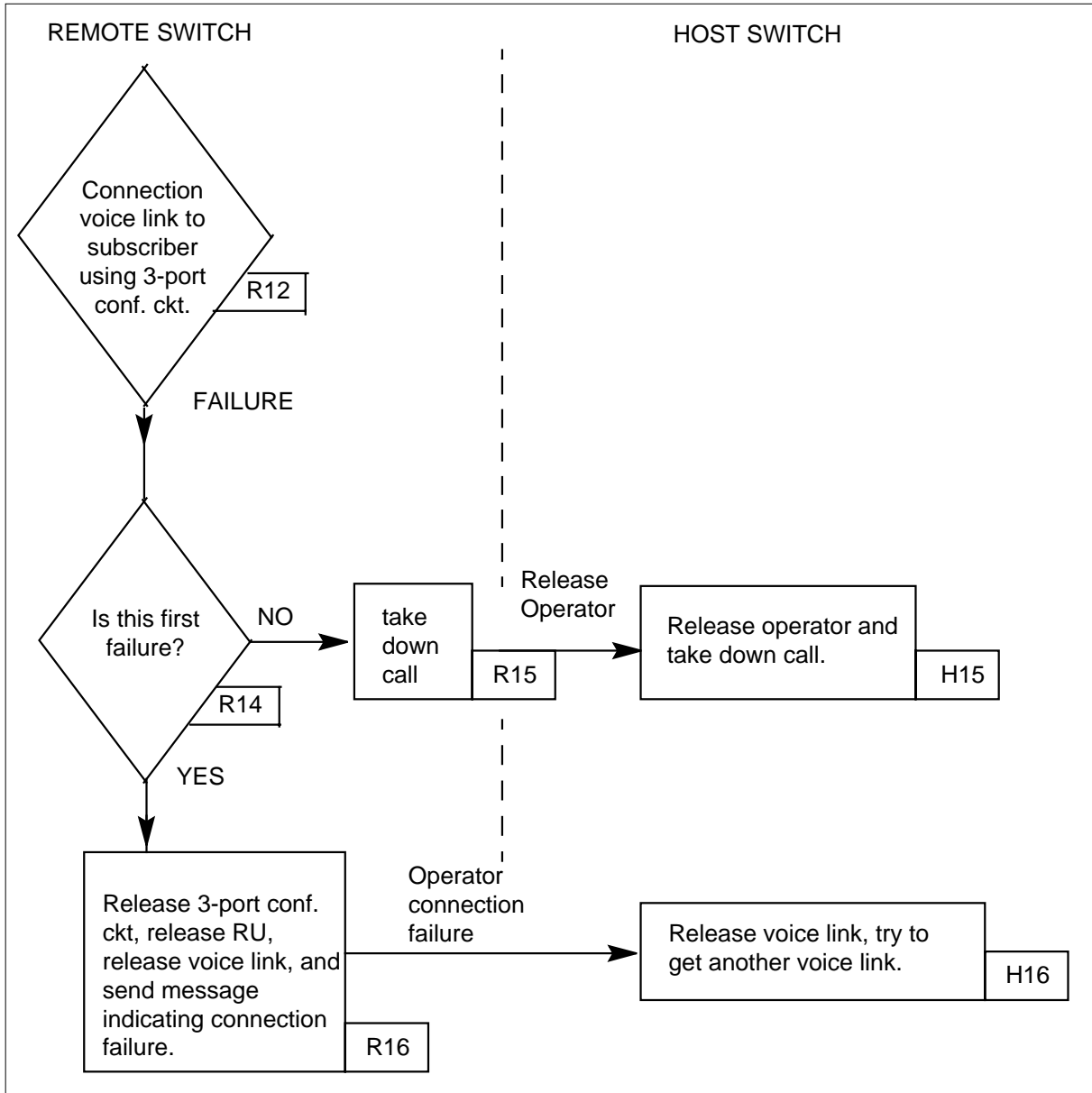
Host OC Data Link (continued)

E: Remote 3-Port Conference Circuit or RU Unavailable



Host OC Data Link (continued)

F: Remote 3-Port Conference Circuit Connection Failure



Translations table flow

The Host OC Data Link translations tables are described in the following list:

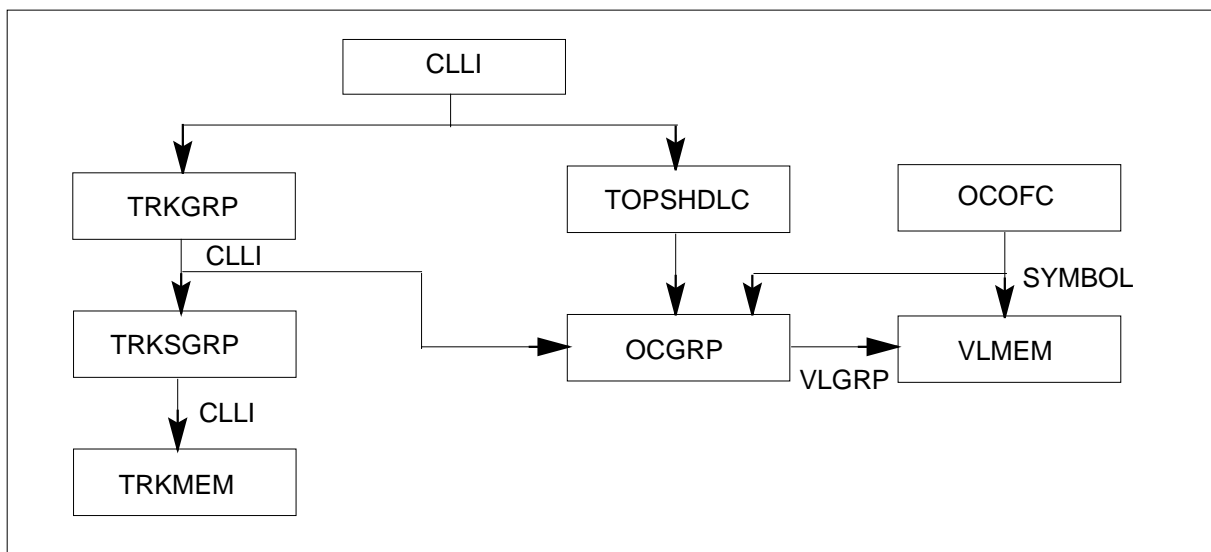
- Table CLLI. The Common Language Location Identifier table identifies the names of voice and data link groups.
- Table TRKGRP. The Trunk Group table identifies circuits and characteristics of each voice link group.

Host OC Data Link (continued)

- Table TRKSGRP. The Trunk Subgroup table lists the supplementary information for each subgroup that is assigned to one of the trunk groups listed in the TRKGRP table.
- Table TRKMEM. The Trunk Member table lists the data for each trunk specified in the TRKGRP and TRKSGRP tables.
- Table DCMINV. The Digital Carrier Module Inventory table defines DCM for data link.
- Table TOPSHDLC. The TOPS Data Link Controller table associates the data links in a data circuit with DCM circuits.
- Table OCOFC. The Operator Centralization Office table identifies OC office names.
- Table OCGRP. The Operator Centralization Group table associates each office with the voice link group and data link group.
- Table VLMEM. The TOPS Voice Link Member table associates an office with the individual voice links in its voice link group.

The Host OC Data Link translation process is shown in the flowchart that follows.

Table flow for Host OC Data Link



Limitations and restrictions

The following limitations and restrictions apply to Host OC Data Link:

- The host DMS-200 TOPS OC switch can support a maximum of 30 remote OC switches. However, when optional feature package HRNQT, is

Host OC Data Link (continued)

present, a remote, host, or host/remote can connect to a maximum of 30 other switches that can be hosts, remotes, or host/remotes.

- Host and remote data link provisioning is based on a maximum of 50 remote positions of traffic per data link with one backup data link. A minimum of two and a maximum of four data links are allowed. The data links provide a maximum of approximately 150 positions served by a remote switch. One data link is provisioned for redundancy.
- A maximum of 255 voice links are provided to each switch.
- There can be a maximum of 320 virtual circuits or twice the available voice links, whichever is lesser. Virtual circuits are data packets with a unique header message (1-320) carried on each data exchanged between the host and remote switches. Once a call ends, the header identification (virtual circuit number) is reused on a new call.
- TOPS OC host and remote switches are different DMS switches. The TOPS OC host switch must always be upgraded to a new BCS before any of the remote switches are upgraded. If functionality HRNQT is present a switch can be a host and remote simultaneously. Refer to the section on BCS upgrades in functionality HRNQT for this special situation.
- TOPS OC host and remote switches must be on compatible BCS releases that do not cross general release boundaries (every third BCS). During the upgrade process, the host and remote switches may be up to one general BCS apart. TOPS OC switches should not run on different BCS releases for extended periods.
- Some features for OC operation introduced in a BCS may or may not work until all switches in the configuration are upgraded to the same BCS that contains the feature. Existing features are not affected.

Interactions

The following paragraph describes the interactions between Host OC Data Link and other functionalities.

Functionality Host OC Data Link interacts with functionality TOPS Call Processing Features.

Activation/deactivation by the end user

Host OC Data Link requires no activation or deactivation by the end user.

Billing

Billing records for OC are identical to those for Basic TOPS.

Host OC Data Link (continued)

All calls that originate in the remote switch are billed in the remote switch. Calls that originate in the host are billed in the host.

Voice links attach the operator to the call to receive verbal billing and call handling instructions from the subscribers.

Station Message Detail Recording

Host OC Data Link does not affect Station Message Detail Recording.

Datafilling office parameters

The following table shows the office parameter used by Host OC Data Link. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by Host OC Data Link

Table name	Parameter name	Explanation and action
OFCENG	TOPS_OC_ENVIRONMENT	The TOPS_OC_ENVIRONMENT parameter specifies whether the switching unit is a host or remote switch. Allowable values are HOST and REMOTE. The range default is HOST. If functionality Host/Remote Networking by Queue Type (HRNQT) is present, this parameter should not be used. Instead, the status of Host, Remote, or Standalone is determined by table OCHOSTQ on a call queue basis. Refer to the HRNQT description for further information.

Datafill sequence

The following table lists the tables that require datafill to implement Host OC Data Link. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Host OC Data Link

Table	Purpose of table
CLLI	Common Language Location Identifier. This table identifies the names of voice and data link groups.
TRKGRP	Trunk Group. This table identifies circuits and characteristics of each voice link group.

Host OC Data Link (continued)

Datafill tables required for Host OC Data Link

Table	Purpose of table
TRKSGRP	Trunk Subgroup. This table lists the supplementary information for each subgroup that is assigned to one of the trunk groups listed in the TRKGRP table.
TRKMEM	Trunk Member. This table lists the data for each trunk specified in the TRKGRP and TRKSGRP tables.
DCMINV	Digital Carrier Module Inventory. This table defines DCM for data link.
TOPSHDLC	TOPS Data Link Controller. This table associates the data links in a data circuit with DCM circuits.
OCOFC	Operator Centralization Office. This table identifies OC office names.
OCGRP	Operator Centralization Group. This table associates each office with the voice link group and data link group.
VLMEM	TOPS Voice Link Member. This table associates an office with the individual voice links in its voice link group.
TOPSPOS	TOPS Position. This table specifies functions and characteristics of TOPS positions and devices.

Datafilling table CLLI

The following table shows the datafill specific to Host OC Data Link for table CLLI. Only those fields that apply directly to Host OC Data Link are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table CLLI

Field	Subfield or refinement	Entry	Explanation and action
CLLI			Enter the data and voice links to each remote switch.

Datafill example for table CLLI

The following example shows sample datafill for table CLLI.

Host OC Data Link (continued)

MAP display example for table CLLI

CLLI	TRKGRSIZ	ADMININF
REMVLOG	64	REMOTE_VOICE_LINK_OUTGOING
REMDL	32	REMOTE_DATA_LINK
CLOSEVLOG	64	CLOSE_VOICE_LINK_OUTGOING
CLOSEDL	32	CLOSE_DATA_LINK

Error messages for table CLLI

The following error messages apply to table CLLI.

Error messages for table CLLI

Error message	Explanation and action
This CLLI is being used in table OCGRP as a VLGRP CLLI. TRKGRSIZ greater than 255 is disallowed.	This message is output when a user attempts to change the TRKGRSIZ field in table CLLI to a value larger than 255, if the CLLI being changed is being used as a voice link group in table OCGRP. The change is denied.

Datafilling table TRKGRP

The following table shows the datafill specific to Host OC Data Link for table TRKGRP. Only those fields that apply directly to Host OC Data Link are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TRKGRP

Field	Subfield or refinement	Entry	Explanation and action
CLLI			Datafill voice links to each remote switch.
GRPTYP DIR		IT OG	Direction to remote switches.

Datafill example for table TRKGRP

The following example shows sample datafill for table TRKGRP.

Host OC Data Link (continued)

MAP display example for table TRKGRP

GRPKEY			GRPINFO						
REMVLOG	IT	99	EML6	NCTC	OG	IA	MIDL		
				316	NPRT	NSCR	316	000	N N
CLOSEVLOG	IT	99	EML6	NCTC	OG	IA	MIDL		

Datafilling table TRKSGRP

The following table shows the datafill specific to Host OC Data Link for table TRKSGRP. Only those fields that apply directly to Host OC Data Link are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TRKSGRP

Field	Subfield or refinement	Entry	Explanation and action
CLLI			Enter the voice links to each remote switch.
DIR		OG	Direction to remote switch.
IPULSTY		NP	Incoming type of pulse.
ISTARTSG		IM	Incoming start dial signal.
REMBSY		Y	Remote make busy. Set to Y in an OC_REMOTE OC_HOST configuration.

Datafill example for table TRKSGRP

The following example shows sample datafill for table TRKSGRP.

MAP display example for table TRKSGRP

SGRPKEY	CARDCODE	SGRPVAR
REMVLOG	0 DS1SIG	STD OG NP IM 0 0 NO NO N N Y 70
CLOSEVLOG	0 DS1SIG	STD OG NP IM 0 0 NO NO N N N 70

Datafilling table TRKMEM

The following table shows the datafill specific to Host OC Data Link for table TRKMEM. Only those fields that apply directly to Host OC Data Link are

Host OC Data Link (continued)

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

Datafilling table TRKMEM

Field	Subfield or refinement	Entry	Explanation and action
CLLI			Enter the voice links for each remote office.

Datafill example for table TRKMEM

The following example shows sample datafill for table TRKMEM.

MAP display example for table TRKMEM

CLLI	EXTRKNM	SGRP	MEMVAR
REMVLOG	3701	0 DCM	0 0 21
REMVLOG	3702	0 DCM	0 0 22
REMVLOG	3703	0 DCM	0 0 23
CLOSEVLOG	3721	0 DCM	0 0 20
CLOSEVLOG	3722	0 DCM	0 0 22
CLOSEVLOG	3723	0 DCM	0 0 23

Datafilling table DCMINV

Table Digital Carrier Module Inventory (DCMINV) lists the assignment data for using a DCM as a TOPS OC datalink application.

Datafill example for table DCMINV

The following example shows sample datafill for table DCMINV.

MAP display example for table DCMINV

DCMNM	FRTYPE	FRNO	SHPOS	FLOOR	ROW	FRPOS	EQPEC	LOAD	LKDATA
EXECS	USER	VARINFO							
DCM 0	DCE	0	18	6	B	20	2X31AC	RDCMHA02	(1 0)(0 27)(0 42)(1 26)\$
	DCMEX	OCDL	DCM	(0 DEFAULT N)	(2 DEFAULT N)	(3 DEFAULT N)	(4 DEFAULT N)		
DCM 1	DCE	0	32	6	B	20	2X31AC	RDCMHA02	(1 18)(0 38)(0 17)(1 44)\$
	DCMEX	OCDL	DCM	(0 DEFAULT N)	(1 DEFAULT N)	(2 DEFAULT N)	(3 DEFAULT N)	(4 DEFAULT N)	

Datafilling table TOPSHDLC

Table TOPS High-speed Data Link Controller (TOPSHDLC) lists the data links provided and their Digital Carrier Module (DCM) assignments.

Host OC Data Link (continued)

The following table shows the datafill specific to Host OC Data Link for table TOPSHDLC. Only those fields that apply directly to Host OC Data Link are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TOPSHDLC

Field	Subfield or refinement	Entry	Explanation and action
DLGRP			Up to 4 (3 regular and 1 spare) OC data link assignments can be made per switch with a limit of 150 positions.
PMTYPE		DCM	
DCMNO		0-511	Each data link must be assigned to a unique DCM circuit.
DCMCKTNO		0	0 must be entered.
DCMCKTTS		1	

Datafill example for table TOPSHDLC

The following example shows sample datafill for table TOPSHDLC.

MAP display example for table TOPSHDLC

DLGRP	EXTRKNM	DLDCMVAR
REMDL 1		DCM 0 0 1
REMDL 2		DCM 1 0 1
CLOSEDL 3		DCM 2 0 1
CLOSEDL 4		DCM 3 0 1

Datafilling table OCOFC

Table Operator Centralization Office (OCOFC) matches an office name to a numeric so that OFCNAME can be used as a key for table Operator Centralization Group (OCGRP). Each OC office name must be entered in this table before it can be referenced elsewhere. Specify office names at the other end of the OC links. In the host switch specify the remote switch(es) name.

Datafill example for table OCOFC

The following example shows sample datafill for table OCOFC.

Host OC Data Link (continued)

MAP display example for table OCOFC

VALUE	SYMBOL
1	REMOTEOFFICE
2	CLOSEOFFICE

Datafilling table OCGRP

Table Operator Centralization Group (OCGRP) is required to identify the voice and data link groups that connect to the offices datafilled in table OCOFC. Table OCGRP also designates whether the connected office is a host or remote. In the host switch, specify each remote switch name and its voice link and data link group.

The following table shows the datafill specific to Host OC Data Link for table OCGRP. Only those fields that apply directly to Host OC Data Link are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table OCGRP

Field	Subfield or refinement	Entry	Explanation and action
BCSLEVEL		2-digit number	In BCS32, functionality HRNQT added field BCSLEVEL and changed the OC upgrade procedure for base OC. Therefore, starting with BCS32, field BCSLEVEL is present and OC upgrade procedure for base OC are changed whether HRNQT is present or not. Incorrect datafill of field BCSLEVEL, a base OC change, could cause outage. Therefore, it recommended to refer to the HRNQT description in OC upgrade procedures for datafilling field BCSLEVEL whether package HRNQT is present or not.

Datafill example for table OCGRP

The following example shows sample datafill for table OCGRP.

MAP display example for table OCGRP

OFFICE	OFCTYPE	VLGRP		DLOVRLAY	BCSLEVEL
REMOTE	OFFICE	REMOTE	REMVLOG	HDLC	REMDL 33
CLOSE	OFFICE	REMOTE	CLOSEVLOG	HDLC	CLOSEDL 32

Host OC Data Link (continued)

Error messages for table OCGRP

The following error message applies to table OCGRP.

Error messages for table OCGRP

Error message	Explanation and action
VLGRP CLLI size larger than 255 is disallowed	This message is output when a user attempts to add an entry to table OCGRP, and the CLLI being used for the VLGRP has been datafilled in table CLLI with a TRKGRSIZ larger than 255. The change is denied.

Datafilling table VLMEM

Table Voice Link Member (VLMEM) maps voice link terminations between OC equipped offices. Table VLMEM associates an office with the individual voice links in its voice link group. The VLGRP CLLI should correspond with table CLLI. In the host switch, specify the remote switch(es) name and voice links to the remote switch(es).

The size of table VLMEM is controlled by the CLLI of the VLGRP associated with a given office. This association occurs in table OCGRP, and the size is specified in table CLLI by the TRKGRSIZ field for the VLGRP CLLI. To increase the size of VLMEM for a particular office, the TRKGRSIZ field in table CLLI for the VLGRP being affected should be increased. The trunk members must be busied out, all entries in table VLMEM for the affected office name must be deleted and re-added, the trunk members should be returned to service.

Datafill example for table VLMEM

The following example shows sample datafill for table VLMEM.

MAP display example for table VLMEM

VLKEY	VLGRP	VLEXTRK
REMOTEOFFICE 0	REMVLOG	3701
REMOTEOFFICE 1	REMVLOG	3702
REMOTEOFFICE 2	REMVLOG	3703
CLOSEOFFICE 30	CLOSEVLOG	3721
CLOSEOFFICE 31	CLOSEVLOG	3722
CLOSEOFFICE 32	CLOSEVLOG	3723

Host OC Data Link (end)

Datavfilling table TOPSPOS

The following table shows the datavfill specific to Host OC Data Link for table TOPSPOS. Only those fields that apply directly to Host OC Data Link are shown. For a description of the other fields, refer to the data schema section of this document.

Datavfilling table TOPSPOSs

Field	Subfield or refinement	Entry	Explanation and action
POSNO		numeric (0 to 9999)	Position number. In a TOPS OC network, operator positions that provide directory assistance (DA) or intercept services must have unique position numbers. This applies across the network and to all software releases. Position numbers must be different between the host and its remotes, and between remotes off the same host.

Datavfill example for table TOPSPOS

The following example shows sample datavfill for table VLMEM.

MAP display example for table TOPSPOS

POSNO	VCCKT	VCPDGRP	CARDCODE
DATAPATH			
POSAREA			

100	TM8 0 24	NPDGRP	2X72AA
DMODEM SP ASCII TM8 0 25 NPDGRP BELL108			
OPR 1 TOPSACD TASERV \$ GEN XFR1 \$			

Translation verification tools

Host OC Data Link does not use translation verification tools.

SERVORD

Host OC Data Link does not use SERVORD.

Host/Remote Networking by Queue Type

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

BCS36 and up

Prerequisites

To operate, Host/Remote Networking by Queue Type requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This functionality is provided by the following features:

Feature number	Feature name
NC0152	Host/Remote Networking by Queue Type
UT312449	Networking Problems

This feature allows TOPS calls to be networked to different Operator Centralization host switches based upon the calls' queue assignment. It also allows for an alternate Operator Centralization selection in the event that the primary selection is unavailable. In addition, it permits selective interaction with the OCNC (Operator Centralization Night Closedown) feature and includes a new BCS installation strategy for Operator Centralization Networks.

A difference of up to three BCS levels (e.g., BCS28 to BCS31) between the TOPS host and remote OC switches is permitted. However, Northern Telecom recommends that the host and remote TOPS switches be maintained at the same BCS.

Prior to BCS32, the host switch had to be the first switch upgraded to the higher BCS release in a TOPS operator centralization network. With BCS32, The Host/Remote Networking by Queue Type (HRNQT) feature package, OSB00101, removes this restriction by allowing a TOPS office to serve as either a host or a remote, depending on queue type. Thus, the restriction that the host office be the first switch upgraded to the higher BCS release is removed when both the host and the remotes are at BCS32 or greater. This

Host/Remote Networking by Queue Type (continued)

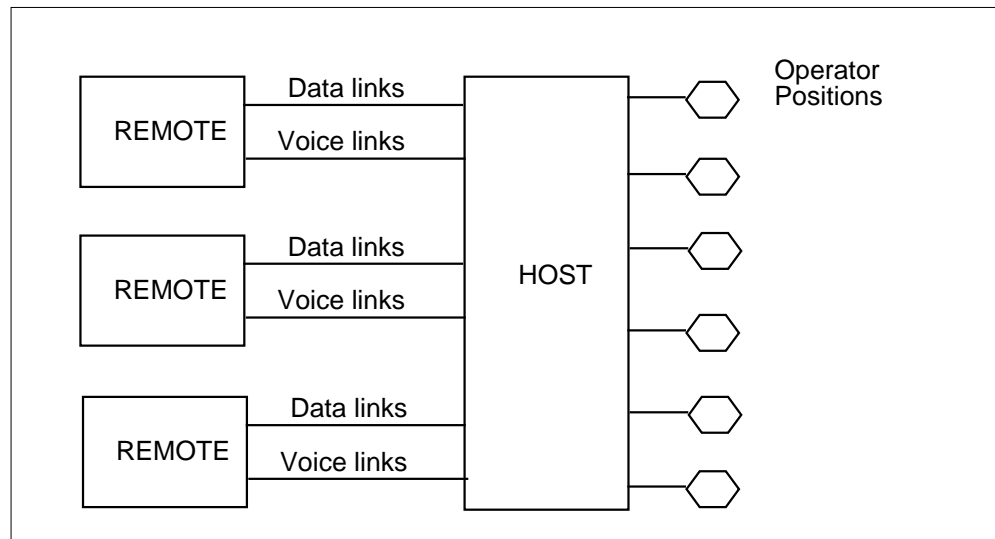
restriction is removed in BCS32, whether or not feature package HRNQT is present.

Operation

Operator Centralization

Operator Centralization provides the ability for many remote offices to share the Operator Positions at one host office. This is accomplished by communications links between the remote offices, where the calls originate, and the host offices, where the positions reside. There are two types of communications links: data links and voice links. Data links provide a messaging mechanism for the two switches to converse during call progression. Tasks are divided between the two switches in such a way that the majority of the work is performed by the remote. The remote performs call processing and executes most operator key functions. The host sends messages to the remote, indicating the operator keys pressed, and updates the operator screen in response to messages from the remote. One data link may be shared by many calls in progress. The voice links allow the operator's voice to be connected into the call circuits resident at the remote. Each call must have a dedicated voice link while the operator services the call. Operator Centralization software is divided to accomplish the tasks within its particular environment, remote or host. The Engineered Office Parameter (OFCENG) TOPS_OC_ENVIRONMENT is initialized to specify the environment.

Host/Remote Network



Host/Remote Networking by Queue Type (continued)

Five data tables that provide communications link information are utilized by Operator Centralization. Each table exists in both the host and remote environments, except for table OCHOST, which is only present in the remote.

- OCHOST: The OC Host table exists only in the remote environment and specifies the name of its host office.
- OCOFC: The OC Office table consists of an office name field and a numeric identifier that is associated with the office name. The numeric identifier provides a count of the number of offices involved in Operator Centralization. A maximum of 15 offices are allowed. In the host environment, this table contains the names and associated numbers for all remote offices. In the remote environment, this table contains the name of the host office.
- OCGRP: The OC Group table designates the voice link group and data link group associated with each of the offices defined in table OCOFC. Table OCGRP also designates whether the connected office is a host or remote, and the lowest BCS level of 2 connected switches.
- TOPSHDLC: The TOPS High-Speed Data Link Controller table contains circuit specific information needed to utilize each data link contained by the data link groups designated in table OCGRP.
- VLMEM: The Voice Link Member table contains circuit specific information needed to utilize each voice link contained by the voice link groups designated in table OCGRP.

Description

This feature enhances OC in several ways. It provides:

- capability for a remote switch to utilize up to four different hosts simultaneously based upon queue type. Prior to this feature, OC (Operator Centralization) permitted the remote switch to utilize only a single host at any given time.
- capability for a switch with standalone and remote software packages to function simultaneously as a standalone and remote switch.
- capability for a switch with host and remote software packages to function simultaneously as a host and remote switch.
- capability for a switch with standalone, host, and remote software packages to function simultaneously as a standalone/host, and remote switch.
- capability for a remote switch to utilize an alternate host when the primary host is unavailable. This capability exists on a queue basis.
- selective interaction with OCNC (feature AF0040 - OC Night Closedown, in functionality TOPS Close Down, OSB00101).

Host/Remote Networking by Queue Type (continued)

- a much improved strategy for accomplishing BCS installations.
- the ability for a call, when transferred (from one queue to another), to actually be transferred from one switch to another. This occurs if the new queue type is served by a different host than the old switch.

A new table, OCHOSTQ, is created to allow the Operating Company to specify both a primary and alternate host on a queue basis. Another new table, OCPARMS, is created. It contains the name of the switch in which it resides and the name of the switch that is used as the host for all MCCS (BVC) queries.

A new field (BCSLEVEL) is added to existing table OCGRP. It gives the lowest BCS level of two connected switches and allows for implementation of the new BCS installation strategy.

PRS UT312449 (BCS36) - The following restriction is lifted: Remote voice and data links cannot be datafilled in table OCGRP when TOPS_OC_ENVIRONMENT is set to REMOTE when HRNQT is present. Therefore, reference to this restriction is deleted from the table OCGRP section. Also, table OCHOSTQ, field PRIHOST must reference HOST in OCGRP or SWITCH_NAME in OCPARMS.

The three basic types of switches and their software packages are:

- Standalone: TOPS Call Processing Features, OSB00101
- Host: Host OC DataLink, OSB00101
- Remote: Remote OC Datalink, OSB00101

In addition to the three basic switch types, all permutations of these types are possible (standalone/host, standalone/remote, host/remote, and standalone/host/remote). These combinations are created simply through the presence of multiple software packages in the same switch.

One of the primary functions of this feature is to allow a switch containing the remote software package to route calls to several hosts simultaneously, on a queue basis. Built upon that function, are the abilities to specify an alternate host on a queue basis and the ability to specify an OC Night Closedown host on a queue basis.

This feature renames these call queue types as follows (prior queue types are in parenthesis):

- CQ0 (GEN)
- CQ1 (XFR1)

Host/Remote Networking by Queue Type (continued)

- CQ2 (XFR2)
- CQ3 (DA)

Table OCHOSTQ

The new table, OCHOSTQ, is created by this feature. It is included as an optional enhancement to the REMOTE software package.

All queues should have an entry in this table. However, this requirement is not enforced. Calls on queues without an entry in this table are handled as if this feature is not present (via OFCENG parameter TOPS_OC_ENVIRONMENT and table OCHOST).

The one exception to the requirement that all queues have an entry in table OCHOSTQ is when this feature is first installed in a switch. In this case, this feature is activated, on a queue basis, by adding entries for each queue in this table.

By placing calls of different service types on different queues, we are also able to segregate traffic on a service type basis. For example, by placing TA calls in CQ0 (the GEN queue) and DA calls in CQ3 (DA) queue and datafilling table OCHOSTQ appropriately, we can route TA traffic to SWITCHA and DA traffic to switch B.

Please note that routing information in this table does not apply to calls received from a remote (it only applies to trunk originating traffic). Calls received from a remote (by a host) are never rerouted by that host to another host.

An example of table OCHOSTQ is shown below. The table is described in the datafill section at the end of this package description.

MAP display for table OCHOSTQ

QTYPE	PRIHOST	RRDATA
CQ0	HOSTA	Y HOSTB QOVFLOW
CQ1	HOSTA	Y HOSTD DLFAIL, QOVFLOW
CQ2	HOSTB	Y HOSTD VLTHROTL
CQ3	HOSTA	N

Table OCPARMS

The new table, OCPARMS, is created by this feature. It is included as an optional enhancement to the REMOTE software package and contains parameters used only by OC.

Host/Remote Networking by Queue Type (continued)

It specifies the name of the switch in which it resides and the name of the switch that handles all MCCS (BVC queries). This table is indexed by PARMNAME.

An example of table OCPARMS is shown below. The table is described in the datafill section at the end of this package description.

MAP display for table OCPARMS

PARMNAME	OFCNAME
SWITCH_NAME	HOSTA
BVC_HOST	HOSTB

Impact of tables OCHOSTQ and OCPARMS

Previously, the remote switch utilized OFCENG parameter TOPS_OC_ENVIRONMENT in conjunction with table OCHOST to determine the host. If TOPS_OC_ENVIRONMENT was remote, the host specified by table OCHOST was used. If TOPS_OC_ENVIRONMENT was host, the switch would act as a standalone (standalone/host) for calls on incoming trunks. Table OCHOST contained only one host, as a remote could route calls to only one host.

With this feature, both TOPS_OC_ENVIRONMENT and table OCHOST are ignored, except for calls on queues that have no entry in table OCHOSTQ. Table OCHOSTQ and parameter SWITCH_NAME of table OCPARMS are now utilized to determine the host for the remote switch. When table OCHOSTQ is indexed with the call queue type, the switch that will process the call is obtained (either field PRIHOST or field ALTHOST). This is true both when the call is routed to a host and when the call is processed by the standalone switch. If field PRIHOST is the same as the SWITCH_NAME parameter from table OCPARMS, then calls on the corresponding queue are handled as standalone calls.

All queues should have an entry in table OCHOSTQ. However, as a contingency plan, if a call exists on a queue with no entry in table OCHOSTQ, that call is treated just as it would be if this feature was not present. TOPS_OC_ENVIRONMENT and table OCHOST determine which host is used.

Table OCGRP

Table OCGRP specifies voice and data links between host and remote offices and is used in OC offices with or without package HRNQT. A new field, BCSLEVEL, is added to existing table OCGRP. It specifies the lowest BCS

Host/Remote Networking by Queue Type (continued)

level of two connected switches and provides the basis for implementing the new BCS installation strategy. This new field will be initialized to a value of the current BCS - 3. This value should be updated by each Operating Company to reflect the lowest BCS level of the two connected offices. An example of this table is shown below. This table example resides in HOSTA (a Host/Remote switch) and describes the switches with which HOSTA communicates.

MAP display for table OCGRP in HOSTA

OFFICE	OFCTYPE	VLGRP	DLOVRLAY	BCSLEVEL
HOSTB	REMOTE	VLA	DLA	33
HOSTB	HOST	VLB	DLB	32
HOSTC	HOST	VLC	DLC	31
HOSTD	HOST	VLD	DLD	30

Call transfer interaction

Call transfer is affected by this feature when a call is transferred from one queue to another, it may subsequently be routed to an operator at another switch.

A call transfer is necessary when an operator receives a call that they are not equipped to handle (e.g., an English-speaking operator receives a call from a french speaking customer). The call transfer actually releases the call from the current operator and places it on a new queue (one that is serviced by operators capable of handling the given need).

When a call is transferred from one queue to another, there is a possibility it may be transferred to an entirely different switch. The new table OCHOSTQ will be referenced. If the tuple receiving the transferred call has a value in field PRIHOST that is different than the value of SWITCH_NAME (in table OCPARMS), the call will be routed to the switch specified by that tuple.

Request for an assistance position interaction

A request for an assistance position will always give an assistance position located on the same host originating the request (an assistance position from a different host is not used).

MCCS/ACCS queries interaction

Without this feature, MCCS (BVC) queries are accomplished as follows. In a remote environment or in a host that is closed and functioning as a remote, the Engineered Office (OFCENG) parameter TOPS_OC_REMOTE_BVC

Host/Remote Networking by Queue Type (continued)

designates how MCCA (BVC) queries are accomplished. When true, the queries are sent over an OC data link to the host. The host queries the Billing Validation Center (BVC) by injecting query messages into the CCIS network. The results are returned over the data link to the remote. Otherwise, the switch is presumed to have a CCIS connection and the Billing Validation Center is queried directly.

The MCCA (BVC) queries from an open host are injected directly into the CCIS network without regard to the value of TOPS_OC_REMOTE_BVC.

With this feature, when parameter TOPS_OC_REMOTE_BVC, is set to FALSE, BVC queries are handled as if this feature is not present (as described above). The BVC Center is queried directly without using the BVC HOST). When parameter TOPS_OC_REMOTE_BVC is set to TRUE, this feature (through tuple BVC_HOST of table OCPARMS) provides a means of specifying a single host for all remotes, MCCA (BVC) queries. If this host is unavailable for some reason, the credit card number will be considered valid even though the validation cannot occur. Tuple BVC_HOST of table OCPARMS overrides both the OCNC host and the host specified by table OCHOST for remote MCCA (BVC) queries.

When table OCPARMS does not have the BVC_HOST tuple, the BVC queries will be performed by the host switch that is designated to provide any needed operators (on a queue type basis).

ACCS queries are not affected by this feature, as they cannot be routed to another host.

Examples of Networking among OC switches

The basic philosophy used to determine the primary versus alternate host follows:

- All attempts to obtain operators in an OC environment (with this feature) should begin with the primary host, then under specific conditions (from table OCHOSTQ, field REASONS) the alternate host should be attempted. If the alternate host fails, the call is routed to treatment.
- When the queue type changes (during a call transfer or a recall), PRIHOST (table OCHOSTQ) should be reset to TRUE (i.e., on the new queue, try the primary host first).
- PRIHOST should be reset to TRUE after treatment, so that if the call is recalled, it will begin with the primary host, then under specific conditions (from table OCHOSTQ, field REASONS) the alternate host will be attempted.

Host/Remote Networking by Queue Type (continued)

Routing to Primary Host - Multiple Hosts

This example describes a remote switch that routes traffic to several different hosts simultaneously. The host may be selected on a queue type basis.

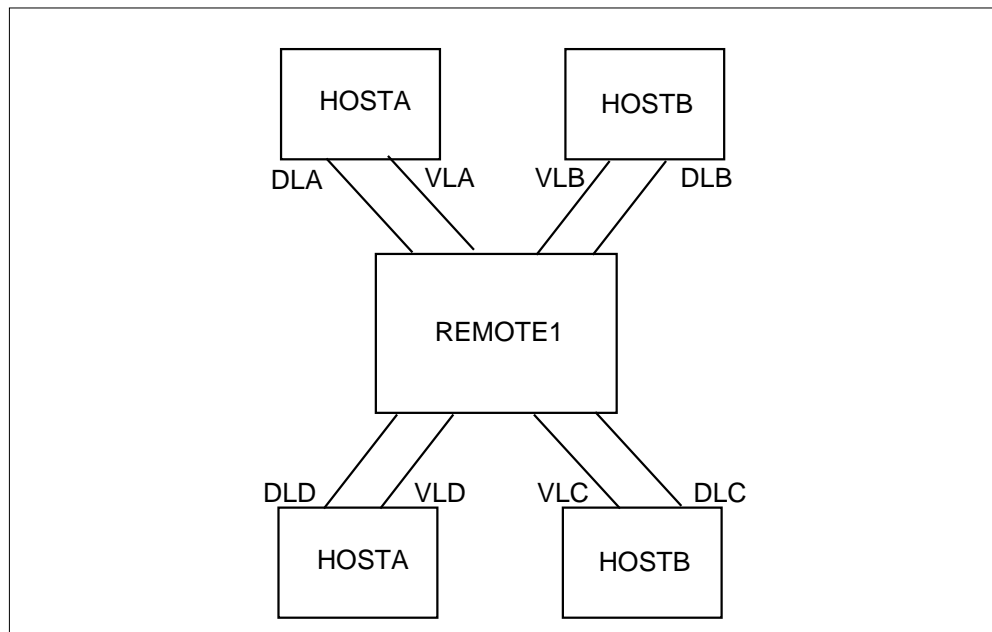
Please refer to the following figure and map displays for tables OCGRP and OCHOSTQ for the discussion of this example. Network 1 consists of one remote switch and four host switches. The Map displays show the contents of tables OCGRP and OCHOSTQ in REMOTE1. These tables determine where calls received by REMOTE1 are routed for processing.

Calls incoming to REMOTE1 are handled as follows:

- Calls on the CQ0 (GEN) queue are routed to HOSTB. HOSTB is determined by the CQ0 (GEN) tuple of table OCHOSTQ.
- Calls on the CQ1 (XFR1) queue are routed to HOSTC. HOSTC is determined by the CQ0 (GEN) tuple of table OCHOSTQ.
- Calls on the CQ2 (XFR2) queue are routed to HOSTC. HOSTC is determined by the CQ2 (XFR2) tuple of table OCHOSTQ.
- Calls on the CQ3 (DA) queue are routed to HOSTA. HOSTA is determined by the CQ3 (DA) tuple of table OCHOSTQ.

Note that all of these hosts are necessarily in table OCGRP.

Network 1



Host/Remote Networking by Queue Type (continued)

MAP display for table OCGRP (in REMOTE1)

OFFICE	OFCTYPE	VLGRP	DLOVRLAY	BCSLEVEL
HOSTA	HOST	VLA	DLA	30
HOSTB	HOST	VLB	DLB	31
HOSTC	HOST	VLC	DLC	29
HOSTD	HOST	VLD	DLD	31

MAP display for table OCHOSTQ (in REMOTE1)

	QTYPE	PRIHOST	RRDATA
	CQ0	HOSTB	N
	CQ1	HOSTC	N
	CQ2	HOSTC	N
	CQ3	HOSTA	N

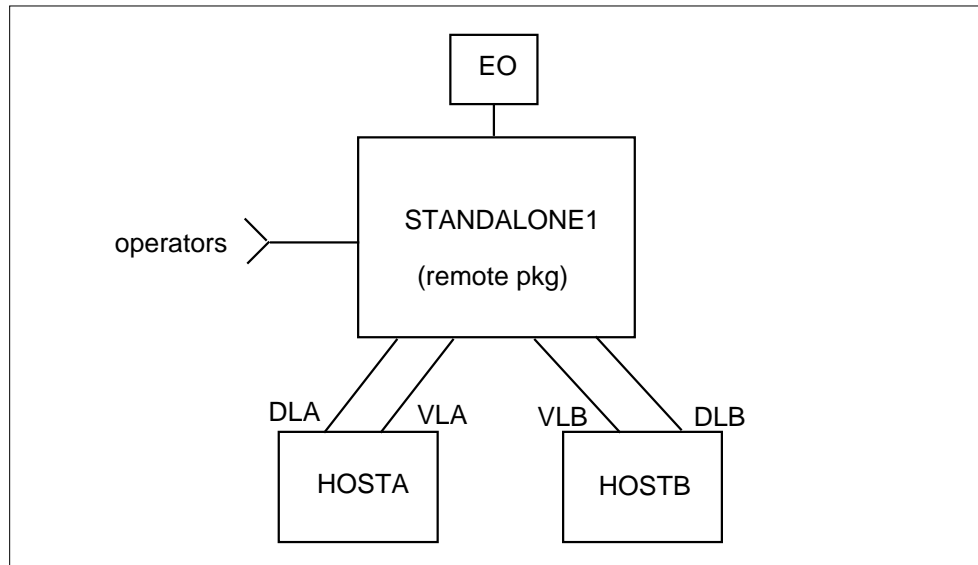
Routing to Primary Host - Standalone/Remote

This example illustrates call routing in a standalone switch that is complemented with a remote software package. Note that STANDALONE1 acts as a standalone switch for calls on some queues and as a remote switch for calls on other queues.

Please refer to the following figure and map display for table OCHOSTQ (in STANDALONE1) for the discussion of this example. Assume that SWITCH_NAME (in table OCPARMS) is STANDALONE1. Calls that arrive on the incoming trunks of STANDALONE1 are routed as follows:

- Calls on the CQ0 (GEN) queue are processed by STANDALONE1. This is determined by the fact that field PRIHOST (of table OCHOSTQ) has the same value as SWITCH_NAME (STANDALONE1). Hence, it processes the calls on the CQ0 (GEN) queue itself. STANDALONE1 acts as a standalone switch in this case.
- Calls on the CQ1 (XFR1) queue are processed by STANDALONE1, following the same logic as used above for the CQ0 (GEN) queue.
- Calls on the CQ2 (XFR2) queue are routed to HOSTB, as determined from the CQ2 (XFR2) tuple in table OCHOSTQ (in STANDALONE1). STANDALONE1 acts as a remote switch in this case.
- Calls on the CQ3 (DA) queue are routed to HOSTA, as determined from the CQ3 (DA) tuple in table OCHOSTQ (in STANDALONE1). STANDALONE1 acts as a remote switch in this case.

Host/Remote Networking by Queue Type (continued)

Network 2**MAP display for table OCHOSTQ (in STANDALONE1)**

QTYPE	PRIHOST	RRDATA		
CQ0	STANDALONE1	N		
CQ1	STANDALONE1	Y	HOSTA	DLFAIL, QOVFLOW, DEFLECT
CQ2	HOSTB	N		
CQ3	HOSTA	Y	HOSTA	DLFAIL, QOVFLOW, VLTHROTL

Routing to Primary Host - Host/Remote

This example shows how a host switch (complemented with a remote software package) acts as both a host and remote, depending upon the queue type.

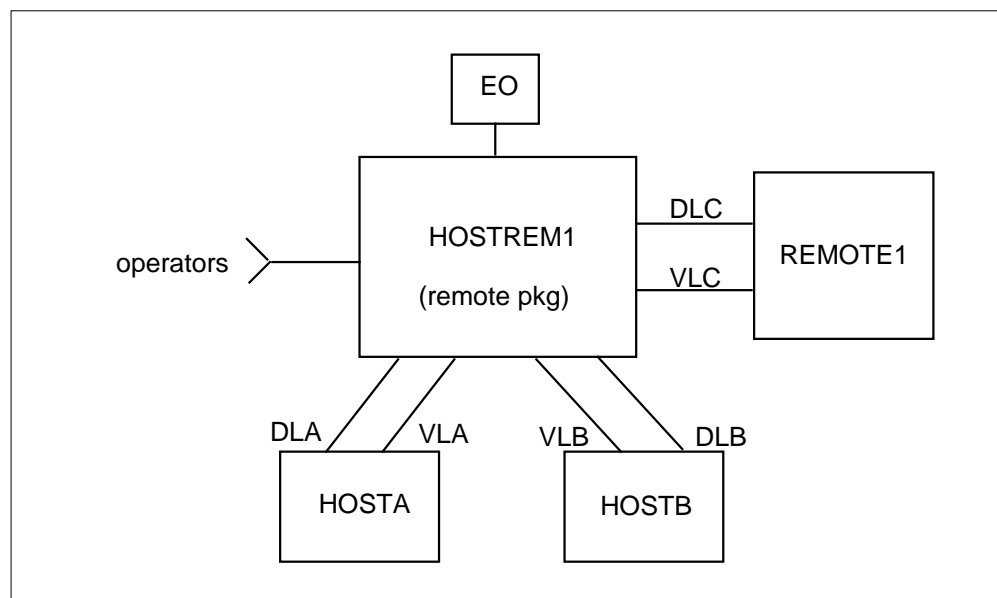
Refer to the following figure and map display for table OCHOSTQ (in HOSTREM1) for the discussion of this example.

Host/Remote Networking by Queue Type (continued)

HOST1 is a host switch, but is complemented with a remote software package. It will handle some calls as if it is a remote switch and others as if it is a host switch as described below:

- Calls at REMOTE1 are routed to HOST1. Note: Calls received from REMOTE1 are never rerouted BY HOST1 to another host. Table OCHOSTQ does not determine routing for calls received from a remote.
 - If HOST1 is available, it handles the call. HOST1 acts as a host switch in this case.
 - If HOST1 is unavailable, field RRDATA in table OCHOSTQ (of REMOTE1) will determine whether an attempt is made to route the call to the alternate host or to treatment.
- HOST1 acts as a remote switch with respect to calls that arrive on it's incoming trunks (directly from it's end office). Calls are routed as follows:
 - Calls on the CQ0 (GEN) queue are routed to HOSTB. This is determined by field PRIHOST of the CQ0 (GEN) tuple in table OCHOSTQ.
 - Calls on the CQ1 (XFR1) queue are routed to HOSTB, following the same logic as used for the CQ0 (GEN) queue above.
 - Calls on the CQ2 (XFR2) queue are routed to HOSTA, as determined from the CQ2 (XFR2) tuple in table OCHOSTQ.
 - Calls on the CQ3 (DA) queue are routed to HOSTA, as determined from the CQ3 (DA) tuple in table OCHOSTQ.

Network 3



Host/Remote Networking by Queue Type (continued)

MAP display for table OCHOSTQ (in HOSTREM1)

QTYPE	PRIHOST	RRDATA		
CQ0	HOSTB	N		
CQ1	HOSTB	Y	HOSTA	DLFAIL, QOVFLOW, DEFLECT
CQ2	HOSTA	N		
CQ3	HOSTA	N		

Routing to Primary Host - Standalone/Host/Remote

This example shows call routing in a switch that contains standalone, host, and remote software packages. The switch labelled HYBRID1 in the following figure has all three of the above mentioned software packages and acts as a standalone switch for some calls, as a host switch for some calls, and as a remote switch for some calls.

Please refer to the following figure and map display for table OCHOSTQ (in HYBRID1) for the discussion of this example. Also, assume that SWITCH_NAME, in table OCPARMS, is HYBRID1.

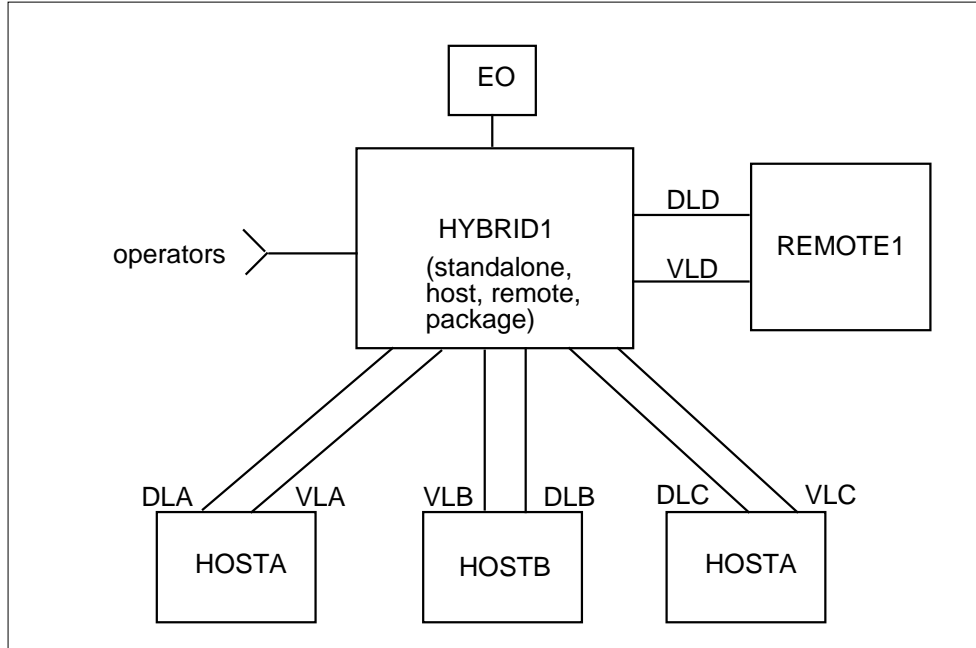
Calls that arrive on the incoming trunks of HYBRID1 are routed as follows:

- Calls on the CQ0 (GEN) queue are processed by HYBRID1. This is determined by the fact field PRIHOST (of table OCHOSTQ) has the same value as SWITCH_NAME (HYBRID1). HYBRID1 acts as a standalone switch in this case if the call was received from the end office. However, if the call was received from REMOTE1, then HYBRID1 acts as a host.
- Calls on the CQ1 (XFR1) queue are processed by HYBRID1, following the same logic as used above for the CQ0 (GEN) queue.
- Calls on the CQ2 (XFR2) queue are routed to HOSTB, as determined from the CQ2 (XFR2) tuple in table OCHOSTQ (in HYBRID1). HYBRID1 acts as a remote switch in this case.
- Calls on the CQ3 (DA) queue are routed to HOSTA, as determined from the CQ3 (DA) tuple in table OCHOSTQ (in HYBRID1). HYBRID1 acts as a remote switch in this case.

Calls routed to HYBRID1 by REMOTE1 are processed by HYBRID1. HYBRID1 acts as a host switch in this case.

Host/Remote Networking by Queue Type (continued)

Network 4



MAP display for table OCHOSTQ (in HYBRID1)

QTYPE	PRIHOST	RRDATA
CQ0	HYBRID1	N
CQ1	HYBRID1	Y HOSTC DLFAIL, QOVFLOW, DEFLECT
CQ2	HOSTB	N
CQ3	HOSTA	Y HOSTC DLFAIL, QOVFLOW, DEFLECT

Routing to Alternate Host

This example shows the role of field ALTHOST (in table OCHOSTQ) in determining which switch will serve as host to the remote switch, when the primary host is unavailable.

Refer to the following figure and map display for table OCHOSTQ (in HYBRID1) for the discussion of this example.

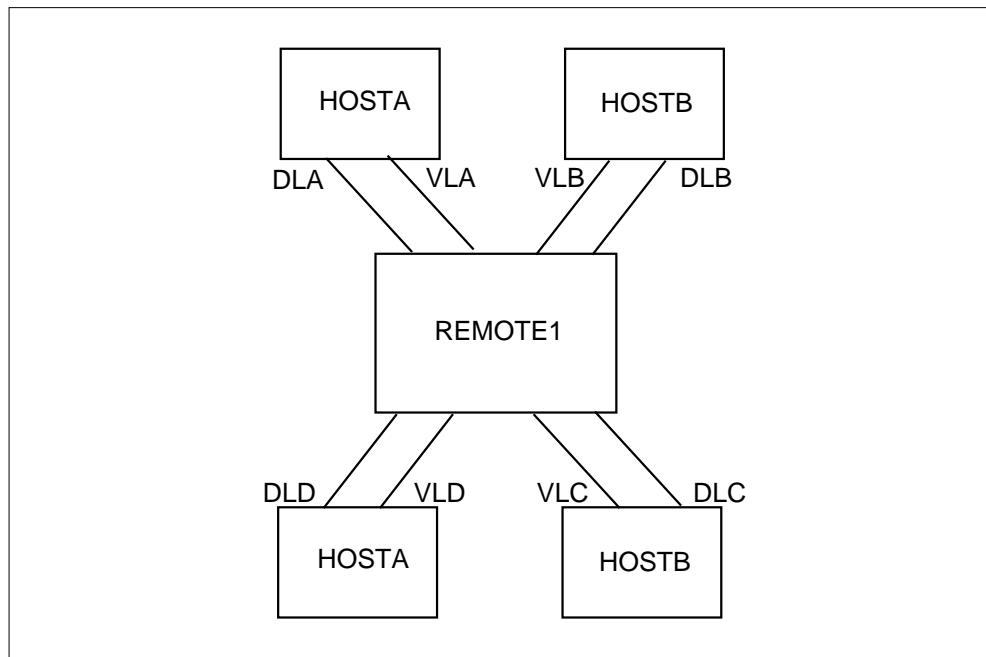
Assume that REMOTE1 attempts to route the call to the primary host, found in table OCHOSTQ, but it is unavailable (for reasons indicated below).

Host/Remote Networking by Queue Type (continued)

Calls are routed as follows:

- Calls on the CQ0 (GEN) queue are rerouted to HOSTB if the primary host is unavailable due to queue overflow.
- Calls on the CQ1 (XFR1) queue are rerouted to HOSTD if the primary host is unavailable due to queue overflow or failure of data links at the primary host.
- Calls on the CQ2 (XFR2) queue are routed to treatment if the primary host is unavailable due to data link failure. Because the set of REASONS for the CQ2 (XFR2) tuple does not include DLFAIL, calls will not be routed to the alternate host. Instead, they will be routed to treatment.
- Calls on the CQ3 (DA) queue are routed to treatment if the primary host is unavailable for any reason. Because the RRDATA field is set to N, an alternate host does not exist.

Network 1



Host/Remote Networking by Queue Type (continued)

MAP display for table OCHOSTQ (in HYBRID1)

QTYPE	PRIHOST	RRDATA		
CQ0	HOSTA	Y	HOSTB	QOVFLOW
CQ1	HOSTA	Y	HOSTD	DLFAIL, QOVFLOW
CQ2	HOSTB	Y	HOSTD	VLTHROTL
CQ3	HOSTA	N		

Discretionary Use of the Alternate Host

By providing an alternate host, reliability is enhanced through the optional ability to route calls to an alternate host when the primary host is unavailable. This capability may be especially useful in the case where a natural disaster renders one switch unavailable and calls are routed to an alternate host. Table OCHOSTQ is also indexed by queue type.

Routing to an alternate host is not without risk. The risk is that of causing an already overloaded network to be further overloaded by attempting to route a call to the primary host then to an alternate host, thus doing twice the work and messaging. Basically, the decision to route a call to an alternate host will likely be a good one if the alternate host is available. However, if the alternate host is unavailable for some reason, twice the messaging will be used to get the same result (a call routed to treatment).

An example of when the use of the alternate host would be beneficial is during a natural disaster that rendered switch A unavailable. Rerouting calls to switch B would prove useful if switch B was available (not affected by the same natural disaster). An example of when use of the alternate host would have adverse affects is during a nationwide/region-wide traffic overload such as Christmas. In this case the extra messaging would serve only to further degrade performance on an already overloaded network.

Careful consideration should be taken in deciding whether or not to reroute. Table OCHOSTQ provides the flexibility to reroute calls under some conditions but not others.

Selective Interaction with OCNC

OCNC (OC Night Closedown) and HRNQT (Host Remote Networking By Queue Type) are both forms of rerouting traffic. Because they both give "instructions" as to which host to route calls to, there must be some means of deciding which instructions to follow when they provide conflicting information.

Host/Remote Networking by Queue Type (continued)

During the closedown period, if a queue has been “added” using CI commands to the set of queues using OCNC, the OCNC host is used if available. If the queue is not in the set of queues using the OCNC host, table OCHOSTQ determines the host.

During the nonclosedown period (usually daytime), table OCHOSTQ determines the host for all queues, regardless of whether they have been “added” to the set of queues using OCNC or not.

Regardless of the time and whether or not a queue is a member of the set of queues that use the OCNC host, if the first host fails, table OCHOSTQ determines whether or not to reroute to the alternate host and which host is the alternate host.

OCNC Background

TOPS Close Down, OSB00101, provides the ability for an Operating Company to closedown and reopen a Traffic Operator Position System (TOPS) Operator Centralization (OC) host office or a standalone office at specified times of the day. When closed, the host or standalone will function as a remote to another TOPS office. Remotes off a closed host will switch to a new host.

During light traffic periods, usually midnight to 6 a.m., few operators are required. Since the traffic is reduced at each host, many small teams of operators can be eliminated by combining the operator traffic of several host offices to one host. This allows many host offices to be closed and the overhead expenses associated with maintaining the host offices to be reduced.

OC Night Closedown is an enhancement to Operator Centralization that provides telephone companies with the ability to rearrange the relationships between remote offices and host offices within the TOPS network. Remote switches can change the host that they rely upon to service their operator traffic. Host and standalone switches can be converted to remotes, which then rely upon another host to service their operator traffic.

For more background information concerning Operator Centralization, refer to Host OC Datalink (OSB00101), Remote OC Datalink (OSB00101), and TOPS Close Down (OSB00101).

OCNC versus HRNQT

This example illustrates how OCNC can be made to override HRNQT and vice versa. It also shows that the decision to override HRNQT with OCNC values can be made on a queue basis (i.e., a different decision for different queues in the same switch).

Host/Remote Networking by Queue Type (continued)

Please refer to the following map display for table OCHOSTQ (in REMOTE1) and three figures for the discussion of this example. Also, assume that the OCNC host is SWITCH3 and SHOWQ reveals that CQ0 (GEN), CQ1 (XFR1), and CQ2 (XFR2) queues are enabled for OC night closedown.

In the daytime configuration, REMOTE1 routes CQ3 (DA) traffic to SWITCH2 and TA traffic (in this case, TA traffic is on the CQ0 (GEN) queue, CQ1 (XFR1), and CQ2 (XFR2) queues) to SWITCH4.

In the nighttime configuration, REMOTE1 continues to route CQ3 (DA) traffic to SWITCH2, but allows the OC Night Closedown feature to closedown the TA traffic to SWITCH3.

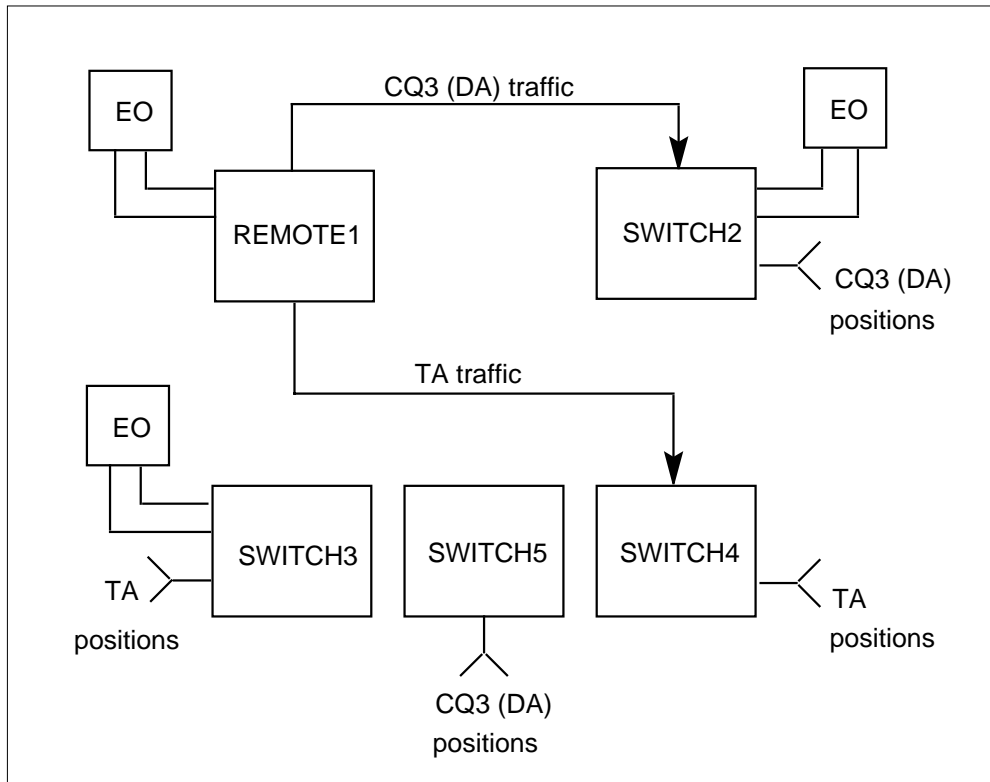
The host for calls on the CQ3 (DA) queue is determined from field PRIHOST of table OCHOSTQ. However, if the primary host is not available due to data link failure, the alternate host (SWITCH5) is used for CQ3 (DA) traffic. The next figure (Network 4 - OCNC Daytime Configuration) shows the case where the alternate host is used for calls on the CQ3 (DA) queue but not for calls on the CQ0 (GEN), CQ1 (XFR1), or CQ2 (XFR2) queues. Calls on queues CQ0 (GEN), CQ1 (XFR1), and CQ2 (XFR2) use the OCNC routing scheme (the host specified by OCNC.OCNCHOST), which in this case is SWITCH3.

MAP display for table OCHOSTQ (in REMOTE1)

QTYPE	PRIHOST	RRDATA
CQ0	SWITCH4 Y	SWITCH5 DLFAIL QOVFLOW
CQ1	SWITCH4 Y	SWITCH5 DLFAIL QOVFLOW
CQ2	SWITCH4 Y	SWITCH5 DLFAIL VLTHROTL
CQ3	SWITCH2 Y	SWITCH5 DLFAIL

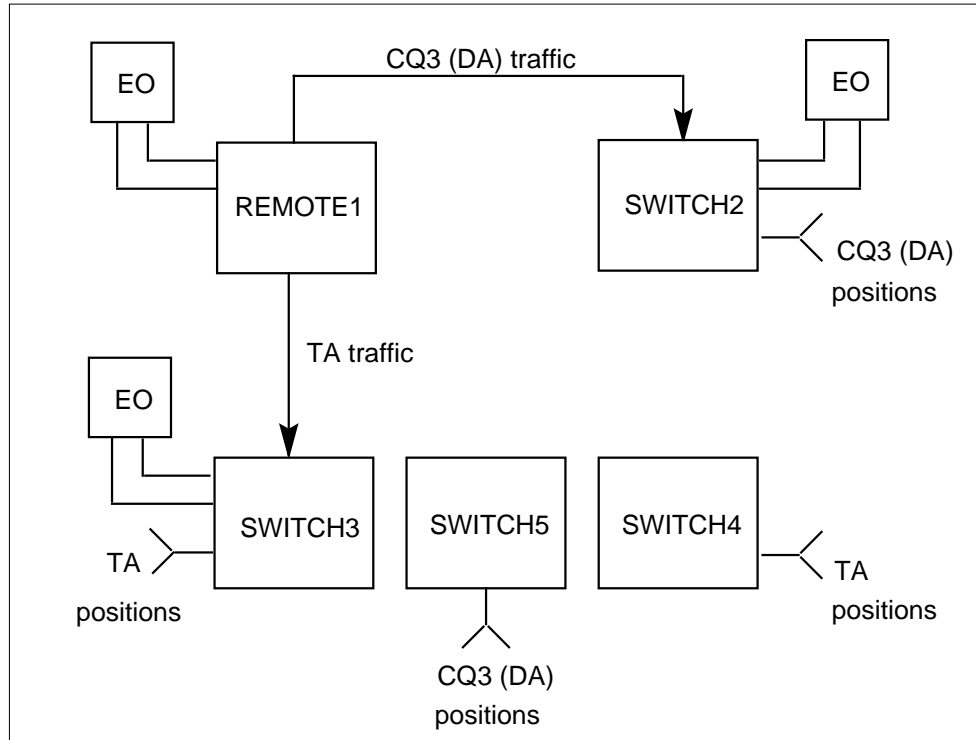
Host/Remote Networking by Queue Type (continued)

Network 4 - OCNC Daytime Configuration

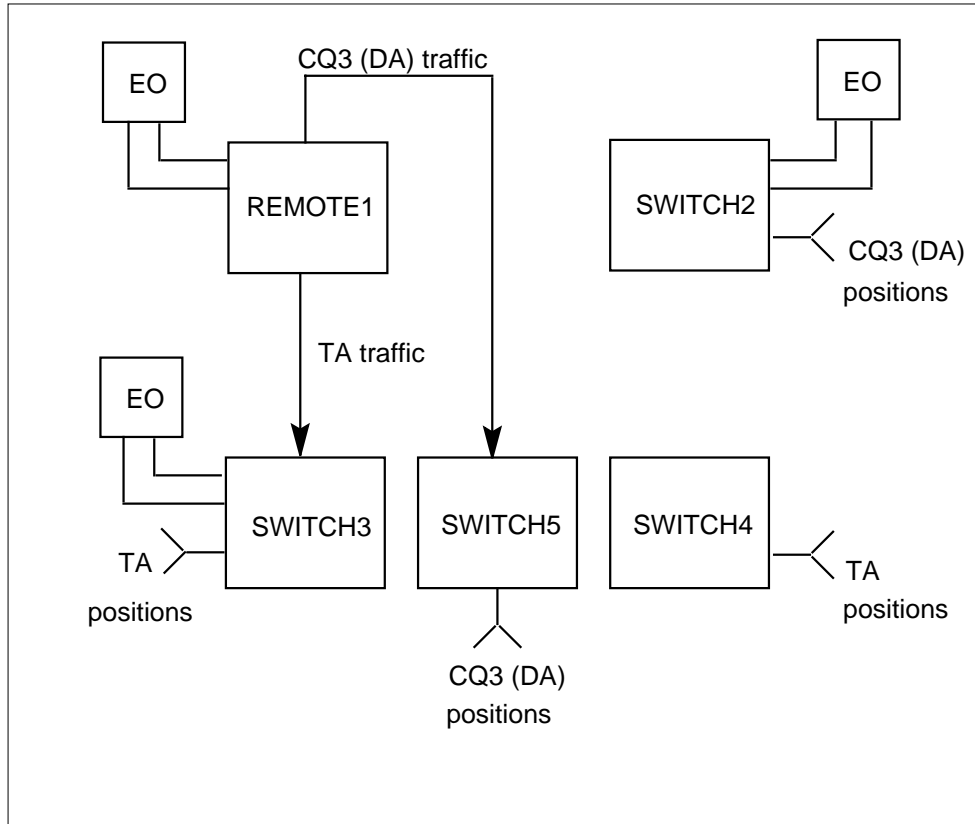


Host/Remote Networking by Queue Type (continued)

Network 4 - OCNC Nighttime Configuration using Primary Host



Host/Remote Networking by Queue Type (continued)

Network 4 - OCNC Nighttime Configuration using Alternate Host for CQ3 (DA) Traffic

BCS installation (prerequisite)

The Operating Company must ensure that operator voice links and data links exist between the remote and all primary and secondary hosts datafilled in table OCHOSTQ. These data and voice links must be identified to the switches they connect by datafilling them within the Operator Centralization tables OCGRP, TOPSHDLC, and VLMEM (refer to data schema section of this manual). These new links must be engineered for the maximum traffic load expected. In addition, resources (such as Recording Units and Call Control Blocks) must be engineered for any added traffic incurred by routing to the primary or secondary host.

As in the past, translations for delay calls are performed at the host switch while all other remote call translations are performed at the remotes.

All remote MCCS (BVC) queries will be handled by the host specified by BVC_HOST in table OCPARMS. This host must have access through the CCIS network to the Billing Validation Center.

Host/Remote Networking by Queue Type (continued)

In the past, Host offices contained the Operator Centralization Host package and possibly the OC Night Closedown package. For OCNC to change the office functionally to a remote, the host also was required to contain the Operator Centralization Remote package. For HRNQT to change a standalone or host to a remote (for calls on specified queues), the standalone/host being used as a remote will also need the Operator Centralization Remote package.

BCS installation

In the past, restrictions used for BCS upgrades in the OC environment included:

- No more than three (3) BCS levels difference between the host and remote switches are permitted (e.g., BCS 29 to BCS 32).
- Upgrade the host switch first then the remote switch. Hence, the host is always at a BCS level greater than or equal to the remote BCS level.

The first restriction is unchanged by this feature. The second restriction is removed by this feature. The changes that remove this restriction are done by this feature, however, they will be incorporated into base OC code. Therefore, the new BCS upgrade strategy will apply to all BCS32+, OC upgrades whether this feature is present or not.

The second restriction existed to prevent the sending of unrecognizable message types from one switch to another (e.g., a BCS32 switch sends a BCS32 message to a BCS30 switch).

BCS installations fall into two categories:

- The “old” BCS is less than BCS32 and the “new” BCS is BCS32 or greater. In this case, the “old” strategy should be used.
- Both the “old” and “new” BCS are BCS32 or greater. In this case, the “old” strategy is no longer followed. The host is not required to be updated first. The procedure that should be used is:

BCS installation: “Old” BCS is less than 32, “New” BCS is 32 or greater

In this case, the “old” strategy should be used.

1. Upgrade all TPCs on the HOST switch to the same BCS as will be installed in the HOST.
2. Upgrade the HOST switch first.

Host/Remote Networking by Queue Type (continued)

3. Apply the appropriate patches to the HOST. The appropriate patches are:
 - For BCS32, to be determined
 - For BCS33, CFL89C32
 - For BCS34 and higher, no patches needed.
4. In the HOST switch, the value in field BCSLEVEL will (by default) be equal to the (BCS level of the "restore side" minus 3). For example, if the HOST switch has been upgraded to BCS32, the default value of field BCSLEVEL will be BCS29. This will be true for every tuple in table OCGRP.

For each tuple in table OCGRP, change the value of field BCSLEVEL to the lower value (BCS level) of the two connected switches.

For example, if the HOST is at BCS32 and the REMOTE is at BCS31, field BCSLEVEL of the OCGRP tuple (in the HOST) that defines the link between the HOST and this REMOTE should be changed from BCS29 (the default resulting from the upgrade to BCS32) to BCS31. BCS31 is the lower of BCS32 (the HOST) and BCS31 (the REMOTE).

Host/Remote Networking by Queue Type (continued)

5. Since the REMOTE switch is still pre-BCS32, field BCSLEVEL will not exist. So, no changes are required in table OCGRP of the REMOTE, at this point.
6. For each REMOTE switch that is connected to this HOST:
 - a. If desired, upgrade the REMOTE switch.
 - b. Apply the appropriate patches to the REMOTE. The appropriate patches are:
 - For BCS32, to be determined.
 - For BCS33, CFL89C32.
 - For BCS34 and higher, no patches needed.
 - c. If the REMOTE switch was UPGRADED TO BCS31 OR LESS:
 - In the HOST, change field BCSLEVEL of table OCGRP (in the HOST) to the lower value (BCS level) of the two connected switches.
 - In the REMOTE, since the REMOTE switch is still pre-BCS32, field BCSLEVEL will not exist. So, no changes are required in table OCGRP, at this point.
 - d. If the REMOTE switch was UPGRADED TO BCS32 OR GREATER:
 - In the HOST, change field BCSLEVEL of table OCGRP (in the HOST) to the lower value (BCS level) of the two connected switches.
 - In the REMOTE, the value in field BCSLEVEL will (by default) be equal to the (BCS level of the "restore side" minus 3). This will be true for every tuple in table OCGRP. For each tuple in table OCGRP, change the value of field BCSLEVEL to the lower value (BCS level) of the two connected switches.

For example, if the HOST for this REMOTE is at BCS33 and this REMOTE is at BCS32, then field BCSLEVEL of the OCGRP tuple (in this REMOTE) that defines the link between the REMOTE and this HOST should be changed from BCS29 (the default resulting from the upgrade to BCS32) to BCS32. BCS32 is the lower of BCS32 (the REMOTE) and BCS33 (the HOST).

Host/Remote Networking by Queue Type (continued)

BCS installation: Both the "old" and "new" BCS are BCS32 or greater

In this case, the "old" strategy is no longer followed. The HOST is not required to be updated first. The procedure that should be used is:

1. Upgrade all TPCs in the network to the highest BCS that will be installed in the switches. For example, if a network exists where switch A will be upgraded from BCS33 to BCS34 and switch B will be upgraded from BCS32 to BCS35 and both switches have positions (both switches are host/remotes), then all TPCs on both switches should be upgraded to BCS35 as a first step.
2. Choose a switch in the network to upgrade. It may be a HOST, REMOTE, or a HOST/REMOTE. The restriction of upgrading the HOST first does not apply.
3. For each tuple of table OCGRP in the chosen switch, ensure that the value of field BCSLEVEL is correct and current. The correct value for field BCSLEVEL is the lower value (BCS level) of the two connected switches (the two switches connected via this tuple of table OCGRP). If necessary, change field BCSLEVEL to make it correct.
4. For each switch that is connected to the switch to be upgraded, ensure that each tuple of table OCGRP has the correct and current value in field BCSLEVEL.
5. Upgrade the selected switch, leaving table OCGRP the same as it was prior to the upgrade (it reflects the BCS levels prior to the upgrade).
6. Apply the appropriate patches to the switch. The appropriate patches are:
 - For BCS32, to be determined.
 - For BCS33, CFL89C32.
 - For BCS34 and higher, no patches needed.
7. In the upgraded switch, for each tuple in table OCGRP (each tuple defines a link set that connects the upgraded switch to another switch in the network), perform the following:
 - a. Change field BCSLEVEL to reflect the upgrade (the lower BCS level of the two switches). Make this change in the switch serving as HOST (IN RELATION TO THIS LINK SET) first.
 - b. Then, immediately change the corresponding tuple of table OCGRP for the switch serving as a REMOTE (IN RELATION TO THIS LINK SET).

Host/Remote Networking by Queue Type (continued)

BCS installation example

This example illustrates the new BCS installation process. Please refer to the following figure and four tables, which show table OCGRP and the network before and after the BCS change.

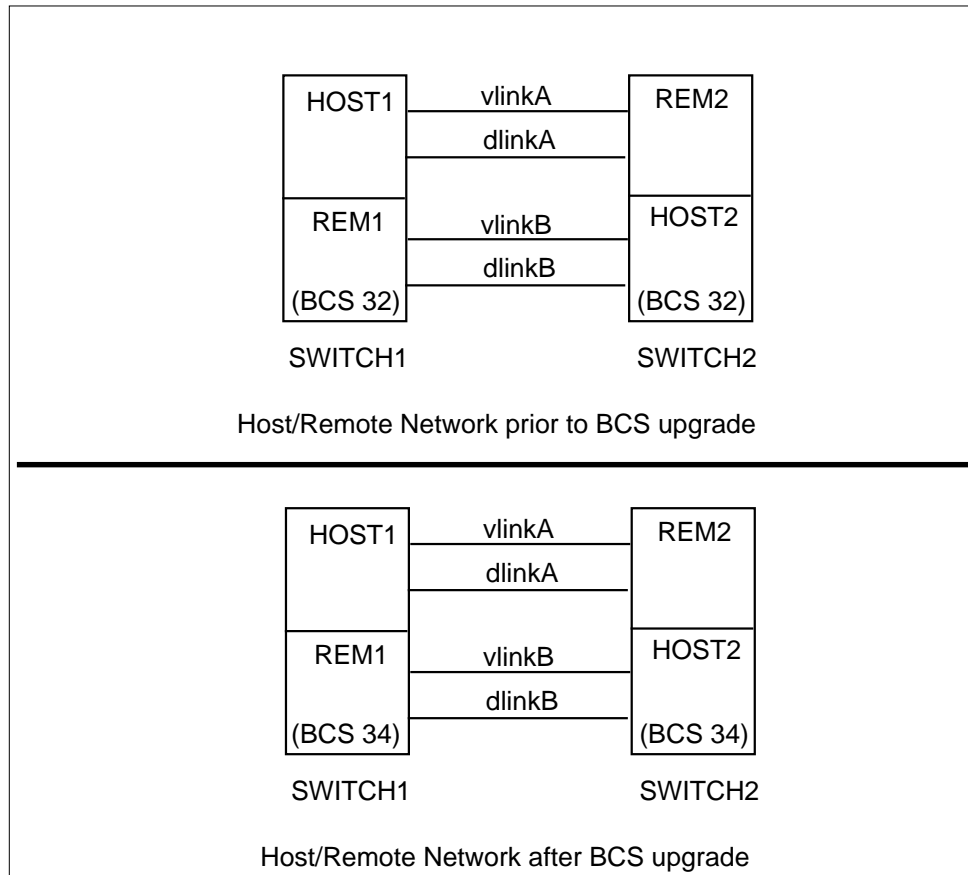
1. Ensure that the values for field BCSLEVEL are correct for all tuples. Since they are BCS32, they are correct.
2. Upgrade the switches (in any order) from BCS32 to BCS34 leaving table OCGRP unchanged in both switches (i.e., field BCSLEVEL of table OCGRP reflects the BCS levels prior to the upgrade).
3. Choose a link set that connects two switches. Let's use link set A.
4. Since HOST1 serves as host to REM2 (in relation to link set A), enter table OCGRP of SWITCH1 and change tuple REM2 to reflect the new BCS level of SWITCH2 (BCS 34).
5. Immediately, enter table OCGRP of SWITCH2 and change the corresponding tuple (for link set A) to reflect the new BCS level for SWITCH1 (BCS34).

At this point SWITCH1 and SWITCH2 communicate with each other via BCS34 messages across link set A and via BCS32 messages across link set B.

After following the same procedure for link set B, both SWITCH1 and SWITCH2 communicate with each other via BCS34 messages across both link set A and B.

Host/Remote Networking by Queue Type (continued)

Host/Remote Network before and after BCS upgrade



MAP display for table OCGRP in SWITCH1 (prior to change)

OFFICE	OFCTYPE	VLGRP	DLOVRLAY	BCSLEVEL
REM2	REMOTE	vlinkA	dlinkA	32
HOST2	HOST	vlinkB	dlinkB	32

MAP display for table OCGRP in SWITCH2 (prior to change)

OFFICE	OFCTYPE	VLGRP	DLOVRLAY	BCSLEVEL
HOST1	HOST	vlinkA	dlinkA	32
REM1	REMOTE	vlinkB	dlinkB	32

Host/Remote Networking by Queue Type (continued)

MAP display for table OCGRP in SWITCH1 (after change)

OFFICE	OFCTYPE	VLGRP	DLOVRLAY	BCSLEVEL
REM2	REMOTE	vlinkA	dlinkA	34
HOST2	HOST	vlinkB	dlinkB	34

MAP display for table OCGRP in SWITCH2 (after change)

OFFICE	OFCTYPE	VLGRP	DLOVRLAY	BCSLEVEL
HOST1	HOST	vlinkA	dlinkA	34
REM1	REMOTE	vlinkB	dlinkB	34

“Turning on” this feature

Table OCHOSTQ will be empty initially. The “old” routing strategy will apply for calls on all queues until the Operating Company adds entries to table OCHOSTQ. (This is the only time that it is appropriate for table OCHOSTQ to not have an entry for each queue type.) The Operating Company has the ability to “turn on” this feature on a queue basis simply by adding the desired queue to table OCHOSTQ.

Translations table flow

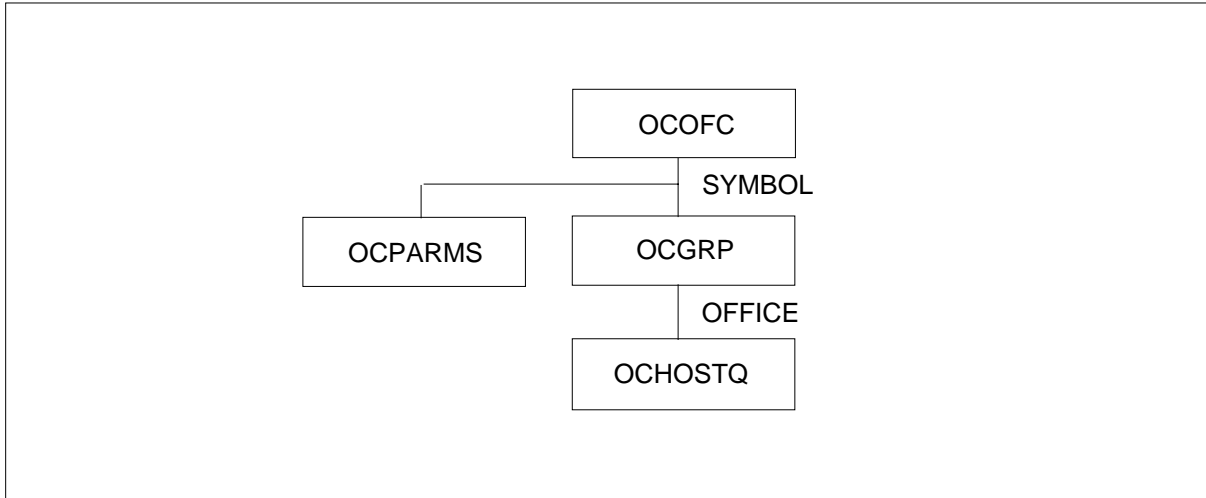
The Host/Remote Networking by Queue Type translations tables are described in the following list:

- Table OCOFC. The Operator Centralization Office table defines OC office names.
- Table OCGRP. The Operator Centralization Group table defines remotes for the host office.
- Table OCPARMS. The Operator Centralization Parameter table defines the switch office name.
- Table OCHOSTQ. The Operator Centralization Host Queue table specifies a primary and alternate host on a queue basis.

The Host/Remote Networking by Queue Type translation process is shown in the flowchart that follows.

Host/Remote Networking by Queue Type (continued)

Table flow for Host/Remote Networking by Queue Type



Limitations and restrictions

The following limitations and restrictions apply to Host/Remote Networking by Queue Type:

- This feature is applicable only to switches that have the remote software package present.
- A host office can service a maximum of 15 remote offices. This is an existing restriction imposed by providing for only 15 entries in table OCGRP. When the TOPS network configuration changes are determined, this limitation must be considered.
- When calls are deflected to an alternate host, the alternate host may begin to see new statistics. Statistics on a queue type that was previously unseen may begin to be output. The alternate host must have adequate resources available to handle both the volume and the type of traffic received from the remote that is deflecting to it (as an alternate host).
- The Operating Company should avoid duplicate operator numbers in a network by ensuring that operator numbers are unique throughout the network. This can be accomplished by assigning different numbers in table OPRDAT, on a network basis. If this restriction is not followed, ambiguity may exist in AMA records; it will not be possible to uniquely identify an operator.
- The field, OFCNAME, of the new table OCPARMS is datafilled with a 32 character office name that corresponds to the PARMNAME field. If PARMNAME is SWITCH_NAME, then the office name being datafilled must be in table OCOFC and must not be in table OCGRP. If

Host/Remote Networking by Queue Type (continued)

PARMNAME is BVC_HOST, then the office name being datafilled must be in both tables OCOFC and OCGRP.

- The Operating Company is responsible for datafilling table OCPARMS, tuple SWITCH_NAME. This tuple indicates the name of the switch in which this table resides. It must be datafilled at all times because other tables use the information in this tuple to decide routing destinations. Table OCHOSTQ will not allow any tuples to be added until SWITCH_NAME is datafilled.

Interactions

The following paragraphs describe the interactions between Host/Remote Networking by Queue Type and other functionalities.

- This feature is completely dependant upon Host OC Datalink, OSB00101, and Remote OC Datalink, OSB00101.
- This feature is an enhancement to Operator Centralization in general and specifically to the Operator Centralization Remote package. It enhances OC by allowing the host remote relationships to be altered by the Operating Company on a queue basis, relying totally upon OC software to accomplish these changes.
- This feature is, however, separate from the OC Host and Remote packages. The Operator Centralization packages (host and remote) may exist with or without Host Remote Networking by Queue Type. Host Remote Networking by Queue Type cannot exist in a switch that does not have the OC Remote package and cannot use a host that does not have the OC Host package. If an alternate host is used (table OCHOSTQ, field ALTHOST) the new operator (at the alternate host) must be datafilled in such a way as to be able to serve the incoming call.
- This feature may exist with or without OC Night Closedown. OC Night Closedown may exist with or without this feature. The flexibility is provided by this feature, when both this feature and OCNC are present, to have OCNC routing specifications override routing by this feature or vice versa. Additionally, this functionality exists on a queue basis.
- Tables OCPARMS and OCHOSTQ only exist in the remote software. The BVC_HOST tuple (in table OCPARMS) is only appropriate if OFCENG parameter, TOPS_OC_REMOTE_BVC, is TRUE.
- The new field BCSLEVEL in table OCGRP is created by this feature; however, it exists with or without this feature, as it is part of the base package, OSB00101. As such, the "new BCS installation strategy" exists for all BCS32+ OC switches.

Host/Remote Networking by Queue Type (continued)

Activation/deactivation by the end user

Host/Remote Networking by Queue Type requires no activation or deactivation by the end user.

Billing

Currently, the AMA record includes the operator number and the team number for purposes of identifying the operator that serves a particular call. This was enough information to uniquely identify the operator when a remote routed all calls to the same host. However, now that the remote can serve multiple hosts, that information may not uniquely identify the operator (i.e., there may be an operator at two hosts with the same operator and team number).

The Operating Company should avoid duplicate operator numbers in a network by ensuring that operator numbers are unique throughout the network. This can be accomplished by assigning different numbers in table OPRDAT, on a network basis.

Station Message Detail Recording

Host/Remote Networking by Queue Type does not affect Station Message Detail Recording.

Host/Remote Networking by Queue Type (continued)

Datafilling office parameters

The following table shows the office parameters used by Host/Remote Networking by Queue Type. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by Host/Remote Networking by Queue Type

Table name	Parameter name	Explanation and action
OFCENG	TOPS_OC_ENVIRONMENT	This parameter determines the type of switch. Valid values are HOST and REMOTE. If an entry does not exist in table OCHOSTQ for a queue type, calls in that queue are handled as if this feature is not present: by referencing TOPS_OC_ENVIRONMENT and table OCHOST to determine where to obtain an operator for a call.
OFCENG	TOPS_OC_REMOTE_BVC	When this parameter is set to N, BVC queries are handled as if this feature is not present (the BVC Center is queried directly without using the BVC HOST). When this parameter is set to Y and table OCPARMS has a BVC_HOST tuple, all MCCS/BVC queries are sent to that BVC HOST. If this host is unavailable for some reason, the credit card number will be considered valid even though the validation cannot occur.

Datafill sequence

The following table lists the tables that require datafill to implement Host/Remote Networking by Queue Type. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Host/Remote Networking by Queue Type

Table	Purpose of table
OPRDAT	TOPS Operator Data. This table defines operator characteristics.
OCOFC	Operator Centralization Office. This table defines OC office names.
OCGRP	Operator Centralization Group. This table defines remotes for the host office.

Host/Remote Networking by Queue Type (continued)

Datafill tables required for Host/Remote Networking by Queue Type

Table	Purpose of table
OCPARMS	Operator Centralization Parameter. This table defines the switch office name.
OCHOSTQ	Operator Centralization Host Queue. This table specifies a primary and alternate host on a queue basis.

Datafilling table OPRDAT

The following table shows the datafill specific to Host/Remote Networking by Queue Type for table OPRDAT. Only those fields that apply directly to Host/Remote Networking by Queue Type are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table OPRDAT

Field	Subfield or refinement	Entry	Explanation and action
OPRNUM		0 to 9997	Operator number. This package allows multiple hosts to be served by a remote, so that information may not uniquely identify the operator for recording on AMA. For example, the same operator and team number may be used at 2 different hosts. Therefore, ensure that operator and team numbers are unique throughout the network.
CTTEAM		0 to 9997	The team number is described in field OPRNUM given above.

Datafill example for table OPRDAT

The following example shows sample datafill for table OPRDAT.

MAP display example for table OPRDAT

OPRNUM	OPRVAR
1	OPR 0 ALL 0 GEN \$ INTCSERV \$
2	OPR 0 ALL 0 GEN \$ TASERV \$
3	OPR 0 ALL 0 GEN \$ TASERV \$

Datafilling table OCOFC

The following table shows the datafill specific to Host/Remote Networking by Queue Type for table OCOFC. Only those fields that apply directly to

Host/Remote Networking by Queue Type (continued)

Host/Remote Networking by Queue Type are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table OCOFC

Field	Subfield or refinement	Entry	Explanation and action
VALUE		1 to 15	When this package is present, value zero is a NIL value for the software. If a host office name is datafilled at index 0, this host office is not recognized by the software. Then, any call refined to a queue datafilled in table OCHOSTQ as requiring a host attendant positions will be sent to a treatment. Reference PRS BC57200.
OFCNAME		up to 32 characters	Office name. A name must be datafilled here before it can be used in table OCPARMS, field OFCNAME.

Datafill example for table OCOFC

The following example shows sample datafill for table OCOFC.

MAP display example for table OCOFC

VALUE	OFCNAME
1	HOSTA
2	HOSTB

Datafilling table OCGRP

The following table shows the datafill specific to Host/Remote Networking by Queue Type for table OCGRP. Only those fields that apply directly to

Host/Remote Networking by Queue Type (continued)

Host/Remote Networking by Queue Type are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table OCGRP

Field	Subfield or refinement	Entry	Explanation and action
BCSLEVEL		alphanumeric	<p>This is a new field that specifies the lowest BCS level of 2 connected switches. This field is initialized to the value of the BCS of "this load" minus 3. This value should be updated to reflect the lowest level of the two connected offices for each tuple. Refer to the section on BCS Installation for details on implementing a new BCS.</p> <p>This table is changed to allow CHANGES (without deleting and re-adding) for field BCSLEVEL.</p> <p>Note: This field must be kept current with changes in the network, as it defines the OC messaging format used between the two connecting switches.</p>

Datafill example for table OCGRP

The following example shows sample datafill for table OCGRP.

MAP display example for table OCGRP in HOSTA

OFFICE	OFCTYPE	VLGRP	DLOVRLAY	BCSLEVEL
HOSTB	REMOTE	VLA	DLA	33
HOSTB	HOST	VLB	DLB	32
HOSTC	HOST	VLC	DLC	31
HOSTD	HOST	VLD	DLD	30

Host/Remote Networking by Queue Type (continued)

Error messages for table OCGRP

The following error messages apply to table OCGRP.

Error messages for table OCGRP

Error message	Explanation and action
	When changing a tuple in this table, if an attempt is made to change field BCSLEVEL, within the 3 BCS level compatibility rule, the change is permitted. If the change is to any field other than field BCSLEVEL, the existing error message is displayed.
CANNOT DATAFILL THE SAME OFFICE IN OCGRPAND AS SWITCH_NAME IN TABLE OCPARMS.	When adding a tuple to this table, if an attempt is made to datafill field OFFICE with an office that is already datafilled as the SWITCH_NAME in table OCPARMS
OFFICE MUST FIRST BE DELETED FROM TABLE OCPARMS	If an attempt is made to delete a tuple from this table that is datafilled as the BVC_HOST of table OCPARMS
OFFICE MUST FIRST BE DELETED FROM TABLE OCHOSTQ	If an attempt is made to delete a tuple from this table that is datafilled in table OCHOSTQ
BCSLEVEL CANNOT BE GREATER THAN THE BCS LEVEL OF THE SWITCH HOUSING THIS TABLE BECAUSE OF OPERATOR CENTRALIZATION COMPATIBILITY RULES.	If an attempt is made to datafill BCSLEVEL with a value greater than the current BCS level of the switch containing this table
THIS ENTRY VIOLATES THE BCS - 3 OC COMPATIBILITY RULES.	If an attempt is made to datafill BCSLEVEL with a value less than three levels below the current BCS level of the switch containing this table
WARNING: PLEASE ENSURE THAT THE VALUE OF BCSLEVEL IS NOT GREATER THAN THE BCS LEVEL OF THE CONNECTED SWITCH (THE SWITCH CONNECTED BY THIS TUPLE). SERIOUS PROBLEMS MAY RESULT IF IT IS A GREATER VALUE.	Whenever a tuple is added to this table or whenever a tuple in this table is changed

Host/Remote Networking by Queue Type (continued)

Datafilling table OCPARMS

The following table shows the datafill specific to Host/Remote Networking by Queue Type for table OCPARMS. Only those fields that apply directly to Host/Remote Networking by Queue Type are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table OCPARMS

Field	Subfield or refinement	Entry	Explanation and action
PARMNAME		BVC_HOST and SWITCH_NAME	Name of the parameter with possible values BVC_HOST and SWITCH_NAME. This is a new table. Tuple SWITCH_NAME must be datafilled at all times. This tuple gives the name of the switch where table OCPARMS resides.
OFCNAME		32 character string	<p>The office name that corresponds to the parameter name. When PARMNAME is SWITCH_NAME, OFCNAME is restricted from being datafilled with an office name that is datafilled in table OCGRP. Also, if PARMNAME is BVC_HOST, OFCNAME must be datafilled with an office name that is in OCGRP.</p> <p>Since OFCNAME cannot be datafilled with an office name that is datafilled in table OCGRP (PARMNAME = SWITCH_NAME), table OCGRP is blocked from being able to datafill an office name that is already datafilled as OFCNAME in table OCPARMS.</p>

Datafill example for table OCPARMS

The following example shows sample datafill for table OCPARMS.

MAP display example for table OCPARMS

PARMNAME	OFCNAME
SWITCH_NAME	HOSTA
BVC_HOST	HOSTB

Host/Remote Networking by Queue Type (continued)

Error messages for table OCPARMS

The following error messages apply to table OCPARMS.

Error messages for table OCPARMS

Error message	Explanation and action
THIS OFFICE NAME CANNOT BE ADDED AS SWITCH_NAME IN OCPARMS WHILE DATAFILLED IN TABLE OCGRP.	If PARMNAME is SWITCH_NAME, if an attempt is made to datafill OFCNAME with an office name that is datafilled in table OCGRP
THIS OFFICE NAME CANNOT BE ADDED AS BVC_HOST IN OCPARMS WITHOUT BEING DATAFILLED IN TABLE OCGRP.	If PARMNAME is BVC_HOST, if an attempt is made to datafill OFCNAME with an office name that is not datafilled in table OCGRP
MUST FIRST DELETE OFFICE FROM TABLE OCHOSTQ.	If PARMNAME is SWITCH_NAME and table OCHOSTQ is datafilled with the same office name datafilled as OFCNAME, then if an attempt is made to change or delete this office name from OCPARMS

Datafilling table OCHOSTQ

The following table shows the datafill specific to Host/Remote Networking by Queue Type for table OCHOSTQ. Only those fields that apply directly to

Host/Remote Networking by Queue Type (continued)

Host/Remote Networking by Queue Type are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table OCHOSTQ

Field	Subfield or refinement	Entry	Explanation and action
QTYPE		CQ0, CQ1, CQ2, CQ3	Operator queue type (old name in parenthesis): CQ0 (GEN), CQ1 (XFR1), CQ2 (XFR2) and CQ3 (DA). Calls on queues not in this table are processed as if this package did not exist, by referencing office parameter TOPS_OC_ENVIRONMENT and table OCHOST. This table allows queues that receive no traffic.
PRIHOST		up to 32 characters	First host choice to route the call. Host must be in table OCGRP or if standalone in tuple SWITCH_NAME of table OCPARMS. This host can be overridden by OCNC. This host is not considered the primary one for MCCS (BVC) queries.
RRDATA		Y, N	A selector, when set to Y, that allows rerouting to an alternate host (in a following subfield) when the primary host in field PRIHOST is not available due to the set of REASONS (in a following subfield). When set to N, rerouting is not allowed.
When RRDATA = Y the following fields are present.			

Host/Remote Networking by Queue Type (continued)

Datafilling table OCHOSTQ

Field	Subfield or refinement	Entry	Explanation and action
ALTHOST		up to 32 characters	<p>The second host choice (alternate host) to route the call. This host must be in table OCGRP (or tuple SWITCH_NAME of table OCPARMS, for the standalone case) and may be selectively overridden by OCNC. It is not applicable for MCCS (BVC) queries.</p>
	REASONS	DLFAIL, VLTHROTL, DEFLECT, OVFLOW, ALL, NONE	<p>Route to alternate host if primary host is unavailable due to the following reasons:</p> <ul style="list-style-type: none"> • DLFAIL: Data link failure. Otherwise, if DLFAIL is not listed and a data link failure occurs, the call is sent to treatment EMERGENCY 3, 4, 5, or 6 (according to call type) instead of the alternate host. If a recall or transfer, the treatment is CAMA QUEUE OVERFLOW. • VLTHROTL: Voice link throttling. Otherwise, if VLTHROTL is not listed and voice link throttling occurs, the call is sent to treatment EMERGENCY 3, 4, 5, or 6 (according to call type) instead of the alternate host. • DEFLECT: Queue is full or a host switch resource failure. Otherwise, if DEFLECT is not listed and deflection occurs, the call is sent to treatment EMERGENCY 3, 4, 5, or 6 (according to call type) instead of the alternate host. If a recall or transfer, the treatment is CAMA QUEUE OVERFLOW. • QOVFLOW: Queue overflow. Otherwise, if QOVFLOW is not listed and queue overflow occurs, the call is sent to treatment CAMA_QUEUE_OVERFLOW (CQOV) instead of the alternate host. • ALL: All reasons: DLFAIL, VLTHROTL, DEFLECT, and QOVFLOW. • NONE: When NONE is listed, table control will not allow the change or addition of the tuple until one of the above reasons is entered.

Host/Remote Networking by Queue Type (continued)

Datafill example for table OCHOSTQ

The following example shows sample datafill for table OCHOSTQ.

MAP display example for table OCHOSTQ

QTYPE	PRIHOST	RRDATA
CQ0	HOSTA	Y HOSTB QOVFLOW
CQ1	HOSTA	Y HOSTD DLFAIL,QOVFLOW
CQ2	HOSTB	Y HOSTD VLTHROTL
CQ3	HOSTA	N

Error messages for table OCHOSTQ

The following error messages apply to table OCHOSTQ.

Error messages for table OCHOSTQ

Error message	Explanation and action
TUPLE SWITCH_NAME IN TABLE OCPARMS MUST BE DATAFILLED.	If an attempt is made to add a tuple to this table when tuple SWITCH_NAME in table OCPARMS is not datafilled, the attempt is disallowed
The OFFICE must be datafilled in table OCGRP as a HOST, or as the SWITCH_NAME in table OCPARMS.	If an attempt is made to add a primary host (PRIHOST) that does not exist in table OCGRP as a HOST, nor in table OCPARMS (tuple SWITCH_NAME)
The OFFICE must be datafilled in table OCGRP as a HOST, or as the SWITCH_NAME in table OCPARMS.	If an attempt is made to add an alternate host (ALTHOST) that does not exist in table OCGRP as a HOST, nor in table OCPARMS (tuple SWITCH_NAME)
A tuple for this QTYPE already exists.	If an attempt is made to add a new tuple with a queue type that already exists
Warning: This action may affect traffic routing.	When a tuple is added to this table
Warning: This action may affect traffic routing.	When a tuple is changed in this table

Host/Remote Networking by Queue Type (end)

Error messages for table OCHOSTQ

Error message	Explanation and action
Warning: This action may affect traffic routing.	When a tuple is deleted from this table
Warning: The ALTHOST and PRIHOST are the same.	When a tuple is added or changed and the PRIHOST and ALTHOST are the same.

Translation verification tools

Host/Remote Networking by Queue Type does not use translation verification tools.

SERVORD

Host/Remote Networking by Queue Type does not use SERVORD.

Improved STATSPAC

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

BCS29 and up

Prerequisites

To operate, Improved STATSPAC requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This functionality is provided by the following features:

Feature number	Feature name
AF2022	Improved STATSPAC Force Management Capability
59006865	EOL Notification & EOL of TOPS ACD (TOPS12)

This feature provides a powerful tool for Force Management statistics. The tool dumps out raw data to a telephone company device (usually a computer) for every operator that was logged in for a previous interval of time.

The raw data includes:

- the number and total work times for each call class
- the number of logins and logouts for the operator
- the operator's number and team number

Since the data that is dumped to the telephone company device is raw data, the telephone company has great flexibility in choosing how to format the report and what kind of statistical analysis to perform upon the data. Also, because the report is automated, no human interaction is needed to facilitate the transfer of the operator statistics from the DMS to the telephone company computer(s).

Operation

The following paragraphs describe the operation of Improved STATSPAC.

Improved STATSPAC (continued)

Background

The following paragraphs describe the background of Improved STATSPAC.

Problem

Before BCS29, a system of Study Registers records information about operator's initial seizures and work volume categorized by call class. Up to 900 operator's could be assigned to study registers at one time. Registers had to be assigned to individual operators by entering the RA command at a TADS tty. The information in these study registers was (and still is) used to calculate that particular operator's AWT (Average Work Time). If a record of the operator's performance was required, FDxxx would be entered at a TAD's tty, where xxx is the operator number. The system would respond by showing the total number of IPS (Initial Position Seizures), the AWT and the System Time. It would also provide the WV and IPS per call class.

Some telephone companies would perform manual data entry in order to get their required statistics. This feature does away with that by sending all output directly to a telephone company computer in a pre-defined format. The telephone company device can then automatically perform statistical analysis and formatting on the data.

Note: The addition of the STATSPAC registers does not mean the end of the Study Register system. Study Registers can still be used.

In order to understand how the STATSPAC feature stores and transmits information, it is important to understand how a CALL CLASS is defined and used. The next section of this document explains this.

Call Classes

Call classes are groupings of Force Management call types. Therefore, to fully understand what call classes are and how they tie in with this feature, it is important to understand what Force Management call types are. The next sections gives a brief description how call types are assigned.

Force Management Call Types

The Force Management call type is determined by three factors:

- the call origination type (based upon how the call was dialed)
- the calling service feature (non-coin, coin, hotel)
- whether or not the called number is overseas

All of the FM call types are internally assigned. The telephone company has no control in choosing which calls are assigned to a FM call type. The data

Improved STATSPAC (continued)

schema section of this document contains a complete list of Force Management call types.

The STATSPAC Data Dump

The new STATSPAC feature automates the operator feedback process. Now, each time that the DMS receives a two digit polling ID from the STATSPAC device, the DMS responds by sending a record of activity for each operator who was logged on sometime during a previous period of time. The record includes:

- the operator number
- the operator's team number
- the number of logins and logouts
- the operator idle time (in seconds)
- a table of Initial Position Seizures for each FM call type
- a table of Work Volume for each FM call type

The physical set up for a STATSPAC device is similar to other TOPS devices. A card and circuit on a card must be physically linked to the telephone company device that receives the STATSPAC information. All transmission is done (on the switch side) via an internal DMODEM which is automatically assigned to the STATSPAC device by the DMS.

Internally, the output is processed just as with other TOPS devices. Thus, the maximum transmission speed is determined by the following factors:

- the transmission speed of the DMODEM
- real time overhead for scheduling delays

These factors allow a maximum transmission rate of 405 ODRs per 15 minutes on a 1200 baud DMODEM. The following table illustrates the number of ODRs that can be transmitted over selected periods of time over a 1200 baud modem.

Operator Data Register transmission rates (1200 baud)

Period	Maximum number of ODRs
15 min.	405
30 min.	810

Some offices only have a 300 baud device available as a STATSPAC device. At 300 baud, the STATSPAC device can send only a maximum of 140 ODRs

Improved STATSPAC (continued)

every fifteen minutes. The following table illustrates the number of ODRs that can be transmitted over selected periods of time over a 300 baud modem:

Operator Data Register transmission rates (300 baud)

Period	Maximum number of ODRs
15 min.	140
30 min.	280

STATSPAC Operator Data Accumulation

The STATSPAC system accumulates operator data over a certain period of time. The accumulation period is not fixed.

The STATSPAC system maintains two sets of internal operator data registers. One set accumulates data for the current accumulation period. This set of registers is called the ACTIVE registers. The other set contains the data for the activity that was accumulated over the previous period. This set of registers is called the HOLDING registers.

At the end of each period, all of the data accumulated in the active registers is put into the holding registers. The active registers are then cleared and begin to accumulate statistics for the new period.

Every STATSPAC dump, dumps the contents of the holding registers.

How a STATSPAC Dump is Triggered

Every STATSPAC dump is triggered when the STATSPAC device sends a two character polling ID. If the STATSPAC device sends the wrong two characters, the DMS returns a question mark (?).

As mentioned earlier, each STATSPAC dump transmits all of the ODRs for the previous STATSPAC accumulation period. For instance, if the accumulation period is 15 minutes and the polling characters are sent by the STATSPAC device at 12:46 PM, then all of the data accumulated between 12:30 and 12:45 PM is transmitted.

The clock on the telephone company must be closely synchronized with the clock on the DMS. Otherwise, transmission errors could occur. For instance, if the STATSPAC device has 12:45 and the DMS has 12:50 and the STATSPAC polls for a dump, the DMS might not finish dumping by 1:00, when a new accumulation period begins. When this happens, the transmission of ODRs ends immediately and an end of transmission ODR is sent immediately.

Improved STATSPAC (continued)

To avoid timing problems, it is highly suggested that STATSPAC polling be closely synchronized with the change of STATSPAC accumulation period on the DMS. For instance, if there is a 15 minute accumulation period and a new interval begins at 12:45 PM, it would be wise to poll the DMS very soon after 12:45 PM. This would allow the maximum transmission time for the ODRs. Remember, if the current accumulation period ends before transmission of all of the ODRs is completed, all of the ODRs that are left will fail to be transmitted.

For instance, if polling is done at 12:54, only 162 ODRs can be sent before the current accumulation period changes. The DMS can send the maximum of 405 ODRs only if polling is done immediately after a new accumulation period begins.

If the STATSPAC device requests a new dump before the old dump is finished, the new request is ignored. In fact, all characters sent to the DMS during the dump are ignored.

Translations table flow

Improved STATSPAC does not affect translations table flow.

Limitations and restrictions

The following limitations and restrictions apply to Improved STATSPAC:

- A currently transmitted STATSPAC dump is preempted whenever the accumulation period changes. The current ODR is sent and then immediate followed by the end of dump ODR. The number of ODRs sent is less than the total number stated at the beginning of the dump.
- Any polling requests made during the middle of a dump are ignored.
- All STATSPAC data is pegged at the end of a call or period of idle or busy time. Therefore, if a call, idle time or busy time spans two or more STATSPAC periods, all of the information is pegged for the last period.

Interactions

Improved STATSPAC has no functionality interactions.

Activation/deactivation by the end user

This feature can be enabled or disabled by removing or changing datafill for the STATSPAC devices in table TOPSDEV.

Billing

Improved STATSPAC does not affect billing.

Improved STATSPAC (continued)

Station Message Detail Recording

Improved STATSPAC does not affect Station Message Detail Recording.

Datafilling office parameters

Improved STATSPAC does not generate office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement Improved STATSPAC. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Improved STATSPAC

Table	Purpose of table
TOPSDEV	This table defines STATSPAC device.
CLASSDEV	This table maps FM call types to call class.

The tables used by this feature and this capability have datafill requirements as follows.

Datafilling table TOPSDEV

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

Datafilling table TOPSDEV

Field	Subfield or refinement	Entry	Explanation and action
		BELL108 or BELL202	Datafill the STATSPAC device that the STATSPAC dump will occur on. Field DEVSEL must set to either BELL108 or BELL202. directory number. The RBC is used as the index into table RESTBIL.

Datafill example for table TOPSDEV

The following example shows sample datafill for table TOPSDEV showing STATSPAC devices.

Improved STATSPAC (end)

MAP display example for table TOPSDEV

DEVNO		DEVTYPE				
1	FMCRT NT4X71	TM8	0	0	2X72AC	BELL108
2	FADS E	DTC	2	1	2X72AC	BELL108
5	SPDEV	TM8	3	13	2X72AC	BELL202

Datafilling table CLASSDEV

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

Datafilling table CLASSDEV

Field	Subfield or refinement	Entry	Explanation and action
			Usually it is a good idea to map all of the Force Management call types to a call class. This will leave the UNDEFINED class with only the times that the operator spent on unproductive work. If call types exist that peg the UNDEFINED class, it will be impossible to segregate time spent on calls from time spent with the headset seated and not logged in or time spent in the MAKE BUSY state. For further details, refer to previous section Table CLASSDEV (background).

Translation verification tools

Improved STATSPAC does not use translation verification tools.

SERVORD

Improved STATSPAC does not use SERVORD.

Interface Signaling

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS07 and up

Interface Signaling was introduced in TOPS07.

Prerequisites

To operate, Interface Signaling requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This functionality provides billing, translations, and signalling support for the new TOPS Global product. The TOPS Global product is a new `variant' of the TOPS system focused on non-North American functionality, with the capability to combo with international DMS100 products (for example, Asia-Pacific-CALA (Central America, Latin America) DMS100 (APC100) and, or Global DMS100 (GL100)). The following functionalities are developed for the TOPS Global product:

- TOPS Enhanced Automatic Message Accounting (EAMA) Billing
- TOPS Universal and North American Translations
- TOPS R1 Open Numbering and R2 signalling (moved from the existing TOPS North American DMS100 (TOPS NA100) product `variant')
- Intertoll signalling (outgoing only)

This functionality is provided by the following feature:

Feature number	Feature name
AF6428	TOPS Global Interface

Interface Signaling (continued)

Operation

TOPS NA100 product

The TOPS North American product is changed as follows:

- R1 Open Numbering and R2 signalling are no longer supported.
- New parameter DEFAULT_PRODUCT in table TOPSPARM is automatically set to NA100 to indicate the TOPS environment. Refer to the datafill procedure section for more details.
- Table EBAFTKPH (EBAF Phase Control on a Per Trunk Basis) is obsoleted since only EBAF Phase 2 is supported.

TOPS Global product

Translations

Standard TOPS Universal translations are used for Open Numbering dialled calls and standard TOPS North American translations are used for North American numbering dialled calls.

Signalling

The following trunks/signalling types are supported:

- R1 Open Numbering trunks are datafilled in table TRKGRP as TOPS trunks with a signalling type of OPENNUM. For further information, refer to functionality Global TOPS Call Processing, GOS00101.
- R2 trunks are datafilled in table TRKGRP as TOPS trunks with a signalling type of R2. For further details, refer to functionality R2on TOPS, GOS00101.
- Intertoll signalling (outgoing only)

Datafill

The following tables are supported:

- New parameter DEFAULT_PRODUCT in table TOPSPARM is automatically set to GLOBAL to indicate the TOPS environment. Refer to the datafill procedure section for more details.
- Tables TOPSBPC and TOPSPFX are only supported for the TOPS global product. These tables were introduced by feature AN1228 in functionality R2 on TOPS, GOS0101.
- Billing related tables are given in the Billing section.

Translations table flow

Interface Signaling has no translations table flow.

Interface Signaling (continued)

Limitations and restrictions

The following paragraphs describe the limitations or restrictions of Interface Signaling.

TOPS NA100 product

R1 Opennum and R2 signalling types are no longer supported.

TOPS Global product

Only Enhanced AMA (EBAF Phase 2), exclusive of E800 and Equal Access, are supported.

The NT AMA format is not supported. The FORMAT field of the AMA tuple in table CRSFMT controls which AMA format (NTAMA, BCFMT, or SMDRFMT) is in effect for the switch. The FORMAT field for the AMA tuple MUST be set to `BCFMT' to select the Enhanced AMA format.

Interactions

Interface Signaling has no functionality interactions.

Activation/deactivation by the end user

Interface Signaling requires no activation or deactivation by the end user.

Billing**TOPS NA100 product**

EBAF Phases 0 and 1 are obsoleted. Also, table EABFTRPH is deleted.

TOPS Global product

The billing format is always Enhanced AMA (EAMA), equivalent to Extended BellCORE AMA Format (EBAF), with only EBAF Phase 2 supported (that is, Phase 0 and 1 are not supported, nor is NT AMA). (Note: This is consistent with the TOPS NA100 product which no longer supports EBAF Phase 0 or 1, as well.) Additionally, for the TOPS Global product only, there is no support for Equal Access or E800 (Enhanced 800 services).

AMA data structures

EBAF Phase 2 is used for operator services data structures and functionality equivalent to the TOPS NA100 product minus Equal Access and E800 support.

Interface Signaling (continued)

That is, Module codes 053, 054, 059, 309, and Call code 251 are not supported. The following EAMA operator services related data structures are supported:

- Structure Codes - 00106, 00107, 00751, 00752, 00772
- Call Codes - 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 215
- Module Codes - 019, 032, 033, 034, 035, 036, 037, 038, 045, 050, 051, 052, 055, 056, 057, 058, 060, 061, 062, 066, 093, 095, 097, 122, 150, 151, 156, 158, 184, 185, 186, 187, 194, 219, 301, 310, 311, 312, 313, 314, 315, 316

Some of the above structures may be generated dependent upon the availability and activation of other TOPS features.

Debug utilities

Debug utilities are provided for displaying AMA records and data structures: CALLDUMP, AMADUMP, and so forth. The EAMA operator services data structures identified above are supported.

Datafill

The following TOPS billing tables and parameters support the TOPS Global product in the same manner as the TOPS NA100 product:

- Table AMASRVID (AMA Service ID)
- Table CHGADJKY (Charge Adjust Key)
- Table TOPAMAOP (TOPS AMA Options)

All TOPS AMA Options are supported except as noted below. The functioning of some options are dependent on the availability and activation of other TOPS features.

- Table TOPSENTC (TOPS Entry Code)
- Table TRAFSAMP (Traffic Sampling)

Interface Signaling (continued)

The following TOPS NA100 product 'equivalent' tables and parameters are NOT supported in the TOPS Global product:

- Table TOPSAMA (AMA Record of Specified Unanswered Calls) since NT AMA is not supported
- Table TOPAMAOP parameters since E800 is not supported:
 - RECORD_800_SERVICE_INFORMATION
 - RECORD_INTERLATA_CALL_CODE_251
 - EA_SERV_PROCESSING_TIME
- Table EBAFTKPH (EBAF Phase Control on a Per Trunk Basis) since only EBAF Phase 2 is supported.

Station Message Detail Recording

Interface Signaling does not affect Station Message Detail Recording.

Datafilling office parameters

Interface Signaling does not affect office parameters.

Datafill sequence

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

Datafill tables required for Interface Signaling

Table	Purpose of table
TRKGRP	Trunk group defines characteristics of trunks
TOPSPARM	TOPS Parameters defines office-wide characteristics.

Interface Signaling (continued)

Datafilling table TRKGRP

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

Datafilling table TRKGRP

Field	Subfield or refinement	Entry	Explanation and action
	SIGTYPE	R2 and OPENNUM	Signalling type. Values R2 and OPENNUM are no longer supported for the TOPS NA100 product, but are for the TOPS Global product. During dump and restore for the TOPS NA100 product, tuples with R2 or OPENNUM are not restored.

Datafill example for table TRKGRP

The following example shows sample datafill for table TRKGRP.

MAP display example for table TRKGRP

GRPKEY	GRPINFO
TOPENIC1	
TOPS 0 TLD NCRT IC MIDL 619 TXLA NLCA NSCR N SP COMBINED N N 0 0000 NONE OPENNUM 10 10 Y WINK N N	
T1TI61R2	
TOPS 30 NPDGP NCRT IC MIDL 003 TXLA NLCA NSCR N NIL DNLOOKUP N N 0 9999 NONE R2 CT TOPR2IC Y R2OPER ONI N N T1TI61R2	

Interface Signaling (continued)

Datafilling table TOPSPARM

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

Datafilling table TOPSPARM

Parameter	Explanation
DEFAULT_PRODUCT	<p>This new parameter determines which TOPS product controls processing of switch originated calls (that is, operator and OSSAIN service node originated calls). This parameter is necessary when multiple TOPS products are combined. The values are NA100 and GLOBAL.</p> <p>Currently, this is a read-only parameter where the value is automatically set according to the environment and cannot be changed. Therefore, no data entry is required or allowed for this TOPS07 release since only single product loads are available.</p> <p>For future releases with loads that contain multiple products, this parameter is automatically initialized but can be changed.</p>

Datafill example for table TOPSPARM

The following example shows sample datafill for table TOPSPARM.

MAP display example for table TOPSPARM

PARAMNAME	PARAMVAL
-----	-----
DEFAULT_PRODUCT	NA100

Datafilling table EBAFTKPH

This table is obsoleted since EBAF Phases 0 and 1 were obsoleted in TOPS04.

Interface Signaling (end)

MAP display example for table EBAFTKPH

CLLI	PHASE
TOPSIC	PHASE1
TOPS2W	PHASE1
RONIIC	PHASE0
ITIC	PHASE2
ATCIC	PHASE1

Datafilling table TOPSBPC

Table TOPSBPC associates a billing party category (or calling party category if a billing party category is not provided) with an index into table TOPSDB. This table was introduced by feature AN1228 in functionality R2 on TOPS, GOS00001.

Starting with release TOPS07, this table is only valid in a TOPS Global environment.

Datafilling table TOPSPFX

Table TOPSPFX associates a dialed prefix with an index into table TOPSDB plus an indication if ANI is required. This table was introduced by feature AN1228 in functionality R2 on TOPS, GOS00001.

Starting with release TOPS07, this table is only valid in a TOPS Global environment.

Translation verification tools

Interface Signaling does not use translation verification tools.

SERVORD

Interface Signaling does not use SERVORD.

Logical TID for Time and Charges Recall

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS10 and up

Logical TID for Time and Charges Recall was introduced in TOPS10.

Prerequisites

To operate, Logical TID for Time and Charges Recall requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This functionality uses the existing TOPS logical terminal identifier (TID) utility (see feature AF6957) to allocate and deallocate logical TIDs for calls that can recall to the TOPS system.

This functionality is provided by the following feature:

Feature number	Feature name
AF7437	Logical TID Usage For T&C Recall

Operation

The logical TID utility simulates a physical resource when none are attached to the call. Then, the TOPS system can disassociate all physical resources for a call and keep the call alive for possible recall. The following is a list of situations where a logical TID is used to recall to an operator or automatic coin toll service (ACTS):

- Time and Charges (T&C) call when the billed party has hung up, and
- An externally rated coin call that uses post-pay when the billed party has hung up.

No datafill is required for this functionality.

Translations table flow

The Logical TID for Time and Charges Recall has no translations table flow.

Logical TID for Time and Charges Recall (end)

Limitations and restrictions

Logical TID for Time and Charges Recall has no limitations or restrictions.

Interactions

Logical TID for Time and Charges Recall has no functionality interactions.

Activation/deactivation by the end user

Logical TID for Time and Charges Recall requires no activation or deactivation by the end user.

Billing

Logical TID for Time and Charges Recall does not affect billing.

Station Message Detail Recording

Logical TID for Time and Charges Recall does not affect Station Message Detail Recording.

Datafilling office parameters

Logical TID for Time and Charges Recall does not affect office parameters.

Datafill sequence

Logical TID for Time and Charges Recall does not affect datafill.

Translation verification tools

Logical TID for Time and Charges Recall does not use translation verification tools.

SERVORD

Logical TID for Time and Charges Recall does not use SERVORD.

MD Code Removal and ReEngineering

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS12 and up

TOPS12 introduced MD Code Removal and ReEngineering.

Requirements

To operate, MD Code Removal and ReEngineering requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This functionality removes some TOPS functionalities.

This functionality consists of the feature as follows:

Feature number	Feature name
59006865	EOL Notification and EOL of TOPS ACD

MD Code Removal and ReEngineering (continued)

Operation

TOPS functionalities are removed from releases as follows:

- TOPS12
 - TOPS Automatic Call Distribution (ACD)—This capability is replaced by functionality QMS Host/Remote Queueing, OSB00101.
- TOPS13
 - TOPS Single Purpose (SP) terminal. This terminal is used for toll and assist calls only.
- TOPS14
 - Delayed outpulsing
 - Inward validation—This capability is a 1161 or 1162 call from an operator on one switch to the mechanized calling card service (MCCS) on another switch for validating a special number by proxy
 - AMR5 signaling
- TOPS15
 - TOPS Multi-purpose (MP) terminal
 - Digital modulator/demodulator (DMODEM) devices
 - Table TOPSTERM—This capability allows termination to an Overseas Operator Center (OOC) switch.
 - Senior operator—This capability is under the queue management system (QMS).

Preparation

Due to the above removal, preparation should be made to use other components as necessary. During a One Night Process (ONP), functionality scheduled for removal is lost without warning, except for the weekly notification log described below.



DANGER

Convert to QMS before an upgrade to TOPS12 or higher.
Failure to convert all ACD to QMS before TOPS12 or higher causes loss of queueing capability.

Notification log

New log TEOL100 (TOPS end of life) indicates when a capability is used that is due for removal within the next three releases. Therefore in TOPS12, this

MD Code Removal and ReEngineering (continued)

log can notify of a removal due as high as TOPS15. This log is generated weekly at midnight on Sundays if at least one such area triggers it that week.

Since TOPS ACD is removed in TOPS12, ACD is not available for use in TOPS12; therefore, ACD will not appear in the log.

Operational measurements (OMs)

The following OM groups are not pegged as of TOPS12 and scheduled for removal in TOPS13.

- OGTSP—Outgoing trunk group single purpose position
- OGTMP—Outgoing trunk group multi-purpose position
- TOPSOCPS—TOPS operator centralization position seizures. This group tracks position seizures for calls that use the TOPS ACD queueing system.
- TOPSQS—TOPS queue statistics. This group provides information on TOPS ACD queues.

Translations table flow

Translations table flow is not applicable to MD Code Removal and ReEngineering.

Limitations and restrictions

The limitation and restriction that follows applies to MD Code Removal and ReEngineering:

In an Operator Centralization (OC) environment, a switch upgraded to TOPS12 or higher can not process requests for an ACD operator from another pre-TOPS12 ACD switch in the network. The safest course of action is to fully convert every switch in an OC network from ACD to QMS before upgrading any switch in the network to TOPS12 or higher. However, any switch in the network can be upgraded to TOPS12 or higher if that switch is fully converted to QMS and no other switch in the network has datafill to route requests for ACD operators to that switch.

Interactions

The removal of table TOPSACD means that all teams are now considered to be QMS teams, instead of just those specified as QMS in TOPSACD. This expectation could possibly cause an office that was deemed single-team in pre-TOPS12 to be treated as multi-team in TOPS12 and higher. For example, OFCENG parm TOPS_NUM_TRAFFIC_OFFICES might be 2, and only team 2 is QMS in TOPSACD. After the ONP, team 1 would be considered as

MD Code Removal and ReEngineering (continued)

an additional QMS team. Some changes have been made to eliminate dependencies on single-team versus multi-team characterizations:

- A sonalert for the QCD condition is turned on at IC positions now if and only if an FMCRT device is not datafilled. Previously, this sonalert was turned on if and only if the office was single-team.
- An FMCRT device can now be datafilled in any office. Previously, this device might have been disallowed if the office was single-team.

Activation and deactivation by the user

MD Code Removal and ReEngineering does not require activation or deactivation by the user.

Billing

MD Code Removal and ReEngineering does not generate billing records or changes.

Station Message Detail Recording

MD Code Removal and ReEngineering does not require Station Message Detail Recording.

Office parameters affected by MD Code Removal and ReEngineering

The table that follows lists the office parameters affected by MD Code Removal and ReEngineering. For additional information about office parameters, refer to the *Office Parameters Reference Manual*.

Office parameters affected by MD Code Removal and ReEngineering

Table name	Parameter name	Explanation and action
OFCENG	TOPS_CALLS_WAITING_Q_SIZE	This parameter is deleted in TOPS12 since it is specific to ACD.
OFCENG	TOPS_PEG_MODE	This parameter is deleted in TOPS12 since it is specific to ACD.
OFCENG	TOPS_TRANSFER_TYPES	This parameter is deleted in TOPS12 since it is specific to ACD.
OFCVAR	TOPS_AGS	This parameter is deleted in TOPS12 since it is specific to ACD.
OFCVAR	TOPS_CALLS_WAITING_SEARCH_DEPTH	This parameter is deleted in TOPS12 since it is specific to ACD.

MD Code Removal and ReEngineering (continued)

Office parameters affected by MD Code Removal and ReEngineering

Table name	Parameter name	Explanation and action
OFCVAR	TOPS_DISPLAY_AWT	This parameter is deleted in TOPS12 since it is specific to ACD.
OFCVAR	TOPS_DISPLAY_ST	This parameter is deleted in TOPS12 since it is specific to ACD.
OFCVAR	TOPS_DUMP_STUDY_REG	This parameter is deleted in TOPS12 since it is specific to ACD.
OFCVAR	TOPS_MFADS_OUTPUT_XFR_NUMBER	This parameter is deleted in TOPS12 since it is specific to ACD.
OFCOPT	TOPS_SEL_XFR_OPR_TRK	This parameter is deleted in TOPS12 since it is specific to ACD.

Datafill tables

The table that follows lists the tables that are affected by MD Code Removal and ReEngineering.

Datafill requirements for MD Code Removal and ReEngineering

Table	Purpose of table
TOPSTOPT	TOPS trunk options defines options for TOPS trunks.
TOPSPOS	TOPS positions defines functions and characteristics of TOPS positions and devices.
OPRDAT	TOPS Operator data assigns operator numbers for ACD operators and non-OPP SA/ICs.
TOPS	TOPS defines call characteristics according to call origination type.
TOPSDEV	TOPS devices defines trunk circuit data for TOPS devices.
ADACCOPT	Automatic directory assistance call completion options gives available billing methods for ADACC calls.
VSNOPT	Voice service node options contains office wide parameters for the VSN.
TEAMACD	TOPS team automatic call distribution associates TOPS teams with an ACD system
TOPSQAGE	TOPS queue aging assigns grades of service to queues.
XFROPSEL	Transfer operator selection routes calls to a transfer operator position

MD Code Removal and ReEngineering (continued)

Datafill requirements for MD Code Removal and ReEngineering

Table	Purpose of table
BPQUEUE	TOPS basic position queue defines queues based on CO type for OA and DA calls.
CLASSDEF	Class definition assigns call types to call classes.
CLASSNAM	Class name defines call class names.
LANGTOQ	Language to queue maps languages to ACD queues.
OIASTART	Open information access automatic session start assigns an OIA service to a call origination type.
OGTSPKEY	Outgoing trunk single purpose key assigns transfer and outgoing trunk functions to keys on ACD TOPS SP positions.
OGTMPKEY	Outgoing trunk multi-purpose key assigns outgoing trunk functions to keys on ACD TOPS MP positions.
QTTIDX	TOPS queue length threshold table index defines average wait times (AWT) for ACD queues.
QT0 to QT5	TOPS queue length threshold lists the ACD queue length thresholds for specified ranges of occupied positions.

MD Code Removal and ReEngineering (continued)

Datafill related to MD Code Removal and ReEngineering for table TOPSTOPT

The table that follows provides the datafill related to MD Code Removal and ReEngineering for table TOPSTOPT. This table includes only those fields that apply directly to MD Code Removal and ReEngineering.

Datafill related to table TOPSTOPT

Field	Subfield	Entry	Explanation and action
ORGAREA		see subfield	Originating area. This field is a rename of field ACDDATA. Subfields ACD and LOCATION that were under ACDDATA are deleted since they are ACD specific. Now, field ORGAREA consists of existing subfield ORGCRIT_SEL and refinements.
	ORGCRIT_SEL	Y or N	Originating criterion selector. If calls are to be CT4Q refined by the originating criteria (table CTQORIG and associated tables), enter Y and datafill refinement ORGCRIT. Otherwise, if there is no criterion, enter N and do not datafill ORGCRIT.
	ORGCRIT	name from TQORGNAM	Enter call originating location name from table TQORGNAM. This field segregates traffic on a trunk group basis according to the calling number and is used in table CT4QORIG.

Datafill example for table TOPSTOPT

The figure that follows shows sample datafill for table TOPSTOPT.

MAP example for table TOPSTOPT

GRPKEY	ORGAREA	DISPCLG	ADASERV	ADASANS	ANITOCCLI	QLNSQRY
DCIBIDX	LNPCLGAM	XLASCHEM	SPIDPRC	TRKSPID	BILLSCRN	ANIFSPL

ISUP2WITALT	Y	T1ORIG	N	NONE	NA	N
0	N	N	Y	N	N	N

For dump and restore, tuples on the dump side with an ACD selector of TOPSACD have the restore side field ORGAREA set to N. While tuples on the dump side with an ACD selector of QMSCAM only have the field renamed and do not show QMSCAM, but keep the remaining information for the field.

MD Code Removal and ReEngineering (continued)

Datafill related to MD Code Removal and ReEngineering for table TOPSPOS

The table that follows provides the datafill related to MD Code Removal and ReEngineering for table TOPSPOS. This table includes only those fields that apply directly to MD Code Removal and ReEngineering.

Datafill related to table TOPSPOS

Field	Subfield	Entry	Explanation and action
POSAREA		see subfield	Position area. This field consists of subfield POS and refinements.
	POS	ASST, IC or OPR	Position type. This field specifies the TOPS position type. When POS = OPR, subfields ACDAREA, ACD, SVCSET, XFRSET, and CAMLOC are deleted since they are specific to ACD. Therefore, only subfields TEAM and SERVPROF are present.

Datafill example for table TOPSPOS

The figure that follows shows sample datafill for table TOPSPOS.

MAP example for table TOPSPOS

POSNO	VCCKT	VCPDGRP	CARDCODE	DATAPATH	POSAREA
170	TM8 0 24	NPDGRP	2X72AA		
	DMODEM SP ASCII	TM8 8 19	NPDGRP	BELL108	OPR 6 80
505	TMS 0 3 5	NPDGRP	DS1SIG		
		TMS MP	OPP 116 2		OPR 6 50
540	TMS 0 0 3	NPDGRP	DS1SIG		
		TMS MP	ASCII 0 0		OPR 6 80

Tuples with a POS selector of OPR and an ACD selector of TOPSACD are removed during the ONP, while tuples with a POS selector of OPR and an ACD selector of QMSCAM have their ACD and CAMLOC fields deleted (essentially replacing the old ACDAREA with simply its SERVPROF component). Tuples containing a POS selector of either ASST or IC are left unchanged.

MD Code Removal and ReEngineering (continued)

Datafill related to MD Code Removal and ReEngineering for table OPRDAT

The table that follows provides the datafill related to MD Code Removal and ReEngineering for table OPRDAT. This table includes only those fields that apply directly to MD Code Removal and ReEngineering.

Datafill related to table OPRDAT

Field	Subfield	Entry	Explanation and action
OPRVAR		see subfield	Position area. This field consists of subfield POS and refinements.
	POS	ASST, IC or OPR	Position type. This field specifies the TOPS position type. When POS = OPR, subfields CTTEAM, CTSET, XFRTEAM, XFRSET, and SVCSET are deleted since they are specific to ACD.

Datafill example for table OPRDAT

The figure that follows shows sample datafill for table OPRDAT.

MAP example for table OPRDAT

OPRNUM	OPRVAR
0	OPR

Tuples containing a POS selector of OPR are removed during the ONP. Tuples containing a POS selector of either ASST or IC are left unchanged.

MD Code Removal and ReEngineering (continued)

Datafill related to MD Code Removal and ReEngineering for table TOPS

The table that follows provides the datafill related to MD Code Removal and ReEngineering for table TOPS. This table includes only those fields that apply directly to MD Code Removal and ReEngineering.

Datafill related to table TOPS

Field	Subfield	Entry	Explanation and action
NOAMA		Y or N	No AMA. This field is deleted since it is specific to ACD.
POSTYPE		GEN, XFR1, DA, or XFR2	Position type. This field is deleted since it is specific to ACD.
SERV TYP		TASERV DASERV INTCSERV	Service type. This field is deleted since it is specific to ACD.

Datafill example for table TOPS

The figure that follows shows sample datafill for table TOPS.

MAP example for table TOPS

CO	DISPLAY	HOLDREQ	CPID
UNSPEC	S	N	DCT TOPSPOS 170

MD Code Removal and ReEngineering (continued)

Datafill related to MD Code Removal and ReEngineering for table TOPSDEV

The table that follows provides the datafill related to MD Code Removal and ReEngineering for table TOPSDEV. This table includes only those fields that apply directly to MD Code Removal and ReEngineering.

Datafill related to table TOPSDEV

Field	Subfield	Entry	Explanation and action
	DEVSEL	SADS, FADS, TADS, MFADS, SPDEV, SADSHADS, and FADSHADS	Device selector. The indicated entries are deleted. During a one night process, tuples containing SADS, FADS, TADS, MFADS, and SPDEV are deleted. Tuples with SADSHADS and FADSHADS are changed to equivalent HADS tuples.

Datafill example for table TOPSDEV

The figure that follows shows sample datafill for table TOPSDEV.

MAP example for table TOPSDEV

DEVNO	DEVTYPE
2	QMFADS E DMODEM TM8 0 1 2X72AC BELL108
10	QFADS EIULAN 8000

Datafill related to MD Code Removal and ReEngineering for table ADACCOPT

The table that follows provides the datafill related to MD Code Removal and ReEngineering for table ADACCOPT. This table includes only those fields that apply directly to MD Code Removal and ReEngineering.

Datafill related to table ADACCOPT

Field	Subfield	Entry	Explanation and action
CCREQUE			Call completion re-connect queue. This field is deleted since it is specific to ACD.

Datafill example for table ADACCOPT

The figure that follows shows sample datafill for table ADACCOPT.

MD Code Removal and ReEngineering (continued)

MAP example for table ADACCOPT

ACCKEY	BILTYPES	DISPLAY
OH STATION	SENTPD \$	S

Datafill related to MD Code Removal and ReEngineering for table VSNOPT

The table that follows provides the datafill related to MD Code Removal and ReEngineering for table VSNOPT. This table includes only those fields that apply directly to MD Code Removal and ReEngineering.

Datafill related to table VSNOPT

Field	PARM	Field VALUE	Explanation and action
DEFAULT_AABS_TO_OPR_QUEUE		Y or N	This parameter is deleted since it relates to ACD.

Datafill example for table VSNOPT

The figure that follows shows sample datafill for table VSNOPT.

MAP example for table VSNOPT

PARM	VALUE
DEFAULT_AABS_TO_OPR_QUEUE	N

Datafill related to MD Code Removal and ReEngineering for table TEAMACD

Table TEAMACD is deleted since it is specific to ACD.

Datafill example for table TEAMACD

The figure that follows shows sample datafill for table TEAMACD.

MAP example for table TEAMACD

TEAM	ACDTYPE
2	TOPSACD

MD Code Removal and ReEngineering (continued)

Datafill related to MD Code Removal and ReEngineering for table TOPSQAGE

Table TOPSQAGE is deleted since it is specific to ACD.

Datafill example for table TOPSQAGE

The figure that follows shows sample datafill for table TOPSQAGE.

MAP example for table TOPSQAGE

QUEUE	AGING

GEN	10
XFR1	10
XFR2	10
DA	10

Datafill related to MD Code Removal and ReEngineering for table XFROPSEL

Table XFROPSEL is deleted since it is specific to ACD.

Datafill example for table XFROPSEL

The figure that follows shows sample datafill for table XFROPSEL.

MAP example for table XFROPSEL

CLLI	XFRTYPE

TOPSCOMAMF	XFR1

Datafill related to MD Code Removal and ReEngineering for table BPQUEUE

Table BPQUEUE is deleted since it is specific to ACD.

Datafill example for table BPQUEUE

The figure that follows shows sample datafill for table BPQUEUE.

MD Code Removal and ReEngineering (continued)

MAP example for table BPQUEUE

BPQKEY	DDQUERQD	OAQUERQD
411 STATION	GEN	GEN

Datafill related to MD Code Removal and ReEngineering for table CLASSDEF

Table CLASSDEF is deleted since it is specific to ACD.

Datafill example for table CLASSDEF

The figure that follows shows sample datafill for table CLASSDEF.

MAP example for table CLASSDEF

CALLTYPE	CLASNAME
DDOVCN	OVERSEAS

Datafill related to MD Code Removal and ReEngineering for table CLASSNAM

Table CLASSNAM is deleted since it is specific to ACD.

Datafill example for table CLASSNAM

The figure that follows shows sample datafill for table CLASSNAM.

MAP example for table CLASSNAM

CLASSNUM	CLASSNAM
3	OVERSEAS

Datafill related to MD Code Removal and ReEngineering for table LANGTOQ

Table LANGTOQ is deleted since it is specific to ACD.

Datafill example for table LANGTOQ

The figure that follows shows sample datafill for table LANGTOQ.

MD Code Removal and ReEngineering (continued)

MAP example for table LANGTOQ

LANGNAME	CQUEUE
FRE	XFR1
ENG	XFR2

Datafill related to MD Code Removal and ReEngineering for table OIASTART

Table OIASTART is deleted since it is specific to ACD.

Datafill example for table OIASTART

The figure that follows shows sample datafill for table OIASTART.

MAP example for table OIASTART

CALLTYPE	OIASERV
121	10

Datafill related to MD Code Removal and ReEngineering for table OGTSPKEY

Table OGTSPKEY is deleted since it is specific to ACD.

Datafill example for table OGTSPKEY

The figure that follows shows sample datafill for table OGTSPKEY.

MAP example for table OGTSPKEY

KEYNUM	LABEL	KEYINFO
2	FRENCH	XFR 1

Datafill related to MD Code Removal and ReEngineering for table OGTMPKEY

Table OGTMPKEY is deleted since it is specific to ACD.

Datafill example for table OGTMPKEY

The figure that follows shows sample datafill for table OGTMPKEY.

MD Code Removal and ReEngineering (end)

MAP example for table OGTMPKEY

KEYNUM	LABEL	KEYINFO
45	DLANGEE	XFR DA

Datafill related to MD Code Removal and ReEngineering for table QTTIDX

Table QTTIDX is deleted since it is specific to ACD.

Datafill example for table QTTIDX

The figure that follows shows sample datafill for table QTTIDX.

MAP example for table QTTIDX

QTTBL	AWT
0	25

Datafill related to MD Code Removal and ReEngineering for tables QT0-QT5

Tables QT0-QT5 are deleted since they are specific to ACD.

Datafill example for table QT0

The figure that follows shows sample datafill for table QT0.

MAP example for table QT0

OPRANGE	CWOFF	CWON	DEFLECT
0_86	1	5	41

Translation verification tools

MD Code Removal and ReEngineering does not use translation verification tools.

SERVORD

MD Code Removal and ReEngineering does not use the Service Order System (SERVORD).

Music and Announcement in Queue

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS10 and up

Music and Announcement in Queue was introduced in TOPS10.

Prerequisites

To operate, Music and Announcement in Queue has the following prerequisites:

- BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y
- Table TOPSFTR paramter MUSIC_AND_ANN_IN_QUEUE = Y
- QMS Host/Remote Queueing, OSB00101 (in the host and remote switches)

Description

This functionality provides music and, or announcements to a caller waiting in a queue for a TOPS operator. This functionality is an enhancement to the QMS Host/Remote Queueing, OSB00101.

This functionality is provided by the following feature:

Feature number	Feature name
AF7567	Music and Announcement in Queue

Operation

Before this functionality, the caller only heard ringing while waiting for an operator. Now, any combination of ringing, music, announcements, and, or silence are available.

The following are a few examples of ways the new functionality might be used.

- Substitute music for ringing.

In some markets, callers may prefer simply to hear music rather than ringing while they are waiting for the operator.
- Substitute silence for ringing.

Music and Announcement in Queue (continued)

This probably would make sense only for calls that route to queues that consistently have very short waiting times. For these calls, silence may be preferable to a very short burst of ringing.

- Start with ringing; then if no operator becomes available in a few seconds, play an announcement and switch to music.

This may work well in markets where callers would prefer music to ringing but would be confused by hearing music as soon as they have dialed for the operator. Also, refer to "Reliability of external audio sources" for another reason why starting with ringing might be preferable to starting with music.

- Start with an announcement to prepare the caller for the transaction; then go to music, ringing, or silence.

For example, the initial announcement for a coin call might request that the caller have coins ready to deposit.

Datafill

Datafill defines the music and announcement. Then, the ringing, music, announcements, and, or silence are combined into a program.

Music sources

The operating company must provide the music source and an interface for connecting the music source to an NT2X72AA analog trunk card. The interface should meet applicable electromagnetic interference and safety standards.

The music source can be an inexpensive device such as a radio or tape player. This device is expected to be broadcasting continuously. The music trunk is entered as an announcement in tables CLLI, ANNS, and ANNMEMS. Refer to the datafill procedure section for details.

Announcement sources

Broadcast announcements, recorded by the operating company on a Digital Recorded Announcement Machine (DRAM) or Enhanced DRAM (EDRAM), are used with this functionality. The DRAM has been manufacture discontinued.

A broadcast announcement begins playing when the first caller is connected, allows other callers to be connected while it is playing, continues to repeat the announcement as long as anyone is connected, and stops playing when the last caller is disconnected.

Callers who are connected while the announcement is playing do not begin to hear the announcement until the beginning of the next cycle. Either ringing or

Music and Announcement in Queue (continued)

silence can be provided during the interval between connection and the beginning of the next cycle. The treatment provided during this interval is determined by datafill in new table TOPAUDIO

The DRAMREC utility is used to record announcements and is described in the following documents:

- *Digital Recorded Announcement Machine DRAM and EDRAM Guide*, 297-1001-527
- *Nonmenu Commands Reference Manual*, 297-1001-8200 and 297-1001-8202

This functionality does not change the datafill that is required for standard DMS switch DRAM or EDRAM announcements. The standard datafill consists of tables CLLI, TMINV, ANNS, ANNMEMS, EDRAMINV (for EDRAM), DRAMS, and DRAMTRK.

Note: The term “standard announcement” has more than one meaning. In some sections of the *DRAM and EDRAM Guide*, a standard announcement is factory recorded and cannot be changed by the operating company. That is not what is meant by “standard announcement” in this functionality. This functionality refers to an announcement that is entered in table ANNS with announcement type STND, as opposed to a specialized type such as for the Mechanized Calling Card Service (MCCS) and Automated Coin Toll Service (ACTS). Note that only announcements entered as STND can be broadcast to multiple listeners.

Audio programs

An audio program consists of a combination of ringing, music, announcements, and, or silence. The program is defined in new table TOPAUDIO. Then, the program is associated with a call type for queuing (CT4Q) in modified table CT4QNAMS. Refer to the datafill procedure section for details.

Other considerations

Wait times and audio thresholds

Suppose a caller is waiting for an operator and announcement is being played. Once an operator is available, the announcement is disconnected and the operator is connected. The caller may be happy enough to get an operator where they do not care if the announcement is interrupted mid-cycle. However, it could be annoying for this to occur on a regular basis. To avoid this problem,

Music and Announcement in Queue (continued)

several factors must be considered when deciding whether or how to use announcements in queue as follows:

- wait times in queue

Obviously, announcements in queue are more appropriate when the caller has to wait a long time than when the operator is going to become available soon.

Wait times for each call queue can be derived from data that is sent to the QMS MIS system in the OC host or standalone switch. Refer to your QMS MIS vendor documentation for more information about this consideration. If QMS Basic Statistics are used, the ANS statistic is the average time it took for an operator to answer a call from a particular queue.

Remember that the reported average wait time is only an average, and a substantial number of calls get an operator in less than the average wait time.

- wait times for announcements

Remember that a caller who connects to a broadcast announcement right after a cycle has started has to wait until the next cycle before beginning to hear the announcement. If multi-track announcements are used, the maximum wait time is the length of a single track (all tracks should be the same length) rather than the length of the entire announcement.

For example, with a 10-second single-track announcement, a caller who is connected right after the announcement has started has to wait nearly 10 seconds before beginning to hear the announcement. However, if the announcement is split into two 5-second tracks, the maximum waiting time is reduced to 5 seconds.

- the CT4Q threshold in table CT4QNAMS

As previously explained, the audio program in datafill is provided for a call only if the call's predicted wait time is at least as great as the entered threshold. Remember that the predicted wait time is an average wait time over a recent interval, so a substantial number of callers will have to wait less than the predicted time to get an operator.

Suppose a queue has an average wait time of 8 seconds at busy hour and 5 seconds during light traffic. If it is desired to play an announcement to callers in that queue, how long could the announcement be? A 5-second announcement would clearly be too long because of the following:

- It can be up to 10 seconds before the announcement has finished.
- During light traffic, many callers do not have to wait even 5 seconds before getting an operator. Even a 3-second announcement would be interrupted before completion for a significant number of callers.

Music and Announcement in Queue (continued)

Unless average wait times for an operator are several times the announcement length, it is recommended that thresholding be used in CT4QNAMS. Therefore, the announcement is played only for callers whose predicted wait time is at least two or three times the announcement length, and possibly longer.

Reliability of external audio sources

The DMS switch does not have circuitry to detect whether any sound is actually being broadcast from an external audio source. So, for example, if a radio is being used and someone turns it off, the DMS switch continues to connect callers to it just as if it were playing.

One implication is that if the first treatment in an audio program is music, and if the music trunk is in service but the music source is not broadcasting, the caller simply hears silence. If this is a concern, ensure that every caller always hears some feedback by making ringing the first treatment in each audio program.

Music compared to announcements in table TOPAUDIO

Ensure that audio routes that use the music selector really do connect to external audio sources. And ensure that routes that use the announcement selector really do connect to DRAM or EDRAM announcements. This section explains what happens if a datafill error is made, and why.

When an audio route has the music selector in datafill, the TOPS system instructs the originating PM to enable the voice path to the caller as soon as the network connection to the music trunk is made. If the trunk really connects to a DRAM or EDRAM, the caller may begin to hear the announcement in the middle of a cycle, and the caller will continue to hear repetitions of the announcement for the amount of time in datafill for the music.

When an audio route has an announcement selector in datafill, the TOPS system expects the announcement source to report cycle transitions. The voice path to the caller is not enabled until the first cycle transition is reported. And depending on the cycle time in the datafill, and on how long the caller remains connected, timeouts related to expected cycle transitions may cause the call to be taken down.

The operating company can record speech on an external audio source that is defined as music in the datafill. The disadvantage of this approach is that the caller may begin to hear the speech at any point, rather than from the beginning.

Music and Announcement in Queue (continued)

Exception handling

Failure to connect to a specified music or announcement source may occur for reasons such as exceeding the maximum number of listeners, circuit trouble, network blockage, and missing announcement datafill. If this occurs, the entire audio route list is abandoned, and ringing is applied to the originator until the operator becomes available.

If announcement circuit failure occurs after the caller is connected to the announcement, or if traffic is so heavy that the MTM loses messages, handling depends on how the cycle time is entered in table ANNS. For further information, refer to the datafill procedure section, table ANNS field CYTIME.

Call process wakeups are used to time audio treatments of music, ringing, and silence that are entered in table TOPAUDIO with non-zero times. If not enough of these wakeups are provisioned (see the "Datafilling office parameters" section), the TOPS system is not able to time an audio treatment as TOPAUDIO indicates it should. If that happens, the audio treatment that was supposed to be timed, continues until the operator becomes available or the caller goes onhook. Also, register WAKEOVFL of OM group CP is pegged.

Optionality control

This functionality is controlled by software optionality control (SOC) option OSB00101. This new SOC option is available in all TOPS switch loads, both international and North American.

Hardware

Music sources

Refer to section "Music sources".

Provisioning DRAMS/EDRAMS

Provisioning rules for standard DRAM/EDRAM broadcast announcements are discussed in *Digital Recorded Announcement Machine DRAM and EDRAM Guide*, 297-1001-527, and documented in detail in *Provisioning Manual*, PLN-8991-1042. Requirements for Music and Announcement in Queue must be added to the overall formula for the office.

Preventing network blocking

When broadcast network connections are used, as they are with this functionality, junctored network (JNET) offices must follow engineering rules for deloading ports to prevent network blocking. These rules are documented in *Digital Recorded Announcement Machine DRAM and EDRAM Guide* and *Provisioning Manual*.

Music and Announcement in Queue (continued)

Provisioning CPWAKEUPS

Table OFCENG parameter NUMCPWAKE should be increased. Refer to the "Datafilling office parameters" section.

OMs

This feature does not add new OM groups or modify existing ones. The remainder of this section describes how this feature interacts with existing OM groups. Please refer to 297-1001-527, *Digital Recorded Announcement Machine DRAM and EDRAM Guide*, for more information about using OMs to evaluate DRAM and EDRAM performance.

Register ANNATT of existing OM group ANN is pegged for the announcement or music CLLI each time a call routes to an announcement or music while queued for a TOPS operator.

Register ANNOVFL of existing OM group ANN is pegged for the announcement or music CLLI each time a call queued for a TOPS operator is routed to an announcement or music, but fails to connect because the maximum number of calls are connected or the announcement is maintenance busy. ANNOVFL does not count the number of calls that overflow due to network blockage.

Register INANN of existing OM group OFZ is not pegged when a call queued for a TOPS operator is routed to an announcement or music.

Register TOPSANN of OM group TOPSTRAF is not pegged when a call queued for a TOPS operator is routed to an announcement or music.

Translations table flow

The Music and Announcement in Queue translations tables are described in the following list:

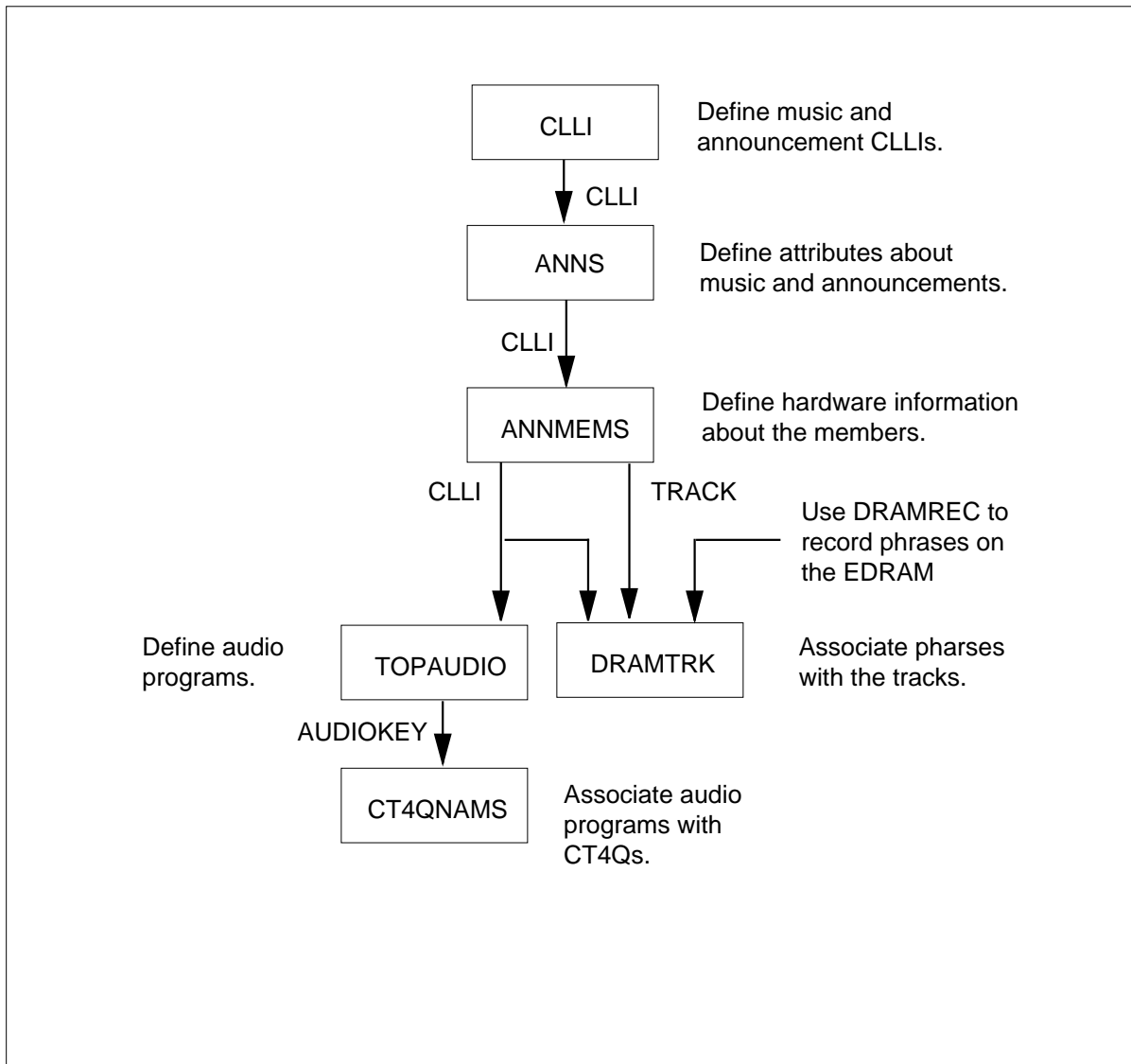
- Table CLLI defines names of trunk groups, including those used for music and announcements.
- Table ANNS identifies which CLLI codes are used for announcement or music trunks, and provides information about how these trunks are used.
- Table ANNMEMS specifies hardware information about the members of an announcement or music trunk group.
- TOPAUDIO defines audio programs which consist of any combination of ringing, music, announcements, and, or silence.

Music and Announcement in Queue (continued)

- CT4QNAMS defines QMS CT4Q names. This table is modified to associate audio programs with CT4Qs.
- DRAMTRK defines names of phrases assigned to each track of an announcement.

The Music and Announcement in Queue translation process is shown in the flowchart that follows.

Table flow for Music and Announcement in Queue



Music and Announcement in Queue (continued)

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

Datafill example for Music and Announcement in Queue

Datafill table	Example data
CLLI	HOLD_4_OPR_CLLI 99 8 HOLD_FOR_OPR_ANN
ANNS	HOLD_4_OPR_CLLI STND Y 26 30 3 1
ANNMEMS	HOLD_4_OPR_CLLI 0 DRAM DRA (0 DTM 1 3)\$
TOPAUDIO	STD_WAIT_TRMT (RINGING 4) (ANN HOLD_4_OPR_CLLI Y) (MUSIC ROCK_MUSIC_CLLI 30) (ANN DONT_HANGUP_CLLI N) (REPEAT 3) \$
CT4QNAMS	21 0_MINUS_STA N TOPSOPR N N N Y 0 STD_WAIT_TRMT
DRAMTRK	HOLD_4_OPR_CLLI 0 (HOLD_4_OPR_SHORT)\$

Limitations and restrictions

This first set of limitations and restrictions applies to the base DMS switch service circuits functionality, and affects all features (including this one) that use that base functionality. Please refer to the DRAM and EDRAM Guide for more information about base service circuits functionality.

- At most, 64 DRAMs/EDRAMs can be provisioned on a DMS switch.
- An announcement track must not be longer than 18 seconds unless the cycle time is entered as 0 in table ANNS.
- When multi-track announcements are used, the different tracks should all be the same length.
- Datafill necessary for an announcement or music source can be deleted from tables DRAMTRK, DRAMPHRS, and ANNMEMS when the announcement still exists in table ANNS (and TOPAUDIO).

With this feature, the caller hears ringing rather than the announcement if this happens.

- At most, 255 callers can be connected to an announcement or music source. When broadcast connections are used with JNET, network blockage may occur if engineering rules for deloading ports are not followed.

Music and Announcement in Queue (continued)

- Calls may be adversely affected if the announcement cycle time is incorrectly entered in table ANNS. Refer to table ANNS in the datafill procedure section for more information.
- The DMS switch does not have circuitry to detect whether an external audio source is actually producing sound. Refer to "Reliability of external audio sources" for more information.

The next set of limitations and restrictions is more specifically related to this feature:

- At most, 128 tuples can be entered in table TOPAUDIO.
- An audio route list in table TOPAUDIO can have at most 6 elements.
- A timed audio treatment (music, ringing, or silence) can last at most 30 minutes.
- The audio threshold in table CT4QNAMS can be at most 60 seconds.
- Internally, this feature considers routes to music and announcement trunks as alternate rather than direct routes. (This is necessary to avoid pegging OFZ.INANN.) Therefore, any network management controls that affect alternate routing, and are placed on the music or announcement trunks, affect the behavior of this feature.
- With certain signaling types and network configurations, the caller can miss the beginning of the first announcement in the audio route list. This problem is due to the delay in propagating signaling from the TOPS switch back to the originating end office. A workaround is to include a little silence at the beginning of the announcement.

This issue is not particular to Music and Announcement in Queue. It already exists with both branding and PARS. If it is not a problem with those features, it is not likely to be a problem with this one.

- Some end offices may provide ringing on operator service calls and may not cut through voice to the caller, until they have received answer from the far end. This does not apply to DMS100 offices that route operator service calls out on OP (operator) trunks. If this is the case, and if the signaling protocol used between the TOPS office and the previous office does not send answer until the operator is connected, the caller does not hear any datafill audio program in the TOPS office.
- Timed audio treatments do not terminate until the operator becomes available or the caller goes onhook, if an inadequate number of call process wakeups is provisioned. Refer to "Datafilling office parameters" for more information.

Music and Announcement in Queue (continued)

- Some calls are not eligible for Music and Announcement in Queue when they are queued for an operator. These include the following:
 - Automatic directory assistance service (ADAS) and ADASPLUS calls waiting for an operator for playback of the recorded information
 - all calls with call origination intercept
 - calls at an operator services system advance intelligent network (OSSAIN) service node that are queued for a passive operator
 - central automatic message accounting (CAMA) and remote operator number identification (RONI) calls
 - recalls
 - assistance requests
 - any call that already has a conference circuit or an agent in the called port when it is queued for an operator
- Refer to “Interactions” for more information.
- If an operator becomes available while the caller is listening to an announcement, the caller does not hear the complete announcement.

Interactions

After a brief discussion of operator centralization, this section focuses on clarifying which queueing scenarios are and are not eligible for Music and Announcement in Queue. In general, initial call arrivals that queue for an operator are eligible, while recalls are not. For calls that transition to an operator after using or attempting to use an automated system, it depends on several factors explained below.

In almost all situations, calls that receive ringing in queue without this feature are eligible for this functionality. Calls that do not receive any feedback tones in queue, without this feature, are not eligible for the functionality of this feature. A notable exception is ADAS calls that are waiting for an operator to play back the recorded information. This and other interactions are explained in the following subsections.

Post-auto refinements can be used to assign a CT4Q that has a different audio program. This assignment is useful if a different queueing treatment is required for calls with different routes. For example, calls that route directly to an operator compared to calls going to an operator after using or attempting to use an automated system,

Music and Announcement in Queue (continued)

Operator centralization

In an OC environment, all of the functionality of this feature is performed in the OC remotes. The feature is entirely transparent to the OC host. The SOC option must be enabled in each OC remote for which the functionality is desired.

OSSAIN

Calls that are queued for an OSSAIN service node are not eligible for Music and Announcement in Queue. This functionality applies only to calls that are queued for a TOPS operator.

When an OSSAIN call routes out of the OSSAIN environment and into the traditional TOPS system for an operator, the call is eligible for Music and Announcement in Queue while it waits for the operator. However, when a service node requests a passive operator for a call that is at the service node, the call is not eligible for this functionality.

ADAS/ADASPLUS

An ADAS or ADASPLUS call waiting for an operator to play back the recorded information is not eligible for Music and Announcement in Queue. The voice service node (VSN) or audio response unit (ARU) is responsible for any feedback tones to the subscriber while the call is waiting for an operator for playback.

Table TOPSPARM parameter ADAS_RINGING_DURING_PLAYBACK controls whether the TOPS system provides ringing to the split caller after the operator is connected for playback of the recorded information. This functionality is unchanged. The call is not eligible for music or announcement while the VSN or ARU is playing the recorded information to the operator.

Intercept calls

Calls that have call origination intercept (INTC) are not eligible for Music and Announcement in Queue. Note that these calls generally do not go to an operator, but they can in some situations, such as split referral or requested number not signaled.

Call transfers

When an operator transfers a call, the call is eligible for Music and Announcement in Queue while it is waiting for the transfer operator. Normally an operator assigns a new CT4Q to a call prior to transferring it. The new CT4Q is then refined, using the RECALL column of the active order table. The CT4Q that results from this refinement is the one that is used to check whether an audio program is in datafill for the call.

Music and Announcement in Queue (continued)

Service assistance

When an operator requests assistance from another operator, the call is not eligible for Music and Announcement in Queue while it is waiting for the assisting operator. This is true, regardless of whether the operator requesting assistance stays on the call or releases it to queue for assistance. And it is true regardless of whether the office uses old-style SA/IC assistance or the newer functionality QMS CASE assistance, OSB00101.

CAMA calls

North American ONI/ANIF CAMA calls that come to an operator only for collection of the calling digits, and are presented to the operator as CAMA calls, are not eligible for Music and Announcement in Queue.

RONI

Remote Operator Number Identification (RONI) calls are not eligible for Music and Announcement in Queue.

Time and Charges, Notify

Time and Charges recalls and Notify recalls are not eligible for Music and Announcement in Queue while they are waiting for the recall operator.

Note that recalls do not receive ringing while they are waiting for the recall operator. The queueing treatment of recalls is unchanged by this feature.

Coin calls

Non-automated coin calls are eligible for Music and Announcement in Queue at initial call arrival just like any other calls. However, a coin call that has been floated, and then recalls to an operator, is not eligible for Music and Announcement in Queue while it is waiting for the recall operator.

Automatic coin toll system (ACTS) calls can be routed to an operator for a number of reasons as follows:

- resource failure
- caller flashing during initial period
- caller disconnecting during overtime request for money
- caller not depositing coins fast enough
- rating query failure
- failure to calculate the rate step from the internal rating tables

An ACTS call that routes to an operator during initial call setup is eligible for Music and Announcement in Queue. However, an ACTS call that routes to an

Music and Announcement in Queue (continued)

operator at any other stage is not eligible for Music and Announcement in Queue.

ACTS calls that are eligible for Music and Announcement in Queue are the same ones that receive ringing in queue without this functionality.

MCCS and AABS

Mechanized calling card service (MCCS) and automated alternate billing service (AABS) calls can route to an operator for a number of reasons including the following:

- customer request (keying 0 or flashing at the right time)
- customer keying error
- resource failure
- DA search needed
- error in LIDB query or response
- OSSAIN trigger
- manual validation of billing for any reason

Most calls that route from MCCS or AABS to a live operator are eligible for Music and Announcement in Queue while waiting for the operator.

The most important exception is an AABS call in which a conference circuit is already connected when the operator is requested. This occurs most often when the VSN attempts to get billing acceptance from a third or called party, but was not able to get either acceptance or rejection. Consequently, it requests a live operator to talk with the party. Calls that already have a conference circuit are not eligible for Music and Announcement in Queue.

In addition to the billing acceptance scenario just described, OSSAIN calls can go to AABS with a conference circuit in certain situations. These calls, too, are ineligible for Music and Announcement in Queue if they route to an operator with the conference circuit still connected.

The only other exception is a call that has a forward agent connected when it leaves MCCS. This can only happen with OSSAIN calls. Since an announcement or music source uses the forward port, it cannot be connected if the call already has a forward agent.

Note that all of the MCCS and AABS calls that are ineligible for Music and Announcement in Queue are also calls that do not receive ringing in queue without this functionality.

Music and Announcement in Queue (continued)

Activation/deactivation by the end user

Music and Announcement in Queue requires no activation or deactivation by the end user.

Billing

Music and Announcement in Queue does not affect billing.

Station Message Detail Recording

Music and Announcement in Queue does not affect Station Message Detail Recording.

Music and Announcement in Queue (continued)

Datafilling office parameters

The following table shows the office parameters used by Music and Announcement in Queue. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by Music and Announcement in Queue

Table name	Parameter name	Explanation and action
OFCENG	NUMCPWAKE	<p>Table OFCENG parameter NUMCPWAKE specifies the maximum number of call process wakeups in the system, and is used to allocate memory for these wakeups. NUMCPWAKE should be increased to ensure that a wakeup is available for each call that can receive a timed treatment while queued for an operator.</p> <p>The TOPS switch uses call process wakeups to time audio treatments (ringing, music, or silence) for a non-zero time in table TOPAUDIO. Each call that is timing an audio treatment requires one call process wakeup. Intervals of ringing, music, or silence that last time 0 (infinite time) do not require wakeups.</p> <p>The TOPS system also uses call process wakeups to ensure that DRAM announcement cycles begin as expected, if the cycle time in table ANNMEMS is not zero. No wakeups are required for announcements with a cycle time of 0 in table ANNMEMS.</p> <p>Manual <i>Memory Administration Manual</i>, 297-1001-305 indicates that OM group CP2 has a high-water register (WAKEHI) which can be used to monitor usage of call process wakeups. It can also detect trends before exhaustion occurs.</p>

Music and Announcement in Queue (continued)

Datafill sequence

The following table lists the tables that require datafill to implement Music and Announcement in Queue. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Music and Announcement in Queue

Table	Purpose of table
CLLI	Common language location identifier defines names of trunk groups, including those used for music and announcements.
ANNS	Announcements identifies which CLLI codes are used for announcement or music trunks, and provides information about how these trunks are used.
ANNMEMS	Announcement members specifies hardware information about the members of an announcement or music trunk group.
TOPAUDIO	TOP Audio defines audio programs which consist of a combination of ringing, music, announcements, and, or silence.
CT4QNAMS	Call type for queueing names defines QMS CT4Q names. This table is modified to associate audio programs with CT4Qs.
DRAMTRK	Digital Recording Announcement Machine Track defines names of phrases assigned to each track of an announcement. Phrases are defined using the DRAM Recording (DRAMREC) utility.

Datafilling table CLLI

Table CLLI defines names of trunk groups, including those used for music and announcements. The name datafilled in table CLLI is used as a key into table ANNS and as part of the key into table ANNMEMS.

The following table shows the datafill specific to Music and Announcement in Queue for table CLLI. Only those fields that apply directly to Music and Announcement in Queue are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table CLLI

Field	Subfield or refinement	Entry	Explanation and action
			This table is not changed.

Music and Announcement in Queue (continued)

Datafilling table CLLI

Field	Subfield or refinement	Entry	Explanation and action
CLLI		up to 16 characters	Common language location identifier. Enter a tuple for each music and announcement trunk.
TRKGRSIZ		0 to 2047	Trunk group size. This field indicates the maximum number of trunk group members that can be entered in table ANNMEMS. This number is used to allocate store.

Datafill example for table CLLI

The following example shows sample datafill for table CLLI.

MAP display example for table CLLI

CLLI	ADNUM	TRKGRSIZ	ADMININF
POP_MUSIC_CLLI	999	6	POP_MUSIC_BROADCAST
ROCK_MUSIC_CLLI	97	7	ROCK_MUSIC
HOLD_4_OPR_CLLI	99	8	HOLD_FOR_OPR_ANN
WAIT_4_OPR_CLLI	95	8	WAIT_FOR_OPR_ANN
BUS_HRS_ANN_CLLI	98	7	BUS_HRS_ANN
DONT_HANGUP_CLLI	96	8	DONT_HANG_UP

In the above example, tuples 1 and 2 are for music, and the remaining tuples are for announcements.

Datafilling table ANNS

Table ANNS identifies which CLLI codes are used for announcement or music trunks, and provides information about how these trunks are used.

The following table shows the datafill specific to Music and Announcement in Queue for table ANNS. Only those fields that apply directly to Music and

Music and Announcement in Queue (continued)

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

Datafilling table ANNS

Field	Subfield or refinement	Entry	Explanation and action
CLLI		name from table CLLI	Common Language Location Identifier. Datafill a tuple for each music and announcement trunk.
ANTYPE		STND	Announcement type. Enter STND (standard) for music and announcement trunks. Then datafill refinement field GAP.
	GAP	N or Y	Gap. This new field indicates if the usual brief gap should occur between tracks. The default is Y and results in the same functionality that existed for multi-track announcements before this release. This field is irrelevant for single track announcement sources; therefore, enter the default value of Y.
MAXCONN		1 to 255	Maximum connections. This field specifies the maximum number of connections that can be simultaneously made to the music or announcement source. The highest number that can be entered is 255. However, when deciding on a value for this field, the possibility of network blocking should be considered if a junctored network is used. Whenever broadcast connections are used with a JNET, it may be necessary to deload ports in order to prevent blocking. The rules for deloading ports are explained in <i>Provisioning Manual</i> , PLN-8991-104, and <i>Digital Recorded Announcement Machine DRAM and EDRAM Guide</i> , 297-1001-527.

Music and Announcement in Queue (continued)

Datafilling table ANNS

Field	Subfield or refinement	Entry	Explanation and action
CYTIME		1 to 18 or 0	<p>Cycle times. For a music trunk, enter 0.</p> <p>For an announcement trunk, enter either 0 or the number of seconds the announcement lasts. For multi-track announcements, enter the number of seconds that a track lasts. However, for announcements with a track length greater than 18 seconds, it is important to enter 0; otherwise, call deaths occur.</p> <p>If the datafill value is not zero, a timer ensures that the announcement machine indicates the beginning of the next cycle within the datafill number of seconds after the caller is connected to the machine. If the next cycle does not begin as expected, the audio program is abandoned and the caller begins to hear ringing.</p> <p>However, if the datafill value is greater than 18, announcement machine failure occurs after about 20 seconds. And any call connected to the announcement at that time loses integrity and may be terminated. (Note, this 18 second limit applies to all DMS switch broadcast announcements, not just to those used by this feature.) Track lengths can be greater than 18 if the cycle time is 0.</p> <p>When entering a non-zero cycle time, use the phrase lengths obtained from the LENGTH column of the output of the DRAMREC DISPLAY command. For single-phrase announcements, copy the length from DRAMREC DISPLAY. For multi-phrase announcements, add the phrase lengths together. For multi-track announcements, all tracks should have the same length, so enter the length of a track.</p>

Music and Announcement in Queue (continued)

Datafilling table ANNS

Field	Subfield or refinement	Entry	Explanation and action
MAXCYC		1 to 255	<p>An alternative approach is to datafill the cycle time as 0 for all announcements used with this feature. The advantages of this approach are the following:</p> <ul style="list-style-type: none"> • It is simpler, • it allows tracks longer than 18 seconds to be used, and • there is no risk of adversely impacting traffic by getting the datafill wrong. <p>The disadvantage is that for certain failures, there is no timer to help with error recovery. For example, an announcement circuitry failing between the time a caller is connected and the first cycle begins. Or, for messages being dropped by the peripheral module (PM) under heavy traffic. The caller may hear silence until the operator becomes available, and there may be no logs to alert operating company personnel of the problem until the next general PM audit.</p> <p>Maximum number of cycles. For a music trunk, enter 1.</p> <p>For an announcement trunk, enter 1 unless it is important for the announcement to be repeated before going to the next element in the audio route list. An audio route list is defined in table TOPAUDIO field ROUTES. For more information, see section "Defining audio programs".</p>

Datafill example for table ANNS

The following example shows sample datafill for table ANNS.

Music and Announcement in Queue (continued)

MAP display example for table ANNS

CLLI	ANTYPE	TRAFSNO	MAZXCONN	CYTIME	MAXCYC
POP_MUSIC_CLLI	STND Y	26	30	0	1
ROCK_MUSIC_CLLI	STND Y	26	30	0	1
HOLD_4_OPR_CLLI	STND Y	26	30	3	1
WAIT_4_OPR_CLLI	STND Y	26	30	0	1
BUS_HRS_ANN_CLLI	STND Y	26	30	8	1
DONT_HANGUP_CLLI	STND Y	26	30	8	1

In the above example, tuples 1 and 2 are for music, and the remaining tuples are for announcements.

Datafilling table ANNMEMS

Table ANNMEMS specifies hardware information about the members of an announcement or music trunk group. There is one entry in ANNMEMS for each music or announcement trunk group member. The music or announcement CLLI and the member number constitute the key.

The following table shows the datafill specific to Music and Announcement in Queue for table ANNMEMS. Only those fields that apply directly to Music and Announcement in Queue are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table ANNMEMS

Field	Subfield or refinement	Entry	Explanation and action
ANNMEM		see subfields	This table is not changed. Announcement member key. This field is the key to the table and consists of the CLLI and member number. Datafill a tuple for each music and announcement trunk.
HDWTYPE		AUDICHRON or DRAM	Hardware type. For a music trunk, enter AUDICHRON because the trunk is analog. For a DRAM or EDRAM announcement trunk, enter DRAM.

Music and Announcement in Queue (continued)

Datafilling table ANNMEMS

Field	Subfield or refinement	Entry	Explanation and action
CARD		2X72AA or DRA	Card code. For a music trunk, enter the broadcast trunk interface card, NT2X72AA. Although the NT2X72AA is a trunk module (TM) card, it can be mounted in a maintenance trunk module (MTM) if engineering rules for installation are followed. The MTM shelf can be located in an integrated service module (ISM) frame. For an announcement trunk, enter DRA.
MEMINFO		see subfields	Memory information. This field consists of subfield TRCKLIST.
	TRCKLIST	see subfields	Track list. This field consists of subfields TRACK, PMTYPE, TMNO, and TMCKT.

Music and Announcement in Queue (continued)

Datafilling table ANNMEMS

Field	Subfield or refinement	Entry	Explanation and action
	TRACK	0 TO 31	<p>Track number. This value is used to index table DRAMTRK. For a music trunk, enter a value. For a radio music source, this field has no meaning.</p> <p>For an announcement trunk, The simplest approach is to use single-track announcements. This is shown in the datafill example, tuple HOLD_4_OPR_CLLI.</p> <p>When multi-track announcements are used, the tracks are played in the order they are listed in the MEMINFO field. For example, the WAIT_4_OPR_CLLI announcement in the datafill example plays track 3 first, and then track 1. Each track should be exactly the same length. If this does not occur naturally, silence should be included in the shorter track(s) until all are the same length.</p> <p>Some reasons for considering multi-track announcements are the following:</p> <ul style="list-style-type: none"> • They are convenient when multilingual announcements are needed. The announcement can be recorded on a separate track for each language. • The caller's maximum wait time for the announcement is decreased from the announcement length to the track length. For further information, refer to section "Wait times and audio thresholds".
	PMTYPE	TM8, MTM, or DTM	<p>Peripheral module type. For a music trunk, enter either TM8 or MTM.</p> <p>For an announcement trunk, enter MTM for a DRAM or DTM (digital trunk module) for an EDRAM.</p>
	TMNO	0 to 2047	Trunk module number.
	TMCKT	0 to 29	Trunk module circuit number.

Datafill example for table ANNMEMS

The following example shows sample datafill for table ANNMEMS.

Music and Announcement in Queue (continued)

MAP display example for table ANNMEMS

ANNMEM		HDWTYPE	CARD	MEMINFO
POP_MUSIC_CLLI	0	AUDICHRON	2X72AA	(0 TM8 6 11)\$
ROCK_MUSIC_CLLI	0	AUDICHRON	2X72AA	(0 MTM 4 7)\$
HOLD_4_OPR_CLLI	0	DRAM	DRA	(0 DTM 1 3)\$
WAIT_4_OPR_CLLI	0	DRAM	DRA	(3 DTM 3 5) (1 DTM 3 8)\$
BUS_HRS_ANN_CLLI	0	DRAM	DRA	(0 DTM 1 4)\$
DONT_HANGUP_CLLI	0	DRAM	DRA	(0 DTM 1 5)\$

In the above example, tuples 1 and 2 are for music, and the remaining tuples are for announcements.

The music broadcast trunk interface cards (tuples 1 and 2) are mounted in TM8 and MTM shelves of an ISM.

Datafilling table TOPAUDIO

TOPS audio is a new table that defines audio programs which consist of a combination of ringing, music, announcements, and, or silence.

Tables CLLI, ANNS, and ANNMEMS require datafill before table TOPAUDIO.

Table CT4QNAMS requires datafill after table TOPAUDIO. Therefore, an associated tuple must be deleted from table CT4QNAMS before deleting from table TOPAUDIO.

The following is a description of the table.

Datafilling table TOPAUDIO

Field	Subfield or refinement	Entry	Explanation and action
AUDIOKEY		1 to 16 alphanumeric characters	Audio key. This field is the key to the table and defines a name for this program. This name is used in table CT4QNAMS.
ROUTES		see subfield	Routes. This field consists of up to 6 occurrences of subfield AUDIOSEL and refinements.

Music and Announcement in Queue (continued)

Datafilling table TOPAUDIO

Field	Subfield or refinement	Entry	Explanation and action
	AUDIOSEL	ANN, MUSIC, SILENCE, RINGING, REPEAT	<p>Audio selection. This field defines the components of the program. The values are defined as follows:</p> <ul style="list-style-type: none"> • ANN (announcement) - enter datafill in fields ANNCLLI and AUDRING. • MUSIC - enter datafill in refinements MUSICLLI and TIME. • SILENCE - enter datafill in refinement TIME. • RINGING - enter datafill in refinement TIME. • REPEAT - enter datafill in refinement ROUTE. This value continuously replays the sequence of entries in AUDIOSEL, starting with the entry number in ROUTE and going to the last entry before REPEAT. When REPEAT is used, it must be the last entry. Also, REPEAT cannot be the only entry. <p>Each value, except REPEAT, can be used more than once.</p>
	ANNCLLI	name from table ANNMEMS	Announcement CLLI. Enter data in this field if field AUDIOSEL = ANN. This field defines the announcement CLLI and it must be entered in tables CLLI, ANNS, and ANNMEMS.
	AUDRING	Y or N	Audible ringing. Enter data in this field if field AUDIOSEL = ANN. This field indicates if audible ringing is provided (Y) or not (N) to the caller after the announcement is connected and before the beginning of a cycle.
	MUSICLLI	name from table ANNMEMS	Music CLLI. Enter data in this field if field AUDIOSEL = MUSIC. This field defines the music CLLI and it must be entered in tables CLLI, ANNS, and ANNMEMS.

Music and Announcement in Queue (continued)**Datafilling table TOPAUDIO**

Field	Subfield or refinement	Entry	Explanation and action
	TIME	0 to 1800	Time. Enter data in this field if field AUDIOSEL = MUSIC, RINGING, or SILENCE. Field TIME defines how many seconds the music, ringing or silence are played. If MUSIC, RINGING, or SILENCE is the last entry in field AUDIOSEL, TIME must be set to 0. Value 0 provides continuous playing of the MUSIC, RINGING, or SILENCE.
	ROUTE	1 to 5	Route. Enter data in this field if field AUDIOSEL = REPEAT. This field indicates the starting entry number in field AUDIOSEL of the sequence of AUDIOSEL entries that are to be continuously replayed. When value REPEAT is used in field AUDIOSEL, REPEAT must be the last entry.

Datafill example for table TOPAUDIO

The following example shows sample datafill for table TOPAUDIO.

MAP display example for table TOPAUDIO

AUDIOKEY	ROUTES
POP_MUSIC_ONLY	(MUSIC POP_MUSIC_CLLI 0)
SILENCE_ONLY	(SILENCE 0)
BUSOFC_AFTER_HRS	(ANN BUS_HRS_ANN_CLLI Y) (MUSIC ROCK_MUSIC_CLLI 0)
STD_WAIT_TRMT	(RINGING 4) (ANN HOLD_4_OPR_CLLI Y) (MUSIC ROCK_MUSIC_CLLI 30) (ANN DONT_HANGUP_CLLI N) (REPEAT 3) \$

The following are comments on the above tuples:

1. The first example tuple shows a one-element audio route list that could be used to replace ringing with music for queued calls. After the music selector, the route specifies the music CLLI and the duration of the music in seconds. A non-zero duration would be used if the music were to be followed by an announcement after some number of seconds. But in this example, music is the last element of the route list, so the duration datafill is zero indicating infinite duration. (For music in queue, infinite duration

Music and Announcement in Queue (continued)

means to continue the treatment until the operator becomes available or the caller goes on hook).

2. The second example tuple shows a one-element audio route list that could be used to simply replace ringing with silence. No CLLI is entered in datafill when the silence selector is used. However, a duration is entered and interpreted the same way as a music duration. (A route with the ringing selector has a similar field for the duration.)
3. The third example shows an audio route that might be used for after hours calls to the business office, if these calls are routed to an operator. The audio route begins with an announcement, which might say the business office is closed, but an operator will be connected if the caller stays on the line. After the announcement, music is played until an operator becomes available.

The Y entry in this announcement route is for the audible ringing sub-field. A Y value indicates that audible ringing should be applied between the time the announcement is connected and the beginning of a cycle.

4. The last example specifies 4 seconds of ringing, followed by an announcement (which might ask the caller to hold for an operator), followed by 30 seconds of music and then a different announcement (which might ask the caller to stay on the line). The "(REPEAT 3)" after the last announcement specifies that the last announcement should be followed by element 3 of the route list, which is music. So the pattern of 30 seconds of music followed by the "don't hang up" announcement continues until the operator becomes available or the caller goes onhook.

In the last example, note that the actual duration of ringing before the first announcement could be anywhere from 4 seconds to 4 plus nearly the number of seconds the announcement takes. This longer ringing time would occur if the caller were connected to the announcement just after a cycle had begun, and had to wait almost an entire cycle's length before beginning to hear the announcement.

Also in the last example, notice that the Audible Ringing sub-field is Y for the first announcement but N for the second one. When an announcement follows ringing, a "Y" selector is recommended because it causes the ringing to simply continue until the beginning of the announcement cycle comes around. But when an announcement follows music, it may be better to provide silence, rather than a short burst of ringing, until the beginning of a cycle. This is especially true if the announcement is short.

It is recommended that the last route in each audio route list specify either repetition or an interval (music, ringing, or silence) of infinite duration. Otherwise, the route list does not specify what happens if the end of the list is

Music and Announcement in Queue (continued)

reached before the operator becomes available. When this happens, ringing is applied until the operator becomes available.

Error messages for table TOPAUDIO

The following error messages apply to table TOPAUDIO.

Error messages for table TOPAUDIO

Error message	Explanation and action
TUPLE ALREADY EXISTS	The field AUDIOKEY name must be unique. If an attempt is made to add a second tuple with the same name this error message is displayed.
INVALID ANNOUNCEMENT/MUSIC CLLI. CHECK TABLE ANNS.	When field AUDIOSEL= MUSIC, then MUSICLLI refinement specifying music CLLI must be already in tables CLLI, ANNS and ANNMEMS tables. Otherwise this error message is displayed.
MUSIC AS THE LAST CHOICE MUST HAVE ZERO TIME.	If MUSIC is the last selection in field AUDIOSEL, then the associated TIME must be 0 (zero). Otherwise this error message is displayed
RINGING AS THE LAST CHOICE MUST HAVE ZERO TIME.	If RINGING is the last selection in field AUDIOSEL, then the associated TIME must be 0 (zero). Otherwise this error message is displayed
SILENCE AS THE LAST CHOICE MUST HAVE ZERO TIME.	If the SILENCE is the last selection in field AUDIOSEL, then the associated TIME must be 0 (zero). Otherwise this error message is displayed.
ANNOUNCEMENT/MUSIC CLLI HAS NO MEMBER. CHECK TABLE ANNMEMS	This message is displayed if an attempt is made to add a CLLI that is defined in table ANNS but not in table ANNMEMS.
REPEAT ROUTE MUST NOT BE GREATER THAN <n>	When field AUDIOSEL=REPEAT then ROUTE refinement specifies the route number {1 to 5} where the repeat sequence begins. If the specified target route does not exist or the route is illegal (for example, the last selection is route #5 and entered as REPEAT 5) then this error message is displayed.

Music and Announcement in Queue (continued)

Error messages for table TOPAUDIO

Error message	Explanation and action
AUDIOKEY MUST BE DELETED FROM CT4QNAMS FIRST.	If an attempt is made to delete a tuple whose AUDIOKEY is still entered in table CT4QNAMS, then this error message is displayed.
NO AUDIO SELECTION WAS DATAFILLED.	At least one audio selection must be entered in field AUDIOSEL. Otherwise, this error message is displayed.
TABLE LIMIT HAS BEEN REACHED.	If the limit of tuples in table TOPAUDIO is reached, this error message is displayed.
INTERNAL RESOURCE ALLOCATION ERROR.	If table TOPAUDIO is not able to allocate more data store, this error message is displayed.
REPEAT MUST BE THE LAST CHOICE ONLY	If the REPEAT choice in field AUDIOSEL is not the last one, this error message is displayed.
SINGLE REPEAT CHOICE IS NOT ALLOWED.	If REPEAT is only choice in field AUDIOSEL, this error message is displayed.
MUSIC WITH ZERO TIME MUST BE THE LAST CHOICE ONLY.	This message is displayed if an attempt is made to add an AUDIOKEY with music and TIME=0.

Datafilling table CT4QNAMS

New subfield AUDIO_SEL and refinements THRESHLD and AUDIOKEY are present when field SYSAREA_SEL = TOPSOPR to select audio programs.

Table TOPAUDIO requires datafill before table CT4QNAMS.

The following table shows the datafill specific to Music and Announcement in Queue for table CT4QNAMS. Only those fields that apply directly to Music

Music and Announcement in Queue (continued)

and Announcement in Queue are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table CT4QNAMS

Field	Subfield or refinement	Entry	Explanation and action
SYSAREA_ SEL		TOPSOPR or OSSAIN	System area selector. When TOPSOPR is entered, datafill subfields CT4QDISP, AUTOORDB, OAINPRE, and new subfield TAUDIO.
	TAUDIO	see subfield	TOPS audio. This field consists of subfield AUDIO_SEL and refinements.
	AUDIO_SEL	Y or N	Audio selector. This field indicates if an audio program is to be played for this CT4Q while the caller is waiting for an operator. The values are Y (play the program) and N (provide ringing). If Y, datafill refinements THRESHOLD and AUDIOKEY. Note that every TOPS operator CT4Q has an audio selector field, but it may not make sense to datafill a "Y" value for some CT4Qs. In most offices, some CT4Qs are reserved for intermediate use during refinements, and are never used for final call queue assignment. Also, some CT4Qs may be used only for calls that are ineligible for Music and Announcement in Queue for other reasons (refer to the "Interactions" section). If audio information is entered for a CT4Q that is not used for final call queue assignment for calls that are eligible for Music and Announcement in Queue, TOPS call processing simply ignores the unnecessary audio information in datafill.

Music and Announcement in Queue (continued)

Datafilling table CT4QNAMS

Field	Subfield or refinement	Entry	Explanation and action
	THRESHLD	0 to 60	<p>Threshold. If the predicted wait time of a call in the queue is equal to or greater than THRESHLD in seconds, the audio program defined in field AUDIOKEY is played. Otherwise, only the default treatment (ringing) is provided while the call is queued for an operator. For further information, refer to section "Wait times and audio thresholds".</p> <p>This field allows a program to be applied only to calls that are expected to be in queue longer than a specified number of seconds. Judicious use of this field can decrease the frequency that callers hear only a short burst of music, or only a partial announcement, before the operator is connected.</p> <p>The predicted wait time for each queue is computed using a 60-second window that slides every 10 seconds. If no calls have been served from a queue in the past 60 seconds, a predicted wait time cannot be computed. Then, the call receives the audio program in table TOPAUDIO, regardless of THRESHLD.</p> <p>For more information about predicted wait times for QMS calls, refer to the Force Management Guide for your operator position type, or to functionality QMS Host/Remote Queueing, OSB00101, in this document.</p>
	AUDIOKEY	name from table TOPAUDIO	<p>Audio key. This field identifies the audio program to be played to a caller waiting in the queue for an operator. This field is an index into table TOPAUDIO. This name must be previously defined in table TOPAUDIO.</p>

Datafill example for table CT4QNAMS

The following example shows sample datafill for table CT4QNAMS.

Music and Announcement in Queue (continued)

MAP display example for table CT4QNAMS

CT4QNUM	CT4QNAME	NOAMA	SYSAREA_SEL
20	SKI_REPORT	N	TOPSOPR N N N Y 5 POP_MUSIC_ONLY
21	0_MINUS_STA	N	TOPSOPR N N N Y 0 STD_WAIT_TRMT
22	BUSOFC	Y	TOPSOPR N N N Y 12 BUSOFC_AFTER_HRS
23	DELAYCQ	N	TOPSOPR N N N N
24	NCC1	N	OSSAIN

Error messages for table CT4QNAMS

The following error messages apply to table CT4QNAMS.

Error messages for table CT4QNAMS

Error message	Explanation and action
AUDIOKEY <key> DOES NOT EXIST IN TOPAUDIO TABLE	When field AUDIO_SEL=Y, the AUDIOKEY refinement identifying an audio program must already be in table TOPAUDIO. If the AUDIOKEY does not exist in TOPAUDIO, then this error message is displayed.

Datafilling table DRAMTRK

The following table shows the datafill specific to Music and Announcement in Queue for table DRAMTRK. Only those fields that apply directly to Music and Announcement in Queue are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table DRAMTRK

Field	Subfield or refinement	Entry	Explanation and action
			This table is not changed. Enter necessary new announcements.

Datafill example for table DRAMTRK

The following example shows sample datafill for table DRAMTRK.

Music and Announcement in Queue (end)

MAP display example for table DRAMTRK

```
ANNTRACK                                     PHSLIST
-----
HOLD_4_OPR_CLLI  0                          (HOLD_4_OPR_SHORT)$
WAIT_4_OPR_CLLI  3                          (HOLD_4_OPR_LONG ) (          SILENCE)$
```

Translation verification tools

Music and Announcement in Queue does not use translation verification tools.

SERVORD

Music and Announcement in Queue does not use SERVORD.

New Access Method for SN

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS14 and up

TOPS14 introduced New Access Method for SN.

Requirements

To operate, New Access Method for SN requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This feature provides an easier method to set up an outgoing route to a node.

This functionality consists of the feature as follows:

Feature number	Feature name
50134648	New Access Method for Announcement Node

Operation

Before this feature, the operator selected an outgoing trunk to route to a node with the Outgoing Trunk (OGT) key. The limitations were as follows:

- A limit of 100 OGT keys are available
- The OGT keys must be defined in both table TQOGTKEY and the operator protocol compliant (OPP) position.
- A CT4Q must be defined for the trunk (node).
- An Operator Services System Advanced Intelligent Network (OSSAIN) control list must set up for the trunk (node).

With this feature, only a CT4Q is used to specify a node (trunk), which is done with existing datafill in table CT4QNAMS. Then, the operator does not need to use the OGT key. The IWS position determines the outgoing trunk from the CT4Q in table CT4QNAMS.

New Access Method for SN (continued)

However, the prior functionality is still available, so the operator can use the OGT keys, which have the above list of requirements and limitations.

The new OPP Action Identifier (ActID) is provided to set the specified CT4Q for the call.

OMs

New operational measurement (OM) group TOPPACT4 is added to record the use of the new ActID.

Translations table flow

This feature does not have a translations table flow.

Limitations and restrictions

The limitations and restrictions that follow apply to New Access Method for SN.

- Operator positions must support the new OPP ActID.
- The new ActID cannot be used by Service Assistant/In Charge (SA/IC) operators.

Interactions

The paragraphs that follow describe how New Access Method for SN interacts with other functionalities.

Since both this feature and the existing functionality for the OGT transfer to CT4Q mechanism set the CT4Q for the call, only the last of these operations received are processed when the operator keys POSRLS.

Transferring from the TOPS operator to OSSAIN is allowed for both DA and TA calls.

Activation and deactivation by the user

New Access Method for SN does not require activation or deactivation by the user.

Billing

New Access Method for SN does not generate billing records or changes.

Station Message Detail Recording

New Access Method for SN does not require Station Message Detail Recording.

New Access Method for SN (end)

Office parameters used by New Access Method for SN

New Access Method for SN does not generate office parameters.

Datafill sequence

This feature does not require datafill.

Translation verification tools

New Access Method for SN does not use translation verification tools.

SERVORD

New Access Method for SN does not use the Service Order System (SERVORD).

Operator Dial-up Autoquote

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS15 and up

Prerequisites

To operate, Operator Dial-up Autoquote requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This functionality is provided by the following features:

Feature number	Feature name
BR0428	300 Baud Dial-Up Autoquote (BCS 19)
BC1407	CC Support for the DUAQ Modems (BCS 19)
BC2138	1200 Baud Dial-Up Autoquote (BCS 20)

The TOPS Dial-Up Autoquote feature enables hotel billing information to be accumulated and transmitted to a receiving device over a switched network path. Prior to DUAQ, hotels received billing information either verbally, from an operator of the Hotel Billing Information Center (HOBIC), or over dedicated lines to the hotel autoquote devices. With the TOPS Dial-Up Autoquote feature, dedicated lines are not required; the hotel device can be accessed in the same manner as any remote telephone set.

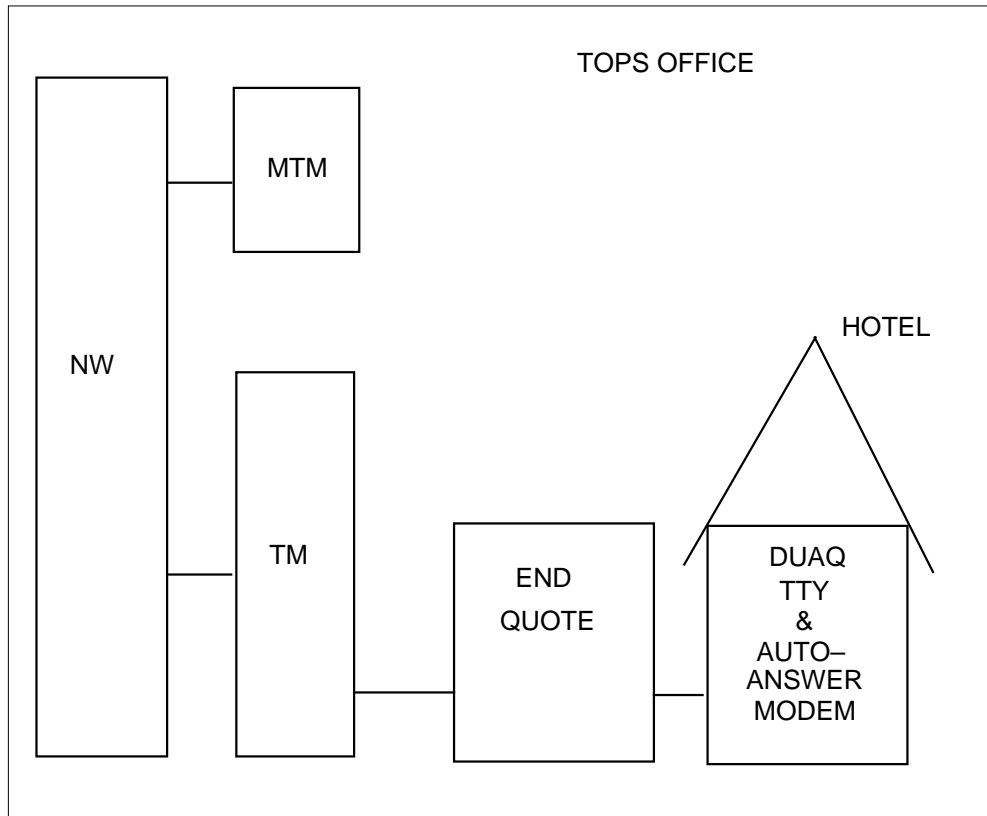
Operation

When a hotel-originated call ends, the system determines if the associated billing record must be sent to a DUAQ device. This determination is made by checking table SPLDNID for the hotel billing number. If the receiving device is DUAQ, the billing record is placed in the DUAQ queue. The collection threshold of records held (REHELD) and the time period of minutes held (MINHELD) for each hotel queue are contained in table HOBICDEV. When either the collection threshold is reached or the holding time expires, a network path is established to the DUAQ device and the collection of records is transmitted to the hotel. The network path is released after the last record is

Operator Dial-up Autoquote (continued)

transmitted. Whenever a new collection of billing records is ready for transmission, the network path to the receiving DUAQ device is reestablished. The following figure details the network connection between the DMS switch and the DUAQ equipment.

DUAQ Connection



The network path to a DUAQ device is set up in the following manner:

1. The device number (DUAQ_NUM) is obtained from table SPLDNID by using the hotel billing number. Using DUAQ_NUM, the device directory number (DEV DN) for the DUAQ device is obtained from table HOBICDEV. A route to the DUAQ device is determined, and a modem is connected to an outgoing trunk that corresponds to the route chosen.
2. The device directory number (DEV DN) is outputted to obtain a network connection to the DUAQ device.
3. A maximum wait, which is specified by the office parameter DUAQ_ANS_WAIT, is allowed for receiving a confirmation of connection (ANSWER) from the auto answer modem of the hotel DUAQ

Operator Dial-up Autoquote (continued)

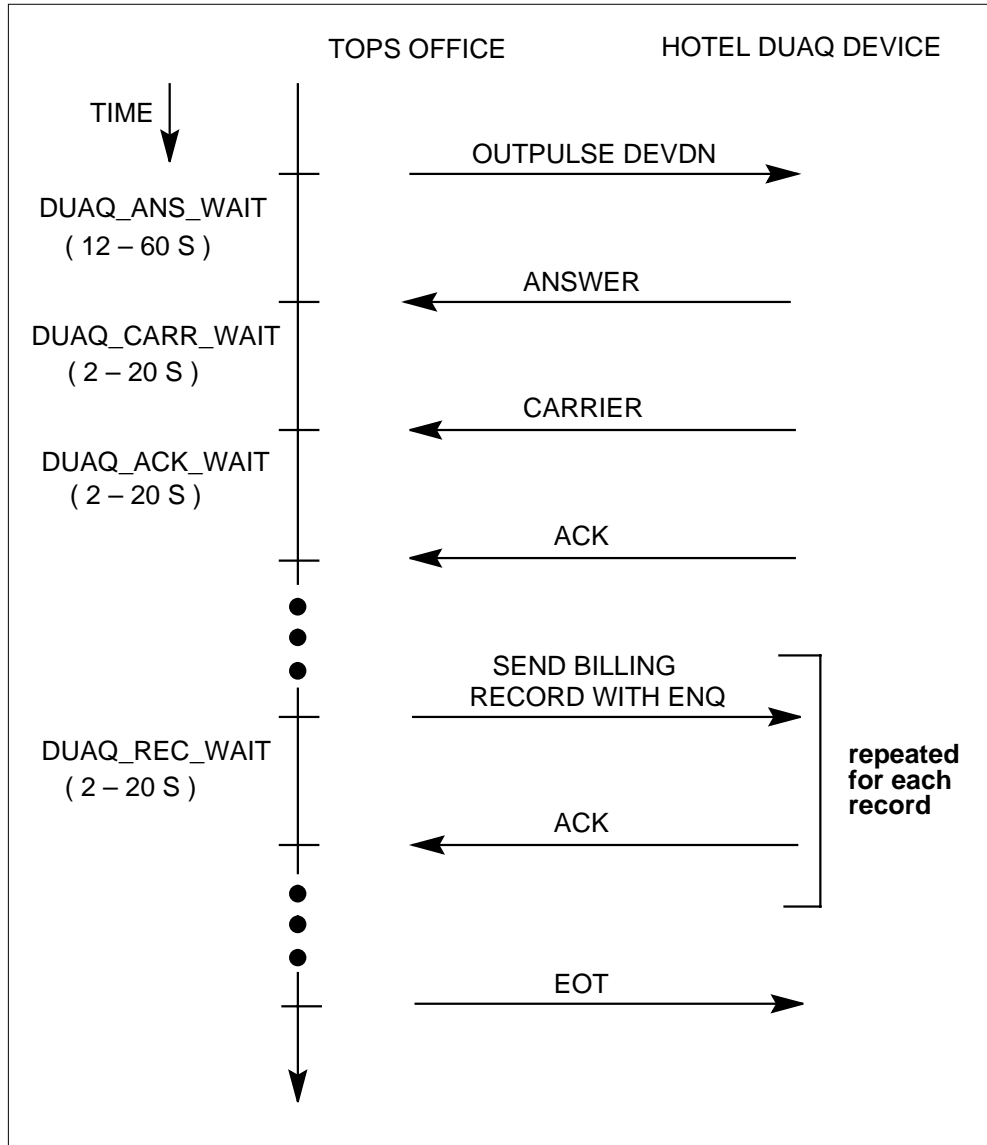
device. Refer to table DUAQOPT, for further information on DUAQ office parameters.

4. ANSWER is followed by CARRIER from the DUAQ device within the time period specified by the office parameter DUAQ_CARR_WAIT.
5. Within DUAQ_ACK_WAIT seconds after CARRIER detection, the ASCII character ACK (octal 006) is received from the DUAQ device.
6. After receiving ACK, each record from the queue is transmitted with the ASCII character ENQ appended and is timed DUAQ_REC_WAIT seconds for the response ACK.
7. After the last record has been sent and acknowledged, EOT (End Of Transmission) is transmitted and the network path is released.

The following figure illustrates the message protocol between a TOPS office and a DUAQ device.

Operator Dial-up Autoquote (continued)

Message Protocol Between TOPS Office and DUAQ

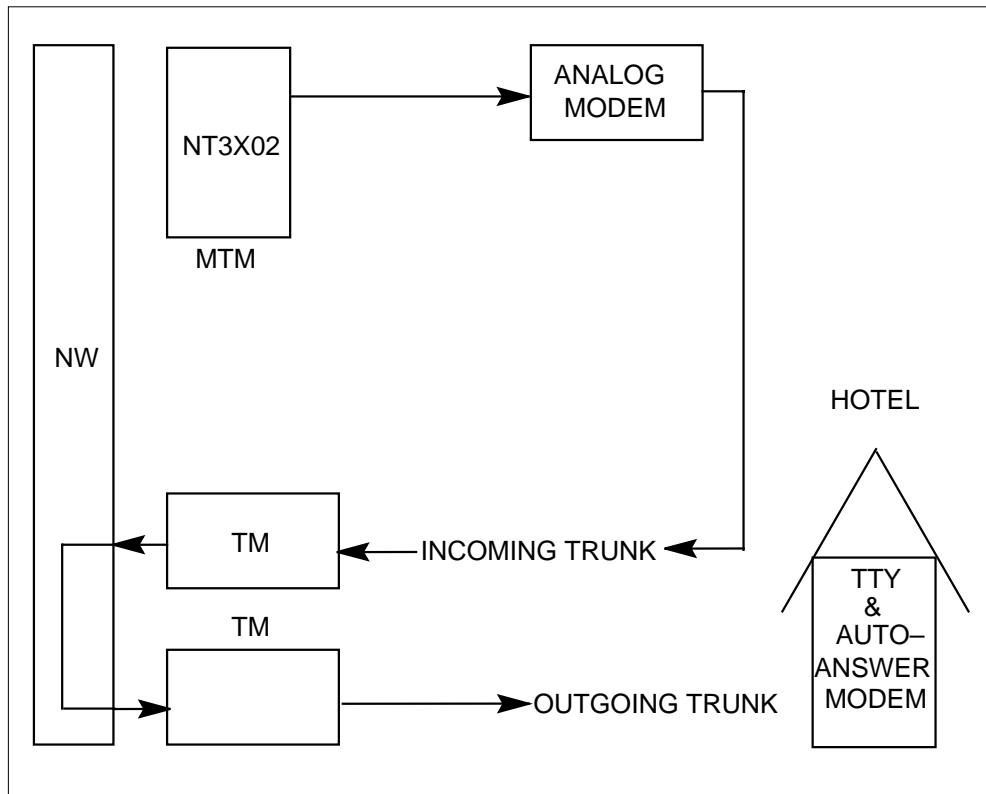


If failure is encountered at any of the steps shown in the figure above, appropriate actions are taken to maintain the quality of service.

The TOPS Dial-Up Autoquote feature uses the NT3X02BA Signal Processor (SP) with an analog modem that is connected to the DMS Network (NW) by an incoming trunk. Data associated with the DUAQ modem can be found in table DQMODEM. Refer to the data schema for more information on table DQMODEM.

Operator Dial-up Autoquote (continued)

The DUAQ modem configuration provides reliable carrier detection from an auto-answer modem located at the hotel premises. The figure below illustrates how a network connection between the DMS switch and the DUAQ equipment is established.

DUAQ Modem Configuration


Communication between the Network (NW) and the Maintenance Trunk Module (MTM) is conducted by a Message Handler system in the DMS switch. This communication is represented by the dotted line between the NW and the MTM. There is also a network connection between the Network and the Trunk Module (TM). The RS232 interface, available on the backplane of the Signal Processor, connects the serial RS232 port to the analog modem. This modem, which is capable of continuous carrier detection, is connected to the Network by an incoming trunk. When records are to be transmitted to hotel premises, an outgoing trunk is connected to the incoming trunk attached to the chosen modem.

The NT3X02BA Signal Processor uses a maximum of 24 circuits on a Maintenance Trunk Module, which may house a maximum of six NT3X02BA circuit packs. Each of these six circuit packs can use four modem circuits.

Operator Dial-up Autoquote (continued)

Each of these circuits is connected to an analog modem. Thus, there can be a maximum of 24 DUAQ modems attached to a Maintenance Trunk Module.

Translations table flow

The Operator Dial-up Autoquote translation process does not have a flowchart.

Limitations and restrictions

The following limitation and restriction applies to Operator Dial-up Autoquote:

- Hotel DUAQ equipment (for example, the auto-answer modem and TTY) must be compatible with the requirements of the message protocol described in this document.

Interactions

The following paragraphs describe the interactions between Operator Dial-up Autoquote and other functionalities.

HOBIC Administration System

Dial-Up Autoquote is a TOPS feature. TOPS also provides Autoquote (AQ), Voice Quote (VQ), and HOBIC services. As part of the HOBIC services, DUAQ interacts with the HOBIC Administration System (HADS) TTY. This interaction parallels that of Autoquote with HADS.

HOBIC Operational Measurements are sent every half hour to the HADS TTY; summaries are printed every six and twenty-four hours. The peg count labeled AQ includes the total messages sent to both AQ and DUAQ.

When a TOPS operator enters a charge adjust sequence for a call classed as 'hotel origination' or 'collect to hotel', the message is printed on the HADS TTY. The following fields are included in the printed message.

- Fail
- System serial number
- Calling number or acronym of the hotel with DUAQ
- Quote code
- Billing code
- Calling number
- Time
- Charge adjust reason

Operator Dial-up Autoquote (continued)

- Adjustment code and adjustment
- Rate step
- Room number

The following commands are entered directly from the HADS TTY.

- H<cr> Displays which devices are out-of-service. System response for out-of-service DUAQ devices is DEV# XXXX OFF ABC, where XXXX is the DUAQ device number and ABC is the hotel acronym.
- HOXXXX <cr> Takes a device out-of-service. When specifying a DUAQ device, XXXX represents the device number of the DUAQ TTY. The system response is DEV# XXXX OFF ABC, where ABC is the hotel acronym.
- HIXXXX <cr> Returns a device to service. When specifying a DUAQ device, XXXX represents the device number of the DUAQ TTY. The system response is DEV# XXXX ON ABC, where ABC is the hotel acronym.

A credit or debit message to a DUAQ device may also be entered from a HADS TTY. The following fields are included in a credit or debit message.

- Message type (C or D)
- Calling number or hotel acronym and cyclic counter
- Quote code
- Billing code
- Called number
- Date (month and day)
- Time (hours and minutes)
- Call duration (minutes)
- Charges (cents)
- Taxes
- Room number
- Name (maximum of four characters)
- Operator number (maximum of four characters)

For verification after a credit or debit message has been entered, the message is retyped at the HADS TTY. After the message is checked, an up arrow is entered to transmit the message to a DUAQ TTY.

Operator Dial-up Autoquote (continued)

Activation/deactivation by the end user

Operator Dial-up Autoquote requires no activation or deactivation by the end user.

Billing

Billing information for a hotel call is stored in the form of a TOPS Recording Unit (RU). For each hotel, the AMA process builds a queue of Recording Units and, at the appropriate time, communicates with Call Processing by means of messages. The following section outlines how AMA builds a queue and when a message is sent to Call Processing.

Note: RECHELD is the queue threshold at which transmission to a DUAQ device should begin. However, Recording Units can be appended to the device queue until the queue is full, that is, until five records have been queued.

AMA Routing Algorithm for Recording Units

If the DUAQ device queue is not full:

- 1 Queue the RU.
- 2 If the DUAQ device is idle, this is the first RU queued, and RECHELD is greater than one, send the appropriate message to Call Processing.
- 3 If the DUAQ device is idle and the number of queued RU equals RECHELD, send the appropriate message to Call Processing.
- 4 If the DUAQ device is full:
 1. Route the full queue to VQ.
 2. Queue the RU.

The billing record is printed at a DUAQ device in the following format.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0004	HOL	004	661-1234	03/25	15:31	2	\$1.75	\$0.12	33

Where:

- (1) Serial number
- (2) Hotel acronym
- (3) DUAQ record count

Operator Dial-up Autoquote (continued)

- (4) Called number
- (5) Date of call
- (6) Time of call connection
- (7) Duration of call in minutes
- (8) Charge for call
- (9) Tax
- (10) Room number

Failure Cases

All billing records accumulated on the DUAQ device queue are sent automatically to the Voice Quote device if the total number of retries exceeds the number specified by the parameter DUAQ_MAX_RETRIES (parameter with a range of one and a default value of six). A trouble report is sent to the HOBIC Administration System (HADS) when any failure occurs.

Every billing record that is transmitted successfully to a hotel is also recorded on the HOBIC RECORD device. If a failure occurs, the records sent to the Voice Quote device are also sent to the RECORD device. These failed records are marked with an asterisk (*) on both the Voice Quote and RECORD devices.

The following are examples of possible failure cases, causes, and effects.

- **No Modem Available:** The records accumulated on the DUAQ device queue are routed, for verbal quotation, to the Voice Quote (VQ) device located at the Hotel Billing Information Center (HOBIC).
- **All Trunks Busy:** The records accumulated on the DUAQ device queue are routed, for verbal quotation, to the Voice Quote (VQ) device located at the Hotel Billing Information Center (HOBIC).
- **Outpulse or Network Connection Failure:** The existing connection is dropped, and a new connection is retried immediately. These failures can be caused by glare, no wink, trouble with sender, or network problems.
- **No ANSWER Received or No CARRIER Received after ANSWER:** The existing connection is dropped, and a new connection is retried after the

Operator Dial-up Autoquote (continued)

time period specified by the parameter `RETRY_WAIT`. Parameter default is one minute. These failures can be caused by the DUAQ device running out of paper.

- No ACK after CARRIER: ENQ is sent, and a wait specified by `DUAQ_ACK_WAIT` is allowed for receiving ACK again. If no ACK is received within this time period, the existing connection is dropped and retried after the time period specified by the parameter `DUAQ_RETRY_WAIT`. This failure can be caused by the DUAQ device running out of paper.
- No ACK Received after Billing Record is Sent: The entire record is retransmitted immediately. A retransmitted record is prefixed by an asterisk (*). If no ACK is received after this retransmission, the connection is dropped and retried after the aging interval specified as `DUAQ_RETRY_WAIT`.

The holding time (`MINHELD`) or the record collection threshold (`RECHELD`) determines when a collection of billing records is due for transmission. These values are specified in table `HOBICDEV`, and neither one may be zero. If the value of `RECHELD` is one, the billing record is sent immediately. If the value of `RECHELD` is greater than one, transmission depends on which event occurs first. If during transmission the number of billing records for a hotel exceeds five, all the queued billing records are rerouted to VQ and the record just received is placed queue.

Station Message Detail Recording

Operator Dial-up Autoquote does not affect Station Message Detail Recording.

Datafilling office parameters

Operator Dial-up Autoquote does not affect office parameters.

Operator Dial-up Autoquote (continued)

Datafill sequence

The following table lists the tables that require datafill to implement Operator Dial-up Autoquote. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Operator Dial-up Autoquote

Table	Purpose of table
DUAQOPT	Dial-Up Autoquote Office Parameter. Stores office parameters for the TOPS Dial-Up Autoquote feature.
HOBICDEV	Hotel Billing Information Center Device. Ensures the proper management of Dial-up Autoquote data.
SPLDNIDf	Tops Special Directory Number ID. Lists the directory number of subscribers.
CLLI	Common Language Location Identifier. Uniquely identifies the far end of each announcement, tone, trunk group, test trunk, national milliwatt test lines, and service circuit.
TRKGRP	Trunk Group Table. Contains information about trunk groups.
TRKSGRP	Trunk Subgroup Table. Contains information about each subgroup associated with a trunk group defined in table TRKGRP.
TRKMEM	The Trunk Member Table. Lists data associated with each analog or digital trunk assigned to one of the trunk groups or subgroups specified in table TRKGRP or table TRKSGRP.
DQMODEM	Dial-UP Autoquote Modem Table. Contains data related to the DUAQ modem configuration.

Datafilling table DUAQOPT

The following table shows the datafill specific to Operator Dial-up Autoquote for table DUAQOPT. Only those fields that apply directly to Operator Dial-up

Operator Dial-up Autoquote (continued)

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

Datafilling table DUAQOPT

Field	Subfield or refinement	Entry	Explanation and action
OPTION		DUAQ_ANS_WAIT,	OFFICE PARAMETER OPTION. Enter the correct office parameter option. This office parameter is the maximum wait time (in seconds) for receiving answer from the DUAQ device. The range is 12-60, and the default is 60. The value type is ANS_WAIT_TYPE.
		DUAQ_CARR_WAIT	Maximum wait time (in seconds) for receiving carrier from the DUAQ device. The range is 2-20, and the default is 10. The value type is CARR_ACK_WAIT_TYPE.
		DUAQ-ACK_WAIT	Maximum wait time (in seconds) for receiving acknowledge from the DUAQ device. The range is 2-20, and the default is 15. The value type is CARR_ACK_WAIT_TYPE.
		DUAQ_REC_WAIT	Maximum wait time (in seconds) for receiving acknowledgment of receipt after DUAQ record is transmitted. The range is 2-2-, and the default is 10. The value type is CARR_ACK_WAIT_TYPE.
		DUAQ_RETRY_WAIT	Maximum wait time (in minutes) before retrying for connection. The range is 1-5, and the default is 1. The value type is RETRY_WAIT_TYPE. This parameter relates to failures of DUAQ connection attempts: No ANSWER received, No CARRIER received after ANSWER, No ACK after CARRIER.
		DUAQ_MAX_RETRIES	Maximum number of accumulated failures allowed for connection to the DUAQ device. The range is 1-6, and the default is 6. The value type is MAX-RETRIES_TYPE.

Datafilling table HOBICDEV

The Hotel Billing Information Device (HOBICDEV) table stores hotel-related information.

Operator Dial-up Autoquote (continued)

The following table shows the datafill specific to Operator Dial-up Autoquote for table HOBICDEV. Only those fields that apply directly to Operator Dial-up Autoquote are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table HOBICDEV

Field	Entry	Explanation and action
DEVNO	0-1000	DEVICE NUMBER. Enter the HOBIC device number. This number must be different from any number in Table TOPSDEV. This field is the index into this table.
HOBDEVSEL	DUAQ	HOBIC DEVICE SELECTOR. Enter the selector (DUAQ) for the HOBIC device.
HACR	A-Z; 0-9 (Valid Acronym)	HOTEL ACRONYM. Enter the three-character hotel acronym.
DEVDN	0-9 (Valid Directory Number)	DEVICE DIRECTORY NUMBER. Enter the 10-digit device directory number.
MINHELD	1 - 10	MINUTES HELD. Enter the number of minutes the buffer is held before transmission begins.
RECHELD	1 - 5	RECORDS HELD. Enter the number of records held in buffer before transmission begins.
LANG	E or F	LANGUAGE. Enter the letter designating English (E) or French (F).
BAUD	BD300	BAUD RATE. Enter the baud rate of the hotel device (BD300).
LC	FF, LF1, LF17	LINE CONTROL. Enter the line control for formfeeds and linefeed.

Datafilling table SPLDNID

The Special Directory Number Identification (SPLDNID) table specifies the directory number of subscribers having special teletype services. This table has been modified to accommodate tuples for DUAQ devices. Refer to the data schema section for more information.

The following table shows the datafill specific to Operator Dial-up Autoquote for table SPLDNID. Only those fields that apply directly to Operator Dial-up

Operator Dial-up Autoquote (continued)

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

Datafilling table SPLDNID

Field	Subfield or refinement	Entry	Explanation and action
SPLDN		numeric	SPECIAL DIRECTORY NUMER. Enter the 10-digit calling number, or define a range of 10-digit numbers.
SPLSEL		see subfields	SPLDNID SELECTOR AREA. This field is composed of field SEL and SEL dependent fields LC_TYPE, AQ_NUM, NC, AND RBILCLAS.
	SEL	AQTAC, AQHTL,DUA QTAC,DUAQ HTL,VQHTL, COIN,RSTRC TD	SPLDNID SELECTOR. Enter the type of device associated with the Special Directory Number: AQTAC - Auto-quote Time and Charge TTY, AQHTL - Auto-quote Hotel TTY, DUAQTAC - Dial-up Auto-quote Time and Charge TTY, DUAQHTL - Dial-up Auto-quote Hotel TTY, VQHTL - Voic-quote Hotel TTY, COIN - Coin Phone, RSTRCTD - Restricted billing class defined in table BILCLAS.

Datafilling table CLLI

The Common Language Location Identifier (CLLI) code identifies the far end of each announcement tone or trunk group. For each applicable baud rate, one entry is made in table CLLI identifying the CLLI for the DUAQ modem type and another entry is made for the related incoming trunk group. To activate the DUAQ feature, tuples (for example, for HOBICDEV, DQB300 for DUAQ modems at 300 baud) are added to the CLLI table. After these additions are made, a Cold Restart must be done. Table CLLI is datafilled before tables TRKGRP, TRKSGRP, TRKMEM, and DQMODEM. Refer to the data schema section for more information.

Datafilling table TRKGRP

The Trunk Group (TRKGRP) table defines data associated with each trunk group in the switch. Table TRKGRP must be datafilled before table TRKSGRP. Refer to the data schema section for further information.

Datafilling table TRKSGRP

The Trunk Subgroup (TRKSGRP) table lists supplementary information for each subgroup assigned to one of the trunk groups listed in the Trunk Group

Operator Dial-up Autoquote (continued)

(TRKGRP) table. Table TRKSGRP must be datafilled before table TRKMEM. Refer to the data schema for more information.

Datafilling table TRKMEM

The Trunk Member (TRKMEM) table lists data associated with each analog or digital trunk assigned to one of the trunk groups or subgroups specified in table TRKGRP or table TRKSGRP. This information includes the trunk number and the physical location of each trunk assigned. Table TRKMEM must be datafilled after table TRKGRP and table TRKSGRP, but before table DQMODEM. Refer to the data schema section for more information.

Datafilling table DQMODEM

The DUAQ Modem (DQMODEM) table contains data related to the DUAQ modem configuration. Table TRKMEM must be datafilled before table DQMODEM. Refer to the data schema for more information.

The following table shows the datafill specific to Operator Dial-up Autoquote for table DQMODEM. Only those fields that apply directly to Operator Dial-up Autoquote are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table DQMODEM

Field	Subfield or refinement	Entry	Explanation and action
DQMODKEY		see subfields	DUAQ MODEM KEY. This field is composed of the two fields DQBAUD and DQMODNO.
	DQBAUD	BD300	DUAQ BAUD RATE. Enter the modem baud rate (BD300)
	DQMODNO	0 - 511	DUAQ MODEM NUMBER. Enter the number of the DUAQ modem. This number identifies modems within each queue.
TMTYPE		MTM	TRUNK MODULE TYPE. Enter the trunk module type (MTM). This value determines the modem position on the network.
TMNO		0 - 255	TRUNK MODULE NUMBER. Enter the trunk module number. This number determines the modem position on the network.
TMCKTNO		0 - 23	TRUNK MODULE CIRCUIT NUMBER. Enter the number of the trunk module circuit. This number determines the modem position on the network.

Operator Dial-up Autoquote (end)

Datafilling table DQMODEM

Field	Subfield or refinement	Entry	Explanation and action
TKGRPNUM		A - Z; 0 -9 (Valid CLLI)	TRUNK GROUP NAME. Enter the Common Language Location Identifier (CLLI) character string.
TKMEMNO		0 - 2047	TRUNK GROUP MEMBER NUMBER. Enter the number of the trunk group member. This number identifies the individual trunks within the trunk group.

Translation verification tools

Operator Dial-up Autoquote does not use translation verification tools.

SERVORD

Operator Dial-up Autoquote does not use SERVORD.

PICNAME Expansion

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS10 and up

PICNAME Expansion was introduced in TOPS10.

Prerequisites

To operate, PICNAME Expansion requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y

Description

Table PICNAME is expanded from 256 to 1000 tuples.

This functionality is provided by the following feature:

Feature number	Feature name
AF7376	Table PICNAME Expansion

Operation

Table PICNAME stores a list of all Primary Interlata Carriers (PICs) serving the DMS switch. The tables that reference table PICNAME support the new size. These tables are DNPIC, DNLPIC, TRKLATA, CARRTRF, TOPEATRK and TOPEACAR. Table OCCNAME, which is referenced by table PICNAME, also supports 1000 entries.

Translations table flow

The PICNAME Expansion translations tables are described in the following list:

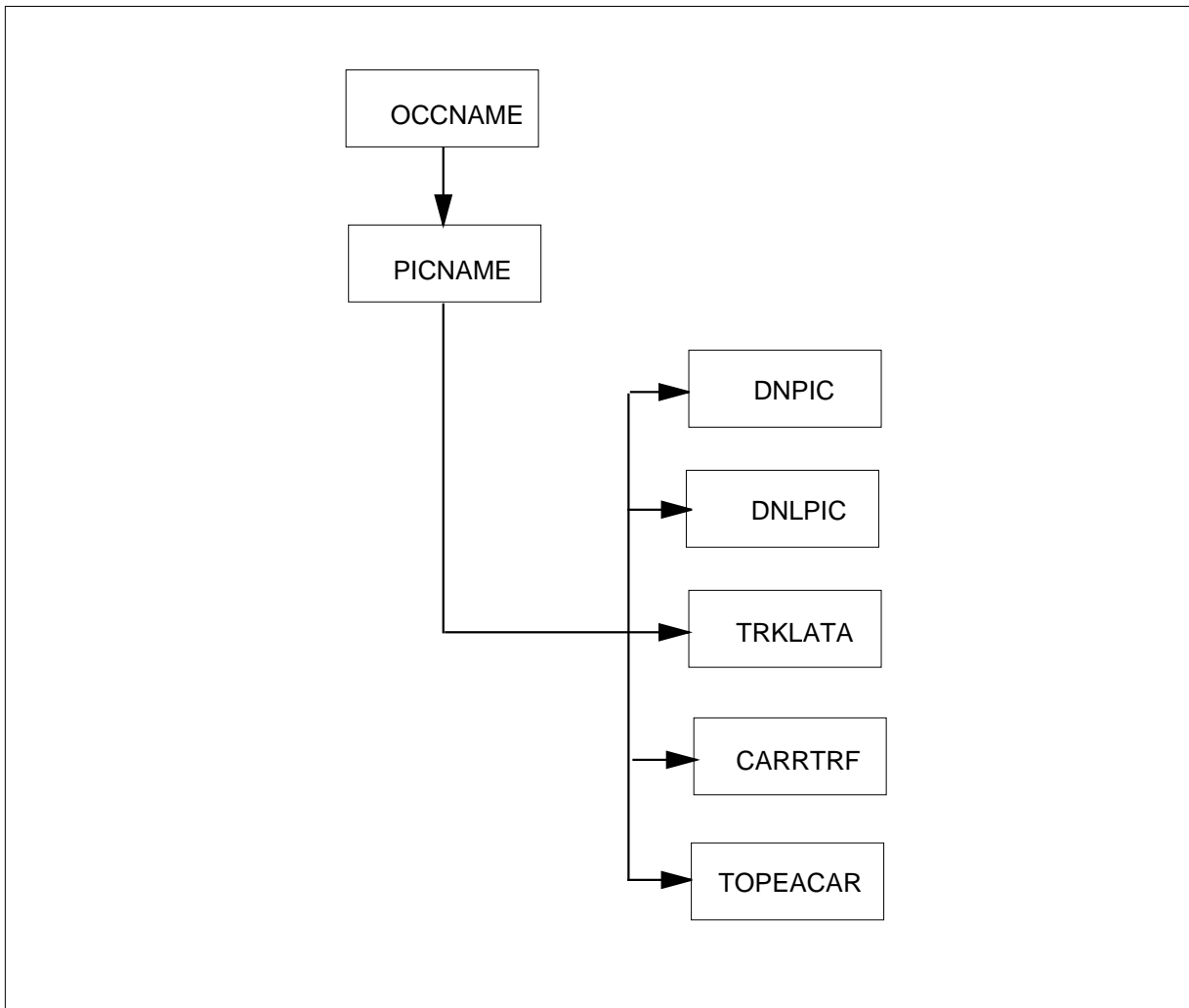
- Table OCCNAME defines carriers that are connected to the DMS switch
- Table PICNAME lists carriers that serve the DMS switch.
- Table DNPIC maps a directory number to a primary inter-LATA carrier.
- Table DNLPIC maps a directory number to a primary intra-LATA carrier.

PICNAME Expansion (continued)

- Table TRKLATA determines the originating local access and transport area (LATA) of a call.
- Table CARRTRF defines carrier rating tariffs.
- Table TOPEACAR defines supported operator services and billing for carriers.
- Table TOPEATRK contains informations used for routing inter-LATA (Local Access and Transport Area) calls when the DMS-200 includes Traffic Operator Position System (TOPS) Equal Access software.

The PICNAME Expansion translation process is shown in the flowchart that follows.

Table flow for PICNAME Expansion



PICNAME Expansion (continued)

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

Datafill example for PICNAME Expansion

Datafill table	Example data
OCCNAME	C111 C222 C333
PICNAME	C111 C222 C333
DNPIC	619 239 11 11 C111 Y N
DNLPIC	212 220 11 11 C222
TRKLATA	TBELLIC1 613239 L123 Y C C333
CARRTRF	C111 619 517 TARIFF619
TOPEACAR	C111 C111 C111 Y Y 0111 UREST UREST SERV NOQUERY Y NOQUERY Y NOQUERY Y Y Y Y 0
TOPEATRK	

Limitations and restrictions

The following limitations and restrictions apply to PICNAME Expansion:

- The maximum number of entries in table PICNAME is 1000.
- Table OCCNAME must be filled with data before table PICNAME. Table PICNAME must be filled with data before tables DNLPIC, DNPIC, TRKLATA, CARRTRF, and TOPEACAR. This is an existing restriction.

Interactions

The following paragraphs describe the interactions between PICNAME Expansion and other functionalities.

Table PICNAME references table OCCNAME. Before a primary interlata carrier (PIC) name is added to table PICNAME, the PIC name must already be present in table OCCNAME. Table OCCNAME supports up to 1000 entries and therefore is not affected by the expansion of table PICNAME.

PICNAME Expansion (continued)

Tables DNLPIC, DNPIC, TRKLATA, CARRTRF, and TOPEACAR reference table PICNAME.

This feature interacts with LATA equal access system (LEAS) and the TOPS system.

Activation/deactivation by the end user

PICNAME Expansion requires no activation or deactivation by the end user.

Billing

PICNAME Expansion does not affect billing.

Station Message Detail Recording

PICNAME Expansion does not affect Station Message Detail Recording.

Datafilling office parameters

PICNAME Expansion does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement PICNAME Expansion. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for PICNAME Expansion

Table	Purpose of table
OCCNAME	Equal Access List of Other Common Carrier Names lists connected carriers and provides spelling standard for carrier names.
PICNAME	Primary Inter-LATA Carrier lists carriers that serve the DMS switch.
CARRTRF	Carrier Tariff Table defines carrier rating tariffs.
TOPEATRK	TOPS Equal Trunk provides routing information for calls made with a DMS-200 switch and TOPS software.
TRKLATA	Trunk Local Access and Transport Area allows the operating company to determine the originating LATA of a call
DNLPIC	Directory Number Primary Intra-LATA Carrier maps a directory number (DN) to a PIC, which is datafilled in table PICNAME.
DNPIC	Directory Number Primary Inter-LATA Carrier maps a DN to inter-LATA PIC, which is datafilled in table PICNAME.

PICNAME Expansion (end)

Datafilling table PICNAME

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

Datafilling table PICNAME

Field	Subfield or refinement	Entry	Explanation and action
			The maximum table size is changed from 256 to 1000 tuples.

Datafill example for table PICNAME

The following example shows sample datafill for table PICNAME.

MAP display example for table PICNAME

```
PICNAME
-----
C111
```

Translation verification tools

PICNAME Expansion does not use translation verification tools.

SERVORD

PICNAME Expansion does not use SERVORD.

Position/Device Evolution IP

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS11 and up

Position/Device Evolution IP was introduced in TOPS11.

Prerequisites

To operate, Position/Device Evolution IP requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y

Description

This feature introduces the following enhancements to TOPS devices.

- Communication of TOPS device application information to personal computers (PCs) using the Internet Protocol (IP) based Digital Multiplex Switch (DMS) Local Area Network (LAN).
- 15 minute, 30 minute, 6 hour, and 24 hour reports for Queue Management System (QMS) force management devices. Refer to the datafill procedure section, table TQMSOPT, for more information.
- Maintenance and Administration Position (MAP) levels TOPSIP and TOPSDEV are created. Refer to the *TOPS Maintenance Manual*, 297-8341-550, for information.

This functionality is provided by the following feature:

Feature number	Feature name
AF7827	TOPS Device Evolution

Operation

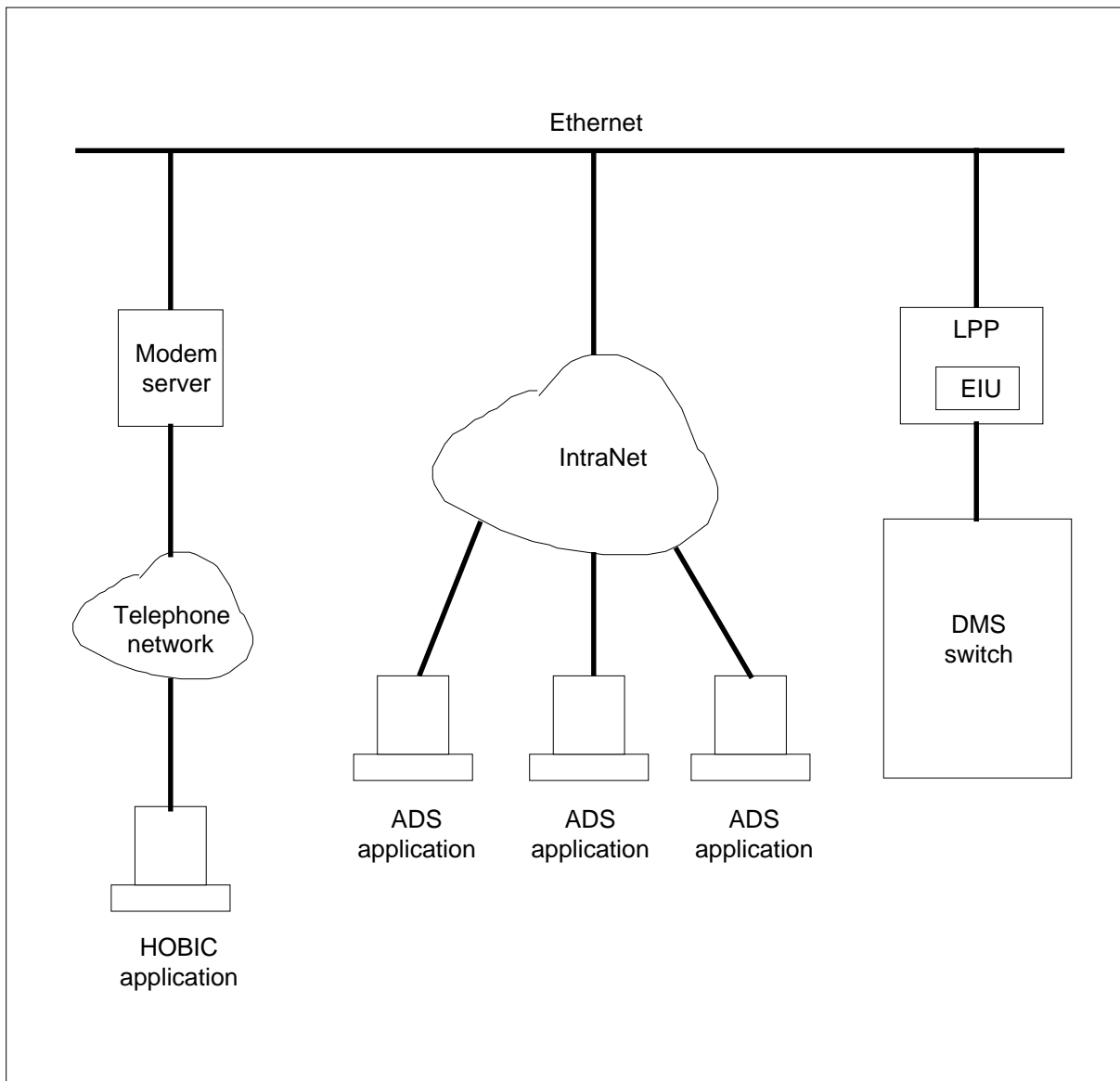
TOPS device IP

Before this feature, TOPS device information was sent to teletypewriters (TTY) using digital modems (DMODEM). This feature provides access to the same information IP based DMS LAN to TOPS devices. In this configuration, device information is made available through Transmission Control Protocol (TCP) / IP telnet connections on the DMS Computing Module (CM). Personal

Position/Device Evolution IP (continued)

computers (PC) and other devices with telnet client software are able to connect to a specific device application on the CM to access this information. The following figure is an example network.

Example IP network



The above DMS switch connects to the Ethernet with an Ethernet Interface Unit (EIU) in the Link Peripheral Processor (LPP). An LPP is also known as a Link Interface Module (LIM). Then, Administrative Data System (ADS) applications can access the DMS switch directly or through Operating Company provided intranet access. Remote access to hotel billing information

Position/Device Evolution IP (continued)

center (HOBIC) applications can be provided with the telephone network and dial-up modem servers. Network security can be provided using firewalls and secure modem servers.

Telnet client recommendations

The operating company is responsible for selecting a telnet client to access this information. The selected client should have at least the following set of features.

- Session logging to a hardcopy and secondary storage device.
- Ability to automatically re-establish lost connections.
- Ability to monitor and display the TCP connection state to the user.
- Ability to send and reply to TCP keep alive messages.
- Ability to connect to non-standard telnet ports. The default telnet port number is 23. TOPS device access is available on ports 8000 to 8095.

Datafill

The DMS CM provides a telnet server interface for each of the supported TOPS devices. Any telnet client with access to the DMS LAN can start a telnet

Position/Device Evolution IP (continued)

connection by using the DMS host address and the assigned telnet server port. The datafill tables are the following:

- TOPS devices
 - TOPSDEV - Assign a server port address for each TOPS device.
- EIU - The switch uses an EIU to access the Ethernet. If one is not present or an additional one is required, datafill the following tables. An EIU can support up to 32 TCP connections.
 - Provision the LIM.
 - PECINV - Add tuples if new PECs are required due to new EIUs.
 - PMLOADS - Add tuples if new loads are required due to new EIUs.
 - LIMINV - Add a tuple if a new LIM is required. A LIM can hold up to 4 EIUs.
 - LIMCDINV - This table is automatically datafilled by table LIMINV. If LIMINV is changed, verify LIMPTINV.
 - LIMPTINV - Add a tuple if a new LIM is required.
 - SUSHELF - Add a tuple if a new LIM is required.
 - LIUINV - Add a tuple for each new EIU.
 - NIUINV - Add a tuple if a new LIM is required.
 - Provision the DMS LAN in the tables as follows:
 - IPNETWRK - Define the DMS switch host IP address. A maximum of two EIUs can be assigned. Only one tuple is allowed in the table.
 - IPROUTER - Add a tuple for each EIU.
 - IPHOST - Add a tuple for each EIU. A maximum of 32 TCP connections are allowed for an EIU.
 - IPTHRON - Add a tuple for each EIU.
 - RMCONFIG - Add a tuple for each EIU. Define the number of TCP connections for each EIU. As given above, the maximum is 32.

Details are given in the datafill procedure section.

Position/Device Evolution IP (continued)

Datafill is not required in tables ENSITES, ENTYPES, nor EXNDINV.

Note: All maintenance on the EIU or LAN should be done from a MAP position and not from a TELNET session on a workstation. If the EIU goes out of service, TELNET sessions are terminated.

Device upgrade considerations

Table TOPSDEV sizing should be taken into consideration before upgrading to IP devices. The maximum number of devices allowed in TOPSDEV is determined by the TRKGRSIZ field in table CLLI tuple TOPSDEV. *Changing TRKGRSIZ does not dynamically alter the maximum number of tuples in TOPSDEV.* Instead, all devices must be taken out of service and removed from TOPSDEV. When the last device is removed, all store used by TOPSDEV is freed. When the first device is added back in, store for TOPSDEV is re-allocated based on TRKGRSIZ.

This existing table TOPSDEV behavior may effect upgrading devices to IP depending on the strategy used for upgrading. If only one DMODEM device is converted to IP at a time, the impact can be limited.

As an alternative to removing and then re-adding TOPSDEV tuples, the size of TOPSDEV can also be changed over during a one night process (ONP). Using this method, TRKGRSIZ is increased to the desired number of TOPSDEV tuples on the dump side before the TABXFR begins. Once the TABXFR completes, table TOPSDEV on the restore side contains the number of tuples specified in field TRKGRSIZ. This method works because table CLLI is transferred before TOPSDEV. TOPSDEV starts out as an empty table on the restore side. When TABXFR transfers the first TOPSDEV tuple, store for TOPSDEV is allocated based on TRKGRSIZ which is already transferred. Once the TABXFR completes, all TOPSDEV tuples are transferred and the maximum number of tuples is equal to TRKGRSIZ.

Device activation

In order to activate a device datafilled in table TOPSDEV, perform the following steps:

1. From the trunk test positions (TTP) level of the maintenance and administration position (MAP) terminal, post the device.
2. Place the device in the installation busy (INB) state.
3. Busy (command BSY) the device and return to service (command RTS).

For more details, refer to table TOPSDEV in data schema.

Position/Device Evolution IP (continued)

Optionality control

All functionality added by this feature is controlled by datafill. No Software optionality control (SOC) is introduced.

Logs

The following logs are created:

- TOPS302: This log is generated when a TOPS IP device enters the system busy (SYSB) state or changes from the CPB to DISC state. This condition could potentially effect billing or force management depending on device type, so a TDTrbl alarm is raised. Check network hardware, such as the Ethernet Interface Units, and end to end connectivity. In order to clear the alarm, all TOPS IP devices must be moved out of the SYSB state.

The raised alarm is indicated on the log by two asterisks on the first line.

- TOPS501: This log is generated when a TOPS IP device changes state. This is an information log only. When a TOPS IP device becomes system busy, a TOPS302 log is generated in conjunction with the TOPS501 log.

Maintenance

The following are changes to maintenance:

- A TDTrbl major alarm is raised when a TOPS IP device enters the system busy state or changes from the CPB to DISC state.
- New MAP display levels TOPSIP and TOPSDEV are added.
- The DEVDISP debugging tool is added.

For further information, refer to NTP 297-8341-550, *TOPS and TMS Maintenance Manual.*, under this functionality (Position/Device Evolution IP).

Position/Device Evolution IP (continued)

Translations table flow

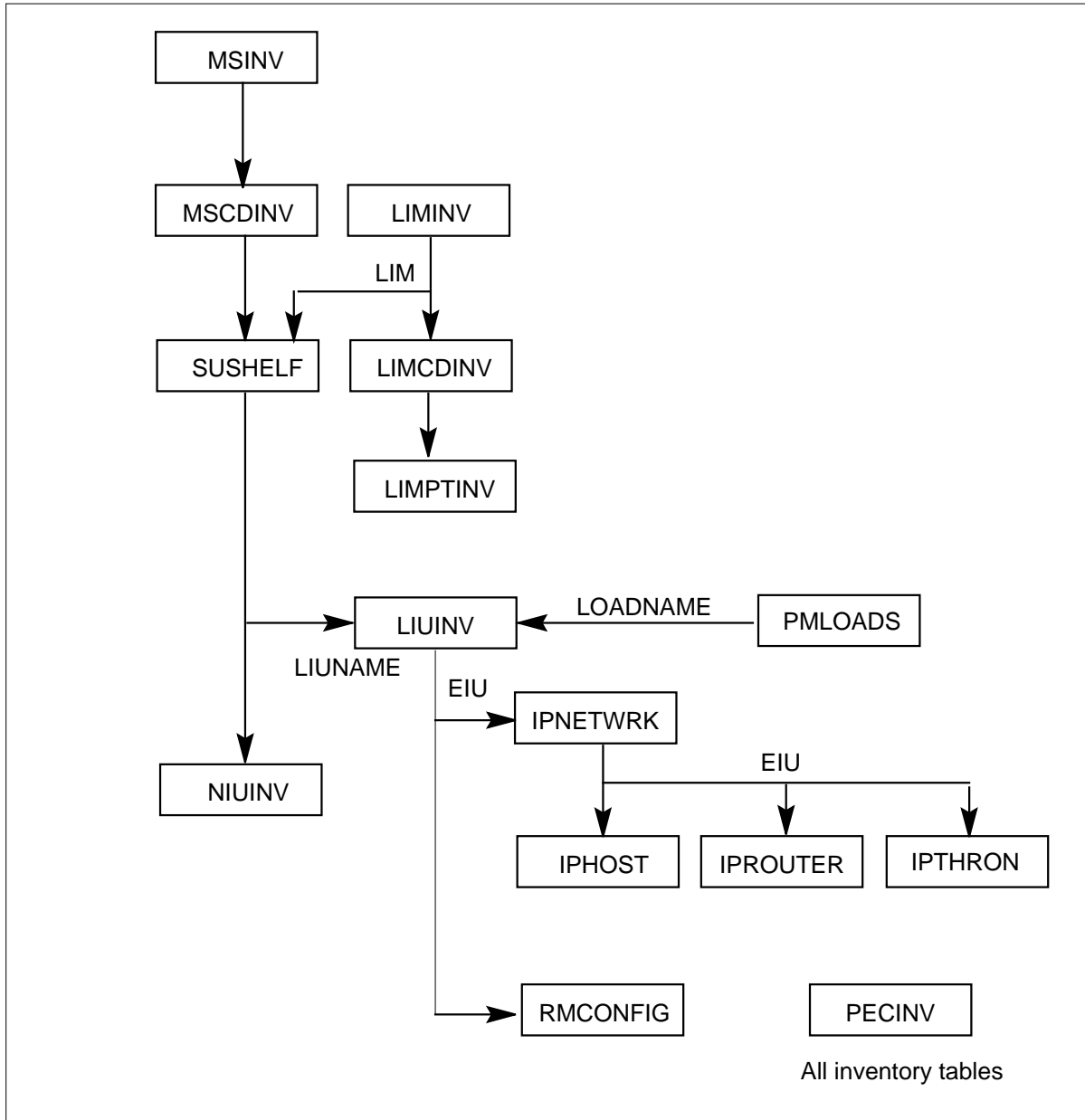
The Position/Device Evolution IP translations tables are described in the following list:

- Provision the LIM.
 - Table PECINV defines the hardware inventory tables in an office.
 - Table PMLOADS defines the software loads used in table LIUINV.
 - Table MSINV contains message switch (MS) location and characteristic information. The MS is the interface between the LPP cabinet and the DMS bus.
 - Table MSCDINV defines the cards in a message switch node.
 - Table LIMINV lists the LIMs in an office.
 - Table LIMCDINV describes the type of cards in the LIM cabinet.
 - Table LIMPTINV describes the port connection on each LIM.
 - Table SUSHELF describes the link interface unit (LIU) shelves in a LIM and a Message Switch (MS) cabinet.
 - Table LIUINV contains information about each of the LIUs in the system including location, hardware configuration, and software load.
 - Table NIUINV defines each NIU inventory. Each NIU is defined with the location, load name, and PEC.
- Provision the DMS LAN
 - Table IPNETWRK stores all Internet-specific information about the Internet network and the SuperNode subnetwork.
 - Table IPROUTER stores the Internet specific information of each of the EIUs in the SuperNode subset.
 - Table IPHOST is responsible for configuring SuperNode-based nodes as Internet hosts.
 - Table IPTHRON provides a mechanism to avoid congestion on DS30 links between the MS (Message Switch) and the LMS (Local Message Switch) in the LPP (Link Peripheral Processor).
 - Table RMCONFIG specifies the number of desired telnet sessions (remote maps) on the CM, and which EIUs will connect these remote maps.

The Position/Device Evolution IP translation process is shown in the flowchart that follows.

Position/Device Evolution IP (continued)

Table flow for Position/Device Evolution IP



Position/Device Evolution IP (continued)

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

Datafill example for Position/Device Evolution IP

Datafill table	Example data
PECINV	NT9X84AA (LISHW 02 \$) \$
PMLOADS	ERS11AL ERS11AL ERS11AL S00DISN S00DISN N
MSINV	0 0 A 0 DPCC 0 NT9X01BA NT9X04AA 39
MSCDINV	0 0 18 DS30 NT9X17AD NT9X23BA
LIMINV	0 1 R 43 LIM 0 LPC11AK NT9X70BA NT9X71AB 1.0
LIMCDINV	0 0 9 DS30 NT9X17AD NT9X23BA
LIMPTINV	0 9 0 0 DMSY MS 1 18 0
SUSHELF	LIM 0 12 0 1 1 R 43 LIM 0 26 NT9X72BA (7 NT9X74DA NT9X79AA) (30 NIL NTEX20AA) (1 NIL NIL) (4 NIL NIL) \$ (32 NT9X74DA NT9X79AA) (8 NIL NTEX20BA) (33 NIL NIL) (36 NIL NIL) \$
LIUINV	EIU 0 LIM 0 2 16 ERS11AL NTEX22BB NT9X84AA NT9X85AA NO 000075F07216
NIUINV	0 LIM 0 1 NRS11AL NTEX22BB NTEX25AA NTEX28AA NTEX22BB NTEX25BA NTEX28AA (0 1) (1 1) (2 1) (2 49) \$
IPNETWRK	0 47 245 8 11 18 (EIU 0) \$ (SCRNFLAG N) \$
IPROUTER	0 EIU 0 47 245 8 3 47 43 162 130 YES YES
IPOST	3 EIU 0 47 245 8 3 47 43 162 130 32 2 2
IPTHRON	EIU 0 32000 32000 \$
RMCONFIG	1 EIU 0 8

Limitations and restrictions

The following limitations and restrictions apply to Position/Device Evolution IP:

- A maximum of 4 EIUs can be installed in a single LPP.
- The DMS switch core can have a maximum of 96 TCP connections.
- All TCP connections are dropped on restarts and switch activities (SWACTs).

Position/Device Evolution IP (continued)

Interactions

The following paragraph describes the interactions between Position/Device Evolution IP and other functionalities.

This feature interacts with existing TOPS device functionality. IP and DMODEM devices behave exactly the same from a user interface standpoint. Report formats, billing records, and user commands are equivalent except where noted in this document.

Activation/deactivation by the end user

Position/Device Evolution IP requires no activation or deactivation by the end user.

Billing

Position/Device Evolution IP does not affect billing.

Station Message Detail Recording

Position/Device Evolution IP does not affect Station Message Detail Recording.

Datafilling office parameters

Position/Device Evolution IP does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement Position/Device Evolution IP. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Position/Device Evolution IP

Table	Purpose of table
TQMSOPT	TOPS Queue Management System Options defines office wide parameters for QMS.
TOPSDEV	TOPS Devices defines trunk circuit data and location for TOPS devices.
PECINV	Product engineering code inventory defines PECs.
LIMINV	Link interface module inventory defines LPP hardware.
LIMCDINV	Link interface module card inventory defines LIM circuit packs.
LIMPTINV	Link interface module port inventory defines port connections on LIMs.

Position/Device Evolution IP (continued)

Datafill tables required for Position/Device Evolution IP

Table	Purpose of table
SUSHELF	Describe LIU shelves in the LIM
NIUINV	Network interface unit inventory defines NIUs.
LIUINV	Link interface unit inventory defines the LIU hardware configuration.
PMLOADS	Peripheral module loads defines software loads.
RMCONFIG	Remote access configuration specifies the number of TELNET sessions.
IPNETWRK	Internet Procotol Network defines characteristics of the Internet network and SuperNode subnetwork.
IPROUTER	Internet procotol router stores Internet information.
IPHOST	Internet procotol host assigns IP addresses to Supernode hosts.
IPTHRON	Internet Procotol throttling numbers avoids congestion on DS30 links.

Datafilling table TQMSOPT

The following table shows the datafill specific to Position/Device Evolution IP for table TQMSOPT. Only those parameters that apply directly to

Position/Device Evolution IP (continued)

Position/Device Evolution IP are shown. For a description of the other parameters, refer to the data schema section of this document.

Datafilling table TQMSOPT

Field	PARMNAME	Field PARMVAL	Explanation and action
	QMSFM_REPORT_INTERVALS	NONE, 15MIN, 30MIN, 6HR, 24HR, ALL	<p>This parameter controls QMS force management report intervals for QFADS and QTADS devices. Enter a set of any combination of the values (except NONE) as follows:</p> <ul style="list-style-type: none"> • NONE - no reports are displayed • 15MIN - display report every 15 minutes • 30MIN - display report every 30 minutes • 6HR - display report every 6 hours • 24HR - display report every 24 hours • ALL - display report every 15MIN, 30MIN, 6HR, and 24HR. <p>The default is 15MIN.</p> <p>These reports are generated regardless of whether the device is using the IP interface or DMODEMs.</p> <p>Before this feature, the interval was 15 minutes. That report format is used for the new intervals.</p> <p>The new intervals are useful for DMODEM QMS devices since QMS reports have a variable length based on the number of call queues and services selected for reporting. If only minimal reporting is needed, a longer interval can prevent an overflow hazard. Overflow occurs when a periodic report should be printed, but the device is printing a previous report. If overflow does occur, a message is printed to the device and the number of call queues or services selected for reporting should be reduced.</p> <p>Refer to the <i>TOPS Force Management Guide</i>, for more information on selecting call queues and services for QMS force management devices.</p>

Datafill example for table TQMSOPT

The following example shows sample datafill for table TQMSOPT.

Position/Device Evolution IP (continued)

MAP display example for table TQMSOPT

PARMNAME	PARMVAL
-----	-----
QMSFM_REPORT_INTERVALS	15MIN 30MIN \$

Datafilling table TOPSDEV

The following table shows the datafill specific to Position/Device Evolution IP for table TOPSDEV. Only those fields that apply directly to Position/Device Evolution IP are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TOPSDEV

Field	Subfield or refinement	Entry	Explanation and action
DEVTYPE			New field DATATYPE is added to define a server port address. Assign an address for each of the TOPS devices below that are present in the office and connected to the DMS LAN.
		see subfield	Device type. This field consists of subfield DEVSEL and refinements.
	DEVSEL	see below	Device selector. New field DATATYPE is added for the following devices, except FMCRT.
		AQ	AQ (Auto quote) and datafill refinements LANG, LC, HACR, and DATATYPE.
		DADS	DADS and datafill refinements LANG and DATATYPE.
		FMCRT	FMCRT and datafill refinement DATAPATH. (DATAPATH was an existing field.)
		HADS	HADS (Hotel Administration Data System) and datafill refinements LANG and DATATYPE.
		QFADS	QFADS (QMS FADS) and datafill refinements LANG and DATATYPE.
	QMFADS	QMFADS (QMS Mechanized FADS) and datafill refinement DATATYPE.	

Position/Device Evolution IP (continued)

Datafilling table TOPSDEV

Field	Subfield or refinement	Entry	Explanation and action
		QTADS	QTADS (Queue Management System [QMS] TADS) and datafill refinements LANG, TRAFOfc, and DATATYPE.
		RECORD	RECORD and datafill refinements LANG, LC, and DATATYPE.
		VQ	VQ (Voice quote) and datafill refinements LANG, LC, and DATATYPE.
	DATAPATH	see below	Data type. If DEVSEL = FMCRT, datafill this field. This field consists of subfield DATATYPE and refinements.
	DATATYPE	DMODEM, TMS, or EIULAN	<p>Data type. If DEVSEL = FMCRT, datafill this field. This field indicates the path data is transmitted to the TOPS terminal. Enter the type of data transmission for TOPS device information. The values are as follows:</p> <ul style="list-style-type: none"> • DMODEM - traditional trunk based digital modem for sending information to TTYs. This data type was used before this functionality and is not changed. Datafill refinements POSTYPE, PROTOCOL, MEMVAR, CARDCODE, and XMISSION. • TMS - For FMCRT, datafill refinements POSTYPE, PROTOCOL, TPCNO and TPCPSNO. This data type is not changed. • EIULAN - Ethernet interface unit local area network. Enter EIULAN for passing data over the IP based DMS LAN and datafill subfield PORT. This data type is new. <p>The default is DMODEM.</p>
	DATATYPE	see below	Data type. If DEVSEL = AQ, DADS, HADS, QFADS, QMFADS, QTADS, RECORD, or VQ, datafill this refinement, This new field consists of subfield DATATYPE and refinements.

Position/Device Evolution IP (continued)

Datafilling table TOPSDEV

Field	Subfield or refinement	Entry	Explanation and action
	DATATYPE	DMODEM or EIULAN	<p>Data type. If DEVSEL = AQ, DADS, HADS, QFADS, QMFADS, QTADS, RECORD, or VQ, datafill this refinement, This field indicates the path data is transmitted to the TOPS terminal. Enter the type of data transmission for TOPS device information. The values are as follows:</p> <ul style="list-style-type: none"> • DMODEM - traditional trunk based digital modem for sending information to TTYs. This data type was used before this functionality and is not changed. Datafill refinements MEMVAR, CARDCODE, and PROTOCOL. • EIULAN - Ethernet interface unit local area network. Enter EIULAN for passing data over the IP based DMS LAN and datafill subfield PORT. This data type is new. <p>The default is DMODEM.</p>
	PORT	8000 to 8095	<p>Data port. If the entry in subfield DATATYPE is EIULAN, datafill this refinement. Enter the IP address on the DMS LAN of the telnet server port for this TOPS device. The entry must be unique within the CM.</p>

Datafill example for table TOPSDEV

The following example shows sample datafill for table TOPSDEV.

MAP display example for table TOPSDEV

DEVNO								DEVTYPE
1	QMFADS	E	DMODEM	TM8	0	1	2X72AC	BELL108
10							QFADS	EIULAN 8000

The above example indicates QMFADS uses a DMODEM and QFADS uses the DMS LAN.

The TOPS device port number is used with the DMS LAN host address in table IPNETWRK, shown below.

Position/Device Evolution IP (continued)

MAP display example for table IPNETWRK

KEYREF	CMIPADDR	SUBNET	OPTION PARMAREA
0	47 245 8 11	18	(EIU 0) \$ (SCRNFLAG N) \$

With the above datafill, the telnet client software can connect to address 47.245.8.11 port 8000 to gain access to QFADS information.

Error messages for table TOPSDEV

The following error messages apply to table TOPSDEV.

Error messages for table TOPSDEV

Error message	Explanation and action
TELNET PORT NUMBER IN USE BY ANOTHER DEVICE	Telnet server port numbers must be unique for each device. This error message is displayed if this condition is not met.

Datafilling table PECINV

The following table shows the datafill specific to Position/Device Evolution IP for table PECINV. Only those fields that apply directly to Position/Device Evolution IP are shown.

Datafilling table PECINV

Field	Subfield or refinement	Entry	Explanation and action
			Add tuples if new PECs are required due to new EIUs.

Datafill example for table PECINV

The following example shows sample datafill for table PECINV.

Position/Device Evolution IP (continued)

MAP display example for table PECINV

PEC	SSYSBASE
NT9X84AA	(LISHW 02 \$) \$
NT9X85AA	(LISHW 02 \$) \$

Datafilling table LIMINV

Table LIMINV is associated with the LPP hardware. Datafill in this table is dependent on the physical location of the cabinet and the circuit cards in the frame. Any new LIMs will be added to this table. The load name specified needs to be the new peripheral load.

The following table shows the datafill specific to Position/Device Evolution IP for table LIMINV. Only those fields that apply directly to Position/Device Evolution IP are shown.

Datafilling table LIMINV

Field	Subfield or refinement	Entry	Explanation and action
			Add a tuple if a new LIM is required. A LIM can hold up to 4 EIUs.

Datafill example for table LIMINV

The following example shows sample datafill for table LIMINV.

MAP display example for table LIMINV

LIM	FLOOR	ROW	POSITION	CABTYPE	CABNUM	LOAD	CABPEC	SHLF0PEC MTCEVRSN
0	1	R	43	LIM	0	LPC11AK	NT9X70BA	NT9X71AB 1.0

Datafilling table LIMCDINV

Circuit card information for each LIM must be datafilled in table LIMCDINV. This information should not be different between LIMs, but should be the same regardless of the applications.

Position/Device Evolution IP (continued)

The following table shows the datafill specific to Position/Device Evolution IP for table LIMCDINV. Only those fields that apply directly to Position/Device Evolution IP are shown.

Datafilling table LIMCDINV

Field	Subfield or refinement	Entry	Explanation and action
			This table is automatically datafilled by table LIMINV. If LIMINV is changed, verify LIMPTINV.

Datafill example for table LIMCDINV

The following example shows sample datafill for table LIMCDINV.

MAP display example for table LIMCDINV

LIM	SHELF	SLOT	CARDTYPE	CARDINFO
0	0	7	PBUS	NT9X49CC
0	0	8	TFI	NT9X73BA NT9X79BA
0	0	9	DS30	NT9X17AD NT9X23BA
0	0	10	DS30	NT9X17AD NT9X23BA
0	0	15	MAPPER	T9X15AA
0	0	17	MSP	NT9X13DD NT9X26AB
0	0	18	CLOCK	T9X53AD
0	0	19	TBUSACC	T9X52AA
0	0	20	TBUSACC	T9X52AA
0	0	21	CLOCK	T9X53AD
0	0	22	MSP	NT9X13DB NT9X26AB
0	0	24	MAPPER	T9X15AA
0	0	29	DS30	NT9X17AD NT9X23BA
0	0	30	DS30	NT9X17AD NT9X23BA
0	0	31	TFI	NT9X73BA NT9X79BA
0	0	32	PBUS	NT9X49CC

Datafilling table LIMPTINV

The port information for each of the LIMs is specified in table LIMPTINV and is necessary for the LIM to communicate with the MS and with other units within the same LPP, as well as other LPPs (LIMs).

Position/Device Evolution IP (continued)

The following table shows the datafill specific to Position/Device Evolution IP for table LIMPTINV. Only those fields that apply directly to Position/Device Evolution IP are shown.

Datafilling table LIMPTINV

Field	Subfield or refinement	Entry	Explanation and action
			Add a tuple if a new LIM is required.

Datafill example for table LIMPTINV

The following example shows sample datafill for table LIMPTINV.

MAP display example for table LIMPTINV

LIM	SLOT	PORT	SHELF	PROTOCOL	LINKDEST	LINKINFO
0	9	0	0	DMSY	MS 1	18 0
0	9	1	0	DMSY	MS 0	18 0
0	9	2	0	DMSY	LIM 0	30 2
0	10	0	0	DMSY	MS 0	19 1
0	10	1	0	DMSY	MS 1	19 1
0	10	2	0	DMSY	LIM 0	29 2
0	29	0	0	DMSY	MS 0	18 2
0	29	1	0	DMSY	MS 1	18 2
0	29	2	0	DMSY	LIM 0	10 2
0	30	0	0	DMSY	MS 1	19 3
0	30	1	0	DMSY	MS 0	19 3
0	30	2	0	DMSY	LIM 0	9 2

Datafilling table SUSHELF

Table SUSHELF describes the Link Interface Unit (LIU) shelves in a Link Interface Module (LIM) and a Message Switch (MS) cabinet. A LIM is also known as a Link Peripheral Processor (LPP).

The physical location of the LIM is specified, as well as the PEC of the shelf. The PEC for both the front and back circuit boards for the FBUS are also specified.

Position/Device Evolution IP (continued)

The following information must be taken into consideration when using table SUSHELF.

- Both FBUSes of an LPP must be in the Offline state.
- NO LIUs can be datafilled in table LIUINV on the shelf being added/ deleted/modified by table SUSHELF.
- The LIU shelf PEC must be compatible with the supporting TFI cards and other LIU shelves of the same FBUS.
- The physical location of an LIU shelf within an LPP must have the same cabinet location as the specified LPP.

The following table shows the datafill specific to Position/Device Evolution IP for table SUSHELF. Only those fields that apply directly to Position/Device Evolution IP are shown.

Datafilling table SUSHELF

Field	Subfield or refinement	Entry	Explanation and action
			Add a tuple if a new LIM is required.

Datafill example for table SUSHELF

The following example shows sample datafill for table SUSHELF.

MAP display example for table SUSHELF

```

SHELFKEY FLOOR ROW FRAMEPOS FRAMETYP FRAMENUM SHELFPOS SHELFPEC
CARDINFO
-----
LIM 0 12 0 1      1  R      43      LIM      0  26 NT9X72BA
(7 NT9X74DA NT9X79AA) (30 NIL NTEX20AA) (1 NIL NIL) (4 NIL NIL) $
(32 NT9X74DA NT9X79AA) (8 NIL NTEX20BA) (33 NIL NIL) (36 NIL NIL) $
LIM 0 12 0 2      1  R      43      LIM      0  26 NT9X72BA
(7 NT9X74DA NT9X79AA) (30 NIL NTEX20AA) (1 NIL NIL) (4 NIL NIL) $
(32 NT9X74DA NT9X79AA) (8 NIL NTEX20BA) (33 NIL NIL) (36 NIL NIL) $
LIM 0 12 0 3      1  R      43      LIM      0  26 NT9X72BA
(7 NT9X74DA NT9X79AA) (30 NIL NTEX20AA) (1 NIL NIL) (4 NIL NIL) $
(32 NT9X74DA NT9X79AA) (8 NIL NTEX20BA) (33 NIL NIL) (36 NIL NIL) $
    
```

Position/Device Evolution IP (continued)

Datafilling table NIUINV

The following table shows the datafill specific to Position/Device Evolution IP for table NIUINV. Only those fields that apply directly to Position/Device Evolution IP are shown.

Datafilling table NIUINV

Field	Subfield or refinement	Entry	Explanation and action
			Add a tuple if a new LIM is required.

Datafill example for table NIUINV

The following example shows sample datafill for table NIUINV.

MAP display example for table NIUINV

NUMBER	LOCATION	LOAD	U0INFO	U1INFO	NETLINKS
0	LIM 0 1	NRS11BA	NTEX22BB	NTEX25AA	NTEX28AA
		NTEX22BB	NTEX25BA	NTEX28AA	(0 1) (1 1) (2 1) (2 49) \$
1	LIM 0 2	NRS11BA	NTEX22BB	NTEX25AA	NTEX28AA
		NTEX22BB	NTEX25BA	NTEX28AA	(0 7) (1 7) (2 7) (1 49) \$

Datafilling table LIUINV

The following table shows the datafill specific to Position/Device Evolution IP for table LIUINV. Only those fields that apply directly to Position/Device Evolution IP are shown.

Datafilling table LIUINV

Field	Subfield or refinement	Entry	Explanation and action
			Add a tuple for each new EIU as required. An EIU can support up to 32 TCP connections. Up to two EIUs are supported in table IPNETWRK.
	LIUTYPE	EIU	Link interface unit type. Enter EIU.

Position/Device Evolution IP (continued)

Datafilling table LIUINV

Field	Subfield or refinement	Entry	Explanation and action
LOAD		name from PMLOAD	The load name must be the latest load as datafilled in table PMLOADS.
	MAC_ADDRESS		For EIU, the MAC_ADDRESS is unique to each EIU and must be obtained from Northern Telecom

Datafill example for table LIUINV

The following example shows sample datafill for table LIUINV.

MAP display example for table LIUINV

LIUENAME	LOCATION	LOAD	PROCINFO	CARDINFO
-----	-----	-----	-----	-----
EIU 0	LIM 0 1 16	ERS11AL	NTEX22BB	
		NT9X84AA	NT9X85AA	NO 000075F07216

Datafilling table PMLOADS

Table PMLOADS contains load names for all peripherals and the location of the load file. Add loads to this table with a temporary location to allow the load file name to be entered. This temporary load file location is changed after the load is put on disk.

The following table shows the datafill specific to Position/Device Evolution IP for table PMLOADS. Only those fields that apply directly to Position/Device Evolution IP are shown.

Datafilling table PMLOADS

Field	Subfield or refinement	Entry	Explanation and action
			Add tuples if new loads are required due to new EIUs.

Datafill example for table PMLOADS

The following example shows sample datafill for table PMLOADS.

Position/Device Evolution IP (continued)

MAP display example for table PMLOADS

LOADNAME	ACTFILE	ACTVOL	BKPFFILE	BKPVOL	UPDACT
ERS11AL					
ERS11AL		S00DISN			
ERS11AL		S00DISN			N

Datafilling table RMCONFIG

The following table shows the datafill specific to Position/Device Evolution IP for table RMCONFIG. Only those fields that apply directly to Position/Device Evolution IP are shown.

Datafilling table RMCONFIG

Field	Subfield or refinement	Entry	Explanation and action
			<p>This table is not changed. It specifies the number of desired TELNET sessions (remote maps) on the CM, and which EIUs connect these remote maps.</p> <p>Note: If no tuples are datafilled, then the default of 8 sessions on the CM and each host EIU is allowed. To use an EIU for TELNET, it must first be loaded with the ETC (EIU with TELNET) load, and datafilled in the IPHOST table with at least as many TCP connections as the number of sessions in table RMCONFIG.</p>

Datafill example for table RMCONFIG

The following example shows sample datafill for table RMCONFIG.

MAP display example for table RMCONFIG

L_KEY	L_DATA
0	CM 16
1	EIU 0 8
2	EIU 1 8

Position/Device Evolution IP (continued)

Datafilling table IPNETWRK

The following table shows the datafill specific to Position/Device Evolution IP for table IPNETWRK. Only those fields that apply directly to Position/Device Evolution IP are shown.

Datafilling table IPNETWRK

Field	Subfield or refinement	Entry	Explanation and action
			This table is not changed. Add a tuple if one is not present. Only one tuple is allowed.
KEYREF		0	Enter 0, the only allowable value.
CMIPADDR		4 groups of up to 3 digits (0 to 255)	Computing module internet protocol address. Enter the CM host address for the DMS LAN. This address must be unique to the DMS host. Get this number from a LAN specialist.
OPTION			Enter an EIU for connection to the network. An EIU can support up to 32 TCP connections. Add a second EIU if it is required but not present. Only two options are allowed.

Datafill example for table IPNETWRK

The following example shows sample datafill for table IPNETWRK.

MAP display example for table IPNETWRK

KEYREF	CMIPADDR	SUBNET	OPTION PARMAREA
0	47 245 8 11	18	(EIU 0)\$ (SCRNFLAG N)\$

Datafilling table IPROUTER

Add all new EIUs to be used as routers. The SuperNode host ID, Ethernet IP address, indication of the use of the Ethernet ARP Control Type, and indication of the use of the Ethernet Proxy ARP Control Type are datafilled. Get the IP addresses from a LAN specialist.

Position/Device Evolution IP (continued)

The following table shows the datafill specific to Position/Device Evolution IP for table IPROUTER. Only those fields that apply directly to Position/Device Evolution IP are shown.

Datafilling table IPROUTER

Field	Subfield or refinement	Entry	Explanation and action
			Add a tuple for each new EIU.

Datafill example for table IPROUTER

The following example shows sample datafill for table IPROUTER.

MAP display example for table IPROUTER

RKEY	ROUTER	SNIPADR	ETHIPADR	ETHARP	ETHPARP
0	EIU 0	47 245 8 3	47 43 162 130	YES	YES

Datafilling table IPHOST

This table assigns IP addresses and other TCP/IP configuration parameters to SuperNode hosts. This table must be datafilled for EIUs defined in table LIUINV.

Note: IP addresses for the EIU must be unique and follow an addressing scheme.

The following table shows the datafill specific to Position/Device Evolution IP for table IPHOST. Only those fields that apply directly to Position/Device Evolution IP are shown.

Datafilling table IPHOST

Field	Subfield or refinement	Entry	Explanation and action
			Add a tuple for each new EIU. A maximum of 32 TCP connections are allowed for an EIU.

Datafill example for table IPHOST

The following example shows sample datafill for table IPHOST.

Position/Device Evolution IP (end)

MAP display example for table IPHOST

INDEX	NODENAME	NODEINFO					
0	CM 0						
3	EIU 0	47	245	8	9		
		47	43	162	130	32	2 2

Datafilling table IPTHRON

Datafill traffic throttling values to prevent bottlenecks in IP communication.

The following table shows the datafill specific to Position/Device Evolution IP for table IPTHRON. Only those fields that apply directly to Position/Device Evolution IP are shown.

Datafilling table IPTHRON

Field	Subfield or refinement	Entry	Explanation and action
			Add a tuple for each new EIU. A maximum of 32 TCP connections are allowed for an EIU.

Datafill example for table IPTHRON

The following example shows sample datafill for table IPTHRON.

MAP display example for table IPTHRON

LMSNODE	TXCAPCT	RXCAPCT	OPTION
EIU 0	32000	32000	\$

Translation verification tools

Position/Device Evolution IP does not use translation verification tools.

SERVORD

Position/Device Evolution IP does not use SERVORD.

Pre-paid Coin

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS03 and later versions

The Pre-paid Coin feature was introduced in TOPS03.

Requirements

To operate, Screened Service Routing has the following requirements:

- BAS Generic, BAS00003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y

Description

The following feature provides this functionality:

Feature number	Feature name
AN0408	TOPS Pre-Paid Coin Overtime (PPCO)

This functionality allows a telephone company to collect overtime charges on coin phones before the charges accrue. This process prevents the loss of revenue due to customers that do not deposit final payment at the completion of the call. A caller can fail to make a deposit. A caller can deposit an amount that is not enough. In these conditions, the system routes the call to an operator or disconnects the call.

Operation

Background

The type of coin telephone is normally post-pay or pre-pay. In this section, post-pay and pre-pay refer to overtime payments, not the type of phone.

One type of call that TOPS currently supports is a sent-paid call. In a sent-paid call, the caller must deposit coins for a period of time, like 3 min. If the call continues beyond this initial period, the system interrupts the call at recall intervals. Datafill determines the intervals. The system requests payment for the last complete interval. This call is post-paid. At the end of the call, TOPS rings the caller back and requests payment for the final period.

Pre-paid Coin (continued)

A major problem with this method of payment is walk-aways. A walk-away occurs when a person talks longer than the specified period, hangs up, leaves, and does not pay the overtime charges. This feature requires payment at the beginning of each overtime interval, which prevents walk-aways.

Overview

With the pre-pay option, the system provides an announcement at the end of the initial period. This message indicates that the call goes into overtime and that pre-payment for that period is required. When the caller deposits the correct amount of funds, the call can continue. If the deposit is too slow or the amount of funds is too low, the system plays an announcement. This announcement is a request for the balance. If the caller does not make a deposit after this announcement, the system routes the call to an operator. If the deposit is in excess of the requested amount, the system acknowledges the extra amount with an announcement. The system gives credit for the next overtime period. When the system prompts the caller for money for an overtime period, the system uses the new parameter in table TOPSPARM. The system performs one of the following actions:

- The system splits the conversation between the calling and called parties, and disconnects the call after a time-out period.
- The system routes the call to an operator to take control of the call.

The calling party can press the switchhook to route to an operator. The calling party can route to an operator at different points during the first period and ACTS announcements. This function is not available during an overtime period in pre-pay because the period is paid for. This function adheres to current non-ACTS post-pay functionality.

This optional feature can function in an ACTS (Automated Coin Toll Service) or non-ACTS environment. This feature allows the use of coin phones on non-ACTS and ACTS trunks as pre or post-pay overtime. For additional trunk information, refer to table TOPSCOIN. This feature is compatible with current ACT/non-ACTS coin calls.

This feature does not affect the length of the initial and overtime periods. Datafill determines these periods. The TOPS Coin Features section of the

Pre-paid Coin (continued)

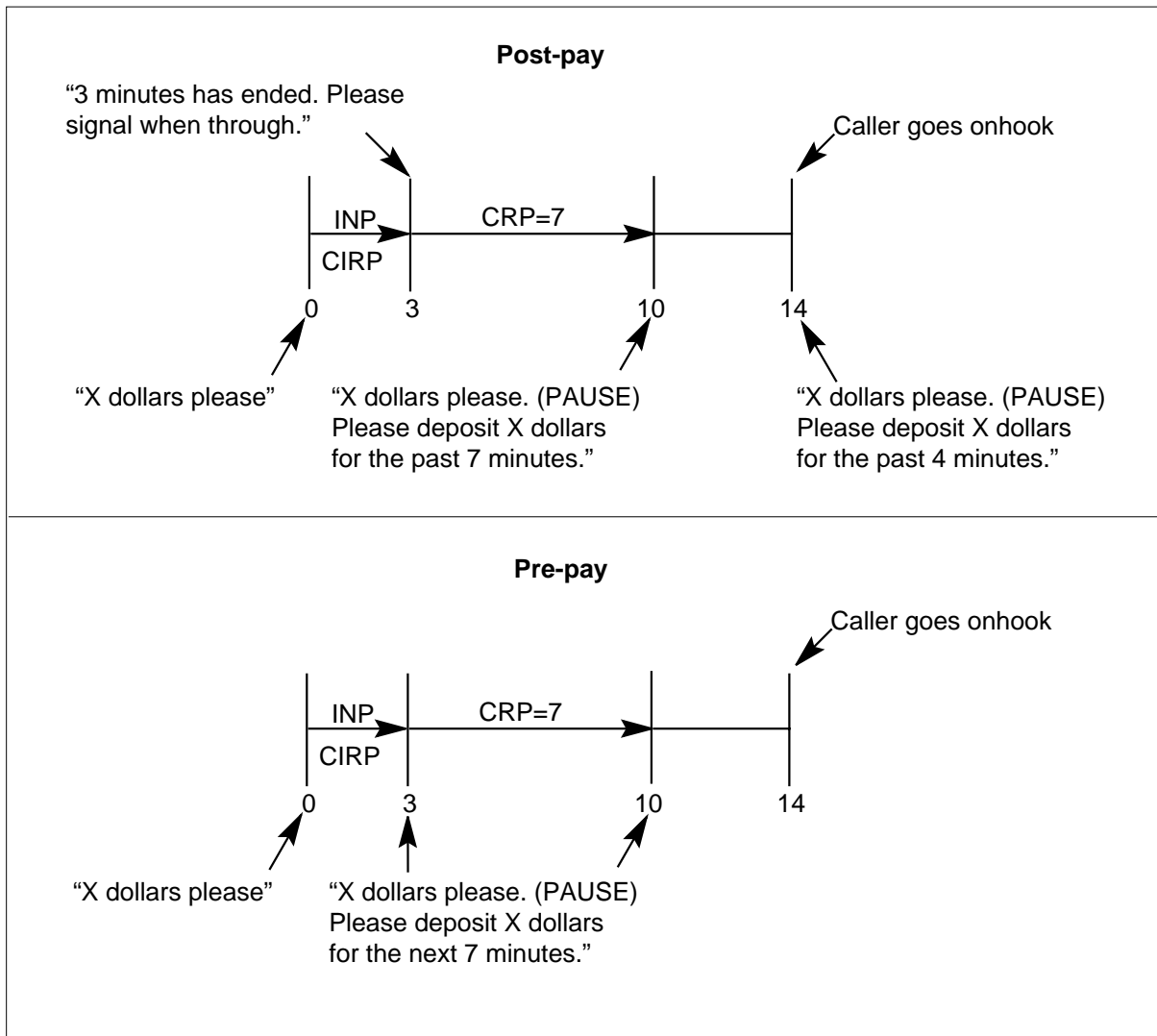
TOPS Call Processing Features, feature package 030CC, describes these features. The definitions of these periods are the following:

- INP—The initial calling time. Enter this value in table CHARGE.
- CIRP—The amount of time from the beginning of the coin call to the first recall to ACTS or the TOPS operator. The CIRP must be \geq INP. Enter this value in table SCHED.
- CRP—after the system recalls the telephone conversation, the amount of time the conversation can continue after the system recalls the telephone conversation to the TOPS operator again. The system can recall the conversation at the end of the CIRP or CRP. Enter this value in table SCHED.

Announcements for post and pre-paid calls appear in the following example.

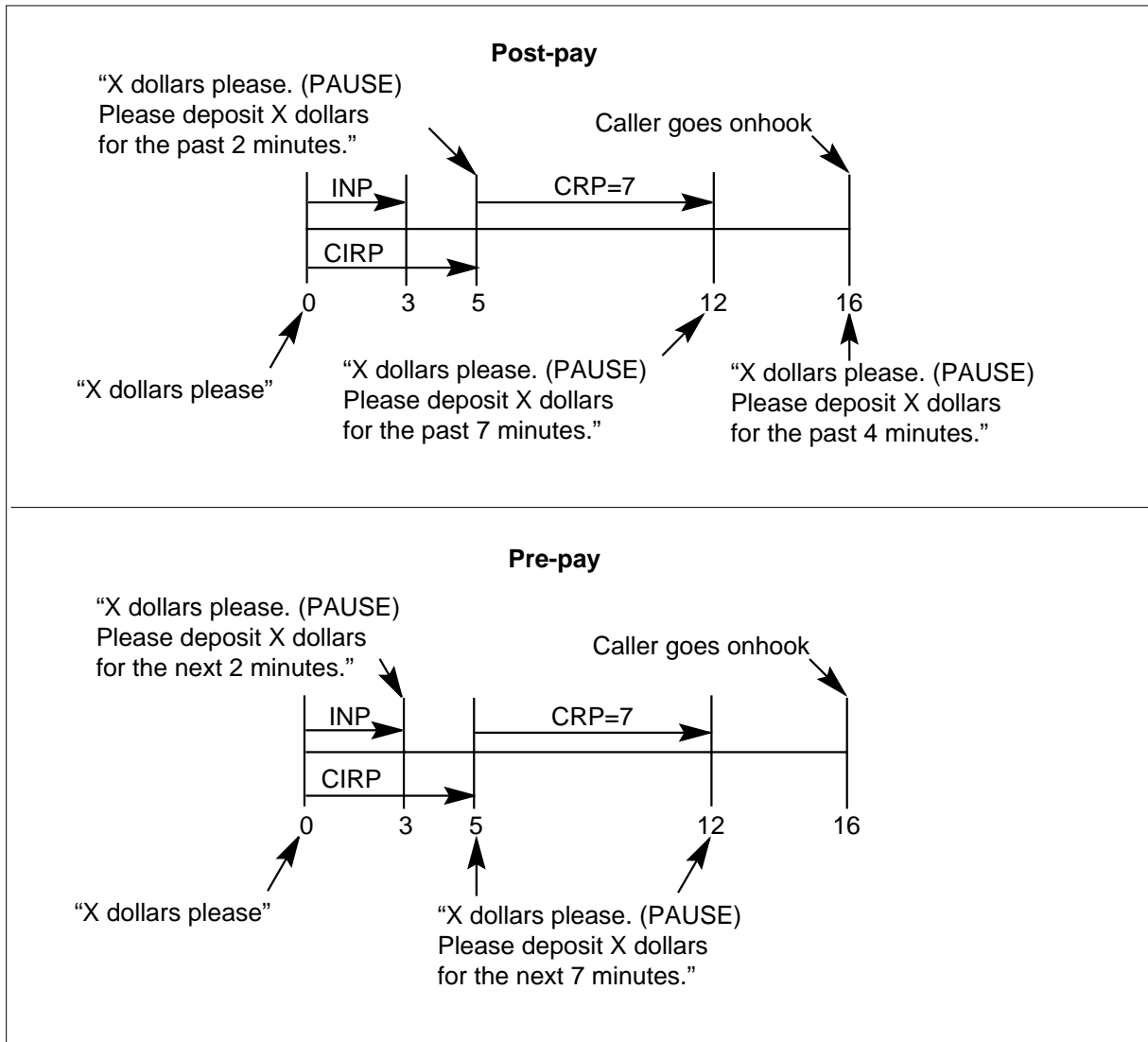
Pre-paid Coin (continued)

Post and pre-paid announcements (INP=CIRP)



Pre-paid Coin (continued)

Post and pre-paid announcements (INP not equal to CIRP)



In the previous figure, where INP is not equal to CIRP for pre-paid calls, an additional announcement is required, in comparison to INP=CIRP. The INP=CIRP can be set to save operator work time in a non-ACTS environment.

Pre-paid Coin (continued)

DRAM datafill procedure

The system uses a DRAM with this feature. Enter data in the DRAM-related tables.



WARNING

When you perform this task, make sure that other users in the office do not modify DRAMREC or DRAMTRK.

The datafill sequence for the DRAM tables appears in the following list:

1. Table CLLI
2. Table DRAMS
3. Table ANNS
4. Table ANNMEMS
5. CI increment DRAMREC
6. Table DRMUSERS.

If these tables are entered and changes must take place, follow the following procedures in the order given:

1. Display and print the contents of DRAMUSER and DRAMREC.
2. Delete each ACTS tuple from Table DRMUSERS.
3. Delete the assigned ACTS tuples in DRAMREC.
4. Add new or changed ACTS tuples again. Use DRAMREC in the same order as Step 1.
5. Add ACTS tuples again in Table DRMUSERS.

The datafill section provides datafill for the tables and DRAMREC.

Software optionality control

This functionality is optional. Software Optionality Control (SOC) controls this functionality. The SOC for this functionality is separate from other office parameters and datafill. With this functionality, the default SOC state is IDLE. The SOC state must be set to ON for this functionality to operate.

The system updates the operator display with the overtime payment method as pre-pay or post-pay. The system updates the operator display if this

Pre-paid Coin (continued)

functionality is IDLE or ON. If the display is IDLE, the system presents the post-pay screen display.

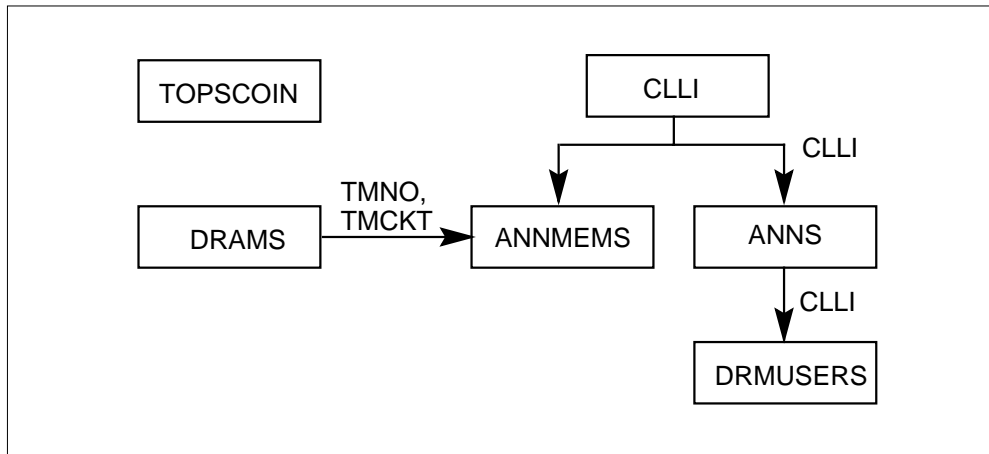
Translations table flow

Descriptions of the Pre-paid Coin translations tables appear in the following list:

- Table CLLI—add new announcement name for table DRMUSERS
- Table ANNS—add new announcement name for table DRMUSERS
- Table ANNMEMS—add new announcement names for table DRMUSERS
- Table DRMUSERS—add new pre-paid announcements
- Table TOPSCOIN—specify coin phone trunk as pre or post-paid

The Pre-paid Coin translation process appears in the flowchart that follows.

Table flow for the Pre-paid Coinfeature



The datafill content used in the flowchart appears in the following example.

Datafill example for the Pre-paid Coin

Datafill table	Example data
CLLI	ACTSTOPS 20 55 0 PPCO
DRAMS	5 7 MTM 0 0 1X75BA CTRLR DRAM0
ANNS	ACTSTOPS ACTS 25 1 0 1
ANNMEM	ACTSTOPS 20 0 DRAM DRA 0 MTM 5 7 \$

Pre-paid Coin (continued)

Datafill example for the Pre-paid Coin

Datafill table	Example data
DRMUSERS	ACTSTOPS 22 (ACTS_PLS_DEPOSIT) (ACTS_VAR_CHARGE) \$
TOPSCOIN	TGENIC1 70 UNKNOWN UNKNOWN CCFCDF Y UNKNOWN UNKNOWN PRE

Limits

The following limits apply to the Pre-paid Coin feature:

- Use the PPCO with the North American numbering plan.
- Different overtime payment methods are assigned at the initial contact stage in the call. This value remains static during the life of the call.
- A caller can go onhook before the end of an overtime period in the pre-pay environment. The caller must forfeit the cost of the time that remains in that overtime period.
- The operating company must add new ACTS announcements in table DRMUSERS that supports this feature. The operating company must add the announcements in the positions that appear in the datafill procedure section. The operating company can add ACTSTOPS announcement(s) data in one of these four positions. The system must relocate this announcement to other ACTSTOPS positions. The system must relocate the announcement so you can enter the pre-pay announcements in the given positions.
- The system disables the Notify Key if the call is tagged as pre-pay overtime and is coin billed.
- Operators must not use charge adjust type WALKAWAY for pre-pay overtime calls. An operator can enter a WALKAWAY charge adjust type and an amount for a pre-pay coin call. The system applies the charge type to the charges like the call were a post-pay overtime call. The operating company must make sure that operators do not use this type of charge adjustment for pre-pay calls.

Interactions

Descriptions of the interactions between Pre-paid Coin and other functionalities appear in the following table.

The PPCO feature depends on the base coin software. The PPCO feature can interact with ACTS software if ACTS and PPCO are enabled.

Pre-paid Coin (continued)

Activation/deactivation by the end user

The Pre-paid Coin feature does not require activation or deactivation by the end user.

Billing

-pay coin calls use the current method of recording post-pay coin calls for each Bellcore request. You cannot determine through AMA that a call is billed pre-pay, except by the trunk.

Station Message Detail Recording

The Pre-paid Coin feature does not affect Station Message Detail Recording.

Datafilling office parameters

The Pre-paid Coin feature does not affect office parameters.

Datafill sequence

The tables that require datafill to implement the Pre-paid Coin feature appear in the following table. The tables appear in the correct entry order.

Datafill requirements for the Pre-paid Coin

Table	Purpose of table
CLLI	Common language location identifier. Add new announcement name
DRAMS	Defines locations of cards on DRAM shelf
ANNS	Announcements. Define new announcement software information
ANNMEM	Announcement members. Define new announcement hardware location
CI increment DRAMREC	DRAM recording facility. The CI increment DRAMREC is not a table.
DRMUSERS	Digital recorded announcement machine users. Add new announcements
TOPSCOIN	TOPS Coin. Define coin trunks as pre or post-paid
TOPSPARM	TOPS Parameters. Define call handling for non-deposit by subscriber.

Pre-paid Coin (continued)

Datafilling table CLLI

Datafill for Pre-paid Coin feature for table CLLI appears in the following table. The fields that apply to Pre-paid Coin appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table CLLI

Field	Subfield or refinement	Entry	Description
CLLI			Common language location identifier. Add ACTSTOPS, if ACTSTOPS is not present.

Datafill example for table CLLI

Sample datafill for table CLLI appears in the following example.

MAP example for table CLLI

CLLI	ADNUM	TRKGRSIZ	ADMININF
ACTSTOPS	27	5	TOPS_ACTS_ANNS

Datafilling table DRAMS

Datafill for Pre-paid Coin feature for table DRAMS appears in the following table. The fields that apply to Pre-paid Coin appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table DRAMS

Field	Subfield or refinement	Entry	Description
			Digital Recorded Announcement Machine. Define DRAM card locations on DRAM shelf.

Datafill example for table DRAMS

Sample datafill for table DRAMS appear in the following example.

MAP example for table DRAMS

DRAMKEY	TMTYPE	TMNO	TMCKT	CARDCODE	CARDINFO
0 0	MTM	0	0	1X75BA	CTLR DRAM0
0 1	MTM	0	2	1X76CA	PROM 0 1

Pre-paid Coin (continued)

Datafilling table ANNS

Datafill for Pre-paid Coin for table ANNS appear in the following table. The fields that apply to Pre-paid Coin appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table ANNS

Field	Subfield or refinement	Entry	Description
CLLI			Common language location identifier. Add ACTSTOPS, if ACTSTOPS is not present.

Datafill example for table ANNS

Sample datafill for table ANNS appear in the following example.

MAP example for table ANNS

CLLI	ANTYPE	TRAFSNO	MAXCONN	CYTIME	MAXCYC
ACTSTOPS	ACTS	23	15	13	2

Datafilling table ANNMEMS

Datafill for the Pre-paid Coin feature for table ANNMEM appears in the following table. The fields that apply to Pre-paid Coin appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table ANNMEM

Field	Subfield or refinement	Entry	Description
ANNMEMS			Announcement members. Add ACTSTOPS 20-23.

Datafill example for table ANNMEMS

Sample datafill for table ANNMEM appears in the following example.

Pre-paid Coin (continued)

MAP example for table ANNMEMS

ANNMEM	HDWTYPE	CARD	TRCKLIST					
ACTSTOPS 20	DRAM	DRA	0	MTM	5	1	\$	
ACTSTOPS 21	DRAM	DRA	0	MTM	5	3	\$	
ACTSTOPS 22	DRAM	DRA	0	MTM	5	5	\$	
ACTSTOPS 23	DRAM	DRA	0	MTM	5	7	\$	

Using DRAMREC facility

The DRAMREC facility assigns phrase components to locations on the DRAM. For the PPCO feature to work in an office, DRAMREC must add and assign the following new phrases to a card on a DRAM. The DRAMREC normally assigns these phrases at load build time.

Sample DRAMREC input

DRAM	PHRASENAME	LENGTH	BLOCK	PHRASENO
ASSIGN 0	ACTS_20	1	0	49
ASSIGN 0	ACTS_21	1	0	50
ASSIGN 0	ACTS_22	1	0	51
ASSIGN 0	ACTS_23	1	0	52

Datafilling table DRMUSERS

Datafill for the Pre-paid Coin feature for table DRMUSERS appears in the following table. The fields that apply directly to the Pre-paid Coin feature appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table DRMUSERS

Field	Subfield or refinement	Entry	Description
USERANN			User announcements. Add announcements. Refer to the example datafill. If other ACTSTOPS announcements are in one of these four positions, the system must relocate the other announcements. The system relocates the announcements to other ACTSTOPS positions. The system must relocate the announcements so you can enter pre-pay announcements. Refer to the following example.

Pre-paid Coin (continued)

Datafill example for table DRMUSERS

Sample datafill for table DRMUSERS appears in the following example.

MAP example for table DRMUSERS

USERANN	PHSLIST
ACTSTOPS 20	(ACTS_ALERT) (ACTS_VAR_CHARGE) (ACTS_PLEASE) (ACTS_PAUSE) (ACTS_PLS_DEPOSIT) (ACTS_VAR_CHARGE) (ACTS_FOR_NEXT) (ACTS_VAR_PERIOD) \$
ACTSTOPS 21	(ACTS_ALERT) (ACTS_VAR_CHARGE) (ACTS_PLEASE) (ACTS_PAUSE) (ACTS_YOU_HAVE) (ACTS_VAR_CREDIT) (ACTS_CREDIT) (ACTS_PLS_DEPOSIT) (ACTS_VAR_CHARGE) (ACTS_MORE) (ACTS_FOR_NEXT) (ACTS_VAR_PERIOD) \$
ACTSTOPS 22	(ACTS_PLS_DEPOSIT) (ACTS_VAR_CHARGE) \$
ACTSTOPS 23	(ACTS_PLS_DEPOSIT) (ACTS_VAR_CHARGE) \$

Datafilling table TOPSCOIN

Datafill for the Pre-paid Coin feature for table TOPSCOIN appears in the following table. The fields that apply to Pre-paid Coin appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TOPSCOIN

Field	Subfield or refinement	Entry	Description
OTTYPE		PRE or POST	Overtime charges type. Determines if coin phones on a specified trunk are pre-pay or post-pay for overtime charges. The default value is POST.

Datafill example for table TOPSCOIN

Sample datafill for table TOPSCOIN appear in the following example.

Pre-paid Coin (end)

MAP example for table TOPSCOIN

GRPKEY	CNSDELAY	PADSTAT0	PADSTAT1	COINTYPE	CCFCNRET
TGENIC1	70	UNKNOWN	UNKNOWN	CCFCDF	Y
		UNKNOWN	UNKNOWN	PRE	

Datafilling table TOPSPARM

Datafill for the Pre-paid Coin feature for table TOPSPARM appears in the following table. The fields that apply to Pre-paid Coin appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TOPSPARM

Parameter	Description
PPCO_DISCONNECT	Pre-paid coin overtime disconnect. This parameter indicates if the system must route a call to an operator. The system must route the call when the caller does nothing after the ACTS prompts and time-outs for overtime payment finish. The range is Y(es) or N(o). The N means that the system routes the call to an operator. The Y means that the system disconnects the call. The default value is N.

Datafill example for table TOPSPARM

Sample datafill for table TOPSPARM appears in the following example.

MAP example for table TOPSPARM

PARAMNAME	PARAMVAL
PPCO_DISCONNECT	N

Tools for verifying translations

The Pre-paid Coin feature does not use tools for verifying translations.

SERVORD

The Pre-paid Coin feature does not use SERVORD.

QMS Billing Indicator

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS09 and up

QMS Billing Indicator was introduced in TOPS09.

Prerequisites

To operate, QMS Billing Indicator has the following prerequisites:

- BAS Generic, BAS00003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- QMS Host/Remote Queueing,, OSB00101

Description

This functionality changes the existing queue management system (QMS) functionality by the addition of new call type refinement table CT4QBLST. This table segregates traffic by satisfaction of billing. Therefore, calls with unsatisfied billing route to operators who handle that type of traffic. And, calls with satisfied billing route to operators who only handle that type of traffic. An example are TOPS basic purpose (BP) positions, discussed in the following section.

Usually, billing is satisfied when all billing requirements are met at call release (call float).

The QMS tools, QCALL and QVIEW, are updated to include this new table.

QMS, released in BCS34, consists of the following functionality:

- QMS Host/Remote Queueing, OSB00101

This functionality consists of the following features:

Feature number	Feature name
AF7321	QMS Queue by Billing Satisfied

QMS Billing Indicator (continued)

Operation

As mentioned before, an example use of this functionality is for TOPS BP positions. TOPS BP positions cannot handle unsatisfied billing traffic. Newer TOPS operator positions can handle this traffic. These newer positions include the Intelligent Workstation (IWS) and TOPS Multi-Purpose (MP) positions. Then, for example, if only 10% of the operator traffic has unsatisfied billing, this functionality prevents upgrading all of the positions at once. The unsatisfied billing traffic can be sent to the IWS positions and the other traffic can be sent to the BP positions. Therefore, only about 10% of the TOPS positions must initially upgrade and the rest can be upgrade when convenient.

This type of call separation is available for use by the QMS force management statistics to monitor the percentage of unsatisfied billing. This report can indicate a need to correct a problem.

QCALL tool

The QCALL CI increment tool has new command BLST (billing satisfied).

Command BLST sets or displays the value of the Billing Satisfied criterion for a hypothetical call queue assignment. For no entry of a parameter, the current setting displays. The valid values are SATISFIED and UNSATISFIED.

The HELP and PROMPTME commands now contain the new BLST command.

QVIEW

Table CT4QBLST is now available in the existing FROMTABLE and TOTABLE commands for the QVIEW CI increment tool.

SOC

Software Optionality Control (SOC) option OSB00101 controls this functionality. Tables CT4QBLST, TQORDERA, and TQORDERB can be datafilled and the tools (QCALL and QVIEW) are operational regardless of the SOC state. But, the SOC state must be ON for call type for refinement (CT4Q) by table CT4QBLST.

QMS Billing Indicator (continued)

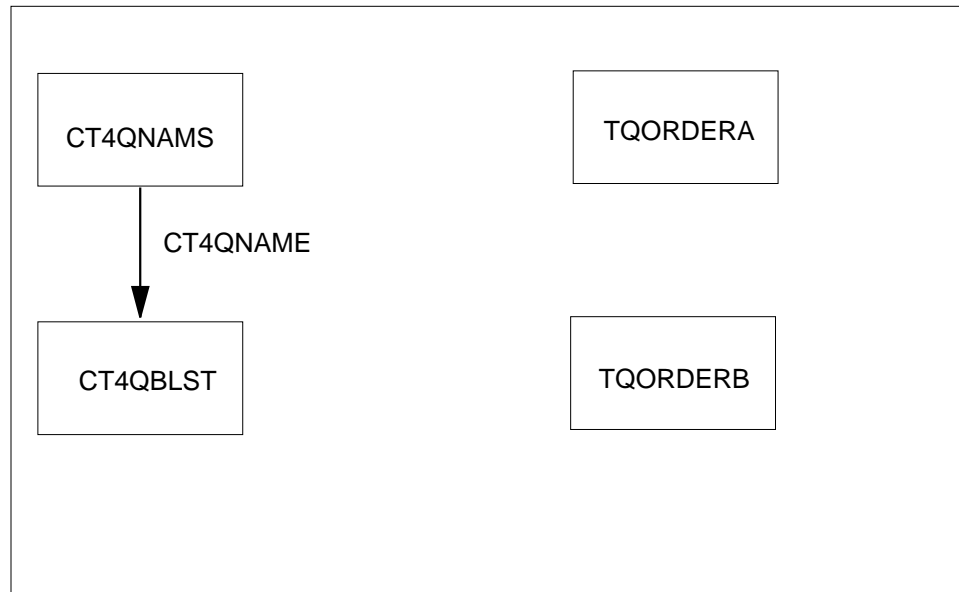
Translations table flow

The QMS Billing Indicator translations tables are described in the following list:

- Table CT4QNAMS defines CT4Q names.
- Table CT4QBLST refines call types by satisfied or unsatisfied billing.
- Tables TQORDERA and TQORDERB indicate the order of the refinement tables.

The QMS Billing Indicator translation process is shown in the flowchart that follows.

Table flow for QMS Billing Indicator



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

Datafill example for QMS Billing Indicator

Datafill table	Example data
CT4QNAMS	5 0_MINUS N TOPSOPR Y 0_MINUS N N 6 0_MINUS_BILLSAT N TOPSOPR Y 0_MINUS_BILLSAT N N
CT4QBLST	0_MINUS SATISFIED 0_MINUS_BILLSAT

QMS Billing Indicator (continued)

Datafill example for QMS Billing Indicator

Datafill table	Example data
TQORDERA	CT4QBLST 3 0 0 0
TQORDERB	CT4QBLST 3 0 0 0

The above example shows sample ordering in tables TQORDERA and TQORDERB. There is no ordering requirement.

Limitations and restrictions

The following limitations and restrictions apply to the QMS Billing Indicator:

- The maximum number of CT4Qs (defined in table CT4QNAMS) is 2047. Therefore, it may be important to conserve the number of new billing satisfied/unsatisfied CT4Qs.
- The maximum number of call queues (CQs) is 255.
- Table CT4QBLST must be the last entry in tables TQORDERA and TQORDERB.
- For table CT4QBLST, ensure that the outgoing CT4Q (field NEWCT4Q) has the correct billing status. The system does not check this condition. For example, the outgoing CT4Q should be a billing unsatisfied CT4Q for the following condition. The condition is that the incoming CT4Q is billable and the criteria is UNSATISFIED. The outgoing CT4Q would not have the correct billing status if it were a toll free CT4Q.

Interactions

The following paragraph describes the interaction between QMS Billing Indicator and other functionalities.

Define CT4Qs in table CT4QNAMS before using them in table CT4QBLST fields OLDCT4Q and NEWCT4Q.

Activation/deactivation by the end user

QMS Billing Indicator requires no activation or deactivation by the end user.

Billing

QMS Billing Indicator does not affect billing.

Station Message Detail Recording

QMS Billing Indicator does not affect Station Message Detail Recording.

QMS Billing Indicator (continued)

Datafilling office parameters

QMS Billing Indicator does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement QMS Billing Indicator. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for QMS Billing Indicator

Table	Purpose of table
CT4QNAMS	Call Type for Queueing defines CT4Q names used by other QMS tables.
CT4QBLST	Call Type for Queueing Billing Satisfied refines CT4Qs by satisfied or unsatisfied billing status.
TQORDERA	TOPS QMS Order A indicates the order of access for the CT4Q refinement tables.
TQORDERB	TOPS QMS Order B indicates the order of access for the CT4Q refinement tables.

Datafilling table CT4QNAMS

The following table shows the datafill specific to QMS Billing Indicator for table CT4QNAMS. Only those fields that apply directly to QMS Billing Indicator are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table CT4QNAMS

Field	Subfield or refinement	Entry	Explanation and action
CT4QNAME		up to 32 characters	This table is not changed. Add tuples for new queue names in table CT4QBLST.

Datafill example for table CT4QNAMS

The following example shows sample datafill for table CT4QNAMS.

QMS Billing Indicator (continued)**MAP display example for table CT4QNAMS**

CT4QNUM	CT4QNAME	NOAMA	SYSAREA
8	O_MINUS_BILLSAT	N	TOPSOPR Y 0M_BSAT N N
9	O_MINUS_BILLUNSAT	N	TOPSOPR Y 0M_BUSAT N N
15	O_PLUS_BILLUNSAT	N	TOPSOPR Y 0P_BILUN N N
17	O_PLUS_COIN_BILLUNSAT	N	TOPSOPR Y 0P_C_BILU N N

Datafilling table CT4QBLST

Call Type for Queueing Billing Satisfied (CT4QBLST) is a new table that refines the CT4Q based on satisfaction of billing. Therefore, calls with unsatisfied billing route to operators that handle that type of traffic. And, calls with satisfied billing route to operators that only can handle that type of traffic. Example operators are those at TOPS basic purpose (BP) positions.

The following is a description of the fields.

Datafilling table CT4QBLST

Field	Subfield or refinement	Entry	Explanation and action
OLDCT4Q		name from table CT4QNAMS	Old call type for queueing. This field is part of the key to the table. Enter the name of the previous CT4Q defined in table CT4QNAMS that requires refinement.

QMS Billing Indicator (continued)

Datafilling table CT4QBLST

Field	Subfield or refinement	Entry	Explanation and action
BLSTCRIT		SATISFIED or UNSATISFIED	Billing satisfied criteria. This field is part of the key to the table. Indicate the type of billing satisfaction for this segregated traffic. Billing satisfaction occurs when all billing requirements are met, which occurs at call release.
NEWCT4Q		name from table CT4QNAMS	<p>New call type for queueing. Enter the CT4Q name from table CT4QNAMS that meets the criteria in field BLSTCRIT.</p> <p>Ensure that the outgoing CT4Q (field NEWCT4Q) has the correct billing status. The system does not check this state. For example, the outgoing CT4Q should be a billing unsatisfied CT4Q for the following condition. The condition is that the incoming CT4Q is billable and the criteria is UNSATISFIED. The outgoing CT4Q would not have the correct billing status if it were a toll free CT4Q.</p> <p>In order to ensure the correct billing status of the outgoing CT4, the incoming and outgoing services should be the same. This suggestion is because the billing satisfied/unsatisfied status may vary between services.</p>

Datafill example for table CT4QBLST

The following example shows sample datafill for table CT4QBLST.

MAP display example for table CT4QBLST

OLDCT4Q	BLSTCRIT	NEWCT4Q
0_MINUS	SATISFIED	0_MINUS_BILLSAT
0_MINUS	UNSATISFIED	0_MINUS_BILLUNSAT
0_PLUS	UNSATISFIED	0_PLUS_BILLUNSAT
0_PLUS_COIN	UNSATISFIED	0_PLUS_COIN_BILLUNSAT

In the above example, 0_MINUS is split into two CT4Qs explicitly stating satisfaction of billing. For 0_PLUS and 0_PLUS_COIN, a new CT4Q only supports unsatisfied billing.

QMS Billing Indicator (continued)

The above 0_MINUS split is an excessive use of the table. Instead, there should be an entry for either the satisfied or unsatisfied tuple and use the OLDCT4Q for the other calls. For example, if only 0_MINUS_BILLUNSAT was entered, that queue would contain unsatisfied billing calls. And the 0_MINUS queue would contain only satisfied billing calls after refinement. This arrangement would conserve CT4Qs. A limit of 2047 CT4Qs are available for all eleven CT4Q refinement tables.

Datafilling tables TQORDERA and TQORDERB

The following table shows the datafill specific to QMS Billing Indicator for tables TQORDERA and TQORDERB. Only those fields that apply directly to QMS Billing Indicator are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling tables TQORDERA and TQORDERB

Field	Subfield or refinement	Entry	Explanation and action
CT4QTABL		CT4QBLST	<p>Call type for queueing. New value CT4QBLST automatically appears with default values (zeros) for the remaining fields.</p> <p>For the ordering fields, table CT4QBLST must be the last table of refinement or not used (value zero). This requirement prevents additional refinement that may change the billing satisfied/unsatisfied status.</p>

Datafill example for tables TQORDERA and TQORDERB

The following example shows sample datafill for table TQORDERA.

QMS Billing Indicator (end)**MAP display example for tables TQORDERA and TQORDERB**

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

Translation verification tools

QMS Billing Indicator does not use translation verification tools.

SERVORD

QMS Billing Indicator does not use SERVORD.

QMS Customer Service Enhancements

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS12 and later versions

QMS Customer Service Enhancements was introduced in TOPS06.

Requirements

To operate, QMS Customer Service Enhancements has the following requirements:

- BAS Generic, BAS0003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- Table TOPSFTR parameter QMS_CASE = Y
- QMS Host/Remote Queueing, OSB00101

Description

This functionality contains the features that appear in the following table:

Features in this functionality

Feature number	Feature name
AN1649	TOPS QMS CASE: Pework (TOPS06)
AN1821	TOPS QMS CASE: Operator Assistance (TOPS06)
AN1836	QMS CASE 2: Infrastructure (TOPS06)
AN1837	QMS CASE 2: Paging and Directed Assistance (TOPS06)
AN1838	QMS CASE 2: Stats - Display and Query (TOPS06)
AN1839	QMS CASE 2: Directory Assistance (TOPS06)
AN1840	QMS CASE 2: Monitoring (TOPS06)
50039957	DA positions in an OC network (TOPS07)
59006877	QMS CASE Call Alerting (TOPS12)
59006865	EOL Notification & EOL of TOPS ACD (TOPS12)

QMS Customer Service Enhancements (continued)

The functionality Traffic Operator Position System (TOPS) Queue Management System (QMS) Customer Service Enhancements provides QMS operators with the combined abilities of QMS and service assistance (SA) operators and positions. This enhancement is for operators with experience that use general operator positions. Another name for SA is ASST. The QMS operators with experience are Customer Service Expert (CSE) operators. In this functionality document, CSE refers to Customer Service Expert. The functionality name, QMS Customer Service Enhancements, always appears as a full name. The QMS Customer Service Enhancements does not appear as an abbreviation. The use of the full name prevents confusion between the functionality name and the operator name.

With QMS Customer Service Enhancements, assistance and supervisory functionalities are not automatically associated with pre-defined position and operator types. These functionalities associate with operator IDs through switch datafill. They are available on all supported positions that are QMS OPR, TOPS Multi-Purpose (MP) and open position protocol (OPP)-compliant positions are supported. The TOPS MP is stand-alone and integrated.

The TOPS12 feature QMS Customer Service Assistance Enhancements (QMS CASE) Call Alerting provides additional capabilities for CSEs. The feature provides the means to establish an alerting queue to handle assistance and subscriber requests for CSEs. The alerting queue is defined as a queue that the operating company can designate to receive specific types of calls. The operating company can assign whatever types of calls it wants to assign to this queue, including assistance requests.

This feature, which only works for operators on OPP-compliant positions, provides visual and audible indicators to inform CSEs about the arrival of assistance and subscriber requests. Prior to this feature, there was no sonalert tone in QMS CASE.

QMS Call Alerting also provides Alternate Force Management procedures to obtain various categories of work time for CSEs. The purpose of this activity is to address situations where tasks of CSEs can distort the work volume statistics of a work group. Additional information about QMS CASE Call Alerting is provided in "Queue information" and "Team Statistics" later in this section.

Operation

Background

In active listening, the operator sits at a position with headphones and listens for an assistance request. Before QMS Customer Service Enhancements, active listening by an SA was not necessary because a sonalert announced the

QMS Customer Service Enhancements (continued)

arrival of a request. Before the QMS CASE Call Alerting feature, the functionality QMS Customer Service Enhancements did not provide a Sonalert. The CSE had to listen for an assistance request.

However, QMS CASE Call Alerting provides a sonalert that informs CSEs of the following two conditions:

- when assistance requests arrive at the queue to which the CSE is assigned
- when the threshold of the assistance queue is met or passed

Without QMS Customer Service Enhancements, QMS operators receive help from SA and in-charge (IC) operators.

Without this functionality, the SA/IC operators log on to positions entered as ASST or IC. These operators could log on to operator (OPR) positions. Before QMS Customer Service Enhancements, they could not complete subscriber calls after providing assistance. They also could not receive subscriber calls directly. When the operators provided assistance, they did not have access to full call details.

Help requests to SA/IC operators are different from subscriber calls to QMS operators. The SA/IC operators cannot queue assistance requests by type or priority. An operator cannot direct an assistance request to a pool of trained SA/IC operators. An operator cannot give higher priority to an emergency request.

Furthermore, statistics that measured the performance of SA/IC operators performance were unavailable for management of the assistance work force.

QMS addressed the preceding problems with senior operators. Senior operators could perform the following actions:

- log on to OPR positions
- receive assistance requests and subscriber calls
- complete calls after providing assistance

However, these actions were not always proper solutions for operating companies because of the following conditions:

- senior operators did not have access to complete call details
- loop-around trunks were a requirement
- senior operators did not have full SA/IC functionality. Senior operators could not page or monitor other operators or view team statistics.

QMS Customer Service Enhancements (continued)

Description

With QMS Customer Service Enhancements, a CSE operator can perform the following functions:

- provide help to QMS operators with toll and assist (TA), directory assistance (DA), and intercept (INTC) calls
- have full access to call details
- complete calls after providing assistance
- receive and handle subscriber calls directly
- monitor other operators
- initiate and receive pages and directed assistance calls
- receive warnings of call queues with calls waiting, calls that deflect, or calls without an assigned operator
- receive specified force management (FM) information

In the preceding list, call queue profile and ability profile tables control optionality. A description of the ability profile tables appears later in this document.

Assistance and supervisory abilities do not have automatic associations with pre-defined operator and position types. These abilities associate with operator IDs through switch datafill.

The CSE operators have the same call handling abilities as other QMS operators. The CSE operators have the same abilities on assistance requests and subscriber calls. On assistance requests, the CSE operators have access to the same call details as the operator that requests assistance. The CSEs are different from QMS senior operators because the CSEs do not require loop-around trunks.

An operator who requests assistance can perform one of the following actions:

- stay on the call and talk with the CSE that provides assistance
- release the call to a QMS call queue for a CSE

In the first condition, the operator requesting assistance and the CSE share control of the call. The operator and the CSE can key on the call. Both operators can release from the call. The operator who continues with the call has full call control.

FM statistics can include CSE operators with other QMS operators. The TOPS12 feature QMS CASE Call Alerting provides Alternate Force

QMS Customer Service Enhancements (continued)

Management techniques. The feature provides an option to track statistics on CSEs' performance. Additional information about this feature is located in "Team Statistics" in this section.

The system supports QMS Customer Service Enhancements for TOPS multi-purpose (MP) and OPP-compliant positions.

The operational measurement (OM) group TOPSTRAF contains the registers GENASST and DIRASST. These registers track the number of general and directed assistance requests. This ability is mandatory. It does not require QMS Customer Service Enhancements to be active.

Summaries of these enhancements appear in the following table:

Summary of capabilities

Capability	gen.opr. -chg. page & direct asst.	ASST /SA	IC	CSE
Receive and handle subscriber calls	yes-primary function	no	no	yes
Receive and handle assistance calls from other operators	no	yes-primary function	yes-secondary function	yes
Request general assistance	yes	no	no	yes
Request directed assistance - A CSE can make a request to a general operator or another CSE.	yes	yes	yes	yes
Receive directed assistance call - Before QMS Customer Service Enhancements, a general operator was not able to receive a directed assistance request. QMS Customer Service Enhancements allows a general operator to receive a directed assistance request from a CSE.	no/yes	yes	yes	yes
Monitor other operators, for withheld calls.	no	yes	yes	yes
Note: The ASST (SA) and IC abilities do not change with QMS Customer Service Enhancements. The QMS operator abilities can change for paging and directed assistance. You can enter CSE operator IDs with limited parts of this functionality.				

QMS Customer Service Enhancements (continued)

Summary of capabilities

Capability	gen.opr. -chg. page & direct asst.	ASST /SA	IC	CSE
Page other operators (not ASST (SA) or IC) - Before to QMS Customer Service Enhancements, a general operator was not able to page any position. With this functionality, a general operator can page a CSE. A CSE can page a general operator or another CSE.	no/yes	yes	yes	yes
Receive and respond to a page	yes	no	no	yes
Receive QMS queue status information (QCD, QCW, QCQ)	no	yes	yes	yes
Receive reports of the number of positions in different states. For example, occupied, busy, out of service, receiving controlled traffic and query.	no	no	yes- primary function	yes
Receive notification of alarm conditions, all time & charges TTYs that are not in service.	no	no	yes	yes
Receive indicator of assistance or subscriber request; a sonalert sounds on arrival of an assistance request for an ASST and IC; call alerting (a visual and audio indicator) informs CSEs of assistance or subscriber requests waiting in alerting queue	no	yes	yes	yes
Receive indicator that queue is full; sonalert sounds when number of calls in assistance queue is full for an IC; for a CSE, QMS calling alerting (QCA) occurs when the number of calls in queue meets threshold	no	no	yes	yes
Capable of observing total number of calls; string ACW## shows the number of requests in the assistance queue	no	no	yes	yes
Note: The ASST (SA) and IC abilities do not change with QMS Customer Service Enhancements. The QMS operator abilities can change for paging and directed assistance. You can enter CSE operator IDs with limited parts of this functionality.				

QMS Customer Service Enhancements (continued)

Optionality

The functionality QMS Customer Service Enhancements is an option (ADVQ0006) that the Software Optionality Control (SOC) controls. The SOC Utility provides the following two types of control:

- The option can be ON or IDLE. In the ON state, full functionality is available. In the IDLE state, functionality is not available. The IDLE state allows and retains datafill. This functionality will not be the OFF state when the OFF state is available.
- Usage determines control. QMS Customer Service Enhancements only supports state control. This functionality does not support SOC Usage control.

An IDLE to ON change activates this functionality. An ON to IDLE change causes the system to route future assistance requests to SA/IC operators. Calls with a CSE queue process normally. Calls that are already at a position of a CSE at the time of the transition process normally. These changes do not fail.

Refer to the *Software Optionality Control User's Manual*, 297-8991-901 for more information on the use of SOC.

Note: In the first release for QMS Customer Service Enhancements, SOC did not control basic TOPS QMS functionality, OSB00101. In this condition, the option OSB00101 does not depend on other options. If SOC controls basic TOPS QMS functionality in later releases, this option depends on other options.

Datafill

General QMS operators have datafill like general CSE operators. The QMS and CSE operators use QMS tables as follows:

- The datafill for general and CSE operator positions appears as OPR in table TOPSPOS.
- Table TQOPROF defines operator profiles (general and CSE).
- Tables TQCQPROF, TQCQINFO, QMSCQDEF, and QAPLNDEF define queues that general operators use for calls. These tables define queues that CSEs use for call assistance.
- Tables TQMSSERV and TQSVPROF define services for both operators.

QMS Customer Service Enhancements (continued)

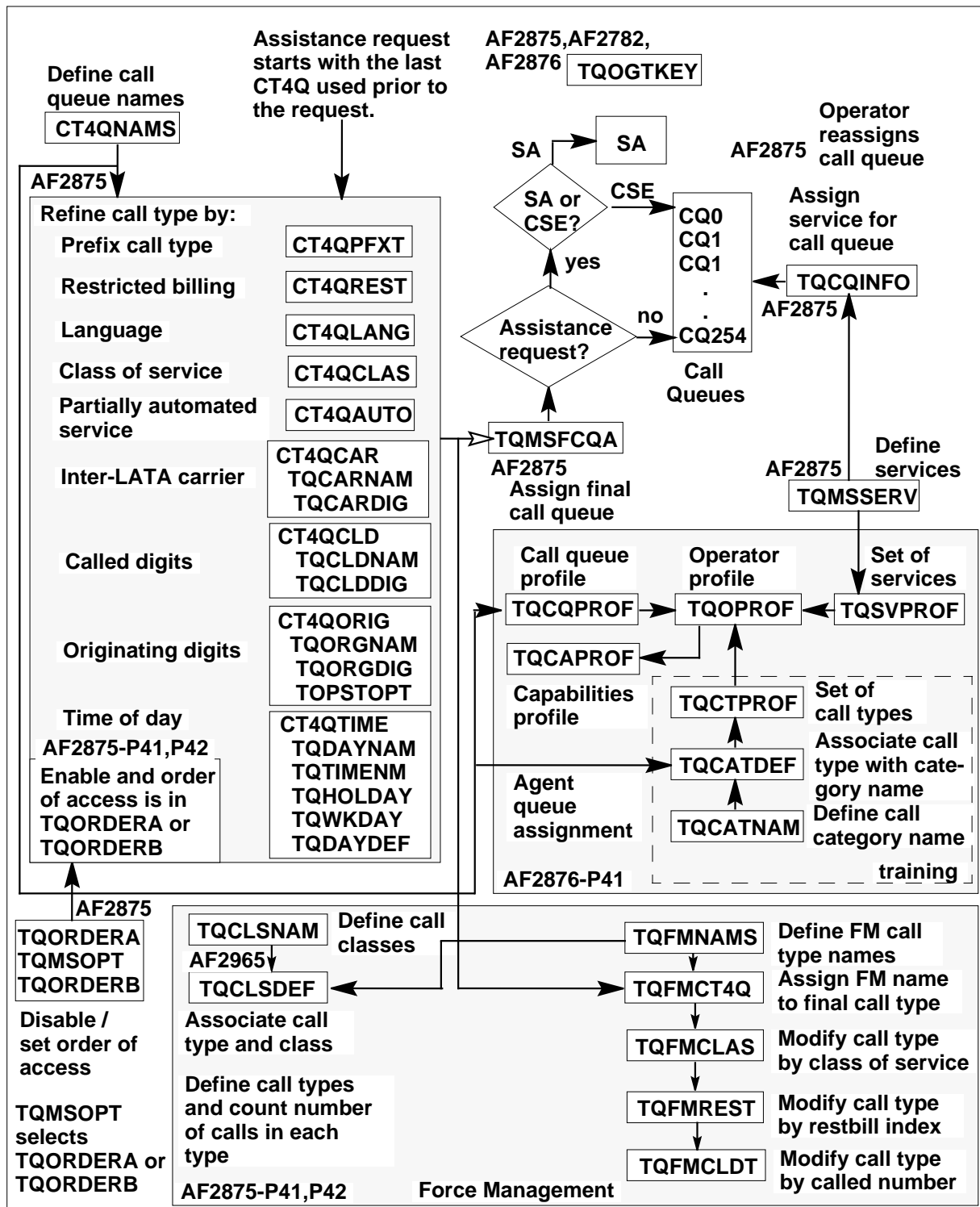
The functionality QMS Customer Service Enhancements provides the following datafill. See the datafill procedure section for a description of this datafill.

- The system uses field ASSTAREA in table TQMSFCQA when an operator requests assistance and determines whether an SA or CSE provides assistance. If an SA provides assistance, the system routes the call to an SA queue and position. The system performs this route the same as before QMS Customer Service Enhancements. If a CSE provides assistance, the field includes a QMS queue where the system routes the call for CSE assistance.
- Table TQCAPROF defines general and CSE operator abilities.
- Field ASST in tables TQORDERA and TQORDERB is for QMS assistance (CSE) queues.
- Table TQCQINFO defines alerting queues. It also provides a means of selecting threshold values for QMS Call Alerting.

Full and simplified dataflows for the QMS tables and table TQCAPROF appear in the following figures.

QMS Customer Service Enhancements (continued)

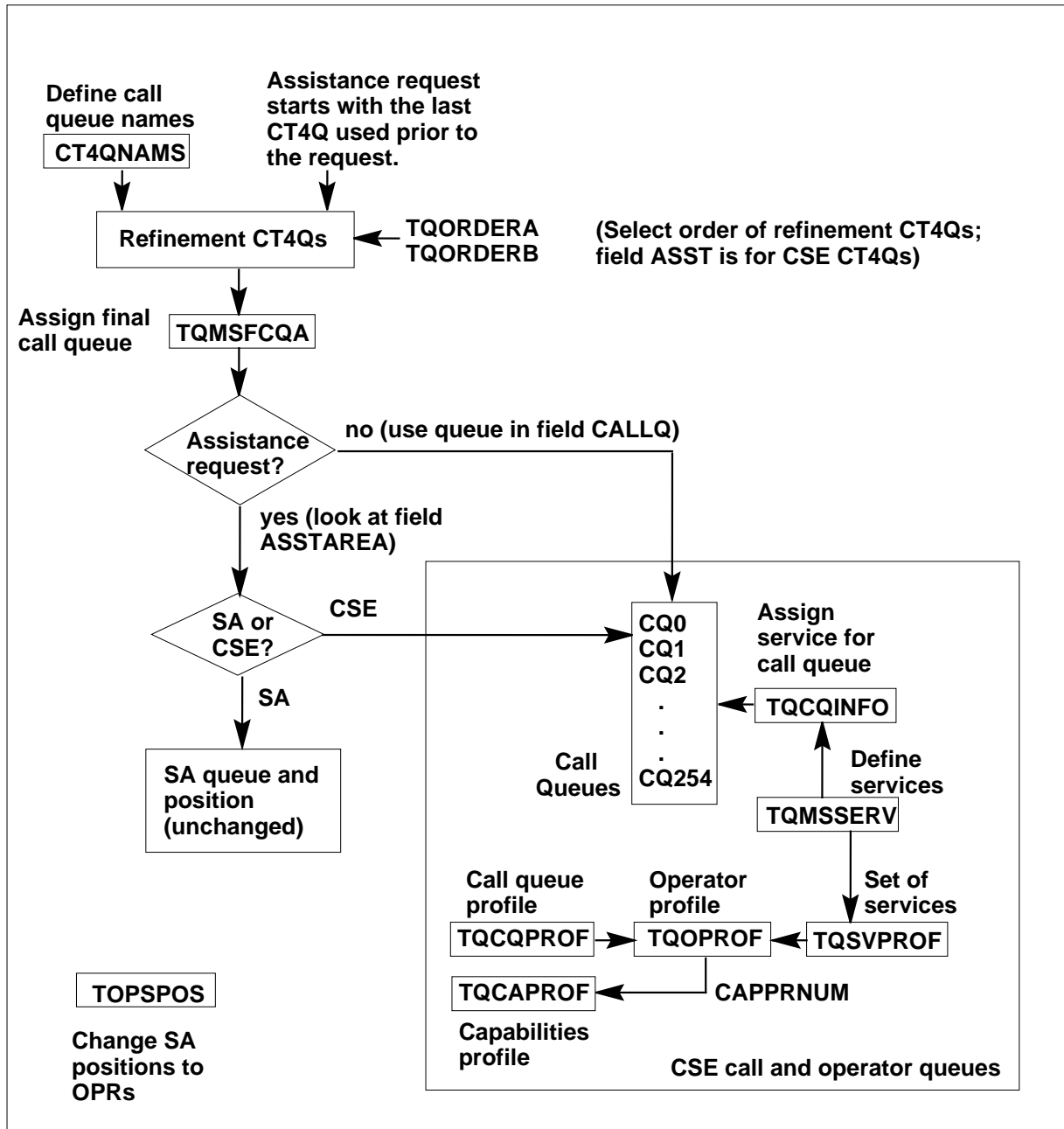
QMS datafill tables



QMS Customer Service Enhancements (continued)

A simplified version with the important tables appears in the following figure:

QMS CSE call flow



QMS Customer Service Enhancements (continued)

In the preceding figure, a call is at an operator position and a request for assistance occurs. If this event occurs, the following sequence applies:

1. The DMS switch starts with the last CT4Q call accessed previous to an assistance request.
2. Table TQORDERA or TQORDERB, field ASST indicates the sequence of refinement CT4Qs. After the last refinement CT4Q, the call arrives at table TQMSFCQA.
3. An examination of table TQMSFCQA field ASSTAREA occurs to determine if an SA or CSE handles the call. If an SA handles the call, this QMS Customer Service Enhancements routes the call to an SA queue as prior to this functionality. If a CSE handles the call, the call queue appears where the the system routes the call for assistance.

If an initial call is not for an assistance request, the system checks field CALLQ in table TQMSFCQA for the call queue.

Table TQCQPROF defines CSE assistance call queues the same as general operator call queues. Definition of CSE operators in table TQOPROF occurs like the definition of general operators.

Table TQOPROF contains the field CAPPRNUM and an index into table TQCAPROF. Definition of the abilities of CSE and general operators occurs in table TQCAPROF. These abilities can include the following:

- paging
- directed assistance
- monitoring
- receiving office statistics
- receiving call queue information

A general operator can page and provide directed assistance. A CSE can have every ability.

Position and operator datafill

The datafill for the positions that CSEs use appear as QMS OPR positions in table TOPSPOS. Sample datafill appears in the following example:

QMS Customer Service Enhancements (continued)

MAP example for table TOPSPOS (CSE operator position datafill)

POSNO	VCCKT	VCPDGRP	CARDCODE	CARDCODE	DATA PATH	POSAREA
370	TMS 1 2 3	NPDGP	DS1SIG			
				TMS MP	OPP 100	0
				OPR 4	QMSCAM	CORECAM 10

Table TQOPROF contains datafill for the operator numbers of all QMS operators. The datafill includes CSEs. Tables TQOPROF and TQCQPROF specify the assistance requests and subscriber calls that each CSE operator handles.

The operator and position numbers can identify operators in an Operator Centralization environment. The operator and position numbers must be different across switches.

Datafill examples for the CSE appears in the following paragraphs and figures.

Example 1 - A CSE that contains datafill to handle QMS call queues. A CSE operator that contains the datafill required to handle two QMS call queues appears in this example. These queues are a subscriber queue and an assistance request queue. The CSE entered in table TQOPROF appears in the following figure. The CSE that appears has an operator number of 1 and a call queue profile number of 10.

MAP example for table TQOPROF (CSE operator datafill)

OPRNUM	DFLTTEAM	SVCPRNUM	CAPPRNUM	SELAREA
1	6	3	5	CALLQ10

In the following figure, table TQCQPROF datafill associates call queue profile 10 with QMS call queues 100 and 101.

QMS Customer Service Enhancements (continued)

MAP example for table TQCQPROF (Two QMS call queues)

CQPROFNM	DLAYCT4Q	AGENTQ	PRIOAREA
10	DELAYCQ	AQ5	OFC (CQ100)(CQ101)\$

In the preceding figure, CQ100 can be for assistance requests. The CQ101 can be for subscriber calls. Definition of subscriber calls occurs in tables TQCQINFO and TQMSSERV.

In the preceding figure, the OFC selector indicates that this profile uses the office-wide priorities in table QMSCQDEF. The priorities are for the call queues that follow OFC. The QMS call queue prioritization mechanism does not change for QMS Customer Service Enhancements. A description of how to use the QMS call queue prioritization mechanism with this functionality appears in the following paragraphs.

Office-wide priorities can provide specified call queues with higher absolute priority than other call queues office-wide. For example, call queue 100 can have higher absolute priority than call queue 101. A minimum of one call can be in each queue when the CSE becomes available. When these events occur office-wide priorities present the oldest call in queue 100. This action does not depend on how long calls wait in queue 101. Office-wide priorities can make sure that CSEs receive assistance calls at a higher absolute priority than subscriber calls.

Office-wide priorities can age calls in different queues at different rates. Artificial aging gives preference to specified queues. Artificial aging does not allow calls in other queues to completely starve out. The artificial aging works the same way for assistance queues and other QMS call queues without QMS Customer Service Enhancements.

Example 2 - A CSE and general operator that contains datafill to handle QMS call queues. Datafill for a CSE and a general operator appears in this example. Another way to use QMS call queue prioritization appears in this example.

The CSE with the same ID (1) and call queue profile number (10) as the preceding example appears in the following figure. The general operator with ID 2 and call queue profile 11 appears in the following figure:

QMS Customer Service Enhancements (continued)

MAP example for table TQOPROF (Multiple operators)

OPRNUM	DFLTTEAM	SVCPRNUM	CAPPRNUM	SELAREA
1	6	3	5	CALLQ10
2	6	3	6	CALLQ11

Like the preceding example, call queue 100 is for assistance requests and call queue 101 is for subscriber calls. In the following figure the general operator has a profile with only the subscriber queue.

MAP example for table TQCQPROF (Complex call mix)

CQPROFNM	DLAYCT4Q	AGENTQ	PRIOAREA
10	DELAYCQ	AQ5	PROF (CQ100 10)\$(CQ101 10)\$
11	DELAYCQ	AQ5	PROF (CQ101)\$

The CSE call queue profile has different datafill in this example. Call queue profile 10 in the preceding figure describes the use of profile-specific call queue priorities. In the preceding figure, profile-specified call queue priorities take the place of office-wide priorities. The PROF selector in the PRIOAREA field indicates this condition. Operators with call queue profile 10 in this handle call queue 100 with higher absolute priority than call queue 101. This method does not depend on office-wide priorities for call queues 100 and 101.

A 10 appears after the call queue numbers in the profile-specific priority specification of the CSE. This number is a default value for a relative priority setting. In this instance, the value is not important because only one call queue is present at each priority level. If multiple queues are in an absolute priority level, the relative priority settings age calls in queues at different rates.

You can use priority agent queues for CSE datafill in the same method as for other QMS operator datafill. You can use these queues to customize the system of priorities for use when the following conditions occur:

- CSEs are idle when a call arrives
- an assistance request occurs

Datafill for routing assistance requests

A QMS operator on a supported position can request general assistance with functionality QMS Customer Service Enhancements active. If this condition

QMS Customer Service Enhancements (continued)

occurs, the system consults QMS datafill in routing the assistance request. For this functionality to be active, the SOC state must be ON.

The call type for queuing (CT4Q) at the time of the request determines where the QMS datafill routes the request. Call attributes like the time of day and class of service can determine where the QMS datafill routes the request. The QMS can route the request to the following queues:

- the SA queue present before this functionality
- a QMS call queue that a CSE sets up for service

The tables used to route assistance requests are the same tables used to route subscriber calls when the following events occur:

- a call arrives
- a call transfers
- a recall occurs

These tables require additional datafill to support assistance. This datafill uses the following fields:

- field ASST in tables TQORDERA and TQORDERB
- field ASSTAREA in table TQMSFCQA

When an operator processes an assistance request the operator traverses the CT4Q refinement tables. The operator starts at the current CT4Q of the call. The ASST field in the active TQORDERA or TQORDERB table determines the order of movement. This condition appears in the following example.

MAP example for tables TQORDERA and TQORDERB (Order for assistance request CT4Q refinement)

CQ4TABL	PREORPR	POSTAUTO	RECALL	ASST
CT4QCLAS	1	0	0	0
CT4QREST	0	0	0	0

The default value for the ASST field is zero. This value indicates that assistance requests do not require the use of the associated refinement table. Entries other than zero indicate the order of use of the refinement tables.

QMS Customer Service Enhancements (continued)

After this pass through the refinement tables, the DMS switch checks the field ASSTAREA in table TQMSFCQA. The DMS switch checks this field to determine the condition of the assistance request.

The selector of the ASSTAREA field can be SA. If this condition occurs the system routes the request to the SA queue for service by an SA or IC operator. The same action occurs without QMS Customer Service Enhancements. The value SA is the default value of the ASSTAREA selector.

If the selector of the ASSTAREA field is CSE a QMS call queue must contain datafill. This datafill specifies the queue to which to route an assistance request for CSE handling. The service entered against the CSE call queue must be like the service entered against the call queues in columns CALLQ and RECALLQ. The CSE call queue is in table TQCQINFO.

Recognition of call queues is switch-wide. Cross team routing is the default for CSE assistance calls. Additional queues are necessary to route calls to CSEs on a specified team.

Example - Final call queue assignment datafill: Sample datafill for table TQMSFCQA for this functionality appears in the following example:

MAP example for table TQMSFCQA (Final call queue assignment)

CT4Q	CALLQ	RECALLQ	ASSTAREA
0_MINUS	CQ10	CQ11	CSE CQ100
DA_411	CQ30	CQ35	SA
SPANISH_TA	CQ40	CQ40	CSE CQ50
EMERGENCY	CQ200	CQ300	CSE CQ200

In the second tuple of the preceding example, a QMS operator can request general assistance and the CT4Q of the call can be DA_411. If this event occurs, the system routes the request to the SA/IC queue. The system processes the request like the system processes requests without QMS Customer Service Enhancements.

The SA is the default value for the ASSTAREA field. A description of how to use this field in different office transition strategies appears in the "Datafill transition strategy" section.

In this example, the system maps other CT4Qs to QMS call queues for CSE assistance. The SPANISH_TA and EMERGENCY tuples indicate how to route assistance requests to groups of CSEs with specified training or skills.

QMS Customer Service Enhancements (continued)

In the Spanish example, the call has a SPANISH_TA CT4Q before the assistance request. For this condition, specification of the CT4QLANG refinement in the ASST field of the active order table is not a requirement. The CSEs that speak Spanish serve call queue 50. An office does not always contain many CSEs that speak Spanish. If CSEs that speak Spanish can also speak English, these CSEs serve call queue 50 at a higher priority than English call queues. This condition applies when Spanish is less common in an office than English.

An operator that uses OGT keying can assign the EMERGENCY CT4Q before the assistance request. A subscriber call can arrive as a 0_MINUS call, but the operator can discover that the call is an emergency. The emergency call requires high-priority assistance. In this condition, QMS datafill can prioritize call queue 200 over all other call queues for CSEs qualified to handle emergencies. The QMS datafill can provide a screen display to communicate the emergency nature of the call to the CSE. This screen display appears in table CT4QNAMS.

Sample TQOGTKEY datafill to support the use of a CT4Q for emergency assistance requests appears in the following figure:

MAP example for table TQOGTKEY (Emergency assistance requests)

KEYNUM	LABEL	KEYINFO
98	EMERGENCY	CT4Q EMERGENCY

In the preceding figure, the KEYNUM must match the datafill in the MP and OPP positions. The KEYINFO field specifies that this OGT key is type CT4Q. The field also specifies that an operator assigns the EMERGENCY CT4Q from table CT4QNAMS to the call with OGT keying. The LABEL field is a display that the system sends to the position. This event occurs when the operator keys to change the CT4Q and the change is not permanent. In this state, the operator can toggle back to the previous CT4Q. To perform this action, the operator repeats the same OGT keying sequence.

Specialized CSE roles

Small offices can require CSEs that receive team statistics or monitor other operators to handle general assistance requests and subscriber calls. Small traffic offices sometimes want this configuration. Large traffic offices often prefer another configuration. The QMS operator profiles that exclude receiving general assistance requests and subscriber calls require definition for large offices.

QMS Customer Service Enhancements (continued)

Before QMS Customer Service Enhancements, a definition of QMS operator profile that excludes receiving general assistance requests and subscriber calls was not an option. Entry of a call queue profile or a controlled traffic profile against each QMS operator was a requirement. The call queue profiles or controlled traffic profiles required datafill. This requirement did not allow for the QMS operator profiles that large offices can require. The ICs can key to accept only directed assistance calls. The CSEs cannot key to accept directed calls because CSEs use OPR positions and do not use IC positions.

QMS Customer Service Enhancements allows you to enter data for an office-wide call queue profile. This queue profile has an empty call queue list in table TQCQPROF. A CSE does not always want to receive general assistance requests or subscriber calls. The CSE can log in with an ID that has a call queue profile with an empty call queue list. A CSE that has an ID with an empty call queue list does not receive general assistance requests or subscriber calls. See the datafill procedure section for details.

An empty call queue list prevents a CSE from receiving general assistance and subscriber calls. The empty call queue list does not prevent directed calls from other CSEs or from general operators.

Control of operator abilities

Table datafill and SOC state are two methods to control the abilities that operators can use. Table datafill associates specified abilities with operator profile numbers. Table TQCAPROF is the primary table that performs this function. Enter the profile numbers against operator IDs in table TQOPROF. The SOC state indicates if the operator abilities entered are acceptable. Sample datafill for table TQCAPROF appears in the following example:

MAP example for table TQCAPROF

PROFNUM	CAPSET
0	NONE
1	INTEROPR MON OINFO\$
5	INTEROPR QINFO STATS \$
10	INTEROPR MON QINFO STATS \$
15	ALL

The abilities that an operator can use appear in field CAPSET. See the datafill procedure section for additional information.

When an operator logs on to a supported position, the system associates the ability set entered for the operator with the operator. The system

QMS Customer Service Enhancements (continued)

communicates the ability set to the position if the set is OPP-compatible. When an operator logs on to a position that is not supported, the system associates an empty ability with the operator. The SOC state does not affect this process.

The SOC state determines if the TOPS system allows the operator to apply the abilities the system determined at log in time. When the SOC state is ON, the operator can apply the operator abilities that the system determined at log in time. When the SOC state is IDLE, the system denies attempts to apply abilities. Changes in the SOC state are immediate.

Note: Table TQCAPROF does not affect if an operator can receive general assistance requests. Datafill in tables TQOPROF and TQCQPROF control if an operator receives general assistance requests. The routing of assistance requests that have routes to QMS call queues controls the reception of general assistance requests.

TOPS output devices

Parameter TOPS06_DEVICE_ENHANCEMENTS in table TOPSPARM allows additional information for TOPS output device reports. The SOC does not control this parameter. The parameter is always correct. See the datafill procedure section for details.

Network connections for CSE

The system allocates a second 3-port conference circuit for the call when one of the following events occurs:

- the CSE is available immediately
- the operator that made the request stays on the call while the system queues the call

The calling and called parties continue to use ports 1 and 2 of the original conference circuit. Port 0 of the original conference circuit connect to port 0 of a conference circuit. The operator who requested assistance connects to port 1 of the conference circuit. The CSE connects to port 2.

The network connections for CSE allows a CSE assistance call to have calling and called parties with both operators connected.

The TOPSSZRS register of OM group CF3P increases if the system allocates the 3-port conference circuit. If the system cannot allocate the 3-port conference circuit, the system increments the TOPSOVFL register. The system generates a TOPS107 log with the TRBLCODE set to TOPS_CF3P_UNAVAILABLE. The system busies the position of the CSE.

QMS Customer Service Enhancements (continued)

General assistance

Operators can request general assistance or directed assistance. General assistance is help from the first available operator. Directed assistance is help from a specified position.

The SOC state can be ON and a QMS operator on an OPP-compliant or TOPS MP position can request general assistance. If this condition occurs the request can receive CSE assistance. Datafill from the following tables determines if the system routes the request to a CSE or an SA/IC:

- table TQMSFCQA, field ASSTAREA
- the CT4Q refinement tables

This functionality supports delay calls, those in which an operator establishes a link for both of the concerned parties, for assistance. The functionality accesses an idle loop and requests general assistance. It supports general assistance requests on calls that the subscriber initiates.

A CSE can request assistance like other QMS OPRs. Only two operators can connect to a call at the same time. The CSE can request assistance when an operator that requests assistance from the CSE drops out of the call.

The system supports CSE assistance requests when a forward party connects to the call. This condition makes CSE assistance requests different from SA/IC assistance.

The DMS switch can deny a request that maps to CSE assistance. The DMS switch can deny a request, and the datafill for the position that makes the request can be OPP. If this event occurs, the DMS switch sends a message to the position to inform the position of the denial.

The DMS switch can deny a request for assistance for the following reasons:

- two operators connected to the call
- a billing verification query is in process
- the notify timer is active
- the outgoing trunk signaling on a 911 OP trunk is in progress
- the current CT4Q of a call refines to an operator services advanced intelligent network (OSSAIN) CT4Q

If a TOPS operator CT4Q refines to an OSSAIN CT4Q during an assistance request, the system generates an OAIN 206 log.

QMS Customer Service Enhancements (continued)

An assistance request can be successful and the CT4Q of the call can change. If this event occurs, the system sends the current CT4Q to the position that makes the request for display. If the DMS switch denies the request the CT4Q at the time of the request does not change. If the request maps to SA/IC assistance, the CT4Q at the time of the request does not change.

The system normally routes an assistance request that maps to CSE assistance to a new QMS call queue for the CSE. The call queue determines the QMS. An assistance request can change the service of the call. Correct data entry can prevent an assistance request from changing the service of a call. For example, consider a call that comes to an operator with a CT4Q, a call queue, and a service. When the operator requests assistance, the operator can refine the CT4Q. The system searches the current CT4Q in table TQMSFCQA, field ASSTAREA, for a new call queue. You must enter the same service in table TQCQINFO against the current call queue as against the original call queue. This process allows the service to remain the same.

Operator capabilities in TQCAPROF

The field CAPSET, in table TQCAPROF determines operator abilities as follows:

- inter-operator directed assistance and paging (INTEROPR)
- monitoring (MON)
- statistics (STATS)
- QMS call queue information (QINFO)

A description of these abilities appear in this section.

No capabilities

Enter some or no abilities for a general QMS operator. You can only enter INTEROPR. If there are no abilities, enter NONE.

Directed assistance

Operators can request general assistance or directed assistance. General assistance is help from the first available operator. Directed assistance is help from a specified position.

Without QMS Customer Service Enhancements, general operators and SA/ICs can request directed assistance only from ASST (SA) and IC positions. The parameter TOPS_CROSS_TEAM_ROUTING in table OFCVAR limits directed assistance to intra-team.

This functionality allows CSEs to make directed assistance requests to other CSEs and to general operators. These requests can occur when table

QMS Customer Service Enhancements (continued)

TQCAPROF field CAPSET contains INTEROPR. Requests to ASST (SA) and IC positions do not change. These requests operate the same as the requests before this functionality. This functionality allows a CSE to make directed assistance requests to a general operator to initiate communication with a specified operator.

There is no intra-team restriction for directed assistance. The operator does not consult parameter TOPS_CROSS_TEAM_ROUTING when processing directed assistance requests. If an operator must contact a party on a different switch, an inward call is a requirement. This requirement also applies to SA/ICs.

General operators can make directed assistance requests to CSEs that have the INTEROPR ability. These requests do not help with subscriber calls. Directed assistance applies to operator-initiated (delay) calls only. This restriction does not normally cause problems because QMS routes general assistance requests to CSEs that specialize in specified subscriber calls.

When the DMS switch receives a directed assistance request, the switch checks the requesting and requested positions. The switch checks these positions to determine that the positions contain the datafill OPR, ASST, or IC. If one position is an ASST or IC position, functionality QMS Customer Service Enhancements is not available. Directed assistance operates the same way as directed assistance operates if this functionality is not active. For the remainder of this section, assume both positions contain the datafill QMS OPR.

The DMS switch can deny a directed assistance request for the following reasons:

- The operator that requests the assistance and the requested operator do not have the INTEROPR ability in table TQCAPROF. The requested operator does not have this ability if the operator that requests the assistance has the ability. The operator that requests the assistance does not require this ability. The requested operator requires this ability.
- This functionality supports the position that makes the request or the requested position. This functionality supports one of the positions. The functionality supports only OPP-compliant and TOPS MP QMS positions. The TOPS MP can be stand-alone and integrated. The TOPS MP does not support directed assistance by operator number.
- The active call of the operator that requests assistance is not an operator-initiated delay call.
- The requested operator handles a call. The requested operator has one directed assistance request that waits.

QMS Customer Service Enhancements (continued)

- The operator requested a position number that:
 - is not in table TOPSPOS
 - is out of service
 - does not have a logged-in operator
 - has calls withheld
- The operator requested an operator number that is not in table TQOPROF. The operator requested an operating number that is not logged-in or is logged-in but with calls withheld.

A CSE that wants to receive directed calls must be available for all calls. A CSE often wants to receive directed but not general assistance calls. The CSE can log in with an ID call queue profile that does not include call queues in table TQCQPROF, field CQLIST. This profile allows the CSE to receive directed calls but not general assistance calls.

The DMS switch can deny directed assistance requests to SA/IC positions. This event occurs if the SA/IC does not have the base service of the call. The service set of the requested operator does not affect the processing of directed assistance requests. Directed assistance does not apply when the operator provides a subscriber service. This restriction can prevent the use of directed assistance to contact general operators.

The provisioning of directed assistance can occur by either operator number or position number for an OPP-compatible (if supported by vendor) or IWS. For an MP position, the system does not support directed assistance by operator number. The system supports directed assistance by position number.

Paging

Before functionality QMS Customer Service Enhancements, general operators were not able page general, SA, or IC operators. The SA/ICs were only able to page general operators. The SA/ICs were not able to page other SA/ICs. The parameter TOPS_CROSS_TEAM_ROUTING in table OFCVAR limited paging to intra-team.

The CSEs can use this functionality to page other CSEs and general operators. This action can occur when table TQCAPROF field CAPSET is INTEROPR for the profile of the CSE. General operators can page CSEs that have the INTEROPR ability. Paging by ASST (SA) and IC positions does not change. Paging by ASST (SA) and IC positions operates in the same method as the paging operated before this functionality.

QMS Customer Service Enhancements (continued)

This functionality does not restrict intra-team paging or directed assistance. This functionality does not consult the parameter TOPS_CROSS_TEAM_ROUTING to process pages, respond to pages, or direct assistance requests. If an operator must contact someone on a different switch, an inward call is a requirement. This requirement applies to SA/ICs.

The operator number or position number for an OPP-compatible, IWS or MP position can issue a page. An OPP-compatible can issue a page if the vendor supports the OPP-compatible.

After the operator initiates a page, the DMS switch checks if the paging position contains the datafill OPR, ASST, or IC. If the position is an ASST or IC position, the functionality is not available. Paging and response to pages operate like pages and responses to pages operate when this functionality is inactive. The rest of this section assumes that the page request is from a QMS OPR position.

The DMS switch can deny a page for the following reasons:

- The operator requests to page an ASST or IC.
- The operator that requests the page and the requested operator do not have the INTEROPR ability in table TQCAPROF. The requested operator does not have this ability if the operator that requests the page has the ability. The operator that requests the page does not require this ability if the requested operator has the ability.
- The operator requests to page a position number that is not in table TOPSPOS. The operator requests to page a position that:
 - is out of service
 - does not have a logged-in operator
 - has a logged-in operator that monitors another operator
- The operator requests to page an operator number that is not in table TQOPROF. The operator requests to page an operator number that is not logged-in or that monitors another operator.
- This functionality does not support the position that pages or the paged position. This functionality supports only OPP-compliant and TOPS MP QMS positions. The TOPS MP can be stand-alone and integrated.

If an operator issues a page and withholds calls, the paged operator cannot respond. The paging operator must accept calls to receive a response to a page. A CSE often wants to receive only directed calls and responses to pages. This CSE can log in with an ID whose call queue profile does not include call queues in table TQCQPROF, field CQLIST.

QMS Customer Service Enhancements (continued)

Monitoring

The primary function of an operator ID can be to monitor. In this event, the operating company does not have to allow this operator ID to handle subscriber and general assistance calls. To exclude this ID from these calls, do not enter table TQCQPROF tuples in field CQLIST. These entries are for call queue profiles that the operators use. A monitor that does not handle subscriber or general assistance calls can page and be paged. This monitor can initiate and receive directed assistance calls. The monitor can receive queue status warnings. The monitor can receive real-time information about the states of positions in the team.

The DMS switch accepts requests from positions to monitor a specified position number or a specified operator ID. When the requesting operator the monitor has the MON ability, the DMS switch attempts to accept the request. The DMS switch does not accept the request if one or more of the following conditions occur:

- The request is for a position that is not the same terminal type and configuration as the position of the monitor. The OPP-compatible positions can monitor OPP-compatible positions only. A stand-alone MP can monitor a stand-alone MP only. An integrated MP can monitor an integrated MP only.
- The request is for an operator ID and the operator number:
 - is not in table TQOPROF
 - is not logged in
 - is logged in an ASST or IC position

The SA/ICs that use QMS TOPS MP positions appear in table OPRDAT. The SA/ICs and CSEs that use QMS OPP positions appear in table TQMSFQCA AS SA or CSE.

- The request is for a position number and the requested position:
 - is not in table TOPSPOS
 - is ASST or IC
 - is TOPSACD
 - is not in service
 - does not have a logged-in operator
- The requesting position has a call, or is in a state in which the requesting position can accept calls.
- The requested operator is a QMS operator that has the MON ability.
- A CSE or an SA/IC already monitors the requested operator or position.

QMS Customer Service Enhancements (continued)

The system does not check to make sure the operator that monitors has the DA services of the monitored operator.

The system does not inform a monitored position of monitoring. This condition applies unless tuple TOPS_DISPLAY_MON in table OFCVAR is Y. The same condition occurs in ASST and IC monitoring.

The voice connection for monitoring requires a 3-port conference circuit. The allocation of the circuit occurs at the beginning of the monitoring session. The de-allocation of the circuit occurs at the end of the session. If allocation of a 3-port conference circuit is not possible, the system increases the TOPSOVFL register of OM group CF3P. The system generates a TOPS107 log with the TRBLCODE set to TOPS_CF3P_UNAVAILABLE.

Team statistics

Without QMS Customer Service Enhancements, IC operators receive warnings about different office and team conditions. The IC operators can view and query statistics about the states of positions in the operator teams. The states of positions include made busy and out of service. The SA or ASST receives a small subset of the information that the ICs receive. QMS Customer Service Enhancements does not change this SA/IC capability.

The functionality QMS Customer Service Enhancements allows field CAPSET in table TQCAPROF to contain the datafill STATS. This datafill allows the operator to receive and to make queries about the team and to receive warnings and alarms. The queries include information about position states and controlled traffic use. The position state and controlled traffic information is only available if table TQMISOPT parameter QMSFM_BASIC is set to Y.

TOPS12 feature QMS CASE Call Alerting provides an alternate way to collect FM statistics about CSEs. The purpose of this feature is to eliminate the possibility of distortion of statistics. This feature affects the Call Busy Work Volume (CBWV) and Non-Queue Work Volume (NQWV).

QMS CASE Call Alerting divides CBWV into two categories: Assistance Call Busy Work Volume (ACBWV) and Subscriber Call Busy Work Volume (SCBWV). ACBWV is the time that CSEs spend servicing assistance requests. SCBWV is the time that CSEs spend servicing subscriber calls. CBWV appears on reports generated by TOPS QMS traffic administration data system (QTADS) and QMS force administration data system (QFADS) devices. ACBWV and SCBWV do not appear on QTADS and QFADS reports.

QMS Customer Service Enhancements (continued)

NQWV is the sum of idle time (IDLT) and Non-Call Work Volume (NCWV). QMS CASE Call Alerting affects how operating company personnel allow these categories of work volume to count towards team and system statistics.

Because some CSEs handle only assistance requests, they accumulate only ACBWV. However, because other CSEs only monitor operators and observe alarms or statistics, they accumulate only NQWV. A CSE's SCBWV counts towards the call queue, team, and system statistics just as a general operator's SCBWV does. Operating company personnel can use table TQOPROF to datafill how to count the CSEs' ACBWV and NQWV.

Selection of the appropriate value for fields in this table depends on whether the CSE is in a team with general operators or in a team with CSEs only. Selection of the appropriate value for NQWV is based on whether the CSE is handling subscriber calls and assistance requests, assistance requests only, or neither.

The following table demonstrates the categories of work volume that are changeable and the types of statistics to which they contribute.

Work volume contributions and datafill status

	Call queue statistics	Team statistics	System statistics
SCBWV	Always	Always	Always
ACBWV	Always	Datafillable	Never
NQWV	N/A	Datafillable	Datafillable
<p>Note: When the ACBWV does not count towards team statistics, the corresponding transfer position seizure (TPS) does not count either. The TPS is the count of customer calls that an operator transfers. Furthermore, if a CSE's ACBWV does not count towards the team statistics, system statistics or both while providing assistance, then ACBWV continues to be blocked in other scenarios. The ACBWV continues to be blocked even if the operator drops off the call before the CSE or if the operator releases the call to a call queue that a CSE services.</p>			

Recommendations for datafill are in the datafilling sections for specific tables in this section.

For information about statistics, refer to *TOPS MP Force Management Guide*, 297-2281-310, or *TOPS IWS Force Management Guide*, 297-2251-313.

QMS Customer Service Enhancements (continued)

Queue information

When the following conditions occur the operator can receive queue status warnings and make queries about the warnings:

- Table TQMSOPT parameter QMSFM_BASIC is set to Y. This setting activates QMS Basis Statistics.
- Table TQCAPROF field CAPSET has value QINFO.

The warnings that the operator can receive and query are as follows:

- QCQ - A call waited in a queue without service from a logged-in operator.
- QCD - A call deflected from a queue.
- QCW - The number of calls in a queue that exceeds the threshold in table QMSCQDEF.
- QCA - The number of calls in an alerting queue that exceeds the threshold in table TQCQINFO

Information for each queue is a part of the QINFO ability. The information is available for OPP-compatible and IWS positions. The information is not available for MP positions. The information is available if the operator requests the information. The information is available for OPP-compatible positions if the vendor supports OPP-compatible positions. When parameter QMSFM_BASIC in table TQMSOPT activates QMS Basis Statistics, information for each queue proceeds to the QTADS TTY.

A queue status condition can begin or subside while a CSE with the QINFO ability monitors. When this condition occurs, the DMS switch sends the queue status information to the position of the CSE. The DMS switch does not terminate the monitoring session. The position must determine whether and how to display the information during a monitoring session. The position must also decide how to handle a condition where a queue status condition occurs when the CSE handles a call.

A queue status condition does not trigger a message from the DMS switch that instructs the CSE position to sound a sonalert. With QMS CASE, the position, not the DMS switch, determines whether a sonalert accompanies a condition. Refer to position documentation for position-specific information.

The TOPS12 feature QMS CASE Call Alerting provides visual and audio indicators to inform CSEs about queue conditions. The feature allows operating company personnel to set up an alerting queue, which is a queue that holds calls that the operating company wants to designate as important or high-priority. For example, operating company personnel may designate a

QMS Customer Service Enhancements (continued)

queue as an alerting queue when CSEs are servicing it. Conditions that can cause an alerting condition for a queue are:

- when QMS operators are busy handling other subscriber calls
- when CSEs are busy handling assistance requests
- when these operators have calls withheld at their positions

OPP-compliant positions receive visual and audio indicators to alert the QMS operator serving an alerting queue that calls are present in their assigned queue. The visual indicator is a CA string that appears in the message status area of the OPP-compliant position. The string remains in the Message Status Area as long as at least one call remains in an alerting queue. This capability benefits situations in which the operator leaves the position in a make busy state without going to the call presentation screen.

In addition to the visual indicator, the sonalert sounds when a call drops into the queue defined as an alerting queue. The operator can deactivate the sonalert through the functions menu or a softkey on an OPP-compliant position. The OPP-compliant position clears the audible alarm if the QMS operator logs out or if the operator is forced out by a restart or another maintenance action.

When an alerting queue has no QMS operators logged in to service it and a subscriber or assistance request falls into the queue, then no call alerting message goes to any OPP-compliant position.

Subsequent CA indicators are not seen or heard at OPP-compliant positions when the number of calls in the alerting queue increases. For example, when the number of calls increases from one to two calls, no subsequent indicators are sent to the position. However, OPP-compliant positions do receive multiple messages when the QMS operators service multiple alerting queues and when they have subscriber calls, assistance requests, or both in these queues.

Through datafill, operating company personnel can give CSEs an assistance calls waiting (ACW) count and the capability to observe the condition of call queues. A CSE can observe these conditions when the CSE has the QINFO capability, which is datafilled in table TQCAPROF. The observed queue must be an alerting queue.

When the number of calls in an alerting queue changes, the message displaying the number changes. The range of count is 0-254. When an alerting queue is observed by a CSE and the number of calls in that queue changes, a message with the new count is sent to all CSEs who are datafilled to observe the count on the alerting queue.

QMS Customer Service Enhancements (continued)

The ACW display of IWS positions provides the following information in these scenarios:

- When there are no calls in queue, nothing appears in the ACW display.
- When the number of calls in the alerting queue is from 1 - 15, the following information appears on the ACW display: ACW n. The variable n can represent a value from 1 to 15.
- When the number of calls in the alerting queue is a value from 16 to 254, the following information appears in the ACW display: 15+.
- When the number of calls in queue is 255 or greater, ACW count is not displayed.

The feature QMS CASE Call Alerting also provides a QCA condition that appears on OPP-compliant positions at which the CSEs have QINFO capability in the datafill. The operating company personnel have a datafillable option to define the threshold that causes the QCA alarm to occur. The QCA alarm is visible in the statistics and alarms window or detectable through a sonalert or both of these mechanisms.

The QCA condition is raised when the number of calls in the alerting queue reaches the OCA ON threshold, which is datafilled in table TQCQINFO. The operating company assigns a number to the threshold that activates the QCA condition. The QCA condition stops appearing when the number of calls in the alerting queue drops down to the QCA OFF threshold, which is datafilled in table TQCQINFO.

This table contains both Call Waiting (CW) ON and OFF and QCA ON and OFF. A major difference exists between CW and QCA thresholds. The CW threshold is projected wait time, which is based on the time it takes to remove a number of calls from queue. The QCA threshold is based on the number of calls in queue.

When the QCA alarm is activated, a CSE can identify which queues have met the threshold. The Query QCA softkey allows the operator to get information about which queue is activating the QCA alarm.

For specific details about the datafill necessary for this feature, refer to the datafill section.

Failure to connect CSE for general assistance

The reasons that a request for general assistance from a CSE can fail are in the following sections.

QMS Customer Service Enhancements (continued)

Deflection or queue overflow

A CSE request can fail because of deflection or queue overflow. Deflection indicates that the expected wait for an operator is too long. In this condition, the system does not queue the request. Queue overflow indicates that not enough resources are present to queue the request. Tables QAPLNDEF and QMSCQDEF control deflection and overflow. Refer to functionality QMS Host/Remote Queueing, OSB00101, for additional information.

If deflection or queue overflow occurs, the DMS switch requests a CSE from the alternate host. This event occurs if one host is in table OCHOSTQ. If this request fails, or if an alternate host is not in table OCHOSTQ, the DMS switch uses the following:

- When deflection or queue overflow occurs, a connection can be present between the operator who makes the request and the call. This condition can occur and the position of the operator can be OPP. If this event occurs the DMS switch sends a failure No Action Reason to the position.
- When deflection or queue overflow occurs, a connection can be present between the operator that makes the request and the call. If this condition occurs and the position is TOPS MP, the DMS switch routes the call to appropriate treatment. The REORDER or NETWORK_BLK_HVY_TRAFFIC are examples of appropriate treatment. A called party can be present when the DMS switch routes a request to treatment. When this event occurs the switch releases the called party from the call. This release is necessary because treatments use the forward port. The operator and the calling party can hear the treatment. The operator can terminate the treatment with Release Called keying, and apologize to the subscriber.
- The switch can release the request to queue and deflection or queue overflow can occur. When this condition occurs the switch routes the call to an appropriate treatment. The switch releases the called party from the call if the called party is present.

In an Operator Centralization (OC) environment, race conditions can occur that involve simultaneous events in the host and remote. For example, the operator can release calls to queue at the same time the host deflects the call from the queue. This condition is not common. When this condition occurs, the the system takes the call down and does not apply treatment. The system generates normal AMA records.

No available 3-port conference circuits

Allocation of a conference circuit cannot always occur. A description of this condition appears in the preceding section "Network Connections for CSE." This behavior applies when the operator that makes the request is on the call

QMS Customer Service Enhancements (continued)

when the resource failure occurs. The system busies the position of the CSE. The system generates a log and an OM. The DMS switch places a new request for assistance. The new request uses the same host and call queue as the original CSE request.

If the requesting operator remains attached, a notification of a failure does not occur. The notification does not occur because of the DMS switch places a new request. The operator and any attached parties continue to wait for a CSE.

If the system releases a request to queue, failure does not occur because the original conference circuit remains attached. A second conference circuit is not a requirement. The CSE connects to the original conference circuit.

No OC resources

For a call that requires CSE assistance in an OC environment, the DMS switch tries one time to obtain an OC data link. Another name for an OC data link is a virtual circuit. The DMS switch attempts twice to obtain an OC voice link.

The DMS switch cannot always obtain these resources to attach an OC CSE to a call. When this condition occurs the switch records the request as deflected. The DMS switch requests a CSE from the alternate host if table OCHOSTQ contains data for a host. If this request fails, or table OCHOSTQ does not contain an alternate host, the DMS switch processes the request. The switch processes the request as described in the section "Deflection and queue overflow."

Position incompatibility

The TOPS-SP and TOPS-BP positions cannot handle CSE calls. Another name for TOPS-SP is TOPS-IV. Another name for TOPS-BP is TOPS AOSS protocol. If a CSE operator logs onto a TOPS-SP or TOPS-BP position, the call setup can fail. The call setup fails when the switch attempts to attach the CSE for an assistance request. The system idles the position of the CSE.

If the system releases the request to queue when call setup fails, the system takes the call down. The system generates normal AMA records. If the requesting position remains connected, the system does not take the call down. If the position that makes the request remains connected and OPP-compatible, the position receives a failure *No Action Reason*.

To prevent CSE failure, CSE operators must not use log in IDs that contain datafill to receive assistance requests. The operators must not use the IDs if the operators must log onto positions that the system does not support.

QMS Customer Service Enhancements (continued)

Hardware connection failure

Hardware or network problems can prevent the connection of the available CSE and 3-port conference circuit. If this condition occurs, the position of the CSE and the 3-port becomes idle. The DMS switch places a new request for a CSE. The system uses the same host and call queue as the original CSE request.

If the second request obtains a CSE and a 3-port, hardware or network problems can cause the connection to fail again. In this event, the positions of the CSE and the 3-port becomes idle. The DMS switch does place a third request.

The requesting position can remain connected to the call when the failure occurs. If this condition occurs, and the position is an OPP-compatible position, the position receives a failure *No Action Reason*.

If the system releases the call to queue when the failure occurs, the system takes the call down. The system generates normal AMA records.

Failure to connect for directed assistance

The reasons that a directed assistance connection can fail appear in the following section.

No available 3-port conference circuits

The "Network Connections for CSE" section describes the actions that occur when the system cannot allocate a conference circuit. These actions occur when the requesting operator remains on the call when the resource failure occurs. The system busies the position of the requested operator. The system generates a log and an OM.

Hardware connection failure

Hardware or network problems can prevent the connection of an available 3-port conference circuit. In this event, the position of the operator and the 3-port become idle.

The requesting position can remain connected to the call when the failure occurs. If the position is an OPP-compatible position, the position receives a failure *No Action Reason*.

QMS Customer Service Enhancements (continued)

Position sanity timer

Without QMS Customer Service Enhancements, the system takes a call down if the following events occur:

- the call position does not have subscribers off-hook
- the operator does not key on the call for the time specified in table TOPSPARM parameter POSITION_SANITY_TIMER

With this functionality, if the call is at two positions without connected subscribers, the system can take the call down. This event occurs if each operator does not key on the call for the specified amount of time in the parameter. The system generates a TOPS118 log for each position.

Service switching

A call can have two attached operators. This condition is dual mode. In dual mode, services can change from Toll and Assist (TA) to DA or from DA to TA. These changes can be implicit or explicit.

Implicit change

A service change is implicit if the CSE request of the original operator changes the QMS call queue. The change is implicit if the current QMS call queue associates with a new QMS service in table TQCQINFO.

An implicit service switch does not cause the system to generate an AMA record for the preceding service. An implicit service switch can occur if the requesting operator does not support the new service. This event can occur when the requesting operator stays on the call and does not support the new service.

Service keying does not cause implicit service switches from DA to TA. The CSE requests cause implicit service switches from DA to TA. The position does not notify the DAS of the implicit service switch. The system does not forward a requested number.

An operator cannot implicitly switch the service of a call from a TA-based or DA-based service to an intercept-based service.

Explicit change

Service keying can implicitly change service.

In dual mode, a service switch can occur. The switch can occur if the log in service profile of both operators on the call includes the requested service. Table TQSVPROF contains the log in service profile.

QMS Customer Service Enhancements (continued)

In dual mode, the operators cannot implicitly switch from a TA-based or DA-based service to an Intercept-based service. The operators cannot explicitly switch from an Intercept-based service to a TA-based or DA-based service.

Datafill transition strategy

This section describes some ways to change from the present SA/IC based assistance to CSE-based assistance.

The flash-cut strategy (during a low traffic period)

The actions required to apply this functionality to an office appear in the following steps:

1. Tell all the SAs and IC operators in the office to log out.
2. Turn on the QMS Customer Service Enhancements SOC option.
3. Create new capability profiles in table TQCAPROF.
4. Create new QMS call queues in tables OFCENG and QMSCQDEF. Include the call queues in new QMS Call Queue Profiles in table TQCQPROF. Associate the call queues with the SA and IC operator IDs in table TQOPROF.
5. Tell the SA and IC operators to log on with the current operator IDs. The SA and IC operators are now CSE operators.
6. Change the ASSTAREA column of table TQMSFCQA from SA to CSE call queues.
7. Change the position datafill of all the SA/IC operators to OPR in table TOPSPOS.

To convert CSEs to SA/IC, change the ASSTAREA column of table TQMSFCQA from CSE to SA for the specified call queues.

Assistance support is not available for a specified period of time during the entry of data. A partial back out method is not available.

A gradual strategy

This approach is a gradual approach to convert to QMS Customer Service Enhancements. The gradual approach requires minimal training.¹ This approach is not necessary and requires more time than the flash-cut strategy. The division of the workforce between CSEs and SAs requires the segregation

¹ Establish guidelines for primary keying responsibility of the operator that requests assistance or the CSE when connection of both operators occurs. Without a protocol, one position can cancel the keying of the other position. For example, both positions can turn on a toggle, like NOAMA. This action can cause the toggle to turn on and immediately back off.

QMS Customer Service Enhancements (continued)

of all positions by service. In this condition, the system can provide all DA or toll service provided and convert other service types later.

1. Create new capability profiles in table TQCAPROF.
2. Create new QMS call queues in tables OFCENG and QMSCQDEF. Include the call queues in new QMS Call Queue Profiles in table TQCQPROF. Associate the call queues with new CSE operator IDs in table TQOPROF.
3. When some of the SA positions are not occupied, delete one or more of the not occupied positions from table TOPSPOS. Add these positions as OPR positions.
4. Change the ASSTAREA column of table TQMSFCQA for a subset of CT4Qs from SA to CSE.
5. Log in a minimum of one ASST operators to one of the OPR positions as a CSE operator. Use one of the new operator IDs from step 1.
6. Turn the QMS Customer Service Enhancements SOC option on.
7. Gradually convert more CT4Qs from SA to CSE. Gradually log in more CSE operators and less SAs.

The operating company can require that earlier SAs be logged on as CSE operators. The operating company can require conversion of the positions to OPRs.

If problems occur, turn the SOC option off. Tell the CSE operators to log back in with the earlier SA numbers. For maximum safety, make sure these positions contain data as ASST. Make sure that the CSE operators use not occupied OPR positions.

Efficient transition strategy

This transition strategy is a careful method of transition. This method is expensive. The number of required assistance personnel increases during transition. To lower this cost, enter data for the CSE operators to take subscriber traffic during the transition. Enter the subscriber traffic at a lower priority than requests for assistance.

LOGs

QMS Customer Service Enhancements does not change or add logs.

Operational Measurements

Operational measurements change as follows:

- The OM group TOPSTRAF receives new registers to record the number of general and directed assistance requests that TOPS processes. This change

QMS Customer Service Enhancements (continued)

is not optional. The change does not require that this functionality be active.

- The OM group TOPPDID6 increases counts for new TOPS OPP DIDs.
- The OM group TOPPACT3 receives new registers to support new ActIDs.

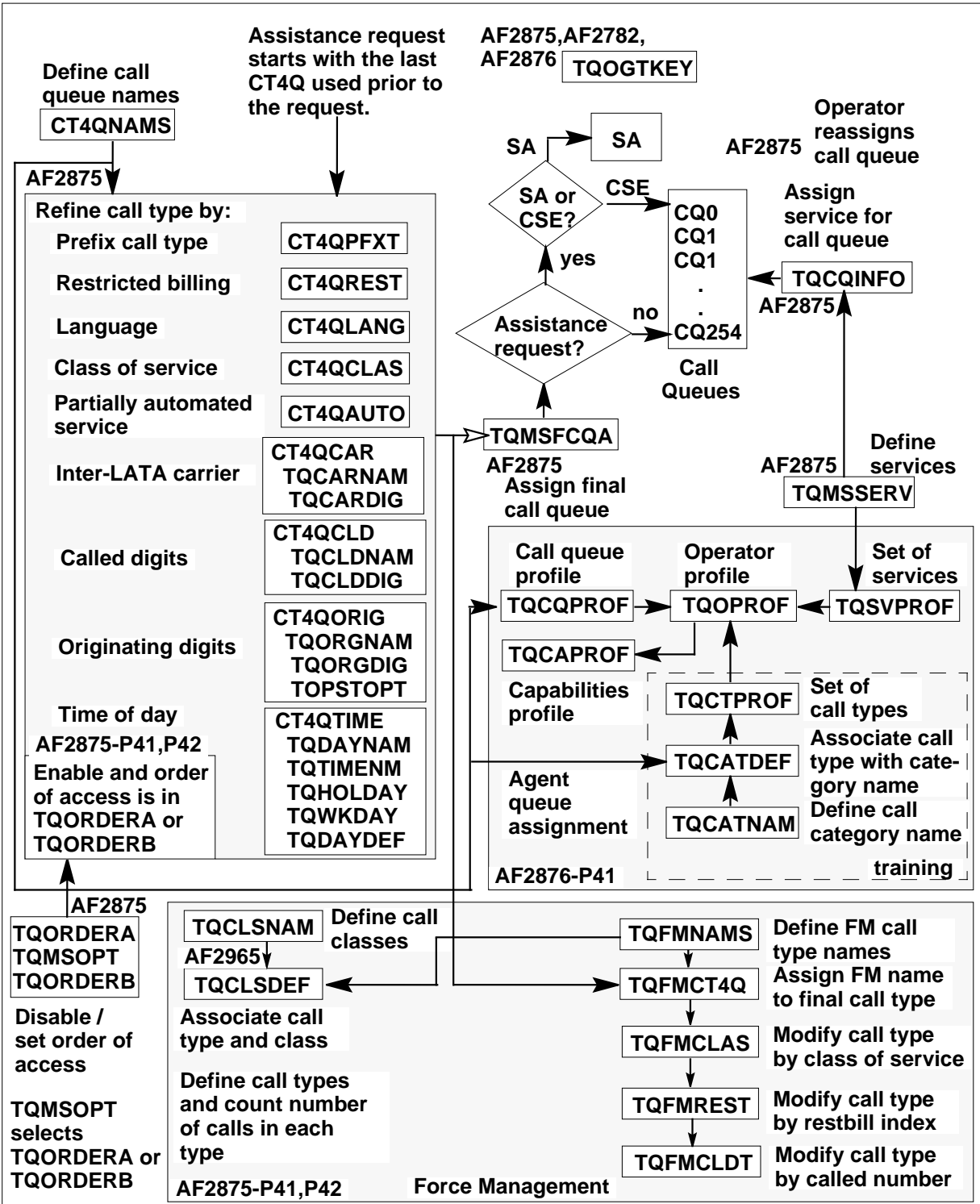
Refer to the Operational Measurements Reference Manual for additional information.

Translations table flow

See QMS Host/Remote Queueing, OSB00101. The table flow for that functionality applies. The addition of table TQCAPROF and parameter TOPS06_DEVICE_ENHANCEMENTS in table TOPSPARM change the table flow for that functionality. The modified table flow appears in the following table.

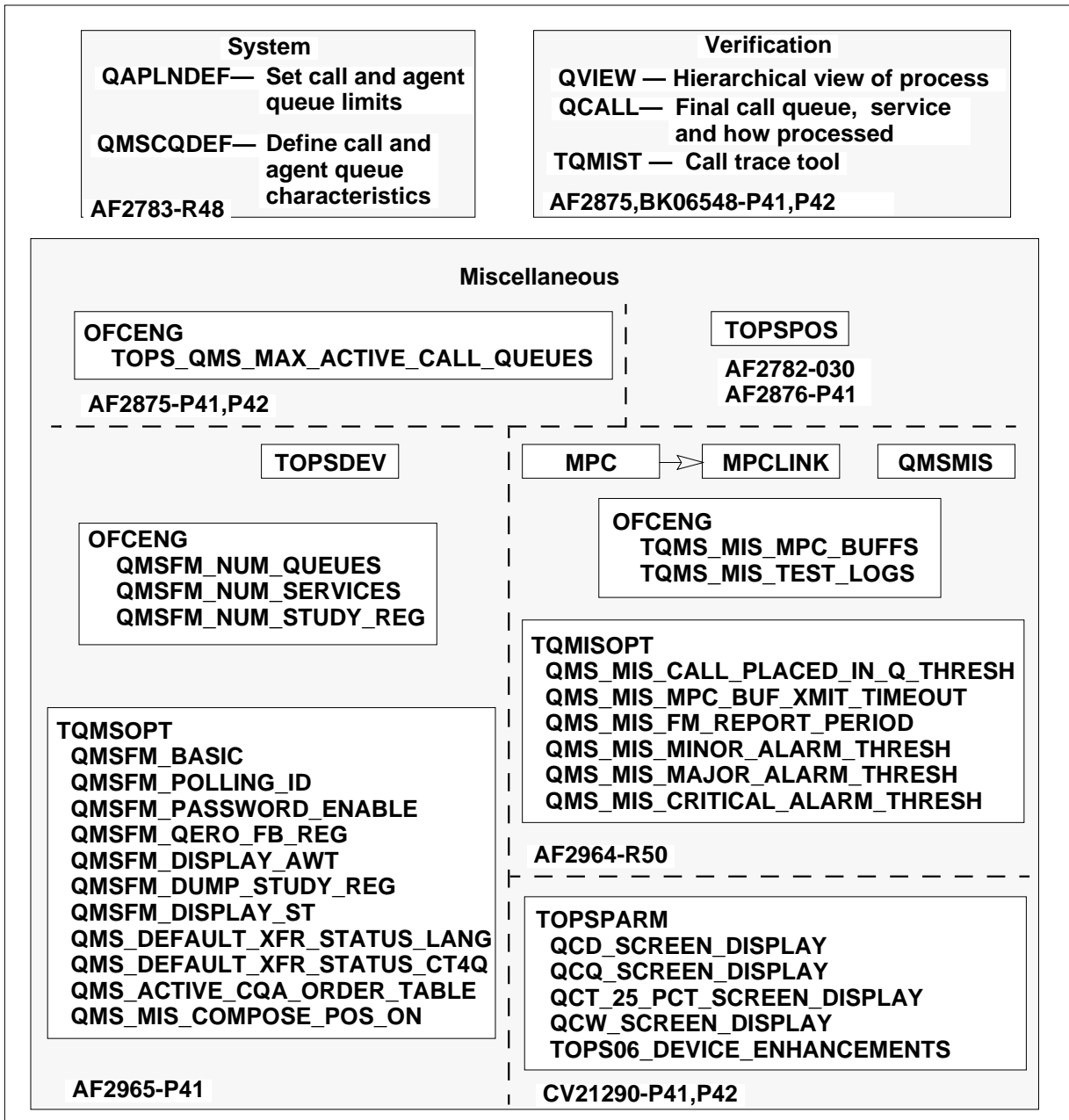
QMS Customer Service Enhancements (continued)

QMS datafill tables



QMS Customer Service Enhancements (continued)

QMS datafill tables (continued)



Limitations and restrictions

The following limitations and restrictions apply to QMS Customer Service Enhancements.

QMS Customer Service Enhancements (continued)

Operator actions

An operator queued for a CSE cannot change the CT4Q or the service of the call. The operator cannot put the call on hold.

Operators cannot put dual mode, DA, and intercept calls on hold.

QMS Customer Service Enhancements does not change the current restriction. The current restriction is that an operator cannot explicitly switch the service of a call to an intercept-based service. An operator cannot implicitly switch the service of the call to intercept by transfer or CSE request. This functionality denies a CSE request which causes an implicit service switch to an intercept-based service.

Service switches have additional limits. These limits appear in the "Service switching" section.

A call can have a maximum of two operators. The functionality denies assistance requests when a call already has two operators. This functionality denies assistance requests when a request for a second operator is in process.

The DA Auto Position Release does not affect dual mode calls. If the DA Auto Position Release parameter in table VROPT is Y, the call can remain at both operators. The call can remain at both operators if a caller goes on hook during a dual mode DA call. The DA Auto Position Release does not affect SA/IC calls.

The following operator actions can cause a DAS message that requests the release of both operators on the call:

- release to audio
- Position Release keying by an operator that selects a listing
- service switching to TA by an operator that selects a listing

The operator actions cause a DAS message to the DMS switch. The DAS message does not indicate the keying operator. In these conditions, the DMS switch releases the requesting operator first. After the release of this operator, the DMS switch releases the CSE operator. The CSE is the last operator on the call. The CSE must handle any events which prevent release from the position. An example of an event that can prevent release from the position is when billing is not satisfied. The CSE must handle these events if the CSE did not key for the release.

QMS Customer Service Enhancements (continued)

Displays and alarms

When two positions are on a call, local screen updates do not proceed to the position that did not initiate the action. These updates include OIA displays and local echoing of input characters. The only exceptions are screen updates that proceed to the position from the DAS.

CA, QCA, and ACW messages are sent to only OPP-compliant positions.

OPP-compliant positions do not receive call alerting indicators when the number of calls in an alerting queue change such as when the number of calls increases from one or two or decreases from two to one.

QMS operators datafilled with a controlled traffic profile cannot receive CA messages.

The ACW count cannot be observed on non-alerting queues.

The QCA alarm cannot be assigned to non-alerting queues.

Calls from OSSAIN Service Nodes are not supported with Calls Alerting or QCA.

Datafill

The QMS teams do not affect assistance requests to CSEs. This condition is different from requests to SA/IC operators. To keep assistance requests in a team, set up different call queues for each QMS team.

The system can record the ability set of a QMS operator in table TQCAPROF, as empty. The system records the set as empty if the operator logs in at a position the system does not support. In this condition, the operator does not have the abilities that the table describes.

If a queue in table TQCQINFO is in a calls alerting condition, a craftsperson cannot change any of the following tables through table editor:

- ALERT
- QCA
- QCAOFF
- QCAON

In order to change the values of these fields in TQCQINFO, a craftsperson must both delete a tuple and re-add it with required changes. If a queue in TQCQINFO is not in a calls alerting condition, then changes through table editor are allowed.

QMS Customer Service Enhancements (continued)

If a general operator or CSE is handling calls during deletion of a queue profile in table TQCQINFO, the alerting condition and possibly the QCA condition will end. In this case, the number of calls in queue does not affect whether the conditions end.

Force management statistics

The QMS Basic Statistics does not separate CSE statistics from other QMS operators. For information about statistics, refer to *TOPS MP Force Management Guide*, 297-2281-310, or *TOPS IWS Force Management Guide*, 297-2251-313.

Supported functions

This functionality supports only OPP-compliant and TOPS MP (stand-alone and integrated) positions.

This activity does not change the following limits:

- 2046 CT4Qs
- 255 TOPS QMS call queues
- 100 OGT keys

QMS Customer Service Enhancements is available only in the QMS environment.

This functionality requires an upgrade of the OPP position software to a release that supports the OPP changes for this functionality.

Dual mode does not support service analysis. When the DMS switch processes an assistance request, the Service Analysis system receives notification of the end of the subscriber call.

This functionality does not support Personal Audio Response System (PARS) for assistance requests. Calls can have PARS if an office uses PARS for initial call arrival. If the CSEs contain datafill to receive subscriber calls directly, these calls can have PARS.

Operators cannot receive assistance on CAMA or RCAMA (RONI) calls.

Directed assistance

This functionality does not have a OPR position state that allows the position to receive only directed assistance calls. A CSE that wants to receive directed calls and not general assistance calls must log in. The CSE must log in with an operator ID that does not receive general assistance requests. To create this condition, do not enter data in field CQLIST of table TQCQPROF.

QMS Customer Service Enhancements (continued)

QMS Customer Service Enhancements supports directed assistance for delay calls only. The functionality does not support calls that originate from the subscriber.

Protocol

The functionality supports the Nortel Standard Directory Assistance System (STD DAS). The functionality allows CSE assistance requests on calls that use a different DAS protocol. The DAS is not aware of the CSE. The dual mode CSE operator does not receive DAS screen displays. The system ignores keystrokes that the DAS receives.

Some DAS messages indicate CSE attachment and detachment, and not correct service switches. These messages are part of the current STD DAS protocol, document Q210-1, version AJ02.

Monitoring

QMS Customer Service Enhancements does not update the screen of a monitoring operator's screen to show what is currently on the monitored operator's screen when a monitoring session begins. The monitoring operator only receives the screen updates that the system sends to a monitored position after the monitoring session begins.

OPP-compatible positions can monitor OPP-compatible positions only. A stand-alone MP can monitor a stand-alone MP only. An integrated MP can monitor an integrated MP only.

The monitoring operator can have a different base DA service than the monitored operator. If this event occurs, the monitoring position does not receive screen updates from the corresponding DAS.

The DMS switch does not support freezing of the monitoring operator display to record information. Position vendors must provide this capability.

A general or CSE operator cannot monitor an ASST or IC position.

The system denies monitoring if the request is for a position number and:

- table TQOPROF does not contain the requested operator number
- the operator number is not logged in
- the operator number is logged in an ASST or IC position

Data entry for SA/ICs that use QMS TOPS MP positions occurs in OPRDAT and not in TQOPROF. Data entry for SA/ICs that use QMS OPP positions occurs in table TQOPROF.

QMS Customer Service Enhancements (continued)

The system denies monitoring if the request is for a position number, and the requested position:

- is not in table TOPSPOS
- is ASST or IC
- is TOPSACD
- is not in service
- does not have a logged-in operator

This system denies monitoring if the requesting position has a call, or is in a state to accept calls.

The ASST, IC, or CSE operators cannot monitor a QMS operator with the MON ability in table TQCAPROF.

The ASST, IC, or CSE operators cannot monitor a QMS operator that an SA/IC or CSE operator already monitors.

A CSE with STATS and QINFO can monitor another CSE with STATS or QINFO. A CSE can receive their own STATS and QINFO as well as those of another CSE. These operators can be in different teams. The STATS for each team can appear on the screen of the operator that monitors.

The Assistance Calls Waiting (ACW) count cannot be observed on non-alerting queues.

The CSEs that use TOPS MP positions can connect to a single DAS only. The CSEs can monitor positions that subtend TPCs that connect to a different DAS. The CSEs do not receive DA screen updates in this event. This limit does not apply to OPP-compliant positions. These positions can access high-speed links to more than one DAS.

DA positions in an OC network

In a TOPS OC network, operator positions that provide directory assistance (DA) or intercept services must have separate position numbers in table TOPSPOS. This condition applies across the network and to all software releases. Position numbers must be different between the host. Position numbers must be different between remotes off the same host.

Interactions

The following paragraphs describe interactions between QMS Customer Service Enhancements and other functionalities. See the previous section "Limits" for additional interactions.

QMS Customer Service Enhancements (continued)

If an OPP-compliant position that is OPP version 46 or earlier is used with the a DMS software release at TOPS12 or later, then no messages associated with QMS call alerting will be sent to that position. If Operator Centralization (OC) operators are logged on as CSEs when their remote is at BCS level 46 level or earlier, then Alternate Force Management (FM) is not available to them.

Refer to NIS:Q214-1, Open Position Protocol, DMS TOP12 for changes made by this feature.

When Alternate FM statistics are in use at a position, certain basic FM statistics will not agree with other basic FM statistics. For example, the total value of the team statistics does not equal system statistics because a CSE's ACBWV does not count towards system statistics. Also, the sum of the call queue statistics does not equal the system statistics for the same reason.

The QMS Call Alerting feature does not affect the activity to peg service initiations (SI) and to accumulate service work volume (SWV) towards services. When a CSE takes advantage of Alternate Force Management, the SI and SWV count the same way as when the CSE does not take advantage of Alternate Force Management.

This QMS Call Alerting feature does not change pegging of TPS and accumulating ACBWV towards QMS call classes on CSE requests.

If an operator makes a directed assistance request to a CSE who is datafilled to use Alternate Force Management, the CSE's time accumulates as ACBWV. The operator's time accumulates as SCBWV.

When a CSE makes a directed assistance request to another CSE and both have the capability to make directed assistance requests and are datafilled to use Alternate Force Management, only the requested CSE accumulates ACBWV. The requesting CSE accumulates SCBWV.

When a CSE pages an operator, and the operator returns the page, the operator accumulates SCBWV. The CSE accumulates ACBWV only if the CSE is datafilled to use Alternate FM.

CSEs accumulate SCBWV when they make the delay call even if they are datafilled to use Alternate FM.

The QMS Call Alerting feature does not change QMS MIS or QFADS and QTADS reports.

When the QMS CASE functionality SOC is off, it is recommended that operators not log on to positions with operator numbers datafilled to use

QMS Customer Service Enhancements (continued)

Alternate FM. The reason for this recommendation is that Alternate FM is intended for use by CSEs, not general operators. There are no safeguards to prevent general operators from logging on to positions with operator numbers datafilled to use Alternate FM.

Because directed assistance calls do not use a call queue, Calls Alerting (CA) does not apply.

In order to use Alternate FM, basic statistics must be activated. This task is accomplished by setting QMSFM_BASIC in table TQMSOPT to Y. Basic statistics do not affect CA, QCA or ACW.

For the best advantage of Calls Alerting and QCA capabilities, it is not recommended that calls routed from OSSAIN Service Nodes (SNs) to QMS operators/CSEs be refinded in QMS to use alerting queues. More specifically, it is not recommended that calls from an SN be routed to alerting queues that also service non-OSSAIN traffic. Calls from SNs cannot turn CA/QCA on or off. This means that if a call from an SN is either the first call in an alerting queue or is the call that reaches the QCAON threshold, neither CA or QCA will happen. This is also true for scenarios in which an SN call is the last call in an alerting queue to leave the queue or it is the call that reaches the QCAOFF threshold. Neither CA or QCA will be turned off. It is recommended that traffic to QMS queues from SNs use non-alerting queues.

If the CSE is viewing a booked call when the assistance request occurs, the system denies the request. The system denies the request if it maps to CSE assistance. If a call is in queue for a CSE, then the system denies interactions with the booked call database. If an operator requires assistance to save a new call in the booked call database, the operator can request assistance. The operator can drop out of the call, and the CSE can save the call.

If the monitored operator logs out, the monitoring session ends. This occurrence is not optional.

When SA/IC monitoring begins, the system cancels any outgoing page from the SA/IC that does not receive an answer.

QMS Customer Service Enhancements does not brand assistance requests.

After the release of an assistance request to queue for CSE, the conference circuit remains attached. This condition allows the operator to release a request to queue, even with the attachment of a called party.

QMS Customer Service Enhancements (continued)

The interactions with the functionality "Increased TOPS Positions" (ENSV0012) which provides multi-DA database access appears in the following list:

- A multi-DAS environment can use the directory assistance ability. When a DAS connects to a present DA call, the new DAS receives a Call Begin message. When the call has an attached CSE, a POS Connect message follows the Call Begin message. The POS Connect message contains CSE position information.
- Multi-DA database access provides support for multiple Directory Assistance Systems and protocols on a TOPS switch. The QMS services map to DA events, and each DA event has an associated single Directory Assistance System. The monitoring operator can have the same QMS services as the monitored operator. If this event occurs, the monitoring operator can connect to a DAS to which the monitored operator can connect. The monitoring operator can receive all DA screen update messages that the monitored operator receives.

Activation/deactivation by the end user

QMS Customer Service Enhancements does not require activation or deactivation by the end user.

Billing

The Operator Identifications field records the first and last operator involved in a call. Structures 751 and 752 and module 032 contain the Operator Identifications field. QMS Customer Service Enhancements records the last operator to enter a call as the last operator. This condition applies if the last operator to enter a call is not the last operator to remain on the call. The system records CSEs as operators.

The system counts Accumulated Operator Work Time as double while two operators are on a call. For example, Operator A can have a call for 5 seconds when operator B enters the call. The operators are on the call together for five seconds. One operator drops out and the other remains on the call for an additional five seconds. The Accumulated Operator Work Time in this example is 20 seconds.

The Elapsed Time can be position elapsed time. In this event, the Elapsed Time count is not double while two operators are on a call. An example of this type of call is a call for general assistance service. If the call in the preceding example is for general assistance, the Elapsed Time is 15 s.

The Elapsed Time count occurs while the call is in queue for a CSE operator. The count continues while the requesting operator continues in the call. If the

QMS Customer Service Enhancements (continued)

requesting operator drops out while the call is in queue for assistance, the accumulation of Elapsed Time stops. The accumulation of Elapsed Time stops until the connection of the CSE.

The elapsed time for DA calls is service elapsed time. The elapsed time does not accumulate double while two operators are on a call. Elapsed Time accumulates while the call is in queue for a CSE if the requesting operator remains connected to the call. Elapsed Time does not accumulate after the requesting operator releases the call to queue for assistance. This procedure is the same as TOPS procedures that wait for other resources.

The count for the Exchange Access Service Processing Time recorded in module 059 is not double while two operators connect. Like Elapsed Time, the count occurs while the call is in queue for the CSE operator. The count occurs if the requesting operator continues in the call. If the requesting operator releases the request to queue, the accumulation of the Exchange Access Service Processing Time stops. The accumulation of the Exchange Access Service Processing time stops until connected to the CSE.

Sections "Datafill for routing assistance requests" and "Requesting assistance" describe how an assistance request can change the service of the call. Make sure that call queues and associated services for CSEs contain the correct datafill. If the service of a call changes, the system does not produce a billing record for the former service. The system records as sent that the operator requests assistance. This condition occurs because the old service is not available. This same condition occurs without QMS Customer Service Enhancements when a call transfer causes the service changes.

The billing record for the new service is like the record produced for a call transfer. The exception to this condition is the earlier example. The service changed as a result of a transfer instead of an assistance request. The Transfer Keying Action in Module 310 "Operator Keying Action" is true. The other keying actions in Module 310 reflect keying before and after the request. The Request Counter in Module 057 "General Assistance Service" reflects requests before and after the assistance request.

Station Message Detail Recording

The QMS Customer Service Enhancements does not affect Station Message Detail Recording.

QMS Customer Service Enhancements (continued)

Datafilling office parameters

The office parameters that QMS Customer Service Enhancements use appear in the following table. Refer to *Office Parameters Reference Manual*

Office parameters by QMS Customer Service Enhancements

Table name	Parameter name	Explanation and action
OFCENG	TOPS_QMS_MAX_ACTIVE_CALL_QUEUEUES	This parameter limits the maximum number of queues that table TQCQINFO can contain. The range is 0-255. This parameter does not change. Increase for new call queues for QMS Customer Service Enhancements.
OFCENG	QMSFM_NUM_QUEUEUES	This parameter sets the number of queues that QMFADS, QFADS, and QTADS15 min reports indicate. The range is 1-256. This parameter does not change. Increase for new call queues for this functionality.
OFCENG	TOPS_OC_REMOTE_BVC	This parameter is not available. The parameter is not in use.
OFCENG	VALIDATE_CCITT_LUHN_DIGIT	This parameter is not available. The parameter is not in use.
OFCENG	TOPS_POPB_TEST	This parameter is not available. The parameter is not in use.

Datafill sequence

The tables that require datafill to implement QMS Customer Service Enhancements appear in the following table. The tables appear in the correct entry order.

Datafill tables requirements for QMS Customer Service Enhancements

Table	Purpose of table
QMSCQDEF	QMS call queue descriptions for new call queues.
TQCQINFO	TOPS QMS call queue information for new call queues.
TQCQPROF	TOPS QMS call queue profiles for new call queues.
TQCAPROF	TOPS QMS capability profile defines capability profiles for QMS operators.
TQOPROF	TOPS QMS operator profiles for new call queue and capability profile numbers and CSEs.

QMS Customer Service Enhancements (continued)

Datafill tables requirements for QMS Customer Service Enhancements

Table	Purpose of table
TOPSPARM	TOPS parameters contains parameters to control the output format of TOPS devices.
TOPSPOS	TOPS position. Delete unoccupied SAs and add CSEs as OPRs.
QMS tables	QMS tables: add new CT4Qs and refinements. This addition is optional.
TQMSFCQA	TOPS QMS final call queue assignment for CSE queues. This assignment is a requirement.
TQORDERA and TQORDERB	TOPS QMS order tables specify the order of the CT4Q refinement tables. This specification is necessary for the addition of optional refinement tables. The dump and restore sets new field ASST to 0.
SOC utility	Software Optionality Control utility. This utility is not a table. Start QMS Customer Service Enhancements after all datafill.

Datafilling table QMSCQDEF

Datafill for QMS Customer Service Enhancements for table QMSCQDEF appears in the following table. The fields that apply to QMS Customer Service Enhancements appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table QMSCQDEF

Field	Subfield or refinement	Entry	Explanation and action
			This table does not change. Add new call queues.

Datafill example for table QMSCQDEF

Sample datafill for table QMSCQDEF appears in the following example.

MAP example for table QMS Customer Service Enhancements

APPLNCQ	CQPRIQ	CQAGS	CQMAXSIZ	DEFLAREA	PRAQAREA
TOPS 100	20	10	40	N	N
TOPS 101	20	18	40	N	N

QMS Customer Service Enhancements (continued)

Datafilling table TQCQINFO

Datafill for QMS Customer Service Enhancements for table TQCQINFO appears in the following table. The fields that apply to QMS Customer Service Enhancements appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TQCQINFO

Field	Subfield or refinement	Entry	Explanation and action
CALLQ		CQ0 to CQ254	<p>Add new call queues as necessary.</p> <p>Call queue. Enter a QMS call queue number. If the CALLQ associated with a call is not datafilled in this table, CQ0 determines QMSSERV, CWOFF, CWON and TREAT. In this case, a minor software alarm is sounded, and log EXT106 is generated.</p> <p>Table OFCENG parameter TOPS_QMS_MAX_ACTIVE_CALL_QUEUES determines the maximum number of call queues that may be datafilled in this table.</p>
QMSSERV		name from table TQMSSERV	<p>QMS service. Enter the QMS service name assigned to calls designated to the specified CALLQ. This entry must first be defined in table TQMSSERV.</p>

QMS Customer Service Enhancements (continued)

Datafilling table TQCQINFO

Field	Subfield or refinement	Entry	Explanation and action
CWOFF		0 to 32767	<p>Call waiting off. Enter the call age when the CW display is turned off. The entry is in tenths of seconds. Each time a call is queued for an operator, the projected wait time for the call is determined, based upon the number of calls in queue, and the rate at which calls are coming out of queue.</p> <p>If the projected wait time exceeds the CWON threshold, then the Calls Waiting (CW) Indicator is displayed on operator positions serving the call queue. When the projected wait time for calls falls below the CWOFF threshold for the call queue, the CW indicator is erased.</p> <p>If an operator serves more than one call queue, and the CW threshold has been exceeded for any of the call queues served, the CW indicator is displayed on that operator's screen. The indicator is erased from the operator's screen only when the projected wait times fall below the CWOFF threshold for all call queues served by the operator.</p>
CWON		0 to 32767	<p>Call waiting on. Enter, in tenths of seconds, the call age when the CW display is turned on for the call queue. The CWON field value must be greater than the CWOFF value. (This restriction is enforced at datafill time). Specifying the maximum value (32766) in the CWON field is interpreted as an infinite age, meaning the CW Indicator is never turned on for the specified call queue. The CWOFF field is irrelevant in this case, and may be set to any value.</p>
TREAT		name from table TMCNTL.TRE EAT	<p>Treatment. Enter the treatment used if the call deflects from the requested call queue. This entry must first be defined in table TMCNTL.TREAT.</p>
ALRTAREA			

QMS Customer Service Enhancements (continued)

Datafilling table TQCQINFO

Field	Subfield or refinement	Entry	Explanation and action
	ALERT		When operating company personnel set the value of the ALERT field to Y (yes), the QCAAREA field applies. When they set the value of this field to N (no), the QCAAREA does not apply.
ALERT	QCAAREA	N or Y	<p>Selection of value N for this field assigns the call queue as a non-alerting queue. Selection of the value Y assigns the call queue as an alerting queue. Set this field in the TOPS OC HOST and the TOPS stand-alone offices. Assignment of this field in the TOPS OC remote has no effect.</p> <p>When the value in this field changes from Y to N, the update takes effect immediately. After this change, operators logged in at OPP-compliant positions that are servicing the queue receive a message that it is no longer an alerting queue.</p> <p>In order to change the ALERT field from N to Y, the queue must be empty. If a queue is in a calls alerting condition, then the operating company personnel cannot change fields ALERT, QCA, QCAOFF, and QCAON through table editor. Operating company personnel must delete and re-add the tuple with the required changes. If the queue is not in a calls alerting condition, then changes through table editor are allowed.</p> <p>After the ALERT field is datafilled with Y or changed from N to Y, the change takes effect immediately. The next time a call is placed in this queue and an operator is not available to service the call, a message indicating that the queue is not empty is sent to all OPP-compliant positions with QMS operators logged in servicing that queue.</p>

QMS Customer Service Enhancements (continued)

Datafilling table TQCQINFO

Field	Subfield or refinement	Entry	Explanation and action
QCAAREA			If the alerting queue is deleted while in alerting condition, the alerting queue ends. Then a message is sent to all OPP-compliant positions to notify them of the status change. If QCA is set to Y and the QCAON threshold is met or exceeded (causing an office-wide QCA condition), then deletion of the tuple will end the QCA condition for that queue and possibly for the office.
	QCAOFF		When operating company personnel set this field to Y, the QCAOFF and QCAON fields apply. When they set this field to N, the QCAOFF and QCAON fields do not apply.
	QCAON		
	QCA	N or Y	Selection of the value N prevents assignment of a threshold to the alerting queue. Consequently, the QCAOFF and QCAON fields do not apply. Selection of the value Y allows assignment of a threshold to the alerting queue. Consequently, the QCAOFF and QCAON fields apply. If operators have the QINFO capability in table TQCAPROF, they can change to the QMS CASE screen for a listing of the queues in the QCA condition.
	QCAOFF	{0-253}	If a queue is in a calls alerting condition, then the operating company personnel cannot change the QCA field through table editor. Operating company personnel must delete and re-add the tuple with the required changes. If the queue is not in a calls alerting condition, then changes through the table editor are allowed. Selection of a value from 0 to 253 specifies the threshold on number of calls in the alerting queue. When the number of calls drops to this value, the QCA condition ends. The number in the QCAOFF field must be less than the number in the QCAON field.

QMS Customer Service Enhancements (continued)

Datafilling table TQCQINFO

Field	Subfield or refinement	Entry	Explanation and action
	QCAON	{1-254}	<p>If a queue is in a calls alerting condition, then the operating company personnel cannot change the QCAOFF field through table editor. Operating company personnel must delete and re-add the tuple with the required changes. If the queue is not in a calls alerting condition, then changes through the table editor are allowed.</p> <p>Selection of a value from 1 to 254 specifies the threshold value that will activate the QCA condition for an alerting queue. The number in the QCAON field must be more than the number in the QCAOFF field.</p> <p>If a queue is in a calls alerting condition, then the operating company personnel cannot change the QCAON field through table editor. Operating company personnel must delete and re-add the tuple with the required changes. If the queue is not in a calls alerting condition, then changes through the table editor are allowed.</p>

Datafill example for table TQCQINFO

Sample datafill for table TQCQINFO appears in the following example.

MAP example for table TQCQINFO

```

CALLQ  QMSSERV  CWOFF  CWON  TREAT  ALRTAREA
                                           QCAAREA
                                           ALERT  QCA  QCAOFF  QCAON
-----
CQ0    TOPS_TA  10    25    EMR4   N
CQ1    TOPS_TA  10    25    EMR4   Y    Y    10    15
CQ2    TOPS_TA  10    25    EMR4   Y    N
    
```

QMS Customer Service Enhancements (continued)

Datafilling table TQCQPROF

Table TQCQPROF defines call queue profiles for TOPS QMS operators. A modification to the field CQLIST allows an empty call queue list.

Datafill for QMS Customer Service Enhancements for table TQCQPROF appears in the following table. The fields that apply to QMS Customer Service Enhancements appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TQCQPROF

Field	Subfield or refinement	Entry	Explanation and action
CQLIST		up to 255 entries in range CQ0 to CQ255	<p>Add new call queues for CSEs.</p> <p>Call queue list. Before this functionality, at least one queue entry was necessary. Now this field does not require queue entry.</p> <p>This field defines the list of office-wide call queues serviced by an operator that uses the profile. This list does not apply to operators that use controlled traffic profiles instead of call queue profiles. Table TQOPROF contains the datafill for call queue profiles. The list does not apply to operators that use call queue profiles for specified profiles instead of profiles for the office. Table TQCQPROF contains the datafill for office profiles.</p> <p>If the call queue list of an operator is empty, the operator does not receive subscriber or general assistance calls. The operator continues to receive directed assistance calls.</p> <p>The TQCQPROF datafill activates the modification that prevents the operator from receiving subscriber or general assistance calls. The SOC state of this functionality does not affect this modification.</p>

Datafill example for table TQCQPROF

Sample datafill for table TQCQPROF appears in the following example.

QMS Customer Service Enhancements (continued)

MAP example for table TQCQPROF (Two QMS call queues)

CQPROFNM	DLAYCT4Q	AGENTQ	PRIOAREA
10	DELAYCQ	AQ5	OFC (CQ100)(CQ101)\$

Datafilling table TQCAPROF

The TOPS Queue Management System (QMS) Capability Profile is a table that defines capability profiles for QMS operators. This table functions like tables TQCQPROF, TQCTPROF, and TQSVPROF. This table defines call queue, controlled traffic, and service profiles for QMS operators.

The system checks table TQCAPROF when a QMS operator logs on to an OPR position entered as MP OPP or MP ASCII. The entered capabilities are active when the SOC state is ON.

Enter data in table TQCAPROF before you enter data in table TQOPROF. Before you delete a tuple from table TQCAPROF, you must delete the tuple in table TQOPROF that refers to that tuple.

QMS Customer Service Enhancements (continued)

A description of the table appears in the following:

Datafilling table TQCAPROF

Field	Subfield or refinement	Entry	Explanation and action
PROFNUM		0 to 15	Capability profile number. This field is the key to the table. This field is indexed from table TQOPROF. The necessary default tuple zero uses value 0. Field CAPSET in tuple zero is NONE. This default tuple does not allow the special capabilities in this functionality. You can change tuple zero. You cannot delete tuple zero.
CAPSET		set of {INTEROPR, MON, QINFO, STATS}, ALL, or NONE	<p>Capability set. These capabilities are correct when this functionality SOC is ON. Descriptions of the capabilities that you can assign to an operator appear below:</p> <ul style="list-style-type: none"> • INTEROPR - Inter-operator communication The operator can page other operators and receive pages from other operators. The operator can make directed assistance calls to other operators. The operator can receive directed assistance calls from other operators. The other operator does or does not have the INTEROPR capability. The INTEROPR capability is a requirement for one of the two operators in the page or directed assistance call. <p>This capability can establish connections to other operators. The capabilities of the operators do not affect the connection. If general operators receive this capability, general operators can use the capability to call each other.</p> <p>If this capability contains datafill for all CSEs and does not contain datafill for general operators, the following capabilities apply:</p> <ul style="list-style-type: none"> • All CSEs can page and make directed assistance calls to both CSEs and general operators. • All general operators can page and make directed assistance calls to all CSEs. • General operators cannot page or make directed assistance calls to each other.

QMS Customer Service Enhancements (continued)

Datafilling table TQCAPROF

Field	Subfield or refinement	Entry	Explanation and action
CAPSET (continued)			<p>Capability set (continued) Descriptions of the capabilities that an operator can have appear below:</p> <ul style="list-style-type: none"> • MON - Monitor. The operator can monitor other operators. To prevent handling of subscriber and general assistance calls, do not enter data in field CQLIST of table TQCQPROF. The section "Monitoring" lists reasons to deny monitoring. • QINFO - QMS call queue information. This capability is only available when table TQMLOPT parameter QMSFM_BASIC is Y. This capability provides warnings to the operator. The warnings indicate that the QMS call queues are marked. The queues are marked with calls waiting, calls deflecting, or calls queued without a logged-in operator. Calls waiting are marked according to thresholds entered in table TQCQINFO. The DMS switch can send information for each of the affected queues to OPP-compliant positions. <p>If the parameter QMSFM_BASIC = Y in table TQMLOPT provides QMS basis statistics, the QTADS TTY receives information for each queue.</p> <p>Refer to the <i>TOPS MP Force Management Guide</i>, 297-2281-310, or <i>TOPS IWS Force Management Guide</i>, 297-2251-313, for additional information.</p>

QMS Customer Service Enhancements (continued)

Datafilling table TQCAPROF

Field	Subfield or refinement	Entry	Explanation and action
CAPSET (continued)			<p>Capability set (continued) Descriptions of the capabilities that an operator can have appear below:</p> <ul style="list-style-type: none"> • STATS - Statistics The operator receives and can query information about team position states and about operators in the team that receive controlled traffic. The operator receives alarms when specified emergency conditions occur. For example, the operator receives alarms when the operating company suspends operator services. The operator receives alarms if all time and charges devices go out of service. <p>Except for the alarms, these capabilities are only available when QMSFM_BASIC=Y in table TQMSOPT provides QMS basic statistics.</p> <p>Refer to <i>TOPS MP Force Management Guide</i>, 297-2281-310, or <i>TOPS IWS Force Management Guide</i>, 297-2251-313, for additional information about statistics.</p> <ul style="list-style-type: none"> • ALL - All capabilities INTEROPR, MON, QINFO, and STATS are available. • NONE - The capabilities INTEROPR, MON, QINFO, and STATS are available.

Datafill example for table TQCAPROF

Sample datafill for table TQCAPROF appears in the following example.

MAP example for table TQCAPROF

PROFNUM	CAPSET
0	NONE
1	INTEROPR MON QINFO\$
5	INTEROPR QINFO STATS \$
10	ALL \$

QMS Customer Service Enhancements (continued)

In the preceding example, tuple 0 is a default entry. You cannot delete the tuple. The tuple is for general operators that do not have CSE capabilities.

Error messages for table TQCAPROF

The error messages that apply to table TQCAPROF appear in the following table.

Error messages for table TQCAPROF

Error message	Explanation and action
<p>THIS CAPABILITY PROFILE NUMBER IS REFERENCED IN TUPLES FOR THE FOLLOWING OPERATOR NUMBERS IN TABLE TQOPROF:</p> <p>OPERATOR NUMBER: operator ID OPERATOR NUMBER: operator ID </p> <p>THESE REFERENCES MUST BE REMOVED BEFORE THIS CAPABILITY PROFILE MAY BE DELETED.</p>	<p>You cannot delete a tuple in TQCAPROF if any tuple in TQOPROF references the tuple. An attempt to delete a TQCAPROF tuple that TQOPROF references causes the message to appear. The operator IDs from all TQOPROF tuples that apply appear. In this example, the "operator ID" appears.</p>
<p>CHANGE NOT ALLOWED AT THIS TIME - OPERATORS WITH THIS CAPABILITY PROFILE NUMBER IN THEIR TABLE TQOPROF OPERATOR PROFILES ARE CURRENTLY LOGGED IN.</p>	<p>You cannot modify a tuple in TQCAPROF if another logged-in operator uses the capability profile. If you attempt to modify a tuple when one or more logged-in operators use the profile, this message appears:</p>
<p>TUPLE ZERO CANNOT BE DELETED.</p>	<p>You cannot delete the first tuple in TQCAPROF. The first tuple has PROFNUM 0. An attempt to delete this tuple causes this message to appear.</p>

Datafilling table TQOPROF

Table TQOPROF defines profiles for TOPS QMS operators. This table gives operating company personnel the option to use the Alternate Force Management, introduced by the TOPS12 feature QMS CASE Call Alerting. This feature provides access through table TQOPROF to modify how CSEs' work time counts towards call queue, team, and system statistics. Enter data for the CSEs in this table. The Alternate FM selector field offers an option to configure force management statistics. If operating company personnel choose

QMS Customer Service Enhancements (continued)

N, then Alternate Force Management techniques are not in operation. A recommendation for selection of this value is to choose N for general operators and CSEs whose work time counts like general operators. When operating company personnel choose Y, two subfields, ACBWV and NQWV, are visible. Choose this value for CSEs whose work time has a negative effect on team and system statistics. When the value is Y in the ALTFM field, the CSE's ACBWV always counts towards the call queue statistics. However, it never counts towards the system statistics.

You must enter data in table TQCAPROF before you enter data in table TQOPROF. Before you delete a tuple from table TQCAPROF, you must delete the tuple in table TQOPROF that references the tuple.

Datafill for QMS Customer Service Enhancements for table TQOPROF appears in the following table. The fields that apply to QMS Customer Service Enhancements appear in this table. See the data schema document for a description of the other fields.

Datafilling table TQOPROF

Field	Subfield or refinement	Entry	Explanation and action
OPRNUM		see subfield	Add tuples for CSEs. Operator number. This field consists of subfield OPRNUM. This is the key field of the table.
	OPRNUM	0 to 9997	Operator number. Enter the number of the operator whose profile is being defined. This number is entered by the operator at log in. Assistant and In-Charge operator numbers must be datafilled in table OPRDAT, as TOPS Assistance processing uses its own call distribution, independent of TOPS QMS. However, assistances on MPX positions must be datafilled in table TQOPROF rather than table OPRDAT. For TOPS offices in transition between TOPS internal ACD and TOPS QMS, operator numbers must be unique between tables TQOPROF and OPRDAT. A number cannot be specified in both tables OPRDAT and TQOPROF.

QMS Customer Service Enhancements (continued)

Datafilling table TQOPROF

Field	Subfield or refinement	Entry	Explanation and action
DFLTTEAM		1 to 30	Default team number. This field indicates which team (that is, Traffic Office) the operator belongs to when not logged on, for TOPS Force Management purposes. When logged on, the operator belongs to the team datafilled for the position in table TOPSPOS. The team number is also datafilled in tables TOPSPOS, OPRDAT, and TOPSDEV. No team number greater than the value in TOPS_NUM_TRAFFIC_OFFICES in table OFCENG can be datafilled. Refer to functionality TOPS ACD Features (OSB00001) for more team information.
SVCPRNUM		number from TQSVPROF	Service profile number. Enter the TOPS QMS service profile number, indicating which QMS services the operator is designated to provide. This number is defined in table TQSVPROF and used in table TOPSPOS.
CAPPRNUM		0 to 15	Capability profile number. This is an index into table TQCAPROF where a QMS operator's capabilities are defined. Value 0 references the tuple 0 in TQCAPROF, which by default has none of the capabilities. These capabilities become available when the operator logs onto an OPR position datafilled as MP OPP or MP ASCII in table TOPSPOS, if the SOC state is ON for functionality QMS Customer Service Enhancements, OSB00101.
SELAREA		see subfield	Call selection area. This field consists of subfield CALLSEL and its refinements.

QMS Customer Service Enhancements (continued)

Datafilling table TQOPROF

Field	Subfield or refinement	Entry	Explanation and action
	CALLAREA	CONTRAF, CALLQ	<p>Call selection type. This selector indicates whether Call Queue or Controlled Traffic call selection is in effect. The values are:</p> <ul style="list-style-type: none"> • CONTRAF—calls are selected for the operator according to the datafill in table TQCTPROF associated with field CTPROFNM. Then, datafill refinement field CTPROFNM. • CALLQ—Calls are selected for the operator according to the datafill in table TQCQPROF associated with field CQPROFNM. Then, datafill refinement field CQPROFNM.
	CQPROFNM	number from TQCQPROF	<p>Call queue profile number. If the entry in subfield CALLSEL is CALLQ, datafill this refinement. Enter the call queue profile number indicating which call queues the operator serves.</p> <p>This entry must first be defined in table TQCQPROF.</p>
	CTPROFNM	number from TQCQPROF	<p>Controlled traffic profile number. If the entry in subfield CALLSEL is CONTRAF, datafill this refinement. Enter the controlled traffic profile number indicating which call categories the operator serves.</p> <p>This entry must first be defined in table TQCTPROF.</p>
FMAREA		see subfields	
	ALTFM	N or Y	<p>When operating company personnel set the ALTFM subfield to Y, the ACBWV and NQWV fields apply. When they set this subfield to N, the ACBWV and NQWV do not apply.</p>

QMS Customer Service Enhancements (continued)

Datafilling table TQOPROF

Field	Subfield or refinement	Entry	Explanation and action
			Selection of the value N in ALTFM indicates that the the TOPS12 functionality for Alternate Force Management does not apply to collection of FM statistics. Selection of value Y in this subfield indicates that the alternate collection of basic FM statistics applies for this operator. This selection is an option for CSEs; it is not a recommendation for general operators.
	ACBWV	NOTEAM or TEAM	Selection of NOTEAM specifies that ACBWV will not count towards the operator's team statistics. Selection of TEAM specifies that ACBWV will count towards the operator's team statistics.
	NQWV	NONE, TEAM or TEAMSYST	Selection of NONE specifies that NQWV will not count towards the operator's team or system statistics. Selection of TEAM specifies that NQWV will count towards the operator's team statistics, but the NQWV will not count towards the system statistics. Selection of TEAMSYST specifies that the NQWV will count towards the operator's team and system statistics.
ACWAREA		see subfields	
	ACWCOUNT	N or Y	Selection of N, the default value, prevents the CSE from observing the ACW count for an alerting queue. Selection of value Y gives the CSE the capability to observe the ACW count for an alerting queue. The CSE must have the QINFO capability in order to perform this task. The CSE must be logged out to change the ACWCOUNT field.

QMS Customer Service Enhancements (continued)

Datafilling table TQOPROF

Field	Subfield or refinement	Entry	Explanation and action
			When operating company personnel set ACWCOUNT to Y, the ACWCALLQ field applies. When the operating company personnel sets ACWCOUNT to N, the ACWCALLQ field does not apply.
	ACWCALLQ	{1 ....254}	Selection of a call queue gives the CSEs the capability to observe the ACW count on the indicated alerting queue. The selected queue must be an alerting queue. There are no checks to ensure that it is an alerting queue.

Dump and restore: All TQOPROF datafill remains over a dump and restore. In a software upgrade from TOPS05 or earlier to TOPS06 or later, the CAPPRNUM field is 0. This condition references the default tuple in TQCAPROF where a QMS operator does not have the special capabilities. Field CAPSET in table TQCAPROF determines the special capabilities.

Datafill example for table TQOPROF

Sample datafill for table TQOPROF appears in the following example.

MAP example for table TQOPROF (CSE operator datafill)

OPRNUM	DFLTTEAM	SVCPRNUM	CAPPRNUM	SELAREA	FMAREA	ACWAREA
50	2	2	0	CALLQ 10	N	N
220	1	4	1	CALLQ 100	N	N
300	2	5	5	CALLQ 100	N	N
301	3	4	10	CALLQ 0	N	N
9098	3	2	0	CALLQ 4	N	N

Examples of operator profiles appear in the previous example. The operator profiles include the capability profiles that appear in earlier sample datafill for table TQCAPROF. Descriptions of the TQOPROF tuples appear below.

Operator ID 50 has capability profile 0. A general operator without CSE responsibilities uses this capability profile. Many operators can have capability profile 0 or any other capability profile.

QMS Customer Service Enhancements (continued)

An operator who was an ASST before QMS Customer Service Enhancements and is now a CSE uses Operator ID 220. Operator ID 220 has capability profile 1. Capability profile 1 provides capability like the capability of an SA. This CSE can receive general assistance requests. Call queue profile 100 with the service definition in tables TQCQINFO and TQMSSERV provides general assistance requests. This CSE can page and receive pages and make and receive directed assistance connections. This CSE can monitor other operators. The CSE can receive notification when QMS call queues have calls waiting, calls deflecting, or calls queued without an operator. The calls do not have an operator logged in to serve the queue. The QINFO capability allows this CSE to receive queue status information.

An operator who was an IC before QMS CASE uses operator ID 300. Operator ID 300 has capability profile 5. This CSE can perform the same functions as operator 220 except monitor. This CSE has access to information about position states. This CSE receives notification of alarm conditions. Operator 220 does not receive notification of these alarm conditions. The ICs can monitor. An IC does not normally monitor because IC monitoring sessions terminate when alarm conditions occur.

Operator ID 301 has capability profile 10. Operator ID 301 is like operator ID 300. Operator ID 301 can monitor. The CSE monitoring sessions do not terminate for team and office alarm conditions. This CSE is a more effective monitor than an IC.

Datafill recommendations for fields ACBWW and NQWV

The makeup of a team can determine selection of the appropriate value for the ACBWW field. Whether a CSE is in a team with general operators or with CSEs only is an important factor to consider during selection of the value. Operating company personnel can use table TQOPROF to control whether CSEs' ACBWW and NQWV contributes to team and system statistics.

The operating company personnel need to consider the tasks of the CSE during selection of the NQWV value. Consider whether the CSE is handling the following call types or activities:

- subscriber calls
- assistance requests
- assistance only
- alarm and statistics observations

QMS Customer Service Enhancements (continued)

The following table presents recommendations to datafill ACBWV and NQWV.

Recommendations for datafill of field ACBWV and NQWV

Activities of the CSE					
Subscriber calls	Assistance requests	Monitoring, Stats, and Alarms (see note)	TEAM	ACBWV	NQWV
X	X	X	CSEs and operators	NOTEAM	TEAMSYST
X	X	X	CSEs only	TEAM	TEAMSYST
	X	X	CSEs and operators	NOTEAM	NONE
	X	X	CSEs only	TEAM	TEAM
		X	CSEs and operators	NOTEAM	NONE
		X	CSEs only	NOTEAM	TEAM

Note: When a CSE is datafilled to handle subscriber calls and assistance requests, because of the potential amount of work, it does not seem likely that they would also be datafilled to monitor other operators and observe Statistics and Alarms. Regardless of whether the CSEs take on the additional work of monitoring, statistics and alarms, the recommendations are still the same for datafilling ACBWV and NQWV.

The table above shows recommended datafill for the ACBWV and NQWV fields when the decision for datafilling them is based on the activities of the CSEs and how they are teamed. The first column, "Activities Of The CSE", groups the activities of the CSE. The 'X' marks a particular activity performed by each group of CSEs.

The next column shows how the CSE is teamed. The CSE may be put in a team with general operators, indicated by "CSEs and Operators". Or, the CSE may be in a team without any general operators, indicated by "CSEs only."

QMS Customer Service Enhancements (continued)

Error messages for table TQOPROF

The error messages that apply to table TQOPROF appear in the following table.

Error messages for table TQOPROF

Error message	Explanation and action
CAPPRNUM MUST FIRST BE DATAFILLED IN TABLE TQCAPROF	You must define a capability profile number in table TQCAPROF before you enter the capability in table TQOPROF. If you attempt to use a capability profile number in TQOPROF before you define the capability in table TQCAPROF, the message appears.
CHANGE TO CAPPRNUM NOT ALLOWED WHILE OPR IS LOGGED ON	You cannot change the capability profile number of an operator while the operator is logged on. An attempt to modify the CAPPRNUM field of the profile of a logged-on operator causes this message to appear.

QMS Customer Service Enhancements (continued)

Datafilling table TOPSPARM

The following table describes a new parameter:

Datafilling table TOPSPARM

Field PARMNAME	Field PARMVAL	Explanation and action
TOPS06_DEVI CE_ENHANCE MENTS	Y or N	<p>This parameter provides additional information in the output reports for TOPS TTY devices for the commands that appear in this table. Enter Y to enable or N to disable the new information. The value Y is the default. The following are the commands, devices, and new information.</p> <ul style="list-style-type: none"> • RA/EA (assign a study register) - TADS, SADS, SADSHADS, and QTADS devices use RA/EA. The response indicates how many study registers the team uses. The response indicates the number of study registers available for assignment. • RQ/EN (query study register assignments) - TADS and QTADS devices use RQ/EN. The response indicates the number of study registers available for assignment. <p>This parameter is not optional. The SOC state of this functionality does not affect the parameter. This parameter does not apply to the TOPSACD and QMS environments.</p> <p>Refer to <i>TOPS MP Force Management Guide, 297-2281-310</i>, or <i>TOPS IWS Force Management Guide, 297-2251-313</i>, for more information about these commands.</p>

Datafill example for table TOPSPARM

Sample datafill for table TOPSPARM appears in the following example.

MAP example for table TOPSPARM

PARMNAME	PARMVAL
TOPS06_DEVICE_ENHANCEMENTS	Y

Datafilling table TOPSPOS

Datafill for QMS Customer Service Enhancements for table TOPSPOS appears in the following table. The fields that apply to QMS Customer Service

QMS Customer Service Enhancements (continued)

Enhancements appear in this field. See the data schema section of this document for a description of the other fields.

Datafilling table TOPSPOS

Field	Subfield or refinement	Entry	Explanation and action
POSAREA	POS	OPR	<p>Position. When some SA positions are empty, delete one or more of these empty positions from TOPSPOS. Add the positions as OPR positions for the CSEs.</p> <p>Note: In a TOPS OC network, operator positions that provide directory assistance (DA) or intercept services must have different position numbers. This condition applies across the network and to all software releases. Position numbers must be different between the host and the remotes of the host. Position numbers must be different between remotes off the same host.</p>

Datafill example for table TOPSPOS

Sample datafill for table TOPSPOS appears in the following example.

MAP example for table TOPSPOS

POSNO	VCCKT	VCPDGRP	CARDCODE	CARDCODE	DATA PATH	POSAREA
-----	-----	-----	-----	-----	-----	-----
370	TMS 1 2 3	NPDGP	DS1SIG			
				TMS MP	OPP 100	0
				OPR 4	QMSCAM	CORECAM 10

Datafilling QMS tables

You can add new CT4Qs and refinements for assistance requests. See QMS Host/Remote Queueing OSB00101. The addition of new CT4Qs is optional.

Datafilling table TQMSFCQA

Table TQMSFCQA (TOPS QMS Final Call Queue Assignment) specifies the final CALLQ for a call after the completion of CT4Q refinement for call phases (CALLQ and RECALLQ). Field ASSTAREA provided a call phase.

QMS Customer Service Enhancements (continued)

For the first dump and restore, the selector ASSTTYPE is SA. The first dump and restore was the first upgrade that added the field. The other field values did not change. In following dump and restores, the field ASSTAREA remained like the other fields.

Datafill sequence and table size did not change. Field CT4Q values must be in table CT4QNAMS. Table QMSCQDEF must contain the call queues CALLQ, RECALLQ, and ASSTQ.

Datafill for QMS Customer Service Enhancements for table TQMSFCQA appears in the following table. The fields that apply to QMS Customer Service Enhancements appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TQMSFCQA

Field	Subfield or refinement	Entry	Explanation and action
ASSTAREA		see subfield	Assistance area This field contains subfield ASSTTYPE.
	ASSTTYPE	SA or CSE	Assistance type. Enter the type of assistance a call can receive. These values are: <ul style="list-style-type: none"> • SA - Service assistant located at a service assistant position. The entry of additional refinements is not a requirement. • CSE - Customer Service Expert operator. This operator is a more experienced QMS operator located at a QMS operator position. Enter refinement CSE in ASSTQ.
	ASSTQ	CQ0 to CQ254	Assistance queue. If ASSTTYPE = CSE, enter data in this field. Enter the final QMS call queue for assistance by a CSE. Table QMSCQDEF must contain this call queue.

Datafill example for table TQMSFCQA

Sample datafill for table TQMSFCQA appears in the following example.

QMS Customer Service Enhancements (continued)

MAP example for table TQMSFCQA

CT4Q	CALLQ	RECALLQ	ASSTAREA

0_MINUS	CQ10	CQ11	CSE CQ100
0_HOTEL	CQ30	CQ35	CSE CQ101
TA_EMERGENCY	CQ200	CQ200	CSE CQ200
DA_EMERGENCY	CQ201	CQ201	SA

In the preceding datafill example, DA service can only proceed to an SA.

Datafilling tables TQORDERA and TQORDERB

Tables TQORDERA and TQORDERB specify the order of the CT4Q refinement tables. The CT4Q refinement tables provide call queue assignment in TOPS QMS. The tables specify the order in three different phases. The three phases are PREOPR, POSTAUTO, and RECALL. Field ASST is an additional call phase.

Table CT4QAUTO is a refinement table. Table CT4QAUTO must contain datafill to provide automated services. If this table does not contain datafill, an automated system can request additional assistance. The automated service can return the call to the service type that is not correct. A call returned to a service type that is not correct causes the system to generate SWERS and TQMS logs. See the "Remote Queue Management System" functionality, table CT4QAUTO in the datafill procedure section for further details.

Enter data in tables TQORDERA and TQORDERB after the refinement tables. If you change the TQORDER tables before you complete the CT4Q refinement tables, the routes for some calls are not correct.

The table datafill order does not change.

Datafill for the QMS Customer Service Enhancements for tables TQORDERA and TQORDERB appears in the following table. The fields that apply to QMS

QMS Customer Service Enhancements (continued)

Customer Service Enhancements appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling tables TQORDERA and TQORDERB

Field	Subfield or refinement	Entry	Explanation and action
ASST		0 to 9	<p>Assistance relative ordering. This field defines the relative order of this CT4Q table. This field compares the order of the CT4Q table with the order of other CT4Q tables. The comparison is for calls in which a QMS operator requests assistance. The request maps to Customer Service Expert (CSE) assistance in table TQMSFCQA. At the time of the request, the current CT4Q is the starting point for refinement.</p> <p>Enter a value of 1 to 9 to represent a relative order.</p> <p>Enter a value of 0 to indicate that this CT4Q table is not active in this order.</p>

Datafill example for tables TQORDERA and TQORDERB

Sample datafill for tables TQORDERA and TQORDERB appears in this table.

MAP example for tables TQORDERA and TQORDERB

CT4QTABL	PREOPR	POSTAUTO	RECALL	ASST
CT4QCLAS	3	0	0	0
CT4QREST	1	0	0	0

Translation verification tools

QCALL and QVIEW

Before this functionality, the ORDER subcommand in QCALL and QVIEW accepted the parameters PREOPR, POSTAUTO, and RECALL. The value of the parameter determines the order the CT4Q refinement uses. The value determines which column of TQMSFCQA, CALLQ, or RECALLQ, to use for the simulated call or view.

QMS Customer Service Enhancements does not change. The ORDER subcommand now accepts the parameter ASST.

QMS Customer Service Enhancements (end)

The ASST parameter indicates that a general assistance request causes the CT4Q refinement and QMS CallQ assignment. The specification of ASST uses the ASST field of the specified order and the ASSTAREA field of table TQMSFCQA.

The TOPS Call Processing consults the ASST field of the order table. This event occurs if the SOC option that contains this functionality is ON. The TOPS Call Processing consults the ASSTAREA field of TQMSFCAQA if the SOC option that contains this functionality is ON. The SOC state does not determine if the QCALL and QVIEW consult these fields.

A sample entry appears below:

```
>order asst
```

See QMS Host/Remote Queueing, OSB00101, for more information on QCALL and QVIEW.

SERVORD

The TOPS does not use SERVORD.

QMS Host/Remote Queuing

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS15 and later versions

QMS Host/Remote Queuing was introduced in BCS35.

Requirements

To operate, QMS Host/Remote Queuing requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

The following features provide this functionality:

Feature number	Feature name
AF2875	QMS: Call Queue Assignment
AF2876	QMS: Standalone Call Processing Changes
AF2877	QMS: Host Call Processing Changes (no datafill)
AF2965	QMS: Basic MIS Stats
UV200614	TOPS QMS CT datafill problem in host software (BCS35)
CV21290	French TOPS04 IC/Assist incorrect disposition (BCS35)
BX07116	CAMA calls could be datafilled fail (BCS34)
AF2783	QMS: Call and Agent Manager
AF2964	QMS: MIS Interface
AF2878	QMS:Remote Call Processing Changes
BR42434	QMS table datafill order
UT409915	QMS DA Call Arrival Display Option (TOPS04)
59007458	TOPS IP: MIS Over IP (MISCHILD new in TQMIST)

QMS Host/Remote Queuing (continued)

Feature number	Feature name
BX77689	Table TQMSSERV, field AUTOAMA has no affect if not changing service
UT54592	Table CT4QAUTO requires datafill for auto services
UT63374	QMS creates problems with MPX/IWS
50039957	DA positions in an OC network

This functionality provides the following:

- an increase in the maximum number of call queues from 4 to 255
- enhanced force management (FM) statistics
- division of traffic across the queues according to a wide range of standards. These standards include:
 - time of day
 - called digits
 - incoming trunk group
 - calling digits
 - inter-LATA carrier
 - class of service
 - restricted billing
 - automated service
 - prefix call type
 - language
- assignable grade of service of call priorities for each operator profile
- specification of the types of calls and services that an operator could serve during a session at an operator position.
- specification of a class of senior operators (S0) that can assist other operators and serve as regular operator traffic
- information about operator and queue performance that determines operator staffing requirements

QMS Host/Remote Queuing (continued)

Operation

The contents of this section are the following:

- Differences between the Host and Remote QMS
- AF2875—Call Queue Assignment
 - CT4Q refinement
 - Force Management
 - Installation of QMS in a sample office
 - Examination of non-QMS TOPS queuing
 - Transfer existing queuing to TOPS QMS
 - Extend queuing by a single criterion
 - Tools
- AF2965—Basic MIS Statistics
 - Interactions with TOPS ACD MFADS
 - Caution about missing FM reports
- AF2876—Call and Operator Profiles
 - Controlled traffic
 - Controlled traffic profile considerations
 - Service compatibility checks during logon
 - Senior operators
 - Senior operator transmitting over Intertoll trunks
 - Examples of senior operator setup
 - Senior operators compared to service assistants
 - Presence of both TOPS ACD and QMS CAM
 - Use of call queues for combined offices
 - Data store impact
 - Real time impact
- AF2783—Call and Agent Manager
 - Data store impact
 - Real-time impact

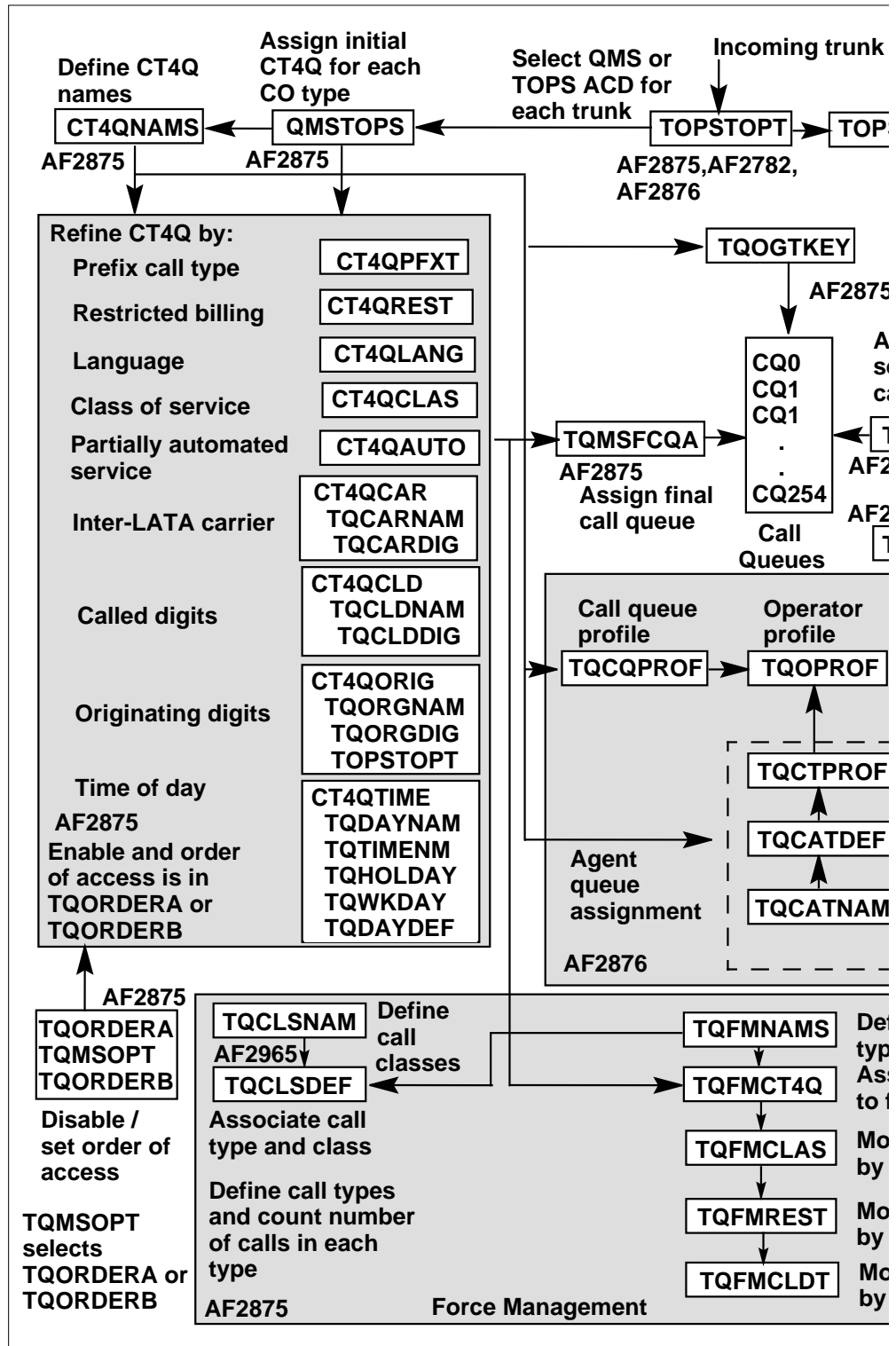
QMS Host/Remote Queuing (continued)

- AF2964—MIS Interface
 - MIS system
 - QMS MIS interface in TOPS OC
 - LOGs
 - OMs
- Operator centralization
- TOPS Close Down
- Host/Remote Networking by Queue Type
- PRSs
- General comments

The datafill tables for Host QMS are shown in the following figures:

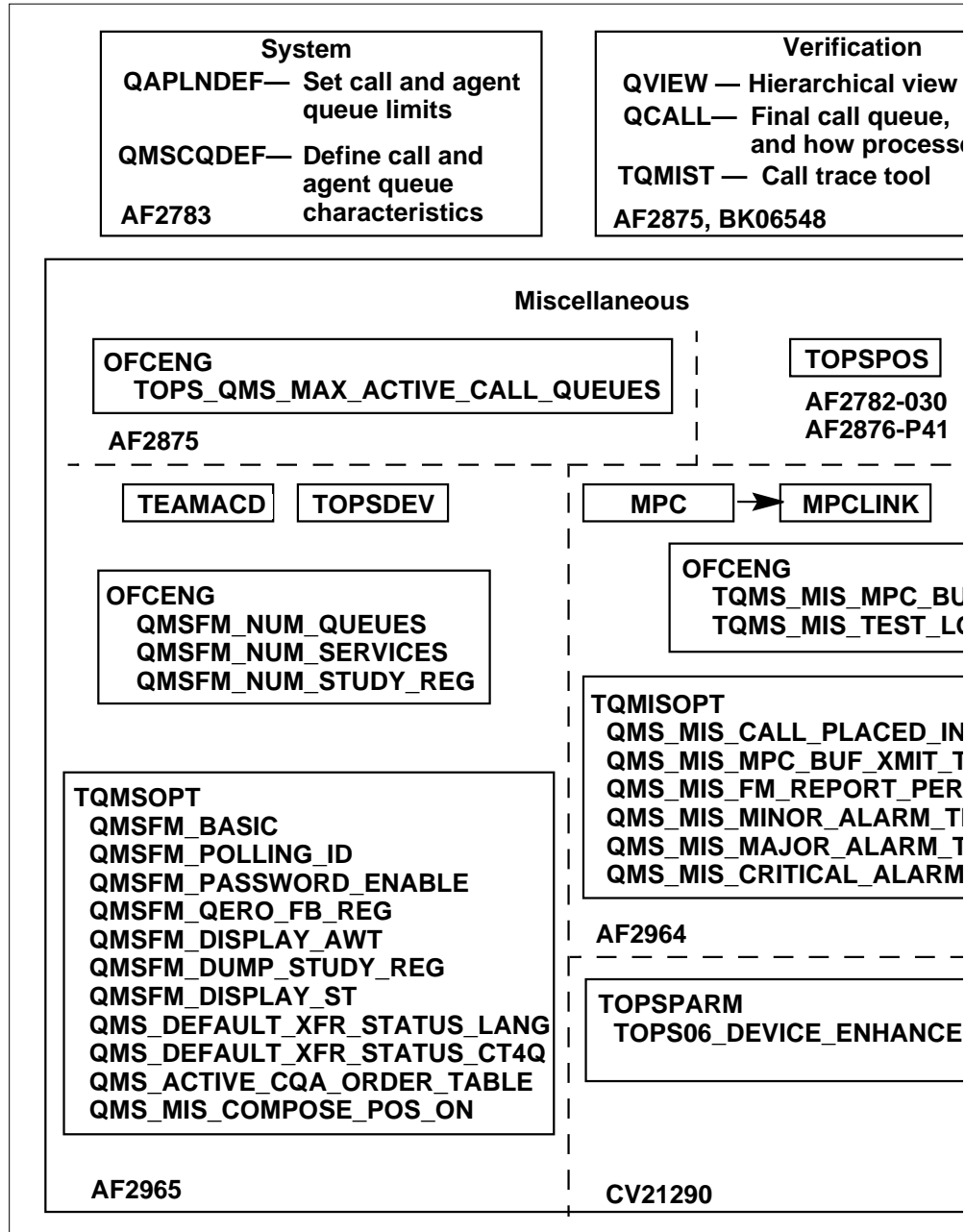
QMS Host/Remote Queuing (continued)

Host QMS datafill tables



QMS Host/Remote Queuing (continued)

QMS datafill tables (continued)



QMS Host/Remote Queuing (continued)

Differences between the Host and Remote QMS

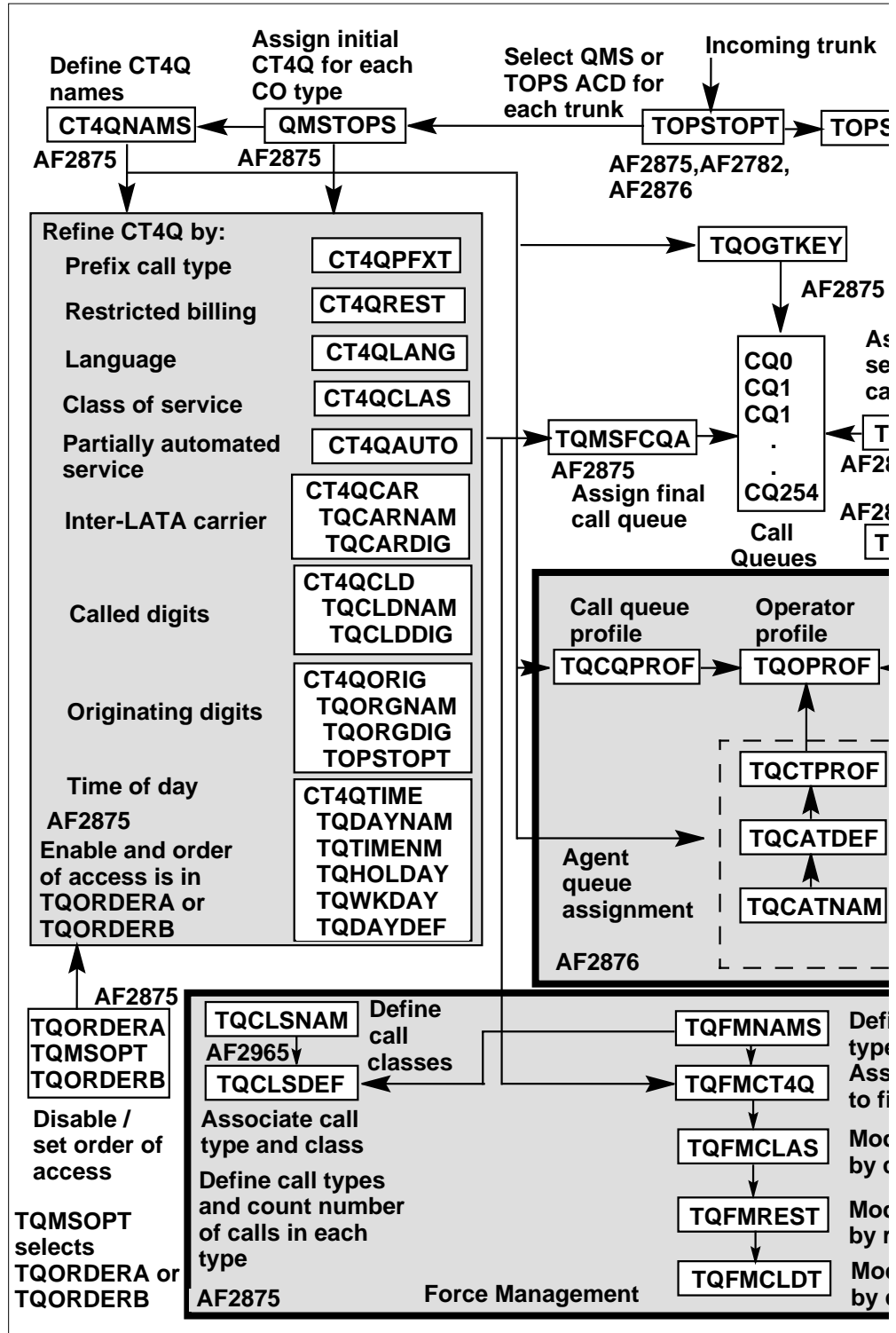
The Remote QMS contains the CT4Q refinement tables but none of the following functionality (present in the Host QMS):

- Force Management
- Agent queue assignments
- Training

The following figures show the datafill tables in the Host QMS. The Remote QMS has the same tables except for the tables marked with heavy boxes.

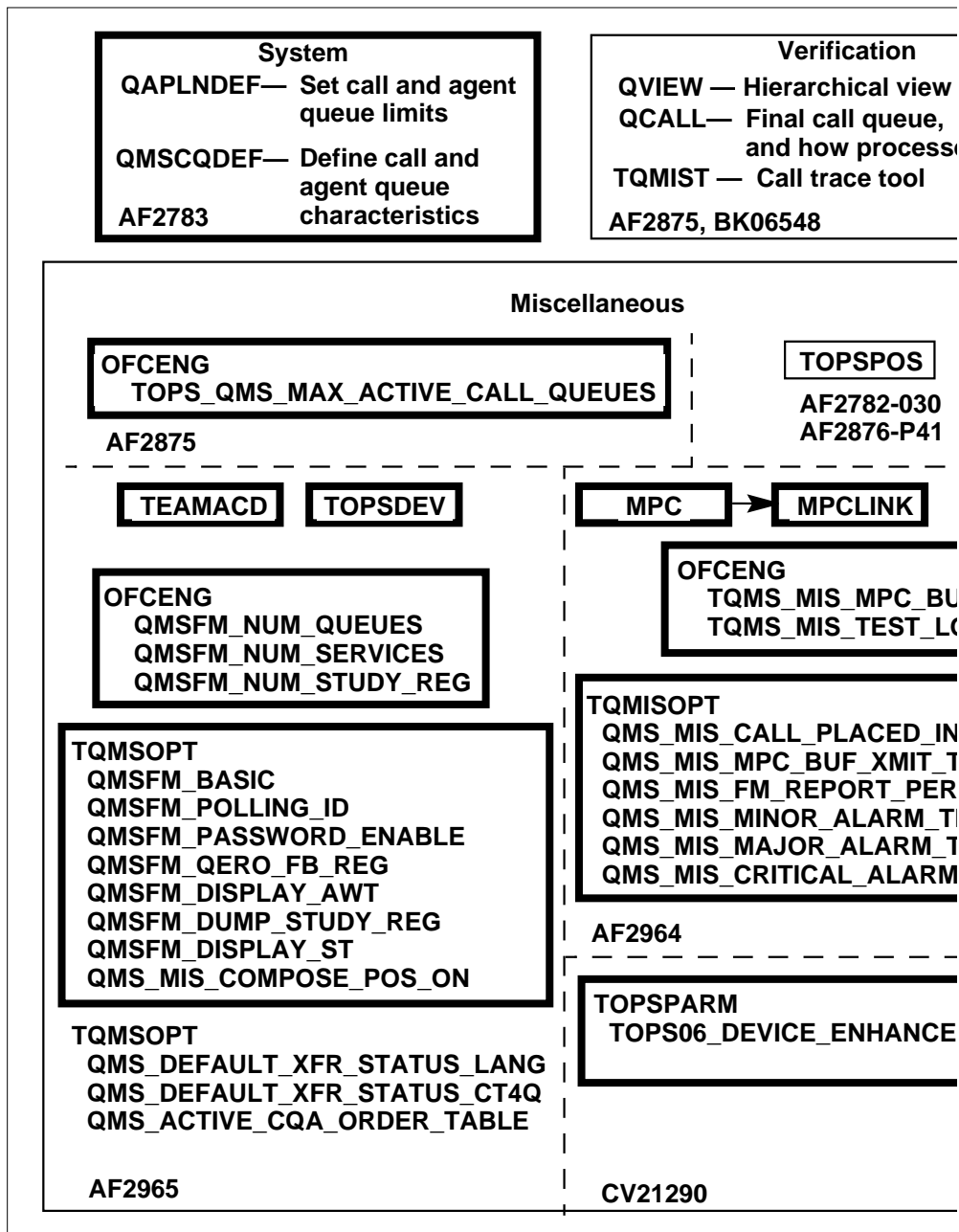
QMS Host/Remote Queuing (continued)

Host - Remote QMS comparison of datafill tables



QMS Host/Remote Queuing (continued)

Host - Remote QMS comparison of datafill tables (continued)



QMS Host/Remote Queuing (continued)

The descriptions in this manual for the Host and Remote QMS are the same, except for the following parts that are not present in the Remote QMS:

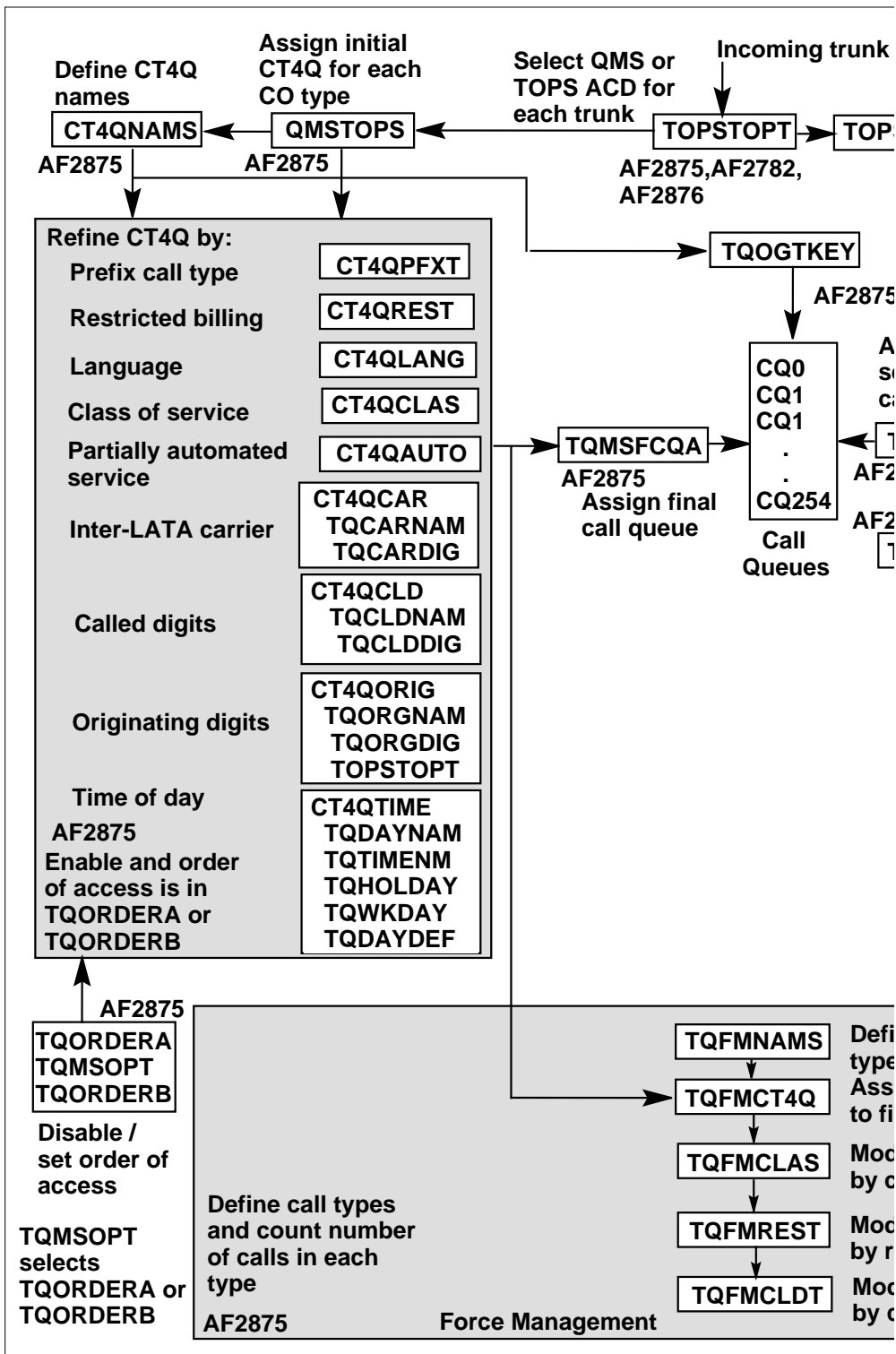
- Operation
 - AF2875—Call Queue Assignment, subsection Force Management
 - AF2965—Basic MIS Statistics
 - AF2876—Call and Operator Profiles
 - AF2783—Call and Agent Manager
 - AF2964—MIS Interface
 - PRSs
 - UT409915 - QMS DA Call Arrival Display Option (TOPS04)
 - UT63374 - QMS creates problems with MPX/IWS (datafill requirement in table TQOPROF)
 - 50039957 - DA positions in an OC network (datafill requirement in table TOPSPOS)
- Limits
 - references to Force Management and tables not in the Remote
 - AF2964 - MIS Interface
- Interactions
 - references to Force Management
- Office parameters
- Datafill
 - Call and agent queue tables: TQCQPROF, TQOPROF, TQSVPROF, TQCTRPF, TQCATDEF, TQCATNAM, TEAMACD, QAPLNDEF, QMSCQDEF, and TRKGRP
 - Force Management tables: TQCLSNAM, TQCLSDEF, TQFMNAMS, TQFMCT4Q, TQFMCLAS, TQFMREST, and TQFMCLDT, TOPSDEV, TOPSPARM
 - Miscellaneous tables: MPC, MPCLINK, QMSMIS, TQMSOPT (some), and TQMISOPT

AF2875—Call Queue Assignment

The datafill tables this feature provides appear in the following figure:

QMS Host/Remote Queuing (continued)

QMS datafill tables in feature AF2875



QMS Host/Remote Queuing (continued)

CT4Q refinement

When the system receives a call, table TOPSTOPT determines if an operator handled call on a trunk must go to QMS or ACD. This process allows for gradual cut-over to TOPS QMS. Each call has an initial call type for queuing (CT4Q) in table QMSTOPS. The tables that appear in the refinement area in the above QMS datafill tables figure change, refine, the first CT4Q. This CT4Q refinement allows the office to divide incoming traffic into separate categories that the office can manage. Different call attributes, based on the requirements of the office determine the categories.

After a call passes through the standards of CT4Q refinement, a CT4Q of a specified call can change several times. A call can continue to have the initial CT4Q. After refinement, the final CT4Q determines the call queue, and service to assign the call. This document describes example refinement.

An office can decide to segregate the DA_411 traffic. The traffic includes all calls assigned a CT4Q of DA_411 in table QMSTOPS. The office can segregate the traffic into the following categories: DA_411_STATION, DA_411_COIN, and DA_411_HOTEL. The office can subcategorize DA_411_STATION into DA_411_STATION_OA and DA_411_STATION_DD. A possible condition for this type of division for traffic, is an office with mixed TOPS BP and TOPS MP terminals. The terminals can route some DA traffic to the BP and some to the MP. The BP terminals cannot provide alternate billing, the terminals can only route direct-dialed station traffic to the BP. This division of traffic appears in the box chart below.

DA_411_COIN	
DA_411_STATION	DA_411_STATION_OA
	DA_411_STATION_DD
DA_411_HOTEL	

To divide the traffic in these five categories, the office must apply only two criteria for CT4Q refinement:

- Class of service (COIN, STATION, HOTEL)
- Prefix Call Type (OA or DD)

The first table, CT4QCLAS, divides traffic by class of service. The system checks each incoming call to verify that the calls match the standards in this

QMS Host/Remote Queuing (continued)

table. If the system finds a match, the CT4Q changes to the value specified for the match. If a match is not found the CT4Q does not change.

Each of the tables used in CT4Q refinement has three fields:

- OLDCT4Q - previous CT4Q
- xxxCRIT - criterion of this table (where "xxx" is criterion)
- NEWCT4Q - new CT4Q assigned to the call

In this example, CT4QCLAS requires three tuples. The first tuple refines traffic marked with the DA_411 CT4Q coin class of service. The tuple refines the DA_411 CT4Q to a new CT4Q value of DA_411_COIN. The second tuple refines station traffic marked as DA_411 to have a new CT4Q of DA_411_STATION. The last tuple marks hotel DA_411 traffic as DA_411_HOTEL. This office differentiates only DA_411 traffic. The three tuples in CT4QCLAS all have DA_411 as the Old CT4Q value. The system continues to assign CT4Q DA_411 to DA_411 traffic marked with some class of service other than COIN, HOTEL, or STATION.

The CT4QPFXT table refines the traffic in this office after the tuple divides traffic according to class of service. The CT4QPFXT call queue assignment table differentiates between operator assisted (OA) and direct dialed (DD) traffic. For the example office, only DA_411_STATION traffic requires refinement by this criteria. Both tuples in the example datafill for CT4QPFXT contain DA_411_STATION as an old CT4Q key value. This criteria refines DA_411_STATION traffic dialed directly (e.g., 1+) to DA_411_STA_DD. The system refines DA_411_STATION traffic marked for operator assistance, (e.g., 0-) to DA_411_STA_OA. Table CT4QPFXT does not affect the traffic that does not meet the above criteria.

MAP example for table CT4QCLAS

OLDCT4Q	CLASCRIT	NEWCT4Q
DA_411	COIN	DA_411_COIN
DA_411	STATION	DA_411_STATION
DA_411	HOTEL	DA_411_HOTEL

MAP example for table CT4QPFXT

OLDCT4Q	PFXTCRIT	NEWCT4Q
DA_411_STATION	OA	DA_411_STA_OA
DA_411_STATION	DD	DA_411_STA_DD

QMS Host/Remote Queuing (continued)

Tables TQORDERA and TQORDERB determine the order of the refinement tables. The order is important. If the system does not screen table CT4QPFXT before table CT4QCLAS, the specified traffic division does not occur. The CT4QPFXT does not affect traffic, because the system does not mark calls DA_411_STATION. The CT4QCLAS continues to split DA_411 into three new CT4Qs. The DA_411_STATION traffic does not have additional refinements because the system already traversed CT4QPFXT.

Some call characteristics are not available to the system for some calls until the calls route to an operator. For example, the inter-LATA carrier is not always available until the system routes the call to an operator. Table CT4QCAR uses the inter-LATA carrier standard to divide traffic. If a call arrives without a specified carrier, the table does not affect the CT4Q of the call.

Do not use the CAMA CT4Q to make refinements. The CAMA CT4Q is for CAMA calls. The use of a refinement can break the REQ CAMA function.

Force Management

In Force Management, call type analysis can require different categories than call processing. For example, the assignment of all toll and assist calls are one queue. The force management reports provide data divided by the following:

- class of service
- operator handled compared to operator assisted
- overseas compared to domestic

An operating company can collect CT4Qs used to queue into larger classes for statistical analysis.

Tables TQFMNAMS, TQFMCT4Q, TQFMCLAS, TQFMREST, and TQFMCLDT map call type for queuing into FM call type. The process occurs when the call leaves the operator.

Four new parameters in table TOPSPARM allow customization of several QMS status displays on TOPS 04 force management positions. The QMS status displays are QCD, QCQ, 25% QCT and QCW. The parameters allow custom replacements for applications like alternate (non-English) language displays.

Installation of QMS in a sample office

The Call Queue Assignment abilities of TOPS QMS apply to current TOPS switches. The TOPS switches already have a set of queuing abilities. This

QMS Host/Remote Queuing (continued)

section describes how to apply TOPS QMS in an office. The implementation of TOPS QMS has the following four stages:

- examination of the pre-QMS TOPS queuing abilities of the office
- translation of the datafill that provides these abilities into the analogue tables in the QMS CQA system
- addition of a single CT4Q table as an extension to QMS queuing
- a fully-extended set of QMS CQA datafill appears

The application method that appears below is not best for all offices that convert to QMS. The application method describes application issues.

Examination of non-QMS TOPS queuing

You can ask a number of questions about a TOPS office to determine the queuing abilities and requirements of a TOPS office. Perform the following actions for an office that converts to QMS appears in the following list:

- Determine the types of traffic that this office serve.
- Determine the types of TOPS positions this office uses. The TOPS SP positions can provide TA-only service. The TOPS BP positions can provide DA-only service. The TOPS MP positions can provide all services. The capability sets of the positions in the office dictate queuing restrictions.
- Determine the services that this office provides (TA, DA, INTC).
- Determine if this office uses multilingual operators.
- Determine if this office uses geographical routing.
- Determine if the operators in this office have the same level of experience. Determine if some operators can provide services that other operators cannot provide.

The datafill that appears in the following set of tables provides the information above:

- Table TOPSPOS: Determine the types of positions in the office.
- Table OPRDAT: Determine the different operator capabilities.
- Table SERVICES: Determine the services provided.
- Table TOPS: Determine the type of traffic that this office serves.

Transferring existing queuing to TOPS QMS

To change from non-QMS TOPS to TOPS QMS, the information in the tables in the previous section must transfer to the QMS analogues. The QMS

QMS Host/Remote Queuing (continued)

analogues include tables QMSTOPS, TQMSFCQA, QMSSKEY, TOPSTOPT, and TQMSSERV. If table CT4QORIG contains datafill table TQORDERA requires datafill and table TOPSTOPT requires additional datafill.

The datafill that can correspond to a TOPS office that changes to QMS appears in the following set of tables. The datafill in these tables copies the TOPS queuing functionality on the QMS platform.

MAP example for table QMSTOPS

CO	CT4Q
UNSPEC	UNSPEC
OH	0_MINUS
OA	0_PLUS
DD	1_PLUS
CAMA	CAMA
RCAMA	RCAMA
DELAY	DELAY
555	DA_555
INTC	INTC
411	DA_411
HOM555	HOM_555
FOR555	FOR_555

MAP example for table CT4QNAMS

CT4QNUM	CT4QNAME	NOAMA	CT4QDISP	AUTOORDB
0	UNSPEC	N	N	N
1	CAMA	N	N	N
2	0_MINUS	N	N	N
3	0_MINUS_COIN	N	N	N
4	0_MINUS_COIN_CARRIER1	N	N	N
5	0_MINUS_HOTEL_ACME	N	Y ACME_HTL	Y 10
6	0_MINUS_STATION	N	N	N
7	DA_411	N	N	N
8	DA_411_COIN	N	N	N
9	DA_411_NONCOIN	N	N	N
10	DA_555	N	N	Y 31
11	CUSTOMER_NAME_AND_ADDRESS	N	Y CNA	N
12	BUSINESS_OFFICE_FUNCTIONS	N	Y BIZ_OFc	Y 44

Tables QMSTOPS and CT4QNAMS define the first CT4Qs assigned to the different call types. The CO_TYPES used as keys of QMSTOPS, and the types in table TOPS can correlate in a transitional office.

QMS Host/Remote Queuing (continued)

MAP example for table TQORDERA

CT4QTABL	PREOPR	POSTAUTO	RECALL
CT4QCLAS	0	0	0
CT4QREST	0	0	0
CT4QPFXT	0	0	0
CT4QCLD	0	0	0
CT4QORIG	1	0	0
CT4QAUTO	0	0	0
CT4QLANG	0	0	0
CT4QTIME	0	0	0
CT4QCAR	0	0	0

Except for table CT4QORIG, the other CT4Q tables represent functionality that is not available in non QMS TOPS. To activate only CT4QORIG, the order must be 1. All the other CT4Q tables in table TQORDERA must have a value of 0.

MAP example for table TOPSTOPT

GRPKEY	ACDDATA	DISPCLG	ADASERV
TBFRENCH2	QMSCAM CAMCORE Y	FRENCH_TRK	N N
TBSPANSH1	QMSCAM CAMCORE Y	SPANISH_TRK	N N
TBEXT1	QMSCAM CAMCORE N		N N

Table TOPSTOPT serves two purposes. The ACD field determines if calls from the incoming trunk can route to TOPS QMS or software that is not TOPS QMS. Second the QMSCAM refinement of ACDAREA allows a CT4Q to associate with an incoming trunk group.

MAP example for table CT4QORIG

OLDCT4Q	ORIGCRIT	NEWCT4Q
0_MINUS	SPANISH_TRK	0_MINUS_SPANISH
0_MINUS	FRENCH_TRK	0_MINUS_FRENCH

This table routes Spanish and French to different CT4Qs. The trunk group in table TOPSTOPT determines French and Spanish traffic.

QMS Host/Remote Queuing (continued)

MAP example for table TQMSFCQA

CT4Q	CALLQ	RECALLQ
0_MINUS	CQ0	CQ5
0_PLUS	CQ0	CQ5
1_PLUS	CQ0	CQ5
UNSPEC	CQ0	CQ5
CAMA	CQ4	CQ4
RCAMA	CQ4	CQ4
DELAY	CQ0	CQ5
0_MINUS_SPANISH	CQ1	CQ6
0_MINUS_FRENCH	CQ2	CQ7
DA_555	CQ3	CQ8
INTC	CQ3	CQ8
DA_411	CQ3	CQ8
HOM_555	CQ3	CQ8
FOR_555	CQ3	CQ8

Table TQMSFCQA contains the functionality of table TOPS. The functionality of table TOPS appears in the following list:

- CQ0 corresponds to the GEN queue
- CQ1 corresponds to the XFR1 queue
- CQ2 corresponds to the XFR2 queue
- CQ3 corresponds to the DA queue
- CQ4 corresponds to the CAMA queue

The non-QMS TOPS has only four queues visible on the outside. The four queues have internal duplications with higher priority recall queues. A CAMA queue is internally distinct from the GEN queue. To preserve TOPS functionality in QMS, the table must specify nine queues. Consider the example datafill for the RECALLQ field of table TQMSFCQA. The group of CT4Q that have an initial call queue of CQ0 all map to a recall call queue of CQ5. The CT4Q groups with an initial call queue CQ1 map to CQ6, CQ2 maps to CQ7, and CQ3 maps to CQ8. The CT4Qs CAMA and RCAMA contain data for CQ4 for CALLQ and RECALLQ. The entries occur because these calls do not have the ability to recall. The CQ4 value in the RECALLQ is not used. The datafill in this example is an exact model of non-QMS TOPS queuing, with 9 internal queues. Datafill in table TQMSSERV and TQCQINFO must be present to preserve the functionality of non-QMS TOPS. The entries must occur to preserve DA and TA services. The queue/service associations are clear. The table assigns services for each CT4Q.

QMS Host/Remote Queuing (continued)

MAP example for table TQMSSERV

SERVNUM	QMSSERV	BASESERV	IMPLCT4Q	SERVTYPE
0	TOPS_TA	TASERV	0_MINUS	BASE N
1	TOPS_DA	DASERV	DA_411	BASE Y

MAP example for table TQCQINFO

CALLQ	QMSSERV	CWOFF	CWON	TREAT
CQ0	TOPS_TA	10	25	EMR4
CQ1	TOPS_TA	10	25	EMR4
CQ2	TOPS_TA	10	25	EMR4
CQ3	TOPS_DA	10	25	EMR3
CQ4	TOPS_TA	10	25	EMR3
CQ5	TOPS_TA	10	25	EMR4
CQ6	TOPS_TA	10	25	EMR4
CQ7	TOPS_TA	10	25	EMR4
CQ8	TOPS_DA	10	25	EMR3
CQ9	TOPS_TA	10	25	EMR3
CQ10	TOPS_TA	10	25	EMR4
CQ11	TOPS_TA	10	25	EMR4
CQ12	TOPS_TA	10	25	EMR4
CQ13	TOPS_DA	10	25	EMR3
CQ14	TOPS_TA	10	25	EMR3

Extend queuing by a single criterion

To expand the use of QMS CQA the above office can include an additional queuing criterion. This standard is one more CT4Q table. This office can separate 0- coin traffic and send the traffic to a specified group of operators. Activate table CT4QCLAS to send the traffic to a specified group of operators. Assign 0_MINUS COIN traffic a new CT4Q, like 0_MIN_COIN to accomplish this process. The new CT4Q must map to a new, not used, call queue. The following tables require changes to support this new requirement:

MAP example for table CT4QNAMS

CT4QNUM	CT4QNAME	NOAMA	CT4QDISP	AUTOORDB
0	UNSPEC	N	N	N
1	CAMA	N	N	N
2	0_MIN_COIN	N	N	N

QMS Host/Remote Queuing (continued)

Table TQORDERA: activate table CT4QCLAS. Change the PREOPR of the table to a value other than zero.

Table CT4QCLAS: add a tuple to select traffic assigned to the 0_MIN_COIN CT4Q.

MAP example for table CT4QCLAS

OLDCT4Q	CLASCRIT	NEWCT4Q
0_MINUS	COIN	0_MIN_COIN

Table TQMSFCQA: add a tuple to assign a new call queue to the 0_MIN_COIN CT4Q. The QMS CAM recognizes that the call queue requires service from the specialized team operators. The RECALLQ field assigns a different call queue to the new CT4Q on recalls. The QMS CAM provides CQ10 higher priority than CQ11. The CQ10 routes the traffic to the same specialized team of COIN operators.

MAP example for table TQMSFCQA

CT4Q	CALLQ	RECALLQ
0_MIN_COIN	CQ10	CQ11

Table TQCQINFO: add a tuple to assign a TOPS_TA service type to the CALLQs associated with 0_MIN_COIN calls.

MAP example for table TQCQINFO

CALLQ	QMSSERV	CWOFF	CWON	TREAT
CQ10	TOPS_TA	10	25	EMR4
CQ11	TOPS_TA	10	25	EMR4

After you enter the basic datafill in the office to support TOPS queuing, you can add additional queuing criteria.

QMS Host/Remote Queuing (continued)

Tools

Three new tools are available for QMS:

- The QVIEW utility provides a macro-view of the call queue assignment.
- The QCALL utility provides a micro-view of the call queue assignment.
- The TQMIST utility serves as a call trace tool.

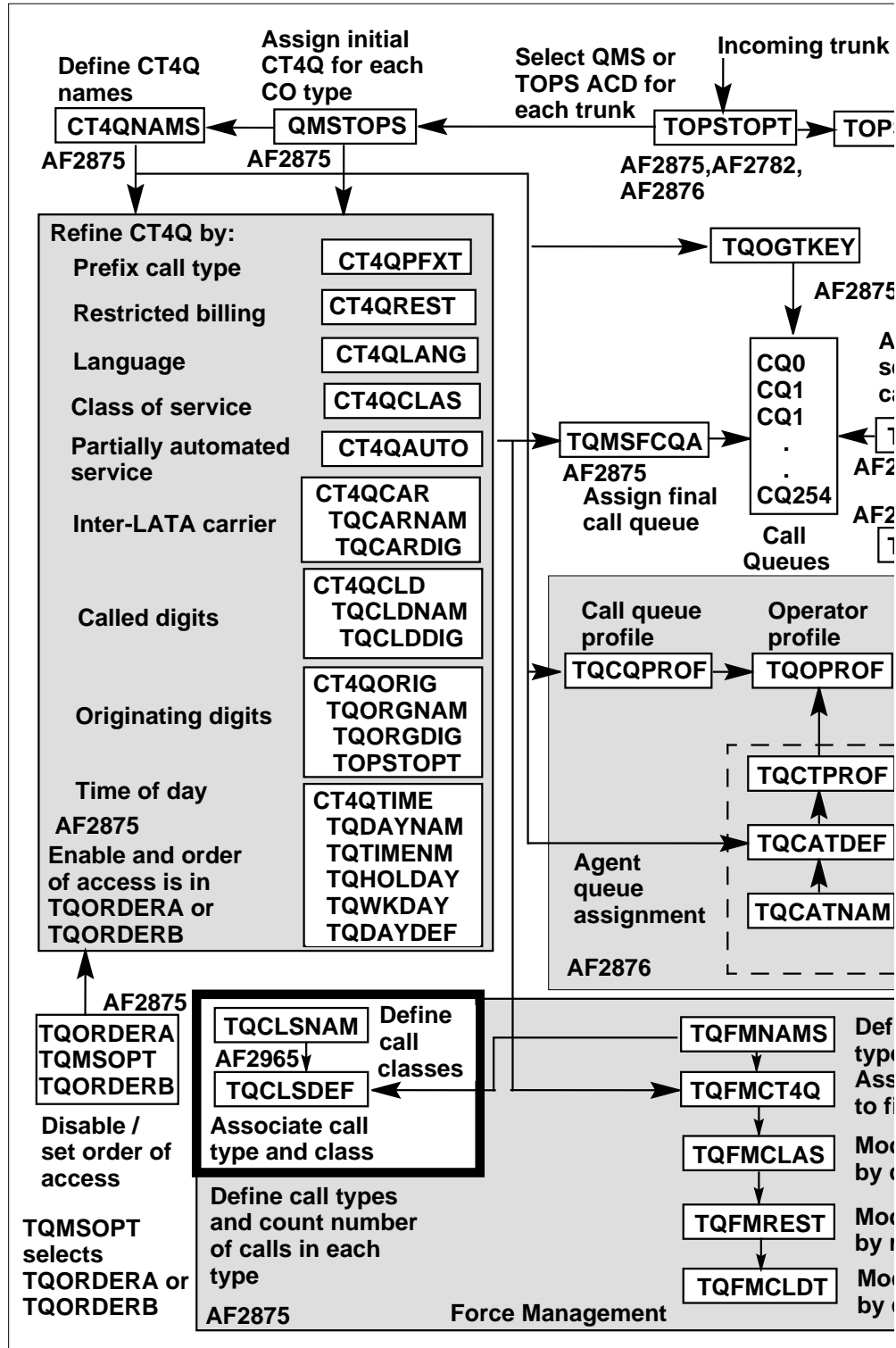
A description of these tools appears in the Tools for verifying translations section at the end of this functionality.

AF2965—Basic MIS Statistics

The datafill tables this feature provides appear in the following figure. Hard lines around the names indicate the datafill tables.

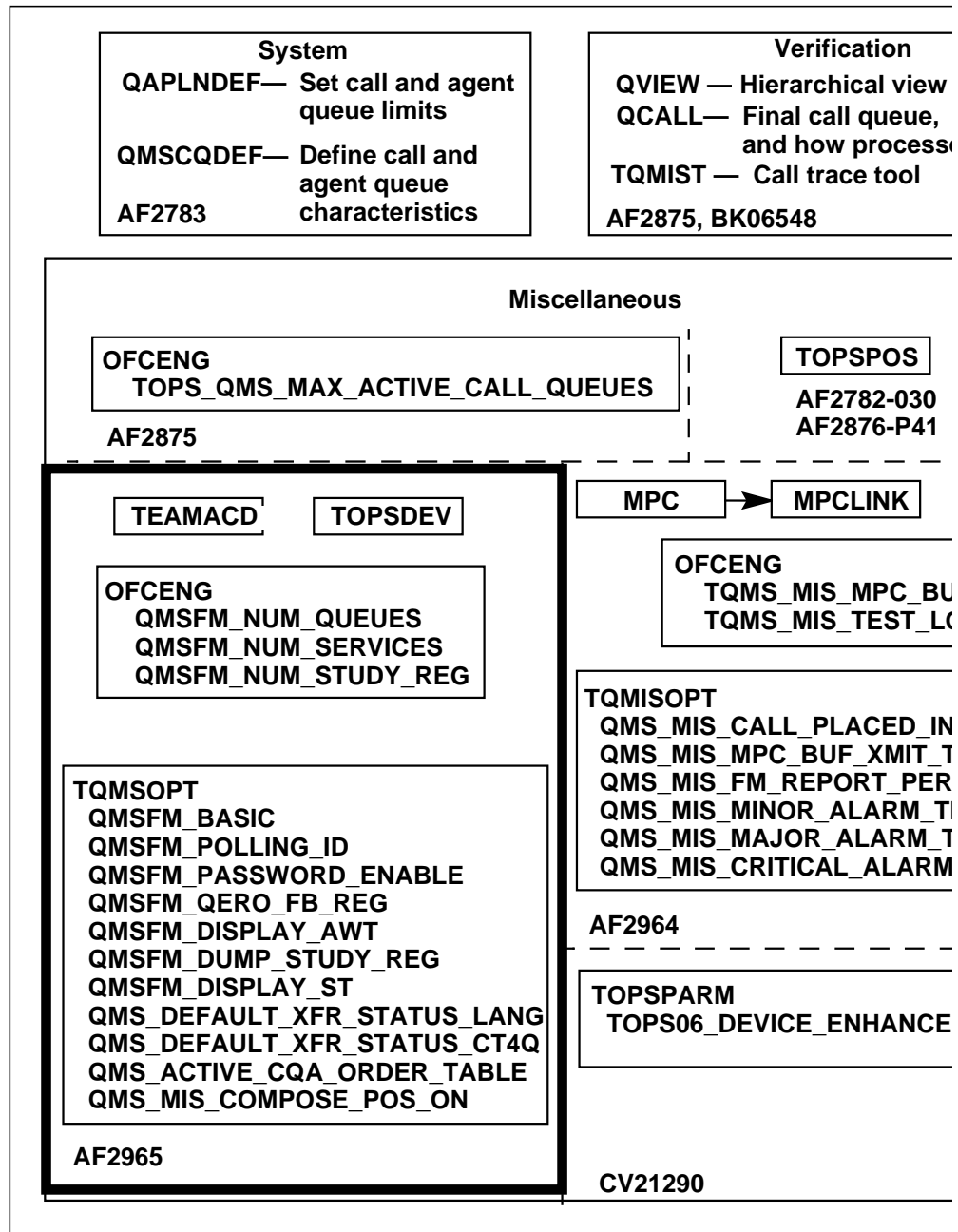
QMS Host/Remote Queuing (continued)

QMS datafill tables in feature AF2965



QMS Host/Remote Queuing (continued)

QMS datafill tables in feature AF2965 (continued)



This feature collects measurements for four different criteria. The four standards are traffic office, TOPS QMS queue, TOPS QMS service and TOPS QMS FM call class. The following tables provide the non-QMS TOPS

QMS Host/Remote Queuing (continued)

functionality. The datafill procedure section of this document describes these functions.

- TQCLSNAM (TOPS QMS Class Name) defines call classes for force management.
- TQCLSDEF (TOPS QMS Class Definition) associates call type and class for FM.
- OFCENG contains three new parameters for QMS.
- TQMSOPT (TOPS QMS Options) contains QMS parameters for FM and other activities.
- TOPSDEV has 3 new FM devices for QMS.
- TEAMACD assigns QMS or TOPSACD to team positions.

Interactions with TOPS ACD MFADS

The QMFADS device can be present in the same office as a TOPS ACD MFADS device. When this event occurs, the MFADS device continues to print reports for traffic offices 1 to TOPS_MAX_TRAFFIC_OFFICES. The MFADS device continues to print traffic offices entered as QMS in table TEAMACD. Reports for traffic offices entered as QMS in table TEAMACD have all fields zeroed when the reports print at MFADS devices. Discard traffic office information for traffic offices entered as QMS in table TEAMACD from the MFADS report.

Caution about missing FM reports

The system sends a QMFADS report after the QMFADS device receives the QMSFM_POLLING_ID. Each report contains data gathered during the previous 15 min period. For example, a report printed at 1:17 has the data accumulated from between 1:00 and 1:15.

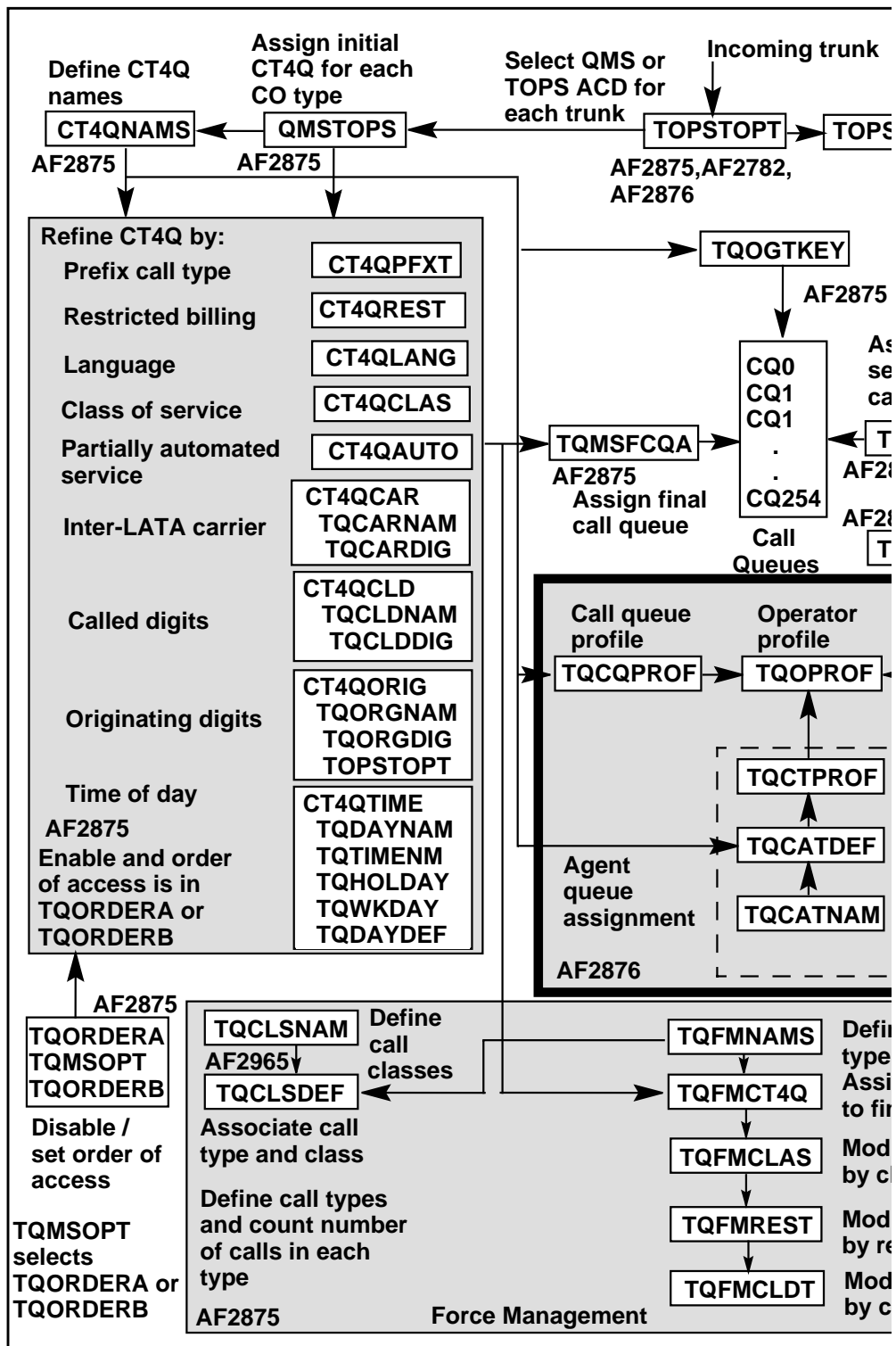
After the QMFADS device receives polling ID, the DMS switch formats a buffer with the QMS Force Management data. The DMS switch collects data from the previous period and sends the buffer to the QMFADS device. The DMS switch can transmit data at 300 or 1200 bps. If the DMS cannot send the complete report in 15 min, the user can miss some reports. Make a note of this risk when you enter data in services and traffic offices. Make a note of the risk when you determine a modem baud rate.

AF2876—Call and Operator Profiles

The datafill tables this feature provides appear in the following figure. Heavy lines around the names of tables indicate datafill tables.

QMS Host/Remote Queuing (continued)

QMS datafill tables in feature AF2876



QMS Host/Remote Queuing (continued)

This feature provides profile tables for call queues, operators, control traffic, and services. Profile tables specify how the system selects calls to present to the operator. The types of profiles follow. The datafill procedure section describes the tables.

- Call selection profile

Each operator can specify one of two different types of profiles to control the calls that the operator can receive. An operator has a call queue profile or a controlled traffic profile at a specified point in time. An operator cannot have both profiles at the same time.

- Call queue profile

Specifies the call queues that an operator can serve. The operator associates a specified call queue profile with an operator number. Table TQCQPROF (TOPS QMS Call Queue Profile) provides this function.

- Controlled traffic profile

Specifies the types of calls an operator can serve. This profile trains operators. The following tables provide this function:

- TQCATNAM (TOPS QMS Call Category Name)
- TQCATDEF (TOPS QMS Call Category Definition)
- TQCTPROF (TOPS QMS Controlled Traffic Profile)

- Service profiles

Associates a list of service names with a service profile number. The service profiles associate with operators and positions to indicate service abilities. The TOPS software checks service profiles. The TOPS software checks profiles during login and datafill. The TOPS software makes sure that the system sends calls to the correct operator or position. Table TQMSSERV (TOPS QMS Service) provides this function:

- Operator profile

Specifies which call selection and service profiles apply to an operator number. Table TQOPROF (TOPS QMS Operator Profile) provides this information

Enter datafill for assistants in table OPRDAT for every position type except MPX. Enter datafill for the assistant in table TQOPROF as an operator.

- SO designation

The SOs assist other operators, like Service Assistants. The SOs serve normal operator traffic. The SOs can assist with calls. The SOs can

QMS Host/Remote Queuing (continued)

complete the calls that receive operator assistance. The following tables provide this function:

- TQOGTKEY (TOPS QMS Outgoing Trunk group Key)
- TRKGRP.IT
- TRKGRP.TOP
- TQCQPROF
- TQOPROF

Controlled traffic

Controlled traffic profiles provide an alternate way to specify the types of calls an operator receives. This feature determines the types of calls based on the CT4Q selected for the call. Call selection is part of the queue assignment process. See table CT4QNAMS for more information on CT4Qs. Use controlled traffic profiles to train operators when one or more specified call types must route to an operator. The call queues calls assigned to the calls do not affect this routing.

Each incoming TOPS call associates with a CT4Q name. Many CT4Qs can map down to a single call queue in table TQMSFCQA. Normal operations have trained operators assigned to handle all call types mapped to a specified queue. Table TQCQPROF specifies the call queues that an operator can serve.

To train operators, it can be necessary to specify the call types an operator can receive. The call queue associated with the call does not affect the call type. The system allows different profile mechanisms. For example, a traffic office manager (TOM) can designate an operator in training to receive specified calls. If an operator in training can receive calls from two of these five call types the system requires a different mechanism.

Controlled traffic profiles provide a method to group CT4Qs in call categories. The profiles associate a set of the call categories with an operator. This process limits the types of calls that route to the operator for training purposes. An operator can have a call queue profile or a controlled traffic profile at the same time. An operator cannot have both profiles at the same time.

Controlled traffic profile considerations

When controlled traffic operators become idle, the system places the operators in a single controlled traffic idle agent queue. The TOPS application uses this queue. The system does not search call queues for a call to an idled controlled traffic operator. The system does search queues because the system queues calls for each call queue. The system does not queue calls for each call

QMS Host/Remote Queuing (continued)

category. Call priorities do not apply to call categories. Call priorities apply only when calls come out of queue.

When the system requests an operator for an arriving call, the following occurs:

1. The system searches controlled traffic idle agent queue to a depth that field CTSEARCH in table TQMSCQDEF (QMS CAM Call Queue Definition) determines. If CTSEARCH = 0, controlled traffic processing does not occur.
2. If an operator that serves the call category associated with the call is present the system presents the call to the operator.
3. If the system cannot find a controlled traffic operator, the system uses normal processing. The system searches for an operator with a normal call queue profile that can serve the call queue of the call.

Do not include controlled traffic operator contributions when you project the operator staff required to handle call traffic for a specified period. Do not include the contributions for the following reasons:

- The system handles operators with controlled traffic profiles as a special occurrence.
- The system does not consider calls already in queue when a controlled traffic operator becomes idle.
- Controlled traffic operators are less efficient.

Staff an operator service center (OSC) with the number of call queue profile operators necessary to achieve the level of service required. Additional operators in controlled traffic mode can be present. Additional operators cannot serve calls from queue. These operators do not have an important effect on the level of service achieved.

Note: The operators logged on to a switch the can be in a controlled traffic mode. If all operators are busy handling calls when a call arrives, the system places the call in a call queue. The operators do not serve the call.

The tables that appear in the following list allow you to name, define and group together call categories. These actions occur in controlled traffic profiles. The datafill procedure section describes the categories:

- TQCATNAM (TOPS QMS Category Name) defines the call category names used in the controlled traffic profile tables.
- TQCATDEF (TOPS QMS Category Definition) associates a call queue with a call category name for controlled traffic.

QMS Host/Remote Queuing (continued)

- TQCTPROF (TOPS QMS Controlled Traffic Profile) groups Call Category names in controlled traffic profiles.
- Table TQMSSERV (TOPS QMS Services) defines a list of services that each operator can provide.
- Table TQSVPROF (TOPS QMS Service Profile) associates lists of service names with a service profile number.
- Table TQOPROF (TOPS QMS Operator Profile) specifies the call selection and service profiles that apply to an operator number.

Service compatibility checks during logon

Table TQOPROF associates a service profile number and a call selection profile to an operator number. The service profile number in table TQOPROF specifies the services that an operator with a specified operator number can serve. This functionality allows a service profile number to associate with TOPS QMS positions in table TOPSPOS. The service profile number in this table specifies the services that a position can handle.

The system can deny an login to a TOPS QMS position. The system denies the operator if the service profile of the operator contains a service that is not present in the service profile. The operator number the operator uses to log into the system indicates the service profile. The service profile appears in table TOPSPOS.

Note: The operator can provide services specified in the QMS service profile (table TQSVPROF) of the operator. The operator can provide services even if the position logged into has a QMS service profile that contains additional services. Table TOPS POS contains the QMS service profile.

The type of service checks and the sample datafill of tables TQSVPROF, TQOPROF, and TOPSPOS appear in the following example:

MAP example for table TQSVPROF

PROFNUM	SVCLIST
0	(TOLL_AND_ASSIST) \$
1	(DIRECTORY_ASSIST) (CUST_NAME_AND_ADDR) \$
2	(TOLL_AND_ASSIST) (DIRECTORY_ASSIST) \$
3	(SVC_DEPT) \$
4	(TOLL_AND_ASSIST) (DIRECTORY_ASSIST) (CUST_NAME_AND_ADDR) (SVC_DEPT) \$

QMS Host/Remote Queuing (continued)**MAP example for table TQOPROF**

OPRNUM	DFLTTEAM	SVCPRNUM	SELAREA	
0	1	0	CALLQ	3
1	1	2	CONTRAF	2
100	2	2	CALLQ	2
9097	3	4	CALLQ	2
9098	3	2	CALLQ	4

MAP example for table TOPSPOS

POSNO	VCCKT	VCPDGRP	CARDCODE	DATAPATH
300	TMS 1 2 5	NPDGP	DS1SIG	TMS MP ASCII 100 1
POSAREA		SERVPROF		
OPR	1	QMSCAM	CORECAM	0

An operator can attempt to login to position 300 with operator number 100. In table TQOPROF, operator number 100 indicates a service profile number of 2. The datafill that corresponds in table TQSVPROF indicates that service profile 2 corresponds to services TOLL_AND_ASSIST and DIRECTORY_ASSIST. This condition implies that operator 100 can serve TA and DA calls. In table TOPSPOS, position 300 indicates a service profile number of 0. The datafill that corresponds in table TQSVPROF indicates that service profile 0 corresponds to service TOLL_AND_ASSIST. This information implies that position 300 can handle only TOLL_AND_ASSIST service. The system denies login by an operator on position 300 with operator number 100. The system denies the operator because the operator provides DIRECTORY_ASSIST service, which the position cannot handle.

The system allows login on position 300 by an operator with operator number 0. The sample datafill indicates that operator 0 can serve TA calls. This process is compatible with the datafill for position 300 in table TOPSPOS.

Senior operators

The TOPS QMS allows creation of a new class of operators with more experience. These operators are senior operators (SO)s. The SOs assist other operators and complete these calls as a primary task. The operators serve subscriber initiated operator traffic as their secondary task.

The SO capability is available with the Outgoing Trunk (OGT) keys. The TOPS provides the OGT keys and a looparound trunk configuration. To

QMS Host/Remote Queuing (continued)

request an SO, an operator must press an OGT key followed by a two digit code. The code specifies the type of SO required. The operating company decides which types of SOs are available to operators. There are two types of SOs. There are SOs that specialize in emergency assistant calls and SOs that serve normal assistant calls. Datafill in table TQOGTKEY assigns the two digit codes to request SOs senior operator outrunks (OT).

The TOPS software selects the outgoing trunk specified by table TQOGTKEY, when an operator presses the OGT key to request an SO. The SO must correspond to the entered two digit code. The system starts SO transmission. This package provides for special two stage outpulsing over InterToll (IT) trunks for the SO configuration. The selected outrunk must loop around back to the office as a TOPS trunk. The system assigns a call queue to the call based on the called digits received over the TOPS trunk. The system assigns a call queue to call that uses the called digits standard. The call uses the called digits standard the TOPS QMS call queue assignment feature provides. Refer to feature AF2875—QMS: Call Queue Assignment for details on assignment of a call queue to a call based on the called digits standard. The setup for datafill in tables TQCQPROF and TQOPROF allows the SO to serve the call queue assigned. This action occurs based on the called digit standard. The SO treats the call queue as the highest priority task and serves other call queues as secondary tasks. The system presents assistance request to the SO that serves the call queue assigned by the call queue assignment processing.

When an SO receives an SO request, the SO can communicate with the operator that originated the request and the calling party. The SO can complete the call. If the SO completes the call, the SO enters the called number at the SO position. The operator enters the number at the SO position, even if the operator that requested the SO entered the information. The system does not automatically forward the called number entered by the original operator over the looparound trunk. The system forwards the number entered in table TQOGTKEY for the SO outrunk over the looparound as the called number. The SO must determine through verbal information from the general operator or from the CT4Q if the customer dialed the call. The operator can use the CT4Q that the operating company set up to determine this information. The operator can key Dial Rate if customer dial rate applies.

Senior operator outpulsing over Intertoll trunks

The configuration of the looparound trunks must allow the trunks to send and receive the Automatic Number Identification (ANI) spill. The looparound trunks must send and receive ANI spill for the SO to complete calls. The looparound trunks must send and receive ANI spill for the operating company to bill for the services an SO provides. The looparound trunks must be InterToll (IT) trunks to TOPS trunks. This package provides for special two

QMS Host/Remote Queuing (continued)

stage Operator Services Signaling (OSS) outpulsing over IT trunks for the senior operator configuration.

The two stages follow:

- KP <called digits> ST*
- KP XX <ANI digits> STP

the XX are hard-coded ANI ID digits with the following meanings:

- 00**
Station with ANI
- 01**
Station ONI
- 06**
Hotel with ANI
- 07**
Special with ANI
- 27**
Coin with ANI

and ST* is a coded start pulse with the following meanings:

- ST**
1+ Coin
- STP**
0+/- Coin
- ST2P**
1+ Non-coin
- ST3P**
0+/- Non-coin

Set signaling on the looparound trunks for wink-start ANI. Wink-start ANI allows the system to indicate a true answer to the operator that requests the SO. The special two stage outpulsing can cause a 0- call at an operator that requests a SO to become a 0+ call at the SO. This process occurs because the outtrunk number outpulses in the signaling as the called number. The loop around trunks require you to set incoming translations to prevent this process. The screen of the SO does not indicate the operator that initiates the request.

A limit of the SO setup is that the system does not propagate coin signals. The system does not propagate coin signals to the SO from the operator initiating the SO request. Set the incoming TOPS trunks as combined non-coin trunks.

QMS Host/Remote Queuing (continued)

The following is the setup of the IT and TOPS trunks.

- TRKGRP.IT
 - GRPTYP = IT
 - DIR = OG
- TRKGRP.TOPs
 - GRPTYP = TOPS
 - DIR = IC
 - STATCLAS = COMBINED
 - CLGID = OSS
 - ANIREQ = WK

MAP example for table TRKGRP

```

GRPKEY GRPINFO
-----
TOPSLNO IT 0 TLD NCRT OG DD MIDL 619 NPRT NSCR 619 000 N N $
TOSSIC TOPS 0 TLD NCRT IC MIDL 619 PTOP NLCA NSCR Y SP
          COMBINED N Y 0 0000 OSS 16 10 10 Y WINK $
  
```

Examples of senior operator setup

Consider the sample datafill for tables TQOGTKEY, TQCQPROF and TQOPROF that appears below. When an operator requires assistance on an emergency call, an operator presses the OGT key. The operator presses the two digit code 24 and the START key to request an emergency SO. The type of operator position in use determines the keying. The system uses datafill in table TQOGTKEY to select an outgoing trunk. The system selects a trunk based on the translation of the called digits 50. The outpulsing starts over the outrunk if the system has routing for a looparound trunk. The outpulsing causes a new call origination at the TOPS end of the looparound. The call queue assignment processing assigns CQ1 to the call based on the called digits received over the TOPS trunk. The call requests an operator that can serve queue CQ1. The system assigns operator 100 (the emergency SO) to the call based on the datafill tables TQCQPROF and TQOPRO. Operator 100 must be idle and must be the most idle operator serving call queue CQ1. The operator must be in agent queue AQ1. If emergency calls do not occur, operator 100 serves the queues CQ7 and CQ9. Profile 1 in table TQCQPROF indicates the queues.

Note: The SO uses a queue profile in table TQCQPROF. This profile specifies CQ1 as the highest priority of the SO. The priority task of the SO

QMS Host/Remote Queuing (continued)

is to serve emergency assistance calls. The secondary task is to serve other queues.

SOs can have the following setup:

- serve non-emergency SO requests from team of the SO as the primary task
- serve non-emergency SO requests from other teams as the next priority
- serve other customer originated traffic as the lowest priority

If an OTC has two teams with two SOs in each team, cross team routing with SOs can apply. To set this routing process use call queue profiles 2 and 3. The profiles appear in table TQCQPROF.

The SOs 200 and 300 in team A login with call queue profile 2. The SOs 400 and 500 in team B login with call queue profile 3. Call queue assignment processing assigns calls with called digits 60 to CQ2. Call queue assignment processing assigns calls with called digits 70 to CQ5. Operators in team A use the two digit code 26 to request an SO. Operators in team B use the two digit code 28 to request an SO. Based on the sample datafill, an operator in either team can receive an SO from the team of that operator if an SO is available. If an SO is not available, the operator receives an SO from the other team. Set the priority agent queue fields in table QMSCQDEF for call queues CQ2 and CQ5 to AQ2 and AQ3. The priority fields make sure that the CAM searches agent queue in team A first. The CAM searches for requests for an SO from an operator in team A. If SOs are not present in AQ2 (team A), the CAM searches AQ3 (team B).

MAP example for table TQOGTKEY

KEY	LABEL	KEYINFO
24	EMERG_SO	TQ_SO 50 OPER N 4
26	SO_TEAM_A_FIRST	TQ_SO 60 OPER N 5
28	SO_TEAM_B_FIRST	TQ_SO 70 OPER N 6

QMS Host/Remote Queuing (continued)

MAP example for table TQCQPROF

CQPROFNUM	DLAYCT4Q	AGENTQ	PRIOAREA				
1	DELAY4Q	AQ1	PROF	(CQ1 10)	\$		
				(CQ7 15)	(CQ9 10)	\$	\$
2	DELAY4Q	AQ2	PROF	(CQ2 10)	\$		
				(CQ5 10)	\$		
				(CQ6 10)	(CQ10 10)	\$	
3	DELAY4Q	AQ3	PROF	(CQ5 10)	\$		
				(CQ2 10)	\$		
				(CQ6 10)	(CQ10 10)	\$	

MAP example for table TQOPROF

OPRNUM	DFLTTEAM	SVCPRNUM	SELAREA				
100	5	0	CALLQ	1 %	Emergency	SO	
200	5	2	CALLQ	2 %	Regular	SO in Team A	
300	5	2	CALLQ	2 %	Regular	SO in Team A	
400	5	2	CALLQ	3 %	Regular	SO in Team B	
500	5	2	CALLQ	3 %	Regular	SO in Team B	

Senior operators versus service assistants

The SO class of operators is available to an OTC in addition to the Service Assistant (assistant and in-charge) class of operators. Service Assistants provide help to other operators. Service Assistants are different from SOs. The Service Assistants cannot serve subscriber initiated traffic. Service Assistants cannot complete the calls to which the Service Assistants provide help. Service Assistants can page and monitor other operators. Service Operators cannot page and monitor other operators. The differences between the abilities available with SOs and Service Assistants appear in the following figure.

Note: The entry of an SO with data appears as a normal operator position in table TOPSPOS. This conditions is different from assistant or in-charge positions

QMS Host/Remote Queuing (continued)

Abilities of senior operators compared to service assistants

Capability	Senior Operator	Service Assistant
Use QMS queueing	Yes	No
Call completion for assistance calls	Yes	No
Serve non-assistant traffic	Yes	No
Receive directed calls	Yes	Yes
Paging capability	No	Yes
Monitor capability	No	Yes

Coexistence of TOPS ACD and QMS CAM

Gradual introduction of the QMS CAM in an office with operator traffic can be necessary. This package provides the ability for the TOPS Automatic Call Distributor to coexist in an office with the QMS CAM. The TOPS ACD to refer to the ACD with the GEN, XFR1, XFR2 and DA queues. This package provides the ability to gradually change from the TOPS ACD to the QMS CAM by position and trunk group.

Datafill in table TOPSPOS requires that TOPS call processing use the specification of the ACD processing for each position entered. The ACD processing requires the use of TOPS ACD compared to QMS CAM. This process allows for the gradual change of operator positions from the TOPS ACD to the QMS CAM. Table TOPSTOPT specifies the ACD processing that TOPS call processing uses for each trunk group. The ACD processing requires the use of TOPS ACD and not QMS CAM. This process allows for the gradual change of TOPS traffic from the TOPS ACD to the QMS CAM.

Sample datafill for table TOPSPOS with QMS CAM specified as the ACD appears below. The location of the CAM is the core. Service profile 5 entered in table TQSVPROF indicates the position service abilities.

MAP example for table TOPSPOS

POSNO	VCCKT	VCPDGRP	CARDCODE	DATA PATH
300	TMS 1 2 5	NPDGP	DS1SIG	TMS MP ASCII 100 1
POSAREA				
OPR	1	QMSCAM	CORECAM	5

QMS Host/Remote Queuing (continued)

Sample datafill for table TOPSTOPT with QMS CAM specified as the ACD appears below. The location of the CAM is the core. The originating information are *uptown* and *downtown*. For trunks this table does not specify, the ACD is TOPSACD.

MAP example for table TOPSTOPT

GRPKEY	ACDDATA	DISPCLG	ADASERV
TOPSIN1	QMSCAM CORECAM Y UPTOWN	N	N
TOPSIN2	QMSCAM CORECAM Y DOWNTOWN	N	N

Usage of call queues for combined offices

Functionality Host/Remote Networking by Queue Type (feature NC0152), OSB00101, provides new names to the four queues the TOPS ACD uses. The names change from GEN, XFR1, XFR2 and DA to CQ0, CQ1, CQ2 and CQ3. Offices can have the TOPS ACD and the QMS CAM present at the same time. If this event occurs the operating company must reserve the first four call queues. The call queues are (CQ0—CQ3) for the TOPS ACD. The TOPS QMS can use call queues that begin with CQ4 in this condition.

Data store impact

This feature minimizes data store use. The system uses dynamic allocation of table data store when necessary. When you add tuples to the table, the system allocates the store. When you remove tuples from the tables, the system deallocates store. Small QMS TOPS applications require less data store than large QMS TOPS applications.

Real time impact

This feature minimizes the real time impact on the DMS system. An increase in call traffic results in a linear increase in real time. The QMS TOPS and the QMS CAM consume the real time. An increase in real traffic does not result in an exponential increase in real time. An increase in the number of operators and/or call queues that TOPS uses can occur. The increase does not have an important additional real time impact.

The number of call queues the operator serves affects the real time cost to select a call from queue. This condition occurs when an operator is available to serve the calls. More call queues in the profile of an operator, results in more work for the QMS CAM. The QMS CAM must select the most acceptable call for the operator. The QMS CAM call selection involves the total priorities and Assignable Grade of Service weights of the call queues in the profile. To minimize the real time cost the QMS CAM incurs, minimize the number of call queues that each operator serves. The number of call queues must not exceed the number of queues necessary to queue functionality.

QMS Host/Remote Queuing (continued)

The time for an available agent to search from 2 to 8 call queues appears in the following table. The agent can search for call queues in a host or standalone office. The table describes the amount of time that passes before the agent can find a queued call.

Agent search time for qualified call

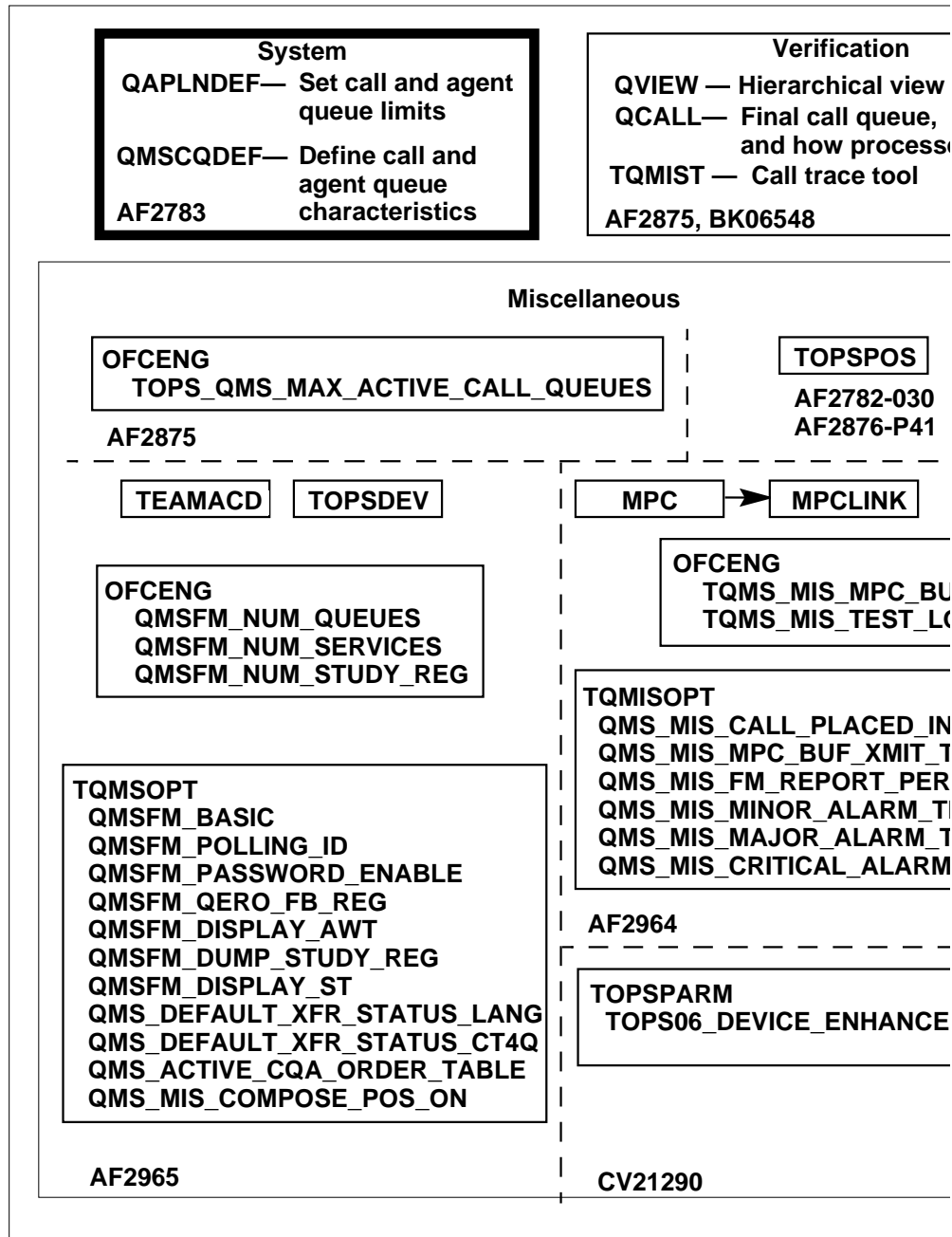
No. of call queues	Standalone (ms)	Host (ms)	Remote (ms)
2	3.4	0.9	2.8
4	3.7	1.2	2.8
6	4.0	1.5	2.8
8	4.3	1.8	2.8

AF2783—Call and Agent Manager

The datafill tables this feature provides appear in the following figure. Heavy lines enclose the datafill tables.

QMS Host/Remote Queuing (continued)

QMS datafill tables for feature AF2783



QMS Host/Remote Queuing (continued)

This feature controls the call and agent queues with the following tables. Agents can be operator, attendant, or any resource defined as available to handle calls. The datafill procedure section describes these queues in detail.

- QAPLNDEF (QMS Application Definition) specifies the call and agent queueing bounds for each application to allocate internal data store.
- QMSCQDEF (QMS Call Queue Definition) defines the characteristics of the call queues each application requires.

Data store impact

This feature minimizes the use of data store. The system allocates data store for applications that table QAPLNDE specifies. The table specifies the applications based on the limits specified in the tuple of each application.

Small applications require less data store than large applications. Small application includes applications that handle a small number of calls with a small number of agents. Applications must have data entries with the minimum values required to meet the needs of an application. Large values in table QAPLNDEF fields CALLQS, CQELEMS, AGENTQS, can affect data store impact and NUMAGNTS.

Real-time impact

This feature minimizes the real-time impact on the DMS system. An increases in call traffic for an application results in a linear increase in real time. The number of agents and/or call queues for an application can increase. This condition does not have an important additional real-time impact.

The number of call queues the agent serves affects the real-time cost to select a call from queue. This condition occurs when the agent is available to serve the call queues. Many call queues in the profile of an agent, requires more work to select the most acceptable call for the agent. The call selection involves the total priorities and Assignable Grade of Service weights of the call queues in the profile. To minimize the real-time cost minimize the number of call queues that the agent of each application serves. The number of call queues must not exceed the number of queues necessary to queue functionality.

The real-time cost of traversing agent queues is a secondary real-time factor. The traversing agent queues look for the most idle agent when the system presents an application. The application indicates that a call requires an agent. The system tracks the call queues that a specified agent queues. For example, agents with the call queue in their profile are present in the agent queue. During this condition, if many agent queues contain agents that can serve an incoming call, the system traverses each agent queue. The system searches for one of these agents, to determine which of the set of agents is idle the longest.

QMS Host/Remote Queuing (continued)

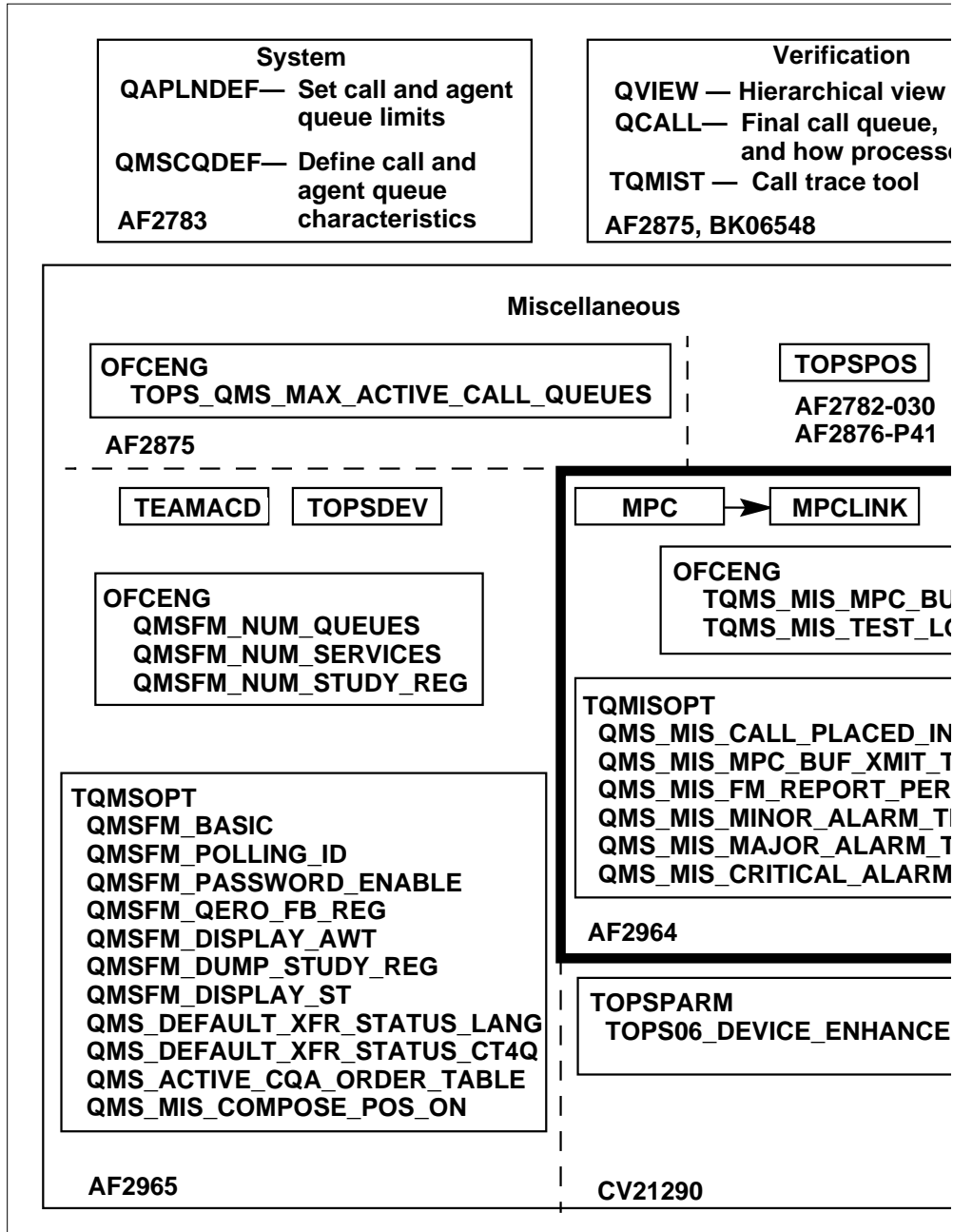
Minimize the number of agent queues employed. Provide a different agent queue for each broad functional category of agent in an application. The recommended approach is to provide the queue based on the primary function of each agent. Refer to table QAPLNDEF, field AGENTQS, for an example of two agent queues that are correct for an application.

AF2964—MIS Interface

The datafill tables this feature provides appear in the following figure. A heavy line encloses the datafill tables.

QMS Host/Remote Queuing (continued)

QMS datafill tables (continued)

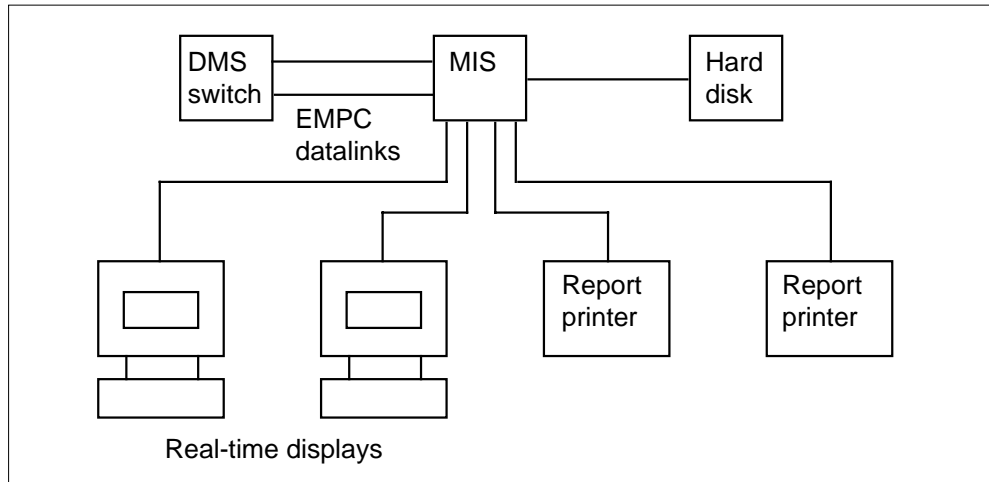


MIS system

The management information system (MIS) connection to the DMS switch appears in the following figure:

QMS Host/Remote Queuing (continued)

Example TOPS QMS MIS system configuration



The DMS switch communicates to the MIS through the MPC (Multi-Protocol Controller) system. The MPC system uses X.25 links to communicate with an outside vendor. The X.25 links use the CCITT-compliant 1984 X.25 protocol and support data transmission speeds of a maximum of 56 Kbps. To obtain a 56 Kbps transmission rate, use an EMPC card. An EMPC card can support a maximum of two *smart* 19.2 Kbps links, or one *smart* 56 Kbps V35 link and one 19.2 RS232 link. You must enter data into tables MPC and MPCLINK to define the location and protocol used by the EMPC links. The system adds a new table, QMSMIS to define which EMPC links associate with the TOPS QMS MIS application.

The following tables, defined in detail in the datafill procedure section, define this capability:

- MPC defines the location of an enhanced multiprotocol controller (EMPC) number.
- MPCLINK specifies link and protocol information for cards entered in table MPC.
- QMSMIS (QMS Management Information System) is a table that specifies the links for the TOPS QMS MIS interface.
- TQMISOPT (TOPS QMS Information Systems Options) is a table that contains QMS MIS parameters.
- TQMSOPT (TOPS QMS Options) is a table that contains QMS MIS parameters.
- OFCENG contains new QMS MIS parameters.

QMS Host/Remote Queuing (continued)

QMS MIS interface in TOPS OC

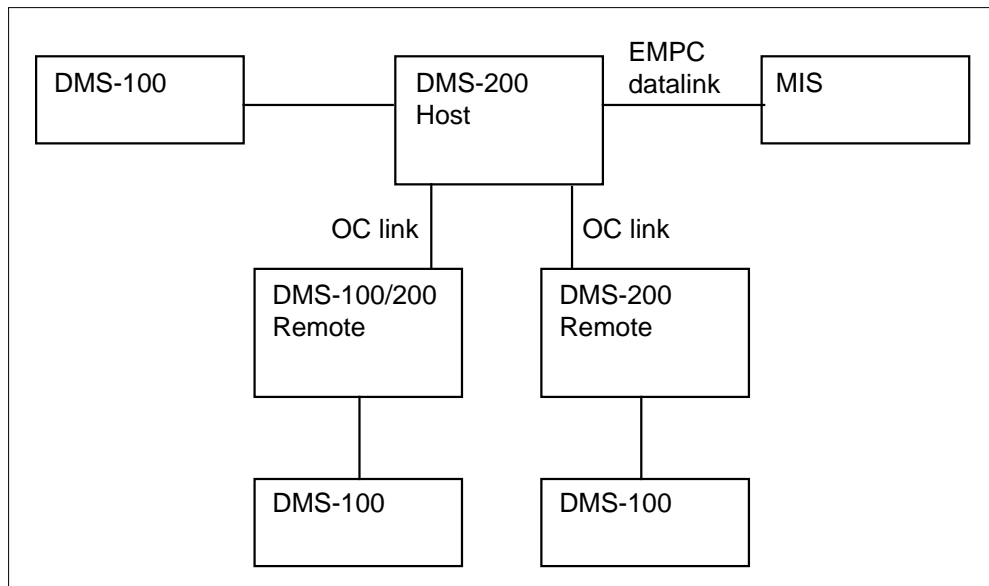
The operator centralization (OC) reduces the number of operators an operating company must employ, which reduces cost. In an OC environment, two types of switches are present. Host switches are switches where live operators are located. Remote switches are switches where TOPS calls can originate, but live operators are not present. Operators at Remote switches are not required. Call information for calls that originate at the remote transfers between the host and remote through OC datalinks.

Therefore, operator traffic originates at remotes and connects to operator positions at host(s) through voice and data links. For a call, the remote assigns a call queue and determines if an operator is necessary. If an operator is necessary, the remote notifies the host and the host selects an operator. Then, the remote connects the calling party to the operator. At the end of the call, the host releases the position and voice link, and the remote generates an AMA record. Refer to the following sections for more information on TOPS OC.

- Host OC Datalink, OSB00101
- Remote OC Datalink, OSB00101
- TOPS Closedown, OSB00101

The TOPS QMS MIS messages pass through the host before the messages output to the FM. The OC implementation of TOPS QMS MIS messaging appears in the following figure:

QMS MIS in TOPS Operator Centralization



QMS Host/Remote Queuing (continued)

LOGs

The logs appear as follows:

- QMIS100—MPC link failure
- EXT106—QMS minor link alarm
- EXT107—QMS major link alarm
- EXT108—QMS critical link alarm, QMS link process alarm, and QMS EMPC link buffers depleted alarm

OMs

The system adds the QMSMIS family.

Operator centralization

In an OC environment, datafill varies based on the configuration as follows:

- *Host* (acts as a standalone) — Datafill tables the Host QMS functionality presents must have datafill.
- *Host* (with one or more remotes) — The remote receives calls. The CT4Qs refine the calls. The CT4Qs send the calls to the call queues in the host. The operators are in the host. The datafill is as follows:
 - The system does not receive calls over trunks. Tables QMSTOPS and TOPSTOPT do not require datafill.
 - Enter data into the CT4Q refinement tables, CT4QNAMS, TQMSFCQA, and the FM tables only for delay (TQCQPROF) and known (TQMSSERV) calls. The host initiates these calls.
 - The tables that remain in the host require datafill for the calls CT4Qs in the remote switches receive and refine. The type of CT4Q in table TQMSFCQA of the remote, must correlate with the host tables that control the associated call queue. Tables TQCQINFO and TQCQPROF are examples of host tables.

A call in the remote can pass through the CT4Q refinement tables and reach table TQMSFCQA. If this event occurs the call queue number passes the call. The call queue number passes the call to the call queue in the host. The CT4Q name does not pass the call. Datafill must match between the host and remote based on call queue number and not the CT4Q.
 - Operator positions that provide directory assistance (DA) or intercept services must have different position numbers in table TOPSPOS. This condition applies across the network and to all software releases. Position numbers must be different between the host and remotes of the host, and between remotes off the same host.

QMS Host/Remote Queuing (continued)

- *Host* (acts as a standalone and as a host with one or more remotes) — This group is a combination of the above two configurations. To prevent confusion, use the call queues as a starting point. Each call queue must be dedicated and map to a switch (host or remote) and service.
- *Remote* — Enter the incoming trunk related tables (TOPSTOPT and QMSTOPS), the CT4Q refinement tables, table TQMSFCQA, and table TQOGTKEY. Enter tables TQCQINFO and TQMSSERV because call deflection can occur where the system requires a treatment. This event can occur because the remote provides treatments for these calls.

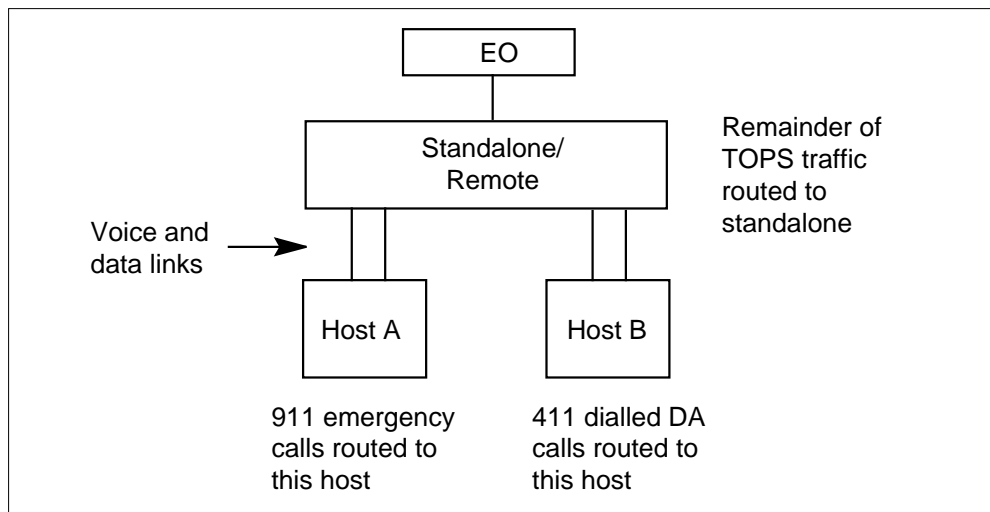
TOPS Close Down

The TOPS QMS that uses the time of day parameter for call queue assignment has priority over operator centralization TOPS Close Down, OSB00101.

Host/Remote Networking by Queue Type

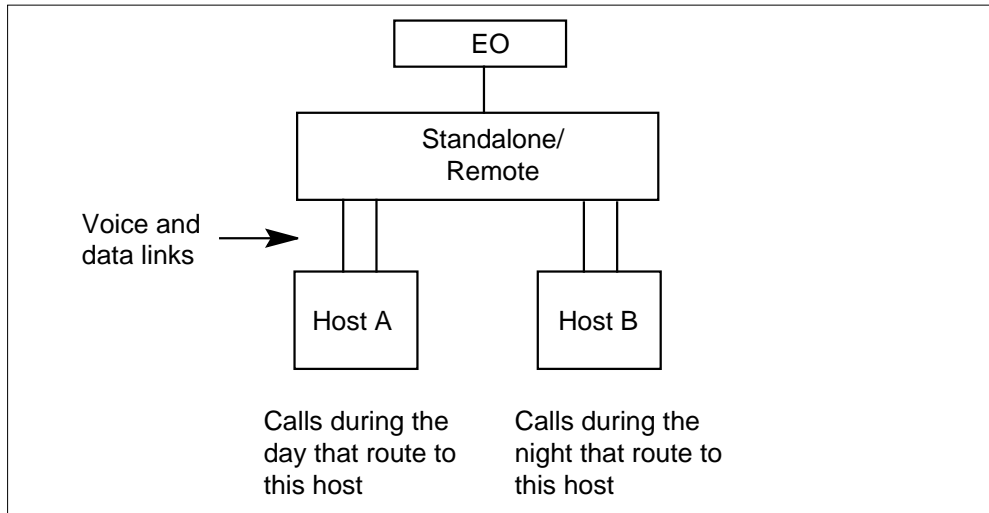
If functionality Host/Remote Networking by Queue Type, OSB00101, is present, the system can divide traffic between offices. The system can use many QMS standards to divide traffic. These standards include time of day, called digits, calling digits and inter-LATA carrier. Possible configurations appear in the following figures:

Separate traffic by called digits

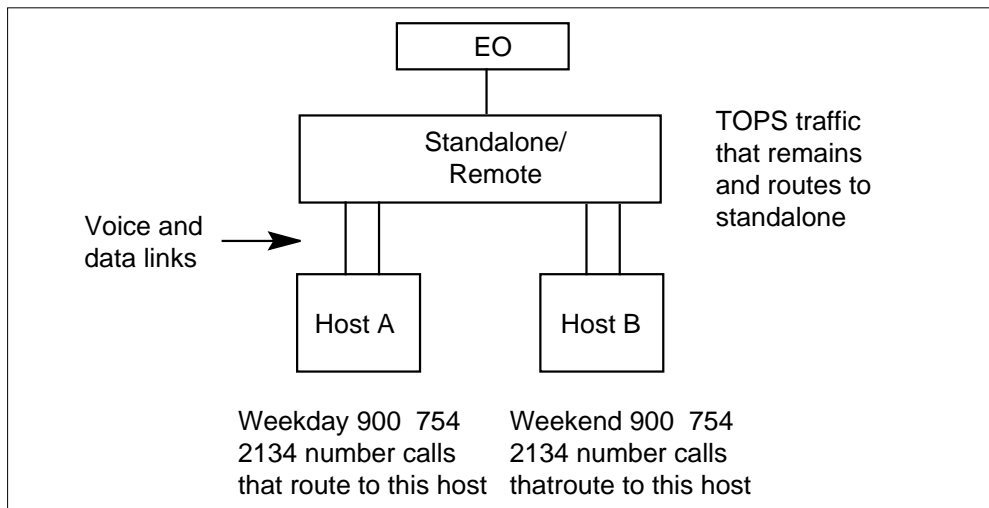


QMS Host/Remote Queuing (continued)

Separate traffic by time of day (OC closedown with TOPS QMS)

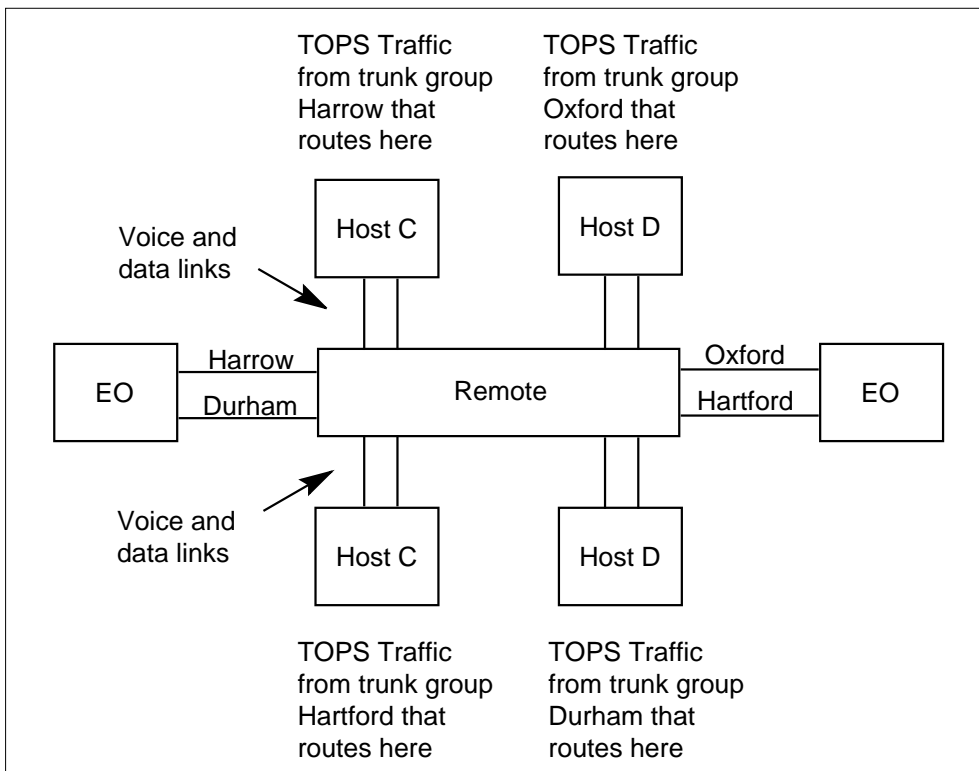


Separate traffic by called digits and time of day



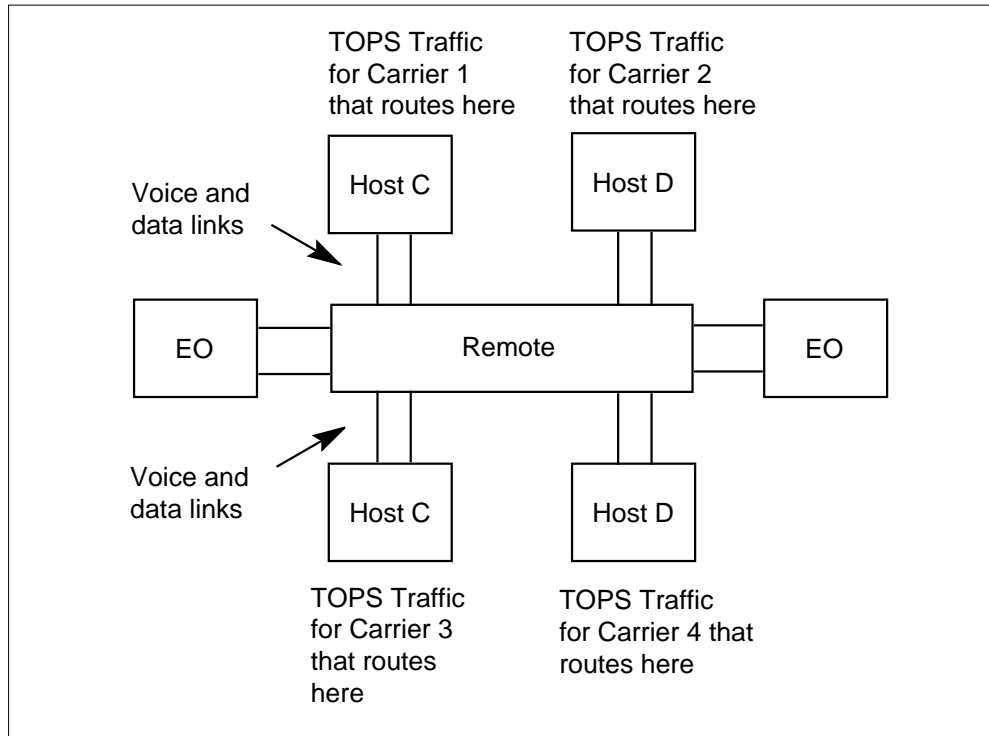
QMS Host/Remote Queuing (continued)

Separate traffic by incoming trunk or calling number



QMS Host/Remote Queuing (continued)

Separate traffic by Inter-LATA carrier



PRSs

The following PRSs can apply:

- PRS UV200614—Datafill in table CT4QNAMS must be identical between the host and remote switches. Refer to table CT4QNAMS.
- PRS CV21290—You can enter custom values (foreign language equivalents) for the QCD, QCW, QCQ and 25% QCT fields on TOPS04 force management positions. Parameters are added to table TOPSPARM.
- PRS BX07116—You can enter data for centralized automatic message accounting (CAMA) calls and the REQ CAMA function in the event of a failure. Controls to prevent problems are planned. The guidelines are as follows:
 - Set call origination CAMA and RCAMA to use CT4Q CAMA in table QMSTOPS.
 - Do not use the CT4Q CAMA of the CT4Q refinement tables, tables CT4QXXXX.
 - The CAMA/RCAMA calls, CT4Q CAMA calls, must go to a different call queue. Other types of calls must not go to the designated CAMA call queue in table TQMSFCQA.

QMS Host/Remote Queuing (continued)

If you do not follow the above guidelines CAMA calls arrive as 0+ calls and/or non-CAMA calls arrive when the user keys REQ CAMA.

- PRS BR42434 - Enter the CT4Q refinement tables before you enter the TQORDER tables, TQORDERA and TQORDERB. You can change the TQORDER tables before you finalize the CT4Q refinement tables. If this action occurs routing that is not correct for some calls can occur.
- PRS UT409915 - Datafill determines operator display of messages CALL COMP, MULT SERV and MULT REQS for ACD and QMS. This display is important when calls convert from ACD to QMS. The following

QMS Host/Remote Queuing (continued)

requirements apply for each of the displays. These requirements apply to TOPS MP and IWS operator positions.

— CALL COMP display:

– ACD:

Table OPRDAT, field SVCSET = TASERV (operator service profile)

Table DATRKOPT, field DACC = OH or ALL (incoming TOPS trunk)

Table DATRKOPT, field MULTREQ = 0 (incoming TOPS trunk)

– QMS:

Table DATRKOPT, field DACC = OH or ALL

Table DATRKOPT, field MULTREQ = 0

— MULT SERV display:

– ACD:

Table OPRDAT, field SVCSET = TASERV (operator service profile)

Table DATRKOPT, field DACC = OH or ALL (incoming TOPS trunk)

Table DATRKOPT, field MULTREQ does not equal 0 (incoming TOPS trunk)

– QMS:

Table DATRKOPT, field DACC = OH or ALL

Table DATRKOPT, field MULTREQ does not equal 0

— MULT REQS display

– ACD and QMS:

Table DATRKOPT, field DACC does not equal OH or ALL (incoming TOPS trunk)

Table DATRKOPT, field MULTREQ does not equal 0 (incoming TOPS trunk)

- PRS BX77689 - Table TQMSSERV, field AUTOAMA does not have an effect if the table does not change services. Refer to the description of this table and field in the datafill procedure section for additional details.
- PRS UT54592 - Table CT4QAUTO, a refinement table, must contain datafill. The table cannot be empty when you use automated services. If the table does not contain datafill, an automated system can request

QMS Host/Remote Queuing (continued)

additional help. The system can return the call to the service type that is not correct. This process causes SWERS and TQMS logs. Refer to the Remote Queue Management System functionality, table CT4QAUTO in the datafill procedure section for additional details.

- PRS UT63374 -When you datafill QMS, assistants are entered in table OPRDAT for every position type except MPX. Enter the assistant in table TQOPROF like the assistant is an operator.
- PRS 50039957 - Operator positions that provide directory assistance (DA) or intercept services must have different position numbers in table TOPSPOS. This condition applies across the network and to all software releases. Position numbers must be different between the host and remotes of the host, and between remotes off the same host.

General comments

The following are some general comments about QMS:

- The operating company does not require a change to the DA database. If new operator IDs are present, database personnel must register the IDs with the database.
- Table TOPSTOPT allows the conversion from ACD to QMS. This table selects QMS or ACD for each trunk group. The table can turn QMS on gradually. When the table returns to ACD in table TOPSTOPT, QMS can deactivate.

Translations table flow

See the QMS datafill tables figure at the beginning of the Operation section.

Limits

The following limits apply to QMS Host/Remote Queuing:

- TOPS QMS does not affect the queue of assistant and in-charge positions. Queues associated with assistant and in-charge positions do not change.
- The total number of QMS services in use with TOPS MP positions is 16.
- In TOPS, only one call with a Base Service of DASERV or INTCSERV can be present. One call can be present at a specified position and a specified time. If a DASERV call is present on one loop, a DASERV or INTCSERV call cannot appear on another loop. The operator cannot initiate another call on the other loop of the operator. This feature introduces the QMS TOPS strategy. This strategy assigns a CT4Q and Call Queue and QMS Service for delay calls. The QMS TOPS strategy portions

QMS Host/Remote Queuing (continued)

this action with the DLAYCT4Q field in table TQOPROF. An operator can encounter a condition like the following:

- A DASERV call is present on one loop.
- The operator attempts to access the second loop of the position. The profile of the operator has a CT4Q specified in the DLAYCT4Q field in table TQOPROF. If this CT4Q has an associated QMS Service with a Base Service of DASERV in table TQMSSERV, the following action occurs. The system denies the attempt to access the other loop. The DMS switch ignores the keying action because the action results in two DASERV calls at one position.

To avoid this condition, specify a CT4Q associated with a QMS Service that has a Base Service of TASERV. Specify this value in the DLAYCT4Q field. The Base Service applies to operator with profiles that indicate the operators can handle calls. The operators can handle calls with a Base Service of DASERV or INTCSEV. This action allows the system to make sure the operator can access a second loop. The operator can access the loop when an operator handles a call DASERV or INTCSEV. The operator handles the calls on the other loop of the operator.

- The propagation of coin signals over looparounds set up for SO does not occur. You must set the incoming side of the looparounds as combined non-coin TOPS trunks.
- The special two-stage OSS outpulsing created for the SO configuration does not have system support for Open Numbering Translations.
- An operator at a TOPS SP position configured as a QMS position in table TOPSPOS cannot login to the position. The operator cannot login when a call is present at a call position. The call must release from the position before the operator can login.
- Table DATRKOPT specifies the different BASE DA options for each trunk group basis. The system restricts QMS services with a base service of DA to the datafill of field MULTREQ in table DATRKOPT. This field specifies the number of multiple DA requests allowed for each call. You can set a field to one for a trunk and a QMS service call can arrive over that trunk. If this event occurs one additional BASE DA request can occur. This condition occurs when the QMS service call has a base service of DA. The operator cannot enter more than one QMS DA service for that call.
- Field NUMAGNTS in the TOPS tuple in table QAPLNDEF must have a value greater than or equal to the TRKGRSIZ field. The field appears for the TOPSPOS tuple in table CLLI. The QMS CAM can deny login of TOPS QMS operators with internal agent numbers that are out of range.
- For a call that passes from a general operator to a SO, the special two stage outpulsing occurs. The outpulsing results in the outpulse of the outtrunk

QMS Host/Remote Queuing (continued)

number in the signaling as the called number. The outpulse requires the SO to enter the called number to complete the call. The SOs can use verbal information from the general operator to determine if the call is customer dialed. The operators can use the CT4Q to determine if the customer dials the call. The operators use the Dial Rate key to apply the correct customer dialed rate.

- Phase 2 EBAF is necessary with TOPS QMS to support the Listing Services, General Assistance and Line number modules. The features record new services on automatic message accounting (AMA). Phase 2 EBAF is not necessary with TOPS QMS if the modules are not used (for example, with normal TA service).
- TOPS QMS supports a maximum of 254 call queues. The number of available outgoing trunk (OGT) entries limits the set of CT4Qs the operator can assign to a call. The limit is 100 OGT values.
- Use the CT4Q tables to refine the *interesting* traffic. Avoid datafill refinements of common traffic that are not important.
- Use caution when you change the order of the CT4Q tables when QMS operates in an office.
- QMS Force Management reports support 16 services. For data on the full range of 63 services, use feature AF2964 (MIS Interface).
- The system swaps registers for QMFADS, QFADS and QTADS reports every 15 min. If a report runs over 15 min, the report prints out data for the next 15 minute period. Reports must not run over 15 minutes.

AF2964—MIS Interface

The following items describe the AF2964—MIS interface:

- Enhanced multiprotocol controller (EMPC) links can be in-service. If this event occurs the system fills a buffer until an event occurs to trigger the transmission of the buffer. If links are not in service, the system discards the contents of the buffer. The messages in the buffer are lost.
- When a buffer is ready to transmit, an attempt to transmit on each link occurs. The attempt occurs until successful, or until the system tries all links. The buffer cannot always transmit correctly on a link. If this event occurs the system does not make more attempts to transmit the buffer at the application level. Messages in that buffer are lost.
- If an idle buffer is not available to fill with messages, messages that are composed during that time are lost. An example of when an idle buffer cannot receive messages occurs during periods of extremely high traffic.
- The switch time of day (TOD) can change forward past an FM report period boundary during the operation of the TOPS QMS MIS system.

QMS Host/Remote Queuing (continued)

When this process occurs the buffer that fills, closes off and the system transmits the buffer. The TOD jumps over the FM report period boundary during this process. For example, you can set the FM period to 5 min, and the time can be 7:09. If this event occurs the system sets the time again. The system sets the time to 7:12 and the buffer closes out.

- If the switch date, not time, changes, the FM report period limit does not change.
- The TOD can change and the hour can decrease, for example from 2:01 to 1:58. If this event occurs the system closes and transmits the filling buffer.

If the TOD changes backwards past an FM report period limit, the buffer does not close out. The buffer closes out when system reaches the next FM TOD report period. For example, the FM period is five minutes, and the time is 7:09. The system sets the time again to 7:01. The buffer closes out 7:05. This process results in an elapsed time of 8 min, not 5 min.

If the TOD changes forwards or backwards but does not cross an FM report period limit, the buffer does not close. The buffer closes when the next FM report limit occurs. For example, if you set the FM period to 5 min at 7:09. The system sets the time again to 7:06. The buffer closes out at 7:10. The elapsed time is eight minutes, not five minutes.

- During light event traffic, an FM report period can end and the system does not always detect the report for several seconds. The system can detect the report when an event or a QMS_MIS_MPC_BUFF_XMIT_TIMEOUT occurs. When the system detects the end of period the system closes the current buffer and sends it out. The next buffer the system sends out has the FM Report Period Boundary Reached set to True in the information message. The system can only send the next buffer out when the next QMS_MIS_MPC_BUFF_XMIT_TIMEOUT occurs. This process can occur up to 59 s later. Even when the indication of the FM Report Period Boundary Reached cannot transmit immediately, the MIS recognizes that a period ends. The MIS knows the message that belongs to which period.
- If a Cold or Reload switch restart occurs when buffered messages wait for transmission, the messages are lost.
- If a position has a call longer than 1:49, the Call Busy Work Volume (CBWV) associated with that call is wrong.

If an operator handles a call that lasts longer than the position event message timestamp *rolls over*. The timestamp does not take correct action. The MIS data increases.

An *appointment* call that provides multiple Directory Assistance listings can cause this condition. An increase occurs each time the operator activates a new service initiation. The operator can supply listings repeatedly without new service initiations. If this even occurs an increase

QMS Host/Remote Queuing (continued)

does not occur until the system releases the call from the position. If the call lasts more than 1:49, the timestamps *roll over* and the system loses CBWV.

- When EMPC links are not in service, the system fills a buffer until an event triggers the transmission. The system can discard the contents of the buffer and loses all messages. This process occurs if links are not in service after the system transmits the buffer.

Interactions

The QMS Force Management provides parallel interfaces for the following TOPS Force Management devices.

- Force Administration Data System (FADS)
Use this system for TOPS ACD positions. Offices equipped for QMS must use QFADS to provide functionality for QMS ACD positions that is like TOPS ACD.
- Mechanized Force Administration Data System (MFADS)
Use this system for TOPS ACD positions. Offices equipped for QMS must use QMFADS to provide functionality for QMS ACD positions that is like TOPS ACD.
- Traffic office Administration Data System (TADS)
Use this system for TOPS ACD traffic offices. The QMS traffic offices must use QTADS to provide functionality that is like TOPS ACD.
- Single-Office Administration Data System (SADS)
Use this system for the single traffic office TOPS ACD environment. A single system equivalent for SADS does not occur in QMS. A group system of QFADS and QTADS provides functionality for a single traffic office QMS ACD environment that is like TOPS ACD.

The Improved STATSPAC Force Management Capability does not report on QMS operators.

This feature adds new fields to TOPS FMCRT positions.

This feature changes the Force Management display of TOPS In Charge and Assistance positions in QMS traffic offices.

The QMS Force Management Centers require a MAP interface to use controlled traffic. The Centers require a MAP interface to provide queue threshold abilities. Tables QMSCQDEF and CTCQINFO set queue thresholds.

QMS Host/Remote Queuing (continued)

The TOPS QMS that uses the time of day requirement for call queue assignment replaces Operator centralization TOPS Close Down, OSB00101.

Activation/deactivation by the end user

QMS Host/Remote Queuing does not require activation or deactivation by the end user.

Billing

The following billing information is the same as in the Remote QMS.

The QMS provides new custom services. The services use module codes 55 (Listing Services) and 57 (General Assistance). These codes require EBAF Phase 2. Table TOPAMAOP must contain tuple EBAF_PHASE with the tuple set to PHASE2.

Module Code 055 records listing services (DA and Intercept) that require a Listing Service Database (LSDB). Module Code 057 records customer defined services that do not use a LSDB. These services include TOPS Inward calls, 0- calls without a called number, calls that report trouble and remote operator number identification (RONI) calls. The Module Code 057 is always present. The state of completion of the service does not affect this condition.

The Service Identification fields in these modules contains the service identifier from table QSERNAM. This table associates a service identifier for each service. Definition of these services occurs through table TQMSSERV.

A forward party can connect to a Listing or General Assistance type of service. If this event occurs the system appends Module Code 307 to the AMA record. This connection can occur for calls with a forward number entry. The module code appends to the AMA record to indicate that the operator entered a forward number. If the system requires a call completion record in this event, operators must close off the service. This process causes the system to generate a Listing Services or General Assistant record. The operator must start a Toll and Assist service before operators complete the call. This process causes the system to generate a Call Completion record.

An example record for module code 55 appears in the following figure.

QMS Host/Remote Queuing (continued)

Call code 055 (phase 2)

```
HEX ID:AA  STRUCTURE CODE:40752C  CALL CODE:194C
SENSOR TYPE:036C  SENSOR ID:0000000C  REC OFFICE TYPE:036C
REC OFFICE ID:0000000C  DATE:80217C  TIMING IND:00000C
STUDY IND:0200000C  SERVICE OBSERVED:0C  ORIG NPA:613C
ORIG NUMBER:2391234C  CONNECT TIME:0427380C
ELAPSED TIME:000000260C  OPERATOR IDS:1010200003101C
ACC OPERATOR WORK TIME:00250C  SERVICE FEATURE:000C
STATION SIGNALING IND:2C  SCREENING CODE:000C
CALLED NUMBER INPUT:1C  CALLING NUMBER SOURCE:1C
MODULE CODE:055C  SERVICE ID:905C
MEANS OF INFORMATION INPUT:1C  MEANS OF LSDB ACCESS:1C
LSDBS BOC ID:13333C  LSDB ACCESSES:FF  LISTING RESPONSE:2C
LISTING STATUS:111111100C  REQUEST COUNTER:001C
MODULE CODE:000C
```

An example of an AMA record the system generates for call code 057 (phase 2) appears in the following figure.

Call code 057 (phase 2)

```
HEX ID:AA  STRUCTURE CODE:40752C  CALL CODE:196C
SENSOR TYPE:036C  SENSOR ID:0000000C  REC OFFICE TYPE:036C
REC OFFICE ID:0000000C  DATE:80217C  TIMING IND:00000C
STUDY IND:0200000C  SERVICE OBSERVED:0C  ORIG NPA:613C
ORIG NUMBER:2391234C  CONNECT TIME:0427380C
ELAPSED TIME:000000230C  OPERATOR IDS:1010200003101C
ACC OPERATOR WORK TIME:00250C  SERVICE FEATURE:000C
STATION SIGNALING IND:2C  SCREENING CODE:000C
CALLED NUMBER INPUT:1C  CALLING NUMBER SOURCE:1C
MODULE CODE:057C  SERVICE ID:909C
DATABASE QUERIED:999C  MEANS OF INFORMATION INPUT:1C
REQUEST COUNTER:001C  COMPANY ID:FFFFFF
MODULE CODE:000C
```

Station Message Detail Recording

QMS Host/Remote Queuing does not affect Station Message Detail Recording.

QMS Host/Remote Queuing (continued)

Datafilling office parameters

The office parameters that QMS Host/Remote Queuing uses appear in the following table. Refer to *Office Parameters Reference Manual*, for additional information about office parameters.

Office parameters that are used by QMS Host/Remote Queuing

Table name	Parameter name	Explanation and action
OFCENG	TOPS_QMS_MAX_ACTIVE_CALL_QUEUES	This parameter limits the maximum number of entries for queues in table TQCQINFO. The range is 0 to 255.
OFCENG	QMSFM_NUM_SERVICES	<p>This parameter defines the number of services that 15 min QMFADS, QFADS and QTADS reports report. The range is 1 to 16. The 15 min reports send records for services 0 to (QMSFM_NUM_SERVICES -1). Service identifiers are entered in table TQMSSERV. The default is 3.</p> <p>Changes to QMSFM_NUM_SERVICES affect QMS Force Management reports immediately. A decrease in the value of QMSFM_NUM_SERVICES can result in reports that are not compatible. The reports are not compatible for the current period and the next period. To change the value of QMSFM_NUM_SERVICES during a QMS Force Management report can cause problems in that report.</p> <p>When an attempt to change the value of the parameter occurs, not enough available store can occur. Problems can occur when you try to allocate all the data registers that depend on the value of the parameter. When not enough store is present, the system updates the parameter. The system updates parameter with the smaller value between the old parameter value and the new value.</p>

QMS Host/Remote Queuing (continued)

Office parameters that are used by QMS Host/Remote Queuing

Table name	Parameter name	Explanation and action
OFCENG	QMSFM_NUM_QUEUES	<p>This parameter sets the number of queues of QMFADS, QFADS and QTADS 15 min reports. The range is 1 to 256. The 15 min reports send records for queue(s) 0 to (QMSFM_NUM_QUEUES -1). The default is 9.</p> <p>Changes to QMSFM_NUM_QUEUES affect QMS Force Management reports immediately. A decrease in the value of QMSFM_NUM_QUEUES can result in reports that are not compatible. These reports are not compatible for the current period and the next period. To change the value of QMSFM_NUM_QUEUES in the center of a QMS Force Management report can cause problems in that report.</p> <p>When an attempt to change the value of the parameter occurs, not enough available store can occur. Problems can occur when you try to allocate all the data registers depend on the value of the parameter. When not enough store is present, the system updates the parameter. The system updates the parameter with the smaller value between the old parameter value and the new value. The user enters the new value.</p>
OFCENG	QMSFM_NUM_STUDY_REG	<p>This parameter sets the number of operator study registers allocated for use by QMS operators. The range is 0 to 450. The default is 100.</p> <p>If correct changes to QMSFM_NUM_STUDY_REG occur, change the number of allocated study registers.</p> <p>A change to QMSFM_NUM_STUDY_REG is not correct if the parameter decreases. A change is not correct if the number of registers assigned to the parameter is greater than the new value. If this event occurs, the user receives a list of operators to release from the study registers.</p> <p>When QMSFM_NUM_STUDY_REG changes, the DMS switch allocates a new QMS study register table. The switch starts the new study registers. During this period, the DMS switch does not allow the assignment of any new QMS study registers.</p>

QMS Host/Remote Queuing (continued)

Office parameters that are used by QMS Host/Remote Queuing

Table name	Parameter name	Explanation and action
OFCENG	TQMS_MIS_MPC_BUFFS	<p>Indicates the number of 8K buffers to allocate for TOPS QMS MIS. The range is 2 to 16 (if switch store is available). The more links allocated, the less risk that the system can discard messages because of not enough buffers in high traffic.</p> <p>The default is 2.</p> <p>The number of buffers allocated for TOPS QMS MIS can increase or decrease dynamically. The system does not deallocate store associated with a decrease until the next switch restart.</p>
OFCENG	TQMS_MIS_TEST_LOGS	<p>This parameter turns on/off the test logs in a laboratory environment. Set this parameter to a group of the following: INFO, POS, QUE, ALL, NONE.</p>
OFCENG	OFFICE_ID_ON_AMA_TAPE	<p>In a QMFADS report, the TOPS Office Identifier field contains the office identifier entered in parameter OFFICE_ID_ON_AMA_TAPE.</p>
OFCENG	TOPS_NUM_TRAFFIC_OFFICES	<p>A FADS report prints records for all traffic offices the TOPS_NUM_TRAFFIC_OFFICES parameter specifies. The system prints records even if the traffic office is not completely QMS ACD or TOPS ACD. Traffic office records printed for offices entered as QMS in table TEAMACD have all fields set to 0. When the system prints records from a FADS device, discard records for QMS offices.</p>

Datafill sequence

The tables that require datafill to implement QMS Host/Remote Queuing appear in the following table. The tables appear in the correct entry order.

Datafill requirements for QMS Host/Remote Queuing

Table	Purpose of table
CT4Q refinement and associated tables:	
CT4QNAMS	Define CT4Q names.
QMSTOPS	Assign initial CT4Q.
TQCLDNAM	Define called number names.

QMS Host/Remote Queuing (continued)

Datafill requirements for QMS Host/Remote Queuing

Table	Purpose of table
TQCLDDIG	Define called digits.
CT4QCLD	Called number requirement
TQORGNAM	Define calling number names
TQORGDIG	Originating digits requirement: define digits
CT4QORIG	Originating digits requirement
TQDAYNAM	Define day types
TQTIMENM	Define time requirement names
TQHOLIDAY	Define holidays
TQWKDAY	Define days of week
TQDAYDEF	Assign day types to time requirement
CT4QTIME	Time of day or week requirement
TQCARNAM	Define carrier names
DNPIC	Maps a directory number (DN) to a primary inter-LATA carrier (PIC)
TOPEACAR	Specifies if operator services are available for carriers and defines the billing procedure for calls to that carrier.
TQCARDIG	Define carrier digits
CT4QCAR	Inter LATA carrier requirement
SPLDNID	Use for special directory number index into table RESTBIL or DARSTBIL
OSSCAT	Define SLT automatic number identification (ANI) codes for use in table SLTANIID
SLTANIID	Use for special line traffic ANI index into table RESTBIL or DARSTBIL
RESTBIL	Datafill for T&A restricted billing. Use to define field RESTBIL for use in table CT4QREST.
DARSTBIL	Datafill for DA restricted billing. Use to define field RESTBIL for use in table CT4QREST.
CT4QREST	Restricted billing index requirement
TOPSLANG	Define language for use in table CT4QLANG

QMS Host/Remote Queuing (continued)**Datafill requirements for QMS Host/Remote Queuing**

Table	Purpose of table
CT4QLANG	Language requirement
CT4QCLAS	Class of service requirement
CT4QPFXT	Dialled prefix type requirement
CT4QAUTO	Partially automated service requirement
TQORDERA	Order the CT4Q tables
TQORDERB	Order the CT4Q tables. At the start datafill TQORDERA and TQORDERB the same.
Tables associated with call and agent queues:	
TQMSSERV	Define services
TQSVPROF	Set of services
TEAMACD	Select QMS for QMS position teams
TOPSPOS	Specify QMSCAM as ACD and service profile
TQCATNAM	Define call category name. Enter data if controlled traffic.
TQCATDEF	Associate call type with category name. Enter data if controlled traffic.
TQCTPROF	Set of call types. Enter data if controlled traffic.
QAPLNDEF	Set call and agent queue limits
QMSCQDEF	Define call and agent queue characteristics
TQCQPROF	Call queue profile
TQOPROF	Operator profile
TQCQINFO	Assign service to call queue
TQMSFCQA	Assign final call queue
TRKGRP	Enter data if SO. Connect a SO through looparound trunk for table TQOGTKEY.
TQOGTKEY	Operator assigns call queue again
FM tables:	
TQFMNAMS	Define FM call type names

QMS Host/Remote Queuing (continued)

Datafill requirements for QMS Host/Remote Queuing

Table	Purpose of table
TQFMCT4Q	Assign FM call type name to CT4Q
TQFMCLAS	FM class of service requirement
TQFMREST	FM restricted billing index requirement
TQFMCLDT	FM called number requirement
TQCLSNAM	Define call classes (FM)
TQCLSDEF	Associate call type and class (FM)
TOPSDEV	Add 3 new QMS FM devices
TOPSPARM	Customize FM status displays
Miscellaneous tables:	
MPC	Multi-protocol controller. This table contains values required to implement the multi-protocol controller in the DMS switch. This table defines equipment and load files for the EMPC link.
MPCLINK	Multi-protocol controller link table. This table specifies link and protocol information for cards datafilled in table MPC.
QMSMIS	Defines links that QMS MIS interface uses
TQMSOPT	Contains parameters that set QMS options
TQMISOPT	Contains parameters that set QMS options
TOPSTOPT	Select QMS/TOPS ACD for each trunk. Datafill of this table activates the QMS system; always datafill last.

QMS Host/Remote Queuing (continued)

Datafilling table CT4QNAMS

Call Type for Queueing Names is a table that defines CT4Q call queues that other tables use. The following table describes the fields:

Datafilling table CT4QNAMS

Field	Subfield or refinement	Entry	Explanation and action
CT4QNUM		0 to 2046	CT4Q number. This field is the index to the table. The first two tuples, UNSPEC and CAMA, are reserved. The refinement of CAMA calls cannot occur. The calls must have a different call queue. The use of refinement can break the REQ CAMA function.
CT4QNAME		1-32 character name	Call type for queueing name. Enter a CT4Q name of CT4Q for use by the other CT4Q tables. Fields CT4QNUM and CT4QNAME must match between the host and remote switches to avoid problems. The system can send a call assigned to a final CT4Q in a remote switch to the host switch. The system sends the call to the host switch for a controlled traffic (CT) operator. An idle operator cannot receive the call. The call goes to a CALLQ operator or a queue. This process occurs because the CT4QNAME passes from the remote to host switch. UNSPEC and centralized automatic message accounting (CAMA) are default, reserved entries.
NOAMA		Y or N	No automatic message accounting indicator. Enter Y (yes) if an AMA record is not necessary Enter N (no) if an AMA record is necessary
SYSAREA		refer to subfield	System area. This field contains subfield SYSAREA_SEL and the refinements of the field.

QMS Host/Remote Queuing (continued)

Datafilling table CT4QNAMS

Field	Subfield or refinement	Entry	Explanation and action
	SYSAREA_ SEL	TOPSOPR or OSSAIN	System area select. The system can route a call through QMS to a final call queue. When this event occurs this field directs the call to an operator (TOPSOPR). This field can direct the call to an OSSAIN service node (OSSAIN). The datafill for OSSAIN, must appear in table OAINCTLA. This table must have data entries. Additional fields do not require datafill. If you enter TOPSOPR, enter subfields CT4QDISP and AUTOORDB.
	CT4QDISP	refer to subfield	CT4Q display. This field contains subfield CT4QDISP_SEL and refinements.
	CT4QDISP_ SEL	Y or N	CT4Q display selector. Enter Y if a special display is necessary for this CT4Q and datafill refinement DISPLAY. Enter N if a special CT4Q display is not necessary
	DISPLAY	1 to 8 characters	Display. If field CT4QDISP_SEL = Y, datafill this refinement. Enter 1-character to 8-character.
	AUTOORDB	refer to subfield	Automated operator reference database. This field contains subfield AUTOORDB_SEL.
	AUTOORDB_ SEL	Y or N	AUTOORDB Selector. If an AUTOORDB session starts, enter Y and datafill refinement ORDBVAL. Enter N if AUTOORDB is not used.
	ORDBVAL	0 to 100	AUTOORDB value. If the entry in field AUTOORDB_SEL is Y, enter this refinement. This field is an index in AUTOORDB.

Datafill example for table CT4QNAMS

Sample datafill for table CT4QNAMS appears in the following figure.

QMS Host/Remote Queuing (continued)

MAP example for table CT4QNAMS

NUM	CT4QNAME	NOAMA	SYSAREA
	UNSPEC	N	TOPSOPR N N
	CAMA	N	TOPSOPR N N
	0_MINUS	N	TOPSOPR N N
	0_MINUS_COIN	N	TOPSOPR N N
	0_MINUS_COIN_CARRIER1	N	TOPSOPR N N
	0_MINUS_HOTEL_ACME	N	TOPSOPR Y ACM_ORDB Y 10
	0_MINUS_STATION	N	TOPSOPR N N
	DA_411	N	TOPSOPR N N
	DA_411_COIN	N	TOPSOPR N N
	DA_411_NONCOIN	N	TOPSOPR N N
	DA_555	N	TOPSOPR Y 555_ORDB Y 31
	CUSTOMER_NAME_AND_ADDRESS	N	TOPSOPR Y CNA N
	BUSINESS_OFFICE_FUNCTIONS	N	TOPSOPR Y BIZ_ORDB Y 44

In the above example, 0_MINUS_COIN_CARRIER1 is 0- traffic from coin telephones handled by CARRIER1.

Datafilling table QMSTOPS

The Queue Management System TOPS table provides the first CT4Q for operator-handled calls marked for QMS in table TOPSTOPT. The descriptions of the fields appear in the following table:

Datafilling table QMSTOPS

Field	Subfield or refinement	Entry	Explanation and action
CO		name from table TOPS	Call origination type. Enter a CO type name defined in the fixed group in table TOPS.
CT4Q		name from table CT4QNAMS	Initial call type to queue defined in table CT4QNAMS. This queue is the first call queue assignment of calls based on call origination type.

Datafill example for table QMSTOPS

Sample datafill for table QMSTOPS appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table QMSTOPS

CO	CT4Q
UNSPEC	UNSPEC
OH	0_MINUS
OA	0_PLUS
DD	1_PLUS
555	DA_555
INTC	INTC
411	DA_411
HOM555	HOM_555
FOR555	FOR_555

Datafilling table TQCLDNAM

The TOPS QMS Called Name table defines the called requirement names used in table CT4QCLD. The descriptions of the fields appear in the following table:

Datafilling table TQCLDNAM

Field	Subfield or refinement	Entry	Explanation and action
CLDCODE		0-126	Called digits code. This field is the index in this table. This entry is a code for the called number.
CLDCRIT		1-32 character name	Called digits criterion. Enter the name associated with a type of called number. Tables TQCLDDIG and CT4QCLD use this name.

Datafill example for table TQCLDNAM

Sample datafill for table TQCLDNAM appears in the following example.

MAP example for table TQCLDNAM

CLDCODE	CLDCRIT
0	UNKNOWN_CLDCRIT
1	CUSTOMER_NAME_AND_ADDRESS_DN
2	BUSINESS_OFc_DN
3	TIME_WEATHER_DN
4	PROTOTYPE_SERVICE_DN

QMS Host/Remote Queuing (continued)

The first entry in table TQCLDNAM has a fixed value. You cannot delete the first entry. You can use this entry in table CT4QCLD to separate traffic when the CLDCRIT is not known. For example, a 0- call that does not have a called number.

Datafilling table TQCLDDIG

The TOPS QMS Called Number Digits table associates the called requirement name from table TQCLDNAM with called digits. The called digits are for use in table CT4QCLD. The following table describes the fields.

Datafilling table TQCLDDIG

Field	Subfield or refinement	Entry	Explanation and action
CLDDIGS		1 to18 digits	Called number digits. This field is the key field of the table. Enter 1 to 18 digits that correspond to a group of called numbers that begin with the specified digits.
CLDCODE		code from table TQCLDNAM	Called number code from table TQCLDNAM for use in table CT4QCLD.

Datafill example for table TQCLDDIG

Sample datafill for table TQCLDDIG appears in the following example.

MAP example for table TQCLDDIG

CLDDIGS	CLDCODE
5551313	CUSTOMER_NAME_AND_ADDRESS_DN
560	BUSINESS_OFC_DN
71628	MAIDENHEAD_DN
81502	OXFORD_DN
936	TIME_WEATHER_DN
9761234	PROTOTYPE_SERVICE_DN

The data that appears above associates the CUSTOMER_NAME_AND_ADDRESS_DN with a call that has called digits of 5551313. The data associates the BUSINESS_OFC_DN with a call that has called digits of 560XXXX. For example, calls with dialed digits 5601212, 5601234, and 5609999, are CLDCRIT of BUSINESS_OFC_DN. The North American dialing plan requires a seven digit DN. The system can match all

QMS Host/Remote Queuing (continued)

calling numbers of length 3 to 18, which begin with 560. For example, the 560 entry matches 56013, 56098 and 56022 in a country with 5-digit directory numbers. The system works in countries with variable length directory numbers. For example, 936 matches 93655, 936123456789 or 93611111. A call that does not find a match for the called digits in table TQCLDDIG skips table CT4QCLD.

The called digits of the call can match a CLDCRIT in table TQCLDDIG. If this event occurs the system uses this value as a requirement in table CT4QCLD. See the sample datafill for table CT4QCLD.

Datafilling table CT4QCLD

The Call Type for Queueing Called Number Type Criterion table refines the CT4Q through the dialed digits. A large range of called digits can occur. The range has negative effects on data store and run-time performance. Use tables TQCLDNAM and TQCLDDIG too avoid this problem,

Table TQCLDNAM defines the called criterion names and table TQCLDDIG associates these names with called digits.

The descriptions of the fields in table CT4QCLD appear in the following table:

Datafilling table CT4QCLD

Field	Subfield or refinement	Entry	Explanation and action
OLDCT4Q		name from CT4QNAMS	Current call queue name defined in table CT4QNAMS. This field is a key field.
CLDCRIT		name from TQCLDNAM	Called number criterion. Definition of values occurs in table TQCLDNAM. This field is a key field.
NEWCT4Q		name from CT4QNAMS	New call queue name to assign call that meets criterion. Table CT4QNAMS defines the name

Datafill example for table CT4QCLD

Sample datafill for table CT4QCLD appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table CT4QCLD

OLDCT4Q	CLDCRIT	NEWCT4Q
1_PLUS	TIME_WEATHER_DN	1_TIME_AND_WEATHER
1_PLUS	PROTOTYPE_SERVICE_DN	1_PROTOTYPE_SERVICE
1_PLUS	BUSINESS_OFC_DN	1_BIZ_OFC
1_PLUS	CUSTOMER_NAME_AND_ADDRESS_DN	1_CNA

The sample values of CLDCRIT selected for the above examples describe the different uses for CT4QCLD. The BUSINESS_OFC_DN describes the use of TOPS QMS to route traffic from the business office of the operator to a group of operators. Other features that the operating company can select are:

- the enhanced force management capabilities
- force reduction of folding the business office functions in the operator service center.

The PROTOTYPE_SERVICE_DN value is a feature of TOPS QMS. This value allows the operating company to prototype new services for each called DN. The new services can route these calls to a special group of operators. A new service an operator can provide is a candidate for a prototype. Some possible examples of design services include:

- weather forecasts for travellers
- customer name and address
- hotel/restaurant guide
- operator-assisted yellow pages.

Datafilling table TQORGNAM

The TOPS QMS Originating Name table defines original location names for use in the following tables:

- CT4QORIG
- TQORGDIG or TOPSTOPT

QMS Host/Remote Queuing (continued)

Descriptions of the fields appears in the following table:

Datafilling table TQORGNAM

Field	Subfield or refinement	Entry	Explanation and action
ORGCODE		0-126	Originating digits. Index into table.
ORGCRIT		1-32 character name	Originating code criterion. Enter a name that defines an originating call location. The following tables use this name: <ul style="list-style-type: none"> • CT4QORIG • TQORGDIG or TOPSTOPT • TQORGDIG for association with calling digits • TOPSTOPT for association with an incoming trunk group.

Datafill example for table TQORGNAM

Sample datafill for table TQORGNAM appears in the following example.

MAP example for table TQORGNAM

ORGCODE	ORGCRIT
0	UNKNOWN_ORGCRIT
1	CAMBRIDGE_EXCHANGE
2	DISABLED_SUBSCRIBER
3	VIETNAMESE_AREA
4	DOWNTOWN_EXCHANGE
5	HARROW_GATE_EXCHANGE
6	SPANISH_AREA
7	DOWNTOWN_EXCHANGE
8	FRENCH_AREA
9	MAIDENHEAD_EXCHANGE
10	OXFORD_EXCHANGE

The first entry in table TQORGNAM has a fixed value. You cannot delete the first entry entry. You can use the entry in table CT4QORG to separate traffic for which a ORGCRIT is not known.

Datafilling table TQORGDIG

The TOPS QMS Originating Digits table associates originating digits with an originating digit code for use in table CT4QORIG. Table TQORGDIG is a

QMS Host/Remote Queuing (continued)

digilator. For a digilator, the key is a group of 1 to 18 digits that correspond to a group of calling numbers. The numbers begin with the specified digits.

Enter table TQORGNAM before table QMS Host/Remote Queuing.

Descriptions of the fields appear in the following table:

Datafilling table TQORGDIG

Field	Subfield or refinement	Entry	Explanation and action
ORGDIGS		1-18 numeric digits	Originating digits. This field is a key field of the table. Enter a digilator field that describes a set of calling numbers.
ORGCRT		name from table TQORGNAM	Originating code criterion. Enter a name that defines an originating call location based on the provide digilator key. Definition of this name occurs in table TQORGNAM. This name is for use in table CT4QORIG.

Datafill example for table TQORGDIG

Sample datafill for table TQORGDIG appears in the following example.

MAP example for table TQORGDIG

ORGDIGS	ORGCRT
223	CAMBRIDGE_EXCHANGE
2721132	DISABLED_SUBSCRIBER
3362	VIETNAMESE_AREA
3424	DOWNTOWN_EXCHANGE
423	HARROW_GATE_EXCHANGE
455	SPANISH_AREA
571	DOWNTOWN_EXCHANGE
583	FRENCH_AREA
628	MAIDENHEAD_EXCHANGE
865	OXFORD_EXCHANGE

If the system cannot find a match for the calling DN in table TQORGDI, the system checks field ORGCRT in table TOPSTOPT. The system checks the field if the calling DN is not available. This condition can occur for operator number identification (ONI) or automatic number identification failed (ANIF). An entry for ORGCRT value against the CLLI of the incoming trunk is not

QMS Host/Remote Queuing (continued)

always present. If this value is not present the value UNKNOWN_ORGCRIT applies to the call. The value is in table TQORGNAM.

You can use table TOPSTOPT, field ORIGCRIT to segregate traffic based on trunk group. One group of operators can have more information on UPTOWN traffic and another group can have more information on DOWNTOWN traffic. You can segregate traffic for the above condition. Data entry for table TOPSTOPT appears as follows:

MAP example for table TOPSTOPT

GRPKEY	ACDDATA		DISPCLG	ADASERV
DOWNTOWN	QMSCAM	CORECAM Y	DOWNTOWN_TRK	N N
UPTOWN	QMSCAM	CORECAM Y	UPTOWN_TRK	N N
TBFRENCH2	QMSCAM	CORECAM Y	FRENCH_AREA	N N
TBSPANSH1	QMSCAM	CORECAM Y	SPANISH_AREA	N N
TBXWYZ75	QMSCAM	CORECAM N		N N

The FRENCH_AREA and SPANISH_AREA standards appear in TOPSTOPT and TQORGDIG. The system can use the trunk group to catch calls not marked as FRENCH or SPANISH for the calling number.

The calling trunk group can be a common parameter. Offices can apply this parameter to a large part of incoming traffic and plan to refine the CT4Q by several information. If this condition occurs apply table CT4QORIG late in the CT4Q refinement process. If you do not perform this action, the tuples that refine the CT4Q of each call multiply. The CT4Q require these tuples. The tuples multiply by several CT4Qs derived from CT4QORIG. This warning is not limited to table CT4QORIG. Some criteria applies to a large segment of traffic. This criteria divides traffic into the largest number of CT4Qs. Apply this criteria after you apply criteria that applies to a smaller segment of traffic.

An office can separate office traffic by 20 different ORGCRITs, 5 different CLASCRTs, and 2 different PFXTCRTs in to a total of $(20 \times 5 \times 2 = 200)$ distinct final CT4Qs. If the order of tables is {CT4QPFXT, CT4QCLAS, CT4QORIG} then $2 + (2 \times 5 = 10) + (10 \times 20 = 200) = 212$ tuples are necessary in the three tables. A less efficient order of {CT4QORIG, CT4QCLAS, CT4QPFXT} results in $20 + (20 \times 5 = 100) + (100 \times 2 = 200) = 320$ tuples are necessary in the three tables. The order of the CT4Q tables can effect the total datafill required for those tables as the use of the tables increases. The previous figures describe this process.

QMS Host/Remote Queuing (continued)

When the system determines an originating location for the call, the system references table CT4QORIG. See the table CT4QORIG sample datafill for an example that uses datafill from the preceding tables.

Datafilling table CT4QORIG

The Call Type for Queueing Originating Location Criterion table provides local knowledge operators for DA calls. The tables route 411 calls that originate from specified areas to operators with knowledge of those areas. This table routes traffic from disabled, or physically-challenged subscribers, to special groups of operators. These operators have special training or equipment to serve these subscribers. You can use this table to separate traffic based on language needs of different locations. A group of DNs or a trunk group can contain a group of subscribers that speak a different language. If this event occurs you can use this origination parameter to select a CT4Q with operators that speak that language.

A large range of possible calling digits that affect data store and run-time production can be present. Data entries must appear in the associated tables TQORGNAM and TQORGDIG and in table CT4QORIG.

See tables TQORGNAM and TQORGDIG for additional information.

The descriptions of the fields for table CT4QORIG appears in the following table:

Datafilling table CT4QORIG

Field	Subfield or refinement	Entry	Explanation and action
OLDCT4Q		name from table CT4QNAMS	Current call queue name defined in table CT4QNAMS
ORGCRT		Originating number criterion	Originating number criterion. Definition of values occurs through table TQORGNAM.
NEWCT4Q		name from table CT4QNAMS	New call queue name to assign call that meets criterion. The definition for the name is in table CT4QNAMS

Datafill example for table CT4QORIG

Sample datafill for table CT4QORIG appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table CT4QORIG

OLDCT4Q	ORGCRT	NEWCT4Q
0_MINUS	DISABLED_SUBSCRIBER	0_MIN_DISABLED
DA_411	DOWNTOWN_EXCHANGE	DA_411_DOWNTOWN
DA_411	DOWNTOWN_TRK	DA_411_DOWNTOWN
DA_411	UPTOWN_TRK	DA_411_UPTOWN
0_MINUS	SPANISH_AREA	0_MINUS_SPANISH
0_MINUS	VIETNAMESE_AREA	0_MINUS_VIETNAMESE
0_MINUS	FRENCH_AREA	0_MINUS_FRENCH

Datafilling table TQDAYNAM

The TOPS QMS Day Names table defines the types of days for use in the following tables:

- TQDAYDEF
- TQHOLIDAY
- TQWKDAY

This definition occurs to segregate traffic in table CT4QTIME. The descriptions of the fields appears as follows:

You cannot delete values in field DAYTYPE from table TQDAYNAM if the values are in use in tables TQDAYDEF, TQHOLIDAY, or TQWKDAY.

See table CT4QTIME for a table flow figure of the associated time tables. A description of the fields appears in the following table:

Datafilling table TQDAYNAM

Field	Subfield or refinement	Entry	Explanation and action
DAYCODE		refer to subfield	Day code. This field contains subfield DAYCODE. This field is the key field of the table.
	DAYCODE	0 to 126	Day code. Enter a numeric value that associates an integer index with each entry in field DAYTYPE.
DAYTYPE		1-32 character name	Type of day. Enter a name associated with a type of day (for example, WEEKDAY, HOLIDAY). Use this field in tables TQDAYDEF, TQHOLIDAY and TQWKDAY.

QMS Host/Remote Queuing (continued)

Datafill example for table TQDAYNAM

Sample datafill for table TQDAYNAM appears in the following example.

MAP example for table TQDAYNAM

DAYCODE	DAYTYPE
0	WEEKDAY
1	WEEKEND
3	MOTHERS_DAY
4	BANK_HOLIDAY

Datafilling table TQTIMENM

The TOPS QMS table defines the types of time periods like light or heavy traffic, that tables TQDAYDEF and CT4QTIME use.

Entries to tables CT4QTIME and TQDAYDEF must occur after TQTIMENM.

You cannot delete an entry in field TIMECRIT from table TQTIMENM if tables CT4QTIME or TQDAYDEF use that value.

See table CT4QTIME for a table flow figure of the associated time tables. The descriptions of the fields appears in the following table:

Datafilling table TQTIMENM

Field	Subfield or refinement	Entry	Explanation and action
TIMECODE		0-126	Index into table.
TIMECRIT		alphanumeric (1-32 characters)	Time name criterion. Enter a name that describes the associated time period. Use this field in tables CT4QTIME and TQDAYDEF.

Datafill example for table TQTIMENM

Sample datafill for table TQTIMENM appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table TQTIMENM

TIMECODE	TIMECRIT
1	LIGHT_HOUR
2	MEDIUM_HOUR
3	HEAVY_HOUR

Datafilling table TQHOLIDAY

The TOPS QMS Holiday table defines the month and day of special days to index into table TQDAYDEF. The table name is for one day type, holiday. Restrictions do not apply to this table. For example, you can use this table to set up a different separations for each day of the year.

The month and day group in table TQHOLIDAY can match the call. If this event occurs the entry in field DAYTYPE determines the time requirement taken from this table. The entry from table TQWKDAY does not determine the time requirement.

Entries to table TQDAYNAM must occur before table TQHOLIDAY.

See table CT4QTIME for a table flow figure of the associated time tables. A description of the fields appears in the following table.

Datafilling table TQHOLIDAY

Field	Subfield or refinement	Entry	Explanation and action
MONTH		JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC	Month. This field is the first of a two-part key field. Enter the three-letter abbreviation of the month.
DAY		1-31	Day. This field is the second of a two-part key field. Enter the number of the day of the month specified in field MONTH.
DAYTYPE		name from table TQDAYNAM	Day type. Enter the type of day to associate with the MONTH and DAY fields. Values are defined in table TQDAYNAM.

Datafill example for table TQHOLIDAY

Sample datafill for table TQHOLIDAY appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table TQHOLIDAY

MONTH	DAY	DAYTYPE
JAN	15	BANK_HOLIDAY
FEB	19	BANK_HOLIDAY
MAY	12	MOTHERS_DAY
MAY	28	BANK_HOLIDAY
SEP	3	BANK_HOLIDAY
OCT	8	BANK_HOLIDAY
NOV	22	BANK_HOLIDAY
DEC	25	BANK_HOLIDAY

Datafilling table TQWKDAY

The TOPS QMS Week Day table defines the day of the week for DAYTYPE to index to table TQDAYDEF. Use this table to determine DAYTYPE if DAYTYPE is not in table TQHOLIDAY.

Enter table TQDAYNAM before you enter table TQWKDAY.

Enter this table before table TQDAYDEF.

See table CT4QTIME for a table flow figure of the associated time tables. A description of the fields appears in the following table.

Datafilling table TQWKDAY

Field	Subfield or refinement	Entry	Explanation and action
TQWKKEY		refer to subfield	TOPS QMS week key. This field contains subfield DAYOWEEK. This field is the key field of the table.
	DAYOWEEK	SUN, MON, TUE, WED, THU, FRI, or SAT	Day of week. Enter a value for the day of the week.

QMS Host/Remote Queuing (continued)

Datafilling table TQWKDAY

Field	Subfield or refinement	Entry	Explanation and action
TQWKKEY		SUN, MON, TUE, WED, THU, FRI, SAT	Day of the week. This field is the index in the table.
DAYTYPE		name from table TQDAYNAM	Type of day to associate with field TQWKKEY. Definition of values occurs through table TQDAYNAM.

Datafill example for table TQWKDAY

Sample datafill for table TQWKDAY appears in this example.

MAP example for table TQWKDAY

TQWKKEY	DAYTYPE
SUN	WEEKEND_B
MON	WEEKDAY
TUE	WEEKDAY
WED	WEEKDAY
THU	WEEKDAY
FRI	WEEKDAY
SAT	WEEKEND_A

Datafilling table TQDAYDEF

The TOPS QMS Day Definition table defines the minutes, hours, day and month, if holiday, for TIMECRIT (index into table CT4QTIME).

Enter data into tables TQDAYNAM and TQTIMENM before table TQDAYDEF.

QMS Host/Remote Queuing (continued)

See table CT4QTIME for a table flow figure of the associated time tables. A description of the fields appears in the following table.

Datafilling table TQDAYDEF

Field	Subfield or refinement	Entry	Explanation and action
TQDEFKEY		refer to subfield	TOPS QMS definition key. Field TQDEFKEY contains the subfield DAYTYPE. This field is the key field of the table.
	DAYTYPE	name from table TQDAYNAM	Day type. Enter a name that indicates the type of day. Definition of values occurs in table TQDAYNAM. This field indicates the day and month of a holiday (table TQHOLIDAY) or day of any week (table TQWKDAY).
TIMESLOT		refer to subfields	Time slots. This field contains subfields HH, MM and TIMECRIT. A maximum of eight field TIMESLOT values can be present in each tuple. If less than eight timeslots are necessary, end the list with a \$ (dollar sign). This process indicates a maximum of eight time periods for a specified day.
	HH	00 to 23 (2 digits)	Hour. Enter the hour based on the 24-hour clock (00 is midnight, 12 is noon). Each tuple must contain a TIMESLOT with time value 0000 (midnight). Add timeslots in ascending order. Table control makes sure that this requirement occurs.
	MM	00 to 59 (2 digits)	Minutes. Enter the minutes of the hour.
	TIMECRIT	alphanumeric (1 to 32 characters)	Time criterion. Enter a name defined in table TQTIMENM. TIMECRIT applies to to all calls that arrive at or following the time value. This value applies until the next repetition (timeslot). If you do not add other repetitions, the TIMECRIT applies for the 24-h period.

Datafill example for table TQDAYDEF

Sample datafill for table TQDAYDEF appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table TQDAYDEF

DAYTYPE	TIMESLOT
WEEKDAY	(0000 LIGHT_TRAFFIC)(8000 HEAVY_TRAFFIC) (1700 MEDIUM_TRAFFIC)(2200 LIGHT_TRAFFIC)\$
WEEKEND_A	(0000 LIGHT_TRAFFIC)\$
WEEKEND_B	(0000 LIGHT_TRAFFIC)(1700 MEDIUM_TRAFFIC) (2200 LIGHT_TRAFFIC)\$
MOTHERS_DAY	(0000 LIGHT_TRAFFIC)(8000 HEAVY_TRAFFIC)\$
BANK_HOLIDAY	(0000 LIGHT_TRAFFIC)(1135 MEDIUM_TRAFFIC)\$

In the above example, the WEEKDAY tuple has four TIMESLOT values. Each TIMESLOT contains a 24-h time field and a TIMECRIT value. The value applies to calls that arrive at the time value or following the time value. The WEEKEND_A tuple defines calls that arrive at midnight (0000) or after midnight to have a TIMECRIT of LIGHT_TRAFFIC.

Each tuple must contain a TIMESLOT with time value 0000 (midnight). If the addition of other fields to this tuple does not occur, the TIMECRIT in the midnight TIMESLOT applies in the day. The addition of other TIMESLOTS can occur. If this condition applies the TIMECRIT that corresponds to midnight is correct to the minute that the next TIMESLOT takes effect. The MOTHERS_DAY tuple adds a time slot of 0800 HEAVY_TRAFFIC. Traffic that arrives at 8 A.M or after has a TIMECRIT of HEAVY_TRAFFIC on MOTHERS_DAY. The later LIGHT_TRAFFIC name applies to calls that arrive between midnight and 7:59:59 AM

Another example is, 8 AM-5 PM is a HEAVY_TRAFFIC period on WEEKDAY, but a LIGHT_TRAFFIC period on WEEKEND.

A maximum of eight TIMESLOT values for each tuple indicates a maximum of eight time periods for each day. Table control lists the TIMEVALUES in ascending order for each tuple. The table makes sure that the 0000 time value is in each tuple.

Datafilling table CT4QTIME

The Call Type for Queueing Time Criterion table refines the CT4Q through the time of day of week requirements. This table uses TIMECRIT to select a new CT4Q.

You can use this requirement to consolidate different types of traffic in a smaller number of call types to queue. The queue call types consolidate at

QMS Host/Remote Queuing (continued)

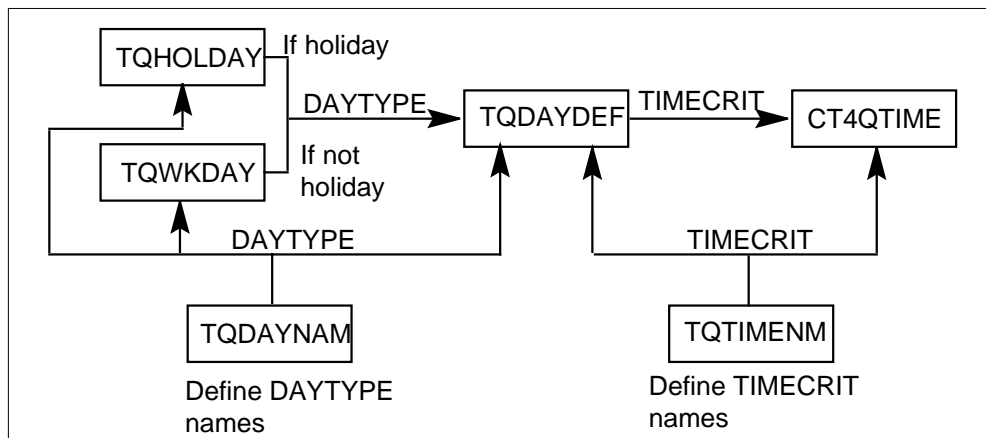
low-traffic periods of the day or night. This process decreases staff requirements for low traffic periods. Coin and hotel traffic can route to a specified team at night. Other teams can have operators not trained for coin or hotel. Functionality Host/Remote Networking By Queue Type (ADVQ0005) and TOPS QMS expand the abilities of operator centralization. The package with TOPS QMS allow traffic to route to other switches in the OC network. The system can use call type refinement requirements to route the calls.

Refinement by time uses the following tables:

- TQHOLIDAY — defines holidays
- TQWKDAY — defines days of the week
- TQDAYDEF — defines type of day, for heavy or light traffic
- TQDAYNAM — defines day names for use in tables TQWKDAY, TQHOLIDAY, and TQDAYDEF
- TQTIMENM — defines time of day
- CT4QTIME — refines CT4Q by time

Table flow appears in the following figure:

Time criteria table flow



QMS Host/Remote Queuing (continued)

The process to determine if a table is a new CT4Q in table CT4QTIME is as follows:

1. Determine DAYTYPE

Today can be a holiday. Check table TQHOLIDAY. If today is a holiday, use DAYTYPE value for index into table TQDAYDEF.

If these conditions do not apply, use DAYTYPE value from table TQWKDAY for index into table TQDAYDEF.

2. Determine TIMECRIT

Index table TQDAYDEF with DAYTYPE. In field TIMESLOT, obtain TIMECRIT for index into table CT4QTIME.

3. Determine new CT4Q

Index into table CT4QTIME with TIMECRIT and OLDCT4Q.

A description of the fields appears in the following table.

Datafilling table CT4QTIME

Field	Subfield or refinement	Entry	Explanation and action
OLDCT4Q		name from table CT4QNAMS	Previous call type for queueing. This field is the first of a two-part key field for the table. Enter a value for the previous CT4Q, defined in table CT4QNAMS.
TIMECRIT		name from table TQTIMENM	Time of day of week criterion. This field is the second of a two-part key field for the table. Definition of values occurs in table TQTIMENM and are determined in table TQDAYDEF.
NEWCT4Q		name from table CT4QNAMS	New call queue name for the call that meets the requirements. The definition of this name occurs in table CT4QNAMS.

Datafill example for table CT4QTIME

Sample datafill for table CT4QTIME appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table CT4QTIME

OLDCT4Q	TIMECRIT	NEWCT4Q
DA_411_EAST	LIGHT_TRAFFIC	DA_411_LIGHT
DA_411_WEST	LIGHT_TRAFFIC	DA_411_LIGHT
DA_411_NORTH	LIGHT_TRAFFIC	DA_411_LIGHT
DA_411_SOUTH	LIGHT_TRAFFIC	DA_411_LIGHT
DA_411_UPTOWN	LIGHT_TRAFFIC	DA_411_LIGHT

This example describes DA_411 traffic separated geographically in heavy and medium hours, grouped in a new CT4Q DA_411_LIGHT in light traffic hours. The grouping allows the operating company to have separate queues of operators for each geographical area during the day. With Directory Assistance, a separate group of operators can provide local knowledge of the calling area. At night and on weekends, the operating company can use a single group. Traffic on nights and weekends is too low to support geographical separation.

Datafilling table TQCARNAM

The TOPS QMS Carrier Name table defines Inter-LATA carrier names for use in tables TQCARDIG and CT4QCAR. A description of the fields appears in the following table.

You cannot delete field CARCRIT entries from table TQCARNAM if the entries are in use in table CT4QCAR.

Datafilling table TQCARNAM

Field	Subfield or refinement	Entry	Explanation and action
CARCODE		0-126	Inter-LATA carrier code. This field is the index into the table. Enter the numeric key to associate with the field CARCRIT entry.
CARCRIT		alphanumeric (1 to 32 characters)	Carrier criterion name. Enter a name that defines an inter-LATA carrier. Use this name in tables TQCARDIG and as part of the key for table CT4QCAR.

Datafill example for table TQCARNAM

Sample datafill for table TQCARNAM appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table TQCARNAM

CARCODE	CARCRIT
0	UNKNOWN_CARCRIT
1	DOWNTOWN_TRK
2	UPTOWN_TRK
3	DOWNTOWN_EXCHANGE
4	SPANISH_AREA
5	FRENCH_AREA
6	VIETNAMESE_AREA
7	DISABLED_SUBSCRIBER

The first entry in this table has a fixed value. You cannot delete the value. You can use this entry in table CT4QCAR to separate traffic with a not known CARCRIT.

Datafilling table DNPIC

Datafill for QMS Host/Remote Queuing for table DNPIC appears in the following table. The fields that apply to QMS Host/Remote Queuing appear in the following table.

Datafilling table DNPIC

Field	Subfield or refinement	Entry	Explanation and action
			This table does not change. Make sure that subscribers entries have carriers.

Datafill example for table DNPIC

Sample datafill for table DNPIC appears in the following example..

QMS Host/Remote Queuing (continued)

MAP example for table DNPIC

DNKEY		DNPIC		CHOICE	CTD		
212	220	11	11	NOCAR	N	N	
212	220	12	34	CARR2	N	N	
212	221	22	09	CARR5	Y	Y (CARRX) (CARRY) \$	
212	221	56	98	CARR3	Y	Y (CARRZ) \$	
613	621	12	34	NILCAR	Y	N	
613	621	12	44	CARR2	N	Y (CARRX) (CARRY) (CARRZ) \$	

Datafilling table TOPEACAR

Datafill for QMS Host/Remote Queuing for table TOPEACAR appears in the following table. The fields that apply to QMS Host/Remote Queuing appear in the table.

Datafilling table TOPEACAR

Field	Subfield or refinement	Entry	Explanation and action
CARDIGS		0000 to 9999	The inter-LATA carrier digits. This table does not change. If table CT4QCAR requires datafill, make sure you enter carrier digits used in table TQCARDIG in table TOPEACAR.

Datafill example for table TOPEACAR

Sample datafill for table TOPEACAR appears in the following example.

MAP example for table TOPEACAR

CARDIG	CARNAME	ALTDISP	OPLSCLD	CAMABILL	ALTCARR	NATERM
INTERM					OPSERV	TDBIDX
0120	MCI	N	Y	Y	0120	UNREST
UNREST	SERV NOQUERY	N NOQUERY	N NOQUERY	N NOQUERY	N N N Y	7

Datafilling table TQCARDIG

The TOPS QMS Carrier Digits table associates groups of called digits with symbolic names. These symbolic names are for use in traffic separation in table CT4QCAR.

QMS Host/Remote Queuing (continued)

Enter table TQCARNAM before table TQCARDIG.

Datafilling table TQCARDIG

Field	Subfield or refinement	Entry	Explanation and action
CARDIGS		1 to 18 digits	Inter-LATA carrier digits. Enter the inter-LATA carrier digits. Three digits are normal. This field is a digilator key field of the table.
CARCRIT		name from TQCARNAM	Carrier criterion. Enter a carrier name defined in table TQCARNAM to associate with the given digilator key.

Datafill example for table TQCARDIG

Sample datafill for table TQCARDIG appears in the following example.

MAP example for table TQCARDIG

CARDIGS	CARCRIT
000	UNKNOWN_CAR
123	CAR1
987	CAR2

Datafilling table CT4QCAR

The Call Type for Queueing Inter-LATA Carrier Criterion table refines CT4Qs by inter-LATA carrier.

An operating company can provide operator services for each carrier with functionality TOPS Inter-LATA Carrier Service, OSEA0002. Table CT4QCAR allows the system to route calls for a carrier to a queue with operators dedicated to that carrier.

Enter tables TQCARNAM, TQCARDI and CT4QCAR. A large range of possible carrier digits can be present. These digits can affect data store and run-time performance.

The carrier information that applies to a call is not always obtained before that call routes to an operator. If this event occurs this table cannot affect the CT4Q. The table cannot affect the first CT4Q used to route the call to an operator. Remember this limit for table CT4QCAR. Carrier information is often missing until the operator supplies the information. Use table CT4QCAR on recalls when operator-assigned carrier information is present.

QMS Host/Remote Queuing (continued)

A description of the fields appears in the following table.

Datafilling table CT4QCAR

Field	Subfield or refinement	Entry	Explanation and action
OLDCT4Q		name from table CT4QNAMS	Current call queue name defined in table CT4QNAMS.
CARCRIT		name from TQCARNAM	Inter-LATA carrier name criterion. Define values in table TQCARNAM.
NEWCT4Q		name from table CT4QNAMS	New call queue name to assign call that meets criterion. Define the name in table CT4QNAMS.

Datafill example for table CT4QCAR

Sample datafill for table CT4QCAR appears in the following example.

MAP example for table CT4QCAR

OLDCT4Q	CARCRIT	NEWCT4Q
0_MINUS	CAR1	0_MINUS_CAR1
0_MIN_RES	CAR1	0_MIN_RES_CAR1
0_MIN_RES_55	CAR1	0_MIN_RES_55_CAR1

In the above example, the Operating Company provides operator services for carrier CAR1. The carrier does not handle DA traffic. The DA does not require entries. The carrier requires the same queuing breakdown for TA calls that the operating company requires.

Datafilling table SPLDNID

Datafill for QMS Host/Remote Queuing for table SPLDNID appears in the following table. The fields that apply to QMS Host/Remote Queuing appear

QMS Host/Remote Queuing (continued)

in this table. See the data schema section of this document for a description of the other fields.

Datafilling table SPLDNID

Field	Subfield or refinement	Entry	Explanation and action
			This table does not change. If table CT4QREST requires datafill, the restricted billing index must have a definition in table RESTBIL or DARSTBIL. Table SPLDNID can provide a DN index into table RESTBIL or DARSTBIL.

MAP example for table SPLDNID

SPLDN	SPLSEL
4166757611	AQHTL 13 Y
4162415336	AQTAC 21
4167676435	VQHTL Y
9003852211	RSTRCTD 0

Datafilling table OSSCAT

Datafill for QMS Host/Remote Queuing for table OSSCAT appears in the following table. The fields that apply to QMS Host/Remote Queuing appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table OSSCAT

Field	Subfield or refinement	Entry	Explanation and action
			This table does not change. If table CT4QREST requires datafill, the restricted billing index must have a definition in table RESTBIL or DARSTBIL. Table OSSCAT can provide SLT ANI codes for use in table SLTANIID. The table indexes into table RESTBIL or DARSTBIL.

QMS Host/Remote Queuing (continued)

MAP example for table OSSCAT

ANI	FORMAT	CLGSERV	REST		ROUTE
4	ANIID	INTC	NONE	T AOSS	INTC
7	ONI	HOTEL	NONE	T OFRT	74

Datafilling table SLTANIID

Datafill for QMS Host/Remote Queuing for table SLTANIID appears in the following table. The fields that apply to QMS Host/Remote Queuing appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table SLTANIID

Field	Subfield or refinement	Entry	Explanation and action
			This table does not change. If table CT4QREST requires datafill, the restricted billing index must have a definition in table RESTBIL or DARSTBIL. Table SLTANIID can provide a line traffic ANI index into table RESTBIL or DARSTBIL.

MAP example for table SLTANIID

SLTANI	RBILCLAS	ONEPLUS	SLTAMA
15	25	Y	Y

QMS Host/Remote Queuing (continued)

Datafilling table RESTBIL

Datafill for QMS Host/Remote Queuing for table RESTBIL appears in the following table. The fields that apply to QMS Host/Remote Queuing appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table RESTBIL

Field	Subfield or refinement	Entry	Explanation and action
			This table does not change. If table CT4QREST requires datafill, the restricted billing index must have a definition in table RESTBIL for toll and assist restricted billing.

MAP example for table RESTBIL

```

BILCLASS AMARBC SCRNDISP
                                                    BILTYPES CCPDI
-----
      1      21 SENTPAID
        ( COL) ( CC) ( 3RD) (SPLCLG) (SPLCLD)$ LOCA
    
```

Datafilling table DARSTBIL

Datafill for QMS Host/Remote Queuing for table DARSTBIL appears in the following example. The fields that apply to QMS Host/Remote Queuing appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table DARSTBIL

Field	Subfield or refinement	Entry	Explanation and action
			This table does not change. Table CT4QREST can require datafill. If this condition applies the restricted billing index must have a definition in table DARSTBIL. This condition for directory assistance restricted billing.

QMS Host/Remote Queuing (continued)

MAP example for table DARSTBIL

BILCLASS AMARBC SCRNDISP			BILTYPES
21	21	21HOTEL	(COL) (CC) (3RD)\$

Datafilling table CT4QREST

The Call Type for Queueing Restricted Billing Type Criterion table refines the CT4Q by the restricted billing index. The TOPS software provides for 100 different types of restricted telephones. These telephones can require special treatment. This special treatment can be a different queue. This table overrides previous CT4Q determination if the system finds a match.

A description of the fields appears in the following table.

Datafilling table CT4QREST

Field	Subfield or refinement	Entry	Explanation and action
OLDCT4Q		name from table CT4QNAMS	Current call queue name defined in table CT4QNAMS. This field is the first of a two-part key field for the table.
RESTRIT		0 to 100	Restricted billing index criterion. This field is the second of a two-part key field for the table. The meaning and screen displays associated with these values appear in table RESTBIL. The restricted billing index associated with the call is in tables SPLNDID or (in BCS32 and later) SLTANIID.
NEWCT4Q		name from table CT4QNAMS	New call queue name to assign a call that meets criterion. Definition the name is in table CT4QNAMS.

Datafill example for table CT4QREST

Sample datafill for table CT4QREST appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table CT4QREST

OLDCT4Q	RESTCRIT	NEWCT4Q
0_MIN_RESTRICTED	55	RESTRICTED_55

The example above indicates that a restricted telephone with a RESTBIL index of 55 is a special type of restricted telephone. This telephone is like a COCOT telephone, that requires a special queue. Do not enter restricted billing types that do not require their own queues in this table.

Datafilling table TOPSLANG

Datafill for QMS Host/Remote Queuing for table TOPSLANG appears in the following table. The fields that apply to QMS Host/Remote Queuing appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TOPSLANG

Field	Subfield or refinement	Entry	Explanation and action
			This table does not change. If table CT4LANG, requires datafill you must define the language in table TOPSLANG.

MAP example for table TOPSLANG

LANGDIGT	LANGNAME	AUTOLANG
2	ENG	Y 6

Datafilling table CT4QLANG

The Call Type for Queueing Language Type Criterion table refines the CT4Q by language. The operator or an automated service determines the language. The operator uses key actions to mark the language of the call. On recall, the system uses the language mark to route the call to the correct queue for recall. If the automated service marks the language, the language is a requirement in this table. The language routes to an operator fluent in the language that the initial position seizure specifies.

QMS Host/Remote Queuing (continued)

The system does not assign language until the system sends the call to an operator or an automated service. The AABS or ADAS have this ability. This table can help those two types of calls.

The descriptions of the fields appear in the following table.

Datafilling table CT4QLANG

Field	Subfield or refinement	Entry	Explanation and action
OLDCT4Q		name from table CT4QNAMS	Current call queue name defined in table CT4QNAMS.
LANGCRIT		name from table TOPSLANG	Language name criterion. Define the values in table TOPSLANG. Functionality French/English AABS (ABS00005) introduces this table.
NEWCT4Q		name from table CT4QNAMS	New call queue name to assign call that meets criterion. Define the name in table CT4QNAMS.

Datafill example for table CT4QLANG

Sample datafill for table CT4QLANG appears in the following example.

MAP example for table CT4QLANG

OLDCT4Q	LANGCRIT	NEWCT4Q
0_AABS_CONNECT	FRE	0_AABS_FRENCH
0_AABS_CONNECT	ENG	0_AABS_ENGLISH
0_MINUS	FRE	0_FRENCH
0_MINUS	SPA	0_SPANISH
0_MINUS	JAP	0_JAPANESE
0_MINUS	MAN	0_MANDARIN
0_MINUS	GER	0_GERMAN
0_MINUS	POL	0_POLISH
0_MINUS	VIE	0_VIETNAMESE
0_MINUS	DUT	0_DUTCH
0_MINUS	ARA	0_ARABIC
0_MINUS	POR	0_PORTUGUESE

QMS Host/Remote Queuing (continued)

Datafilling table CT4QCLAS

The Call Type for Queueing Class Type Criterion table modifies the CT4Q by the class of service of the calling number. A description of the fields appears in the following table.

Datafilling table CT4QCLAS

Field	Subfield or refinement	Entry	Explanation and action
OLDCT4Q		name from table CT4QNAMS	Previous call type for queueing. This field is the first of a two-part key field for the table. Enter the value for the previous CT4Q defined in table CT4QNAMS.
CLASCRIT		UNKNOWN_ CLAS COIN STATION HOTEL RESTRICTED	Class of service criterion. This field is the second of a two-part key field for the table. Enter the class of service associated with the calling number. If the class of service is not known, enter UNKNOWN_CLAS. The TOPS trunk signaling or translations determine if the call is COIN, HOTEL, STATION or RESTRICTED. If this information is not present, or not complete, the system treats the call as UNKNOWN_CLAS. For a call that does not have class of service information, the system treats the call as UNKNOWN_CLAS. A restricted coin call matches the COIN CLASCRIT. A restricted coin call does not match RESTRICT CLASCRIT.
NEWCT4Q		name from table CT4QNAMS	New call type for queueing. Enter the new CT4Q defined in table CT4QNAMS. This entry must have a definition in table CT4QNAMS.

Datafill example for table CT4QCLAS

Sample datafill for table CT4QCLAS appears in the following example.

MAP example for table CT4QCLAS

OLDCT4Q	CLASCRIT	NEWCT4Q
0_MINUS	RESTRICTED	0_MIN_RESTRICTED
0_MINUS	COIN	0_MIN_COIN

How the system can handle 0_MINUS calls from RESTRICTED or COIN telephone in a different way appears in the previous datafill.

QMS Host/Remote Queuing (continued)

Datafilling table CT4QPFXT

The Call Type for Queueing Dialed Prefix Type Criterion table refines the CT4Q by the called number prefix. Acceptable values for the information are operator assisted (OA) or direct dialed (DD). In the North American Dialing plan, OH is 0-, OA is 0+, and DD is 1+.

The OA and DD names are for North American TOPS trunk signaling. Table CT4QPFXT does not provide help on other continents.

This information is not available based on dialed digits because the system strips off prefix information at an end office. This information is available from signaling. Use this information based on on position ability. A TOPS Basic Position can process a call dialed 1+555-1212. The TOPS cannot process a call dialed 0+555-1212, if you dial the 0+ prefix. TOPS Basic Position cannot provide alternate billing abilities. Route 1-555-1212 calls to a different queue than 0-555-1212 dialed calls.

Note: Use table CT4QPFXT with calls that originate on Inter-Toll, ATC or IBN type trunks and TOPS trunks. The system can mark calls that come in on one of these non-TOPS type trunks as DD. Continue to use the call origination associated with the call to index table CT4QPFXT.

A description of the fields appears in the following table.

Datafilling table CT4QPFXT

Field	Subfield or refinement	Entry	Explanation and action
OLDCT4Q		name from table CT4QNAMS	Previous call type for queueing. This field is the first of a two-part key field for the table. Enter the previous CT4Q defined in table CT4QNAMS.

QMS Host/Remote Queuing (continued)

Datafilling table CT4QPFXT

Field	Subfield or refinement	Entry	Explanation and action
PFXTCRIT		OA or DD	<p>Dialed prefix value. This field is the second of a two-part key field for the table.</p> <p>Enter OA or DD. In the North American Dialing plan, OA is 0+, and DD is 1+. To index this table the system treats call origination types of OA, NP, and NL as OA. The system treats DD call originations as DD. This field makes sure that positions that require DD traffic do not receive NP or NL traffic. The traffic can require alternate billing.</p>
NEWCT4Q		name from table CT4QNAMS	New call type for queueing. Enter the CT4Q defined in table CT4QNAMS.

Datafill example for table CT4QPFXT

Sample datafill for table CT4QPFXT appears in the following example.

MAP example for table CT4QPFXT

OLDCT4Q	PFXTCRIT	NEWCT4Q
DA_411	OA	DA_411_OA
DA_555	OA	DA_555_OA

Datafilling table CT4QAUTO

The Call Type for Queueing Partially Automated Service Type Criterion table uses automated service to refine the CT4Q service.

An office can separate traffic that receives automated service. An example of a partially-automated call is a calling card call that first routes to MCCS or ACCS. In this event, TOPS attempts to connect the call to an operator. Specified groups of operators handle different types of partially-automated calls. This separation allows the operating company to have a large group of operators that do not need to serve partially-automated calls. The operators do not require special training to handle these calls.

QMS Host/Remote Queuing (continued)

In TOPS03, new log group TQMS with log TQMS 100 indicates table CT4QAUTO datafill is not correct. Refer to the *LOG Report Reference Manual* for additional details.

CAUTION: Table CT4QAUTO is a refinement table. Table CT4QAUTO must contain datafill when the table uses automated services. If this condition does not occur, an automated system can request additional support. The automated system can return the call to the service type that is not correct. This process causes SWERS and TQMS logs.

The system can release a DA call to an automated service. The DA requires additional support from an operator. The call returns to TOPS marked as TA service. If the old queue is not present in table CT4QAUTO, the call defaults to DA service. The call returns to the DA queue the call left. The call must be in a TA queue.

QMS Host/Remote Queuing (continued)

A description of the fields appears in the following table.

Datafilling table CT4QAUTO

Field	Subfield or refinement	Entry	Explanation and action
OLDCT4Q		name from table CT4QNAMS	Old call type for queuing. This field is the first of a two-part key field of the table. Enter the previous CT4Q name defined in table CT4QNAMS.
AUTOCRIT		AABS_ BILLED_ CONNECT ED AABS_NOT _CONNECTED MCCSACCS ACTS ADACC ADAS or NO_AUTO	<p>Automated service criterion. Acceptable values are:</p> <ul style="list-style-type: none"> • AABS_BILLED_CONNECTED - call at TOPS after AABS and billed party connects to the call • AABS_NOT_CONNECTED - call at TOPS after AABS and billed party is not connected to call • MCCSACCS - call at TOPS was at MCCS or ACCS • ACTS - call at TOPS was at ACTS • ADACC - call at TOPS was at ADACC • ADAS - call at TOPS was at ADAS • NO_AUTO - call was not at any automated services. This entry allows the non-automated traffic for a group of operators to channel. <p>The MCCS and ACCS provide the same service in TOPS to different calling card databases. Use MCCSACCS for a call that was at one of the two calling card services.</p> <p>The system treats Time & Charges recall like the recall received ACTS service.</p>

QMS Host/Remote Queuing (continued)

Datafilling table CT4QAUTO

Field	Subfield or refinement	Entry	Explanation and action
			<p>The automated services are as follows:</p> <ul style="list-style-type: none"> • AABS - Automated Alternate Billing Service • ACCS - Automated Calling Card Service • ACTS - Automated Coin Toll Service • ADAS - Automated Directory Assistance Service (to release in a future BCS) • ADACC - Automated Directory Assistance Call Completion • MCCS - Mechanized Calling Card Service
NEWCT4Q		name from table CT4QNAMS	New call type for queuing. Enter the new CT4Q that meets the criterion. Definition of this name occurs in table CT4QNAMS.

Datafill example for table CT4QAUTO

Sample datafill for table CT4QAUTO appears in the following example.

MAP example for table CT4QAUTO

OLDCT4Q	AUTOCRIT	NEWCT4Q
0_PLUS	AABS_BILLED_CONNECTED	0_AABS_CONNECT
0_PLUS	AABS_NOT_CONNECTED	0_AABS_NO_CONNECT
0_PLUS	MCCSACCS	0_PLUS_FROM_ACCS
1_PLUS_COIN	ACTS	1_PLUS_FROM_ACTS

Datafilling tables TQORDERA and TQORDERB

The TOPS QMS Order A and TOPS QMS Order B tables determine the access order of the CT4Q refinement tables. One of these tables (TQORDERA or TQORDERB) is active at a time. Parameter QMS_ACTIVE_CQA_ORDER_TABLE in table TQMLOPT determines the active table. This parameter can have value TQORDERA or TQORDERB. This parameter allows an update of the table. The table is updated from when changes occur in the table that is not active. The table that is not active becomes active.

QMS Host/Remote Queuing (continued)

Enter the TQORDER tables TQORDERA and TQORDERB after you enter the CT4Q refinement tables. Changes to the TQORDER tables before you finalize datafill changes to CT4Q refinement tables can cause routing of some calls can be wrong.

Do not make changes to the order of the CT4Q tables. The mechanisms to order these tables allow for flexible, different configurations of traffic separation in different offices. A change to an order in an office must be a slow and careful operation. The process changes the meaning and effect of the datafill in the CT4Q tables.

A descriptions of the fields appears in the following table.

Datafilling table TQORDERA and TQORDERB

Field	Subfield or refinement	Entry	Explanation and action
CT4QTABL		name from table CT4QNAMS	CT4Q table name. This field is the key field of the table. This field is the name of the CT4Q table that has an order relative to the other tables. The definition of the name is in table CT4QNAMS.
PREOPR		0-9 (0 is inactive)	<p>Preoperator relative ordering. This ordering determines the first processing applied to calls that a human operator or an automated service has not received. This ordering applies for calls that attempt to go to an automated service, but cannot connect to the automated service. The ACCS is an example of an automated service. If the links to the database are down the call cannot connect.</p> <p>PREOPR ordering provides the first separation of incoming traffic in an array of final CT4Qs. Use these final CT4Qs as the starting point for additional POSTAUTO and RECALL refinements when refinements are not necessary.</p> <p>Enter a value of one to nine to represent a relative ordering. Value 0 indicates that this CT4Q table is not active in this ordering.</p>

QMS Host/Remote Queuing (continued)**Datafilling table TQORDERA and TQORDERB**

Field	Subfield or refinement	Entry	Explanation and action
POSTAUTO		0-9 (0 is inactive)	<p>Post-automated service ordering. This field defines the ordering of this CT4Q table compared to other CT4Q tables. This table defines the ordering for calls that an operator has not received. The automated service receives these calls.</p> <p>For Real-time savings, include CT4Q tables that the call criteria can change in the POSTAUTO and RECALL orderings. The call criteria can change the CT4Q tables since the last PREOPR CT4Q refinement. Most offices do not have many CT4Q tables active in the POSTAUTO and RECALL orderings.</p> <p>For POSTAUTO ordering, the information values of CT4QAUTO and CT4QLANG (AUTOCRIT and LANGNAME) can change after the system applies PREOPR ordering. The automated service value is UNKNOWN during the PREOPR ordering and known later. The CT4QAUTO table has a relative ordering of 0 in the PREOPR condition, and a non-zero value in the POSTAUTO condition. The LANGNAME requirement has a 0 value in PREOPR. Automated services can supply the value.</p> <p>Enter a value of one to nine to represent a relative ordering. Value 0 indicates that this CT4Q table is not active in this ordering.</p>

QMS Host/Remote Queuing (continued)

Datafilling table TQORDERA and TQORDERB

Field	Subfield or refinement	Entry	Explanation and action
RECALL		0-9 (0 is inactive)	<p>Recall/transfer ordering. This field defines the ordering of this CT4Q table compared to other CT4Q tables. The field defines the calls that an operator receives and are that recall for operator service.</p> <p>Use this ordering for calls that operator receives. The ordering applies to calls that the automated service receives (for example, 0- AABS handoff recalls).</p> <p>For recall ordering, CT4QLANG, CT4QCAR, CT4QAUTO and CT4QCLD, and CT4QORIG can change requirements after the PREOPR and POSTAUTO orderings are applied. The operator can change the language, carrier, called, or calling numbers associated with the call. The operator can specify the automated requirements through ADACC or AABS handoff.</p> <p>Enter a value of one to nine to represent a relative ordering. Value 0 indicates that this CT4Q table is not active in this ordering.</p>

Datafill example for table TQORDERA and TQORDERB

Sample datafill for table TQORDERA appears in the following example.

MAP example for table TQORDERA

CT4QTABL	PREOPR	POSTAUTO	RECALL
CT4QCLAS	1	0	0
CT4QREST	2	0	0
CT4QPFXT	3	0	0
CT4QCLD	4	0	0
CT4QORIG	5	0	0
CT4QTIME	6	0	0
CT4QCAR	7	0	2
CT4QAUTO	0	2	0
CT4QLANG	0	1	1

Sample datafill for table TQORDERB appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table TQORDERB

CT4QTABL	PREOPR	POSTAUTO	RECALL
CT4QCLAS	1	0	0
CT4QREST	2	0	0
CT4QPFXT	3	0	0
CT4QCLD	5	0	0
CT4QORIG	4	0	0
CT4QTIME	6	0	0
CT4QCAR	7	0	1
CT4QAUTO	0	2	0
CT4QLANG	0	1	2

See the previous sample datafill for TQORDERA. In an office with this datafill, incoming calls PREOPR traverse the call queue refinement phase. The calls appear in the following order:

- CT4QCLAS
- CT4QREST
- CT4QPFXT
- CT4QCLD
- CT4QORIG
- CT4QTIME
- CT4QCAR

Calls do not traverse tables CT4QAUTO and CT4QLANG is in the preoperator stage. Each table contains a 0 in the PREOPR data field. Do not use tables CT4QAUTO and CT4QLANG as PREOPR tables. Language or automated service cannot associate with the call. If you attempt to enter a non-0 value in the PREOPR field for these tuples, the system generates a warning. The warning occurs because the system cannot use the tables until the automated service receives the call. The 0 values in the POSTAUTO and RECALL fields of the example represent recommendations that are the same.

Note: The PREOPR column does not have copies. The non-0 indexes are continuous (that is, 1,2,3,4,5,6,7 as opposed to 1,2,3,4,5,8,9). Table control provides these two restrictions.

The ordering restrictions of this table are checked when the office parameter is toggled to make the other table ACTIVE. If duplicates are present in the ordering, the system denies the swap. The restrictions are not enforced on the

QMS Host/Remote Queuing (continued)

INACTIVE copy. This process allows a change of the ordering without restrictions.

Datafilling table TQMSSERV

The TOPS QMS Services table defines a list of services that each operator can provide. This table associates a service name (field QMSSERV) to a service (BASESERV) and a call queue (IMPLCT4Q).

In most operator service environments, groups of operators are normally assigned the same call handling responsibilities and possess the same call handling abilities. Table TQMSSERV allows the definition of a list of services common to several operators to occur one time. Datafill for each operator can reference this list.

Reference table TQMSSERV for data entries in table TOPSPOS to determine which services each TOPS operator position can provide. At logon time the system compares the service profile of the position and the service profile of the operator that logs on. The comparison makes sure that the position and operator are compatible.

You cannot delete tuples from this table if:

- These tuples have entries in table TQCQINFO.
- You reference the QMSSERV in table TQSVPROF.

A description of the fields appears in the following table:

Datafilling table TQMSSERV

Field	Subfield or refinement	Entry	Explanation and action
SERVNUM		0 to 62	QMS service number. This field is the index to the table.
QMSSERV		1-32 characters	Service name definition for use in table TQCQINFO.
BASESERV		refer to subfield	Base service type. This field contains subfield BASESERV_SEL and refinements.

QMS Host/Remote Queuing (continued)

Datafilling table TQMSSERV

Field	Subfield or refinement	Entry	Explanation and action
	BASESERV_ SEL	TASERV, DASERV, or INTCSERV	<p>Basic service name selector. The names are as follows:</p> <ul style="list-style-type: none"> • TASERV — toll and assistance service. Enter new services that do not require DA or INTC call control functionality as TASERV. An example of this entry is a Time of DAY service. Additional refinements do not require datafill. • DASERV — directory assistance service. Enter new services that do require DA call control as DASERV. An example is Customer Name and Address (CNA). This service requires the use of a subset of the DA call control protocol. Enter the service as DASERV. Enter data in refinements APPLICATION and SETNO. • INTCSERV — intercept service. Enter refinements APPLICATION and SETNO.
	APPLICATION	TOPSVR1, TOPSVR2, or STUB	Application. Enter data into this field if field BASESERV = DASERV or INTCSERV. You must have already defined this application in table SERVICES.
	SETNO	0 to 15	Link set number. Datafill this field if field BASESERV_SEL = DASERV or INTCSERV. Enter the link set number for the application. You must have already defined the link set number must in table SERVICES.

QMS Host/Remote Queuing (continued)

Datafilling table TQMSSERV

Field	Subfield or refinement	Entry	Explanation and action
IMPLCT4Q		CT4Q name from CT4QNAMS	<p>Implicit CT4Q name from table CT4QNAMS. This field assigns a CT4Q to the call when the service changes through operator key actions. If a call is dialled 0 minus and a request for DA occurs, the CT4Q can change. The CT4Q changes to the CT4Q that the system requires if the customer has directly dialled the service access code (perhaps DA_411). If the call recalls to the operator, use the DA_411 CT4Q. Use this feature to make sure that the call recalls to an operator that can serve DA_411.</p> <p>A form of this assignment appears in non-QMS TOPS. The system assigns the DA queue mark to 0 minus calls that the system converts to DA service. In non-QMS TOPS, the assignment has a fixed value. You cannot select the assignment. Use table TQMSSERV to specify CT4Qs as a assignment for service change. This field fulfills the requirement that non-QMS functionality must continue in TOPS QMS. The field extends the functionality because the CT4Q assignment can receive data entries. For example, the system sends a DA call to ADACC and AABS for call completion and billing service. In non-QMS TOPS if the call recalls to an operator, the call arrives at the position in the billing screen. In QMS TOPS the call can recall an operator. If this event occurs the call arrives at the DA screen if refinements do not occur. The call can change from POSTAUTO to a billable TA type CT4Q. This refinement causes the call to arrive at the position in the billing screen. Table control checks make sure that the definition for IMPLCT4Q appears in CT4QNAMS. The checks prevent deletions from CT4QNAMS for CT4Qs entered as IMPLCT4Qs in QMSSERV.</p> <p>The IMPLCT4Q does not appear on the screen of the operator when service switches occur. Use CT4Qs to display the origination of the calling party because the origination remains the same in the call.</p>

QMS Host/Remote Queuing (continued)

Datafilling table TQMSSERV

Field	Subfield or refinement	Entry	Explanation and action
SERVTYPE			QMS service type. This field contains selector SERVTYPE_SEL and refinements.
	SERVTYPE_SEL	BASE or CUSTOM	<p>QMS service type selector. The values are das follows:</p> <ul style="list-style-type: none"> • BASE — mimic non-QMS services. Datafill refinement AUTOAMA. • CUSTOM — QMS services. Enter data in refinements SRVAMANM, RATENAME, SERVBIL (if GOS rating) and CLDFLOAT.
	AUTOAMA	Y or N	<p>Automatically produces AMA record when you change from this service to another service. Enter this field if field SERVTYPE_SEL = BASE.</p> <p>In non-QMS TOPS, the system does not generate an AMA for calls marked TASERV when the service changes to another service. A BASESERV of TASERV can be the same as TASERV in non-QMS TOPS, enter N in the AUTOAMA field for that tuple. A call marked DASERV in non-QMS TOPS produces an AMA record when the service changes to any other service. Enter Y in the AUTOAMA field to treat a BASESERV of DASERV exactly the same as in non-QMS TOPS. This field does not apply when the new service is the same as the old service. When the services are the same, an AMA record occurs (the state of field AUTOAMA does not affect the record).</p> <p>Enter N if an AMA record does not occur when the operator changes the call from this service to another service.</p>

QMS Host/Remote Queuing (continued)

Datafilling table TQMSSERV

Field	Subfield or refinement	Entry	Explanation and action
	SRVAMANM	000-015, 900-988	<p>Service number for AMA. Enter data in this field if field SERVTYPE_SEL = CUSTOM.</p> <p>This number records the service on AMA. If the new services that these examples describe list services in nature, an Operating Company can obtain billing records for them. The operating company can obtain full alternate billing abilities. To obtain the records and abilities the Operating Company can use the Expanded Bellcore AMA system. The General Assistance module (057) contains a Service Identification field that has the value in field SRVAMANM. The range of values for this field is not continuous:</p> <ul style="list-style-type: none">• 000: Nil• 001-015: Bellcore defined service values• 900-988: New service values

QMS Host/Remote Queuing (continued)**Datafilling table TQMSSERV**

Field	Subfield or refinement	Entry	Explanation and action
	RATENAME	name from SERVNAME	<p>Rate name. Enter the service rate step calculator name (from table SERVNAME). This field is for use in real-time rating of calls with CUSTOM service. Enter data in this field if field SERVTYPE_SEL = CUSTOM.</p> <p>This field is an index into table SRVRS, that does not use table SERVSCRN to obtain SERVNAM.</p> <p>If RATENAME is TOLLFREE, the system marks calls with this custom DA service as NO AMA. A call with NO AMA is not billable.</p> <p>The steps to determine if a QMS DA call is billable appear in the following list:</p> <ol style="list-style-type: none"> 1. The datafill for the CT4Q is in table CT4QNAMS with the NOAMA field set to Y, the call is not billable. This condition applies to all calls. 2. The base service of this call is DASERV, and the BILLRQD field in DATRKOPT for the incoming trunk group is N. The call is not billable. 3. The SERVTYPE of this service is BASE, and the base service is DASERV. Call origination and class of service index the table DABILL to determine a SERVNAME. If the SERVNAME is TOLLFREE, then the call is not billable. 4. The SERVTYPE of this service can be CUSTOM. If this event occurs field RATENAME of table TQMSSERV obtains the name of the rate name for the service. If RATENAME is TOLLFREE, the call is not billable. 5. If none of the above rules hold, the call is billable.

QMS Host/Remote Queuing (continued)

Datafilling table TQMSSERV

Field	Subfield or refinement	Entry	Explanation and action
	SRVBILL	SURCHARG E or SRVBILL	Service billing. This field is for GOS rating. SRVBILL is the default. When the value is SURCHARGE, rating includes the datafill in table ATQMSMD. If the field does not have the value SURCHARGE, SRVBILL does not include the datafill in table ATQLMSMD. To enter SURCHARGE, set table TOPSPARM parameter NUMBERING_PLAN to OPEN_NUMBERING. Enter this field if field SERVTYPE_SEL = CUSTOM.
	CLDFLOAT	Y or N	Called number float. A float to called party can occur. Enter this field if field SERVTYPE_SEL = CUSTOM. CLDFLOAT controls POS RLS for called number entries. Subfield CLDFLOAT can have the value Y. When you key POS RLS with a called number entered, this action connects the called and calling parties. The call floats. If CLDFLOAT has the value of N, POS RLS does not float to a called number. The POS RLS floats for an OGT entered value. If the operator keys POS RLS with a called number entered, the system takes the call down. The system takes the call down if the forward party does not connect. For example, BASE services of type TASERV treat CLDFLOAT functionality as a Y. BASE services of type DASERV treat CLDFLOAT as an N.

Datafill example for table TQMSSERV

Sample datafill for table TQMSSERV appears in the following example.

MAP example for table TQMSSERV

SERVNUM	QMSSERV	BASESERV	IMPLCT4Q	SERVTYPE
0	TOPS_TA	TASERV	0_MINUS	BASE N
1	TOPS_DA	DASERV	DA_411	BASE Y
2	CNA	DASERV	CUST_NAME	CUSTOM 011 CNA Y
3	BIZ_OFC	TASERV	BIZOFC	CUSTOM 940 BIZRATE N

QMS Host/Remote Queuing (continued)

Datafilling table TQSVPROF

The TOPS QMS Service Profile is a table that associates lists of service names with a service profile number.

You can add tuples at any time. You cannot change tuples when an operator with the specified Service Profile number is logged on. An operator has the specified Profile Number logged on in the operator profile in table TQOPROF. You cannot change tuples when positions in table TOPSPOS can have QMS services. The QMS services are not compatible in the associated service profiles. You cannot delete the tuples when the tuples contain references to the specified Service Profile number in tables TQOPROF or TOPSPOS.

Descriptions of the fields appear in the following table:

Datafilling table TQSVPROF

Field	Subfield or refinement	Entry	Explanation and action
PROFNUM		refer to subfield	The TOPS QMS service profile number. This field has subfield PROFNUM. This field is the key field of the table.
	PROFNUM	0 to 254	The TOPS QMS service profile number for use in tables TQOPROF and TOPSPOS follow: <ul style="list-style-type: none"> • TOPSPOS—The service profile number specified for each operator position in table TOPSPOS indicates which services each position provides. • TQOPROF—The service profile number specified for each operator number in table TQOPROF. This number indicates which services each operator provides when the operator handles calls.
SVCLIST		a maximum of 63 service names from TQMSSERV	A list can contain a maximum of 63 service names that table TQMSSERV defines. When less than 63 names are required, end the list with a dollar sign (\$).

Datafill example for table TQSVPROF

Sample datafill for table TQSVPROF appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table TQSVPROF

PROFNUM	SVCLIST
0	(TOLL_AND_ASSIST) \$
1	(DIRECTORY_ASSIST) (CUST_NAME_AND_ADDR) \$
2	(TOLL_AND_ASSIST) (DIRECTORY_ASSIST) \$
3	(SVC_DEPT) \$
4	(TOLL_AND_ASSIST) (DIRECTORY_ASSIST) (CUST_NAME_AND_ADDR) (SVC_DEPT) \$

Assume for the above example that table TQMSSERV defines service names TOLL_AND_ASSIST, DIRECTORY_ASSIST, CUST_NAME_AND_ADDR and SVC_DEPT.

In the previous example, an operator with a service profile entry of 2 in field SVCPRNUM in table TQOPROF can perform TOLL_AND_ASSIST and DIRECTORY_ASSIST services. The operator can perform these services for calls that arrive at the operator position.

You can enter an operator position in table TOPSPOS with field SERVPROF set to a service profile number of 4. When this condition occurs, the TOPS application determines that this position can provide TOLL_AND_ASSIST, DIRECTORY_ASSIST, CUST_NAME_AND_ADDR and SVC_DEPT services. The Service compatibility checks during logon section describes a relationship. This relationship is between operator and position service profile names in tables TQOPROF and TOPSPOS.

Datafilling table TEAMACD

Team Automatic Call Distribution is a table that defines the Automatic Call Distribution (ACD) system in use for positions in a team.

The system determines that teams not entered in TEAMACD use the TOPS ACD.

Before you change an ACDTYPE of a team, delete each reference to the team in tables TOPSPOS and TOPSDEV.

A change of an ACDTYPE of a team to QMSCAM can occur. When this event occurs, you can add a QTADS device for that team in table TOPSDEV. The system does not add QMS position state and force management registers until you perform a cold or reload restart. Delete the QTADS device entered against a team from table TOPSDEV before you change the ACDTYPE of the

QMS Host/Remote Queuing (continued)

team from QMSCAM. Delete the QMS position state and force management registers for a team when you change the ACDTYPE from QMSCAM.

A QMFADS report prints a record for a traffic office. This event occurs when that traffic office has an ACD type of QMSCAM in table TEAMACD.

The system sends one traffic office record for each traffic office entered as QMSCAM in table TEAMACD.

You must enter QTADS devices in table TOPSDEV for teams defined as QMSCAM in table TEAMACD. Reports that the system prints at QMFADS, QFADS and QTADS devices include records for teams identified as QMSCAM in table TEAMACD.

An office can have the QMFADS device and the TOPS ACD MFADS device. When this condition occurs, the MFADS device continues to print reports for traffic offices 1 to the maximum that TOPS_MAX_TRAFFIC_OFFICES defines. This action occurs for traffic offices entered as QMS in table TEAMACD. Reports for traffic offices entered as QMS in table TEAMACD have each field zeroed. This event occurs when the system prints the report at MFADS devices. Discard traffic office information from the MFADS report for traffic offices entered as QMS in table TEAMACD.

Descriptions of the fields appear the following table:

Datafilling table TEAMACD

Field	Subfield or refinement	Entry	Description
TEAM		1 to 30	This field associates with a TOPS traffic office entered against TOPS positions in table TOPSPOS. Do not enter team numbers greater than the value of TOPS_NUM_TRAFFIC_OFFICES in table OFCENG.
ACDTYPE		QMSCAM or TOPSACD	Automatic call distribution type system. Enter QMSCAM for QMS or TOPSACD for non-QMS.

Datafill example for table TEAMACD

Sample datafill for table TEAMACD appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table TEAMACD

TEAM	ACDTYPE
1	TOPSACD
2	QMSCAM
3	TOPSACD
4	TOPSACD
5	QMSCAM
12	QMSCAM

Datafilling table TOPSPOS

The QMS Host/Remote Queuing datafill for table TOPSPOS appears in the following table. The fields that apply to QMS Host/Remote Queuing appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TOPSPOS

Field	Subfield or refinement	Entry	Description
POSNO		numeric (0 to 9999)	Position number. In a TOPS OC network, operator positions that provide directory assistance (DA) or intercept services must have different position numbers. This rule applies across the network and to each software release. Position numbers must be different for the host and the associated remotes. Position numbers must be different for remotes off the same host.
	ACD	QMSCAM	Automatic call distribution. Enter new value QMSCAM. Enter refinements CAMLOC and SERVPROF.

QMS Host/Remote Queuing (continued)

Datafilling table TOPSPOS

Field	Subfield or refinement	Entry	Description
	CAMLOC	CORECAM, APCAM	<p>Call and agent manager location. Enter this field. This field contains the location of the call and agent manager (CAM), when the value in field ACD is QMSCAM.</p> <p>Enter CORECAM to specify the core as the location of the CAM.</p> <p>Entry values other than the values listed are not correct.</p>
	SERVPROF	numeric (0 to 254)	<p>Service profile number. Enter this field when the value in field ACD is QMSCAM.</p> <p>Enter the service profile number that relates to the position. The operating company enters the associated service profile in table TQSVPROF. The service profile that associates with the profile number cannot contain a service with an associated service number. The service number is in table TQMSSERV, and is greater than 15. This condition applies for TOPS MP positions with ASCII protocol.</p> <p>Entry values other than the values that appear are not correct.</p>

Datafill example for table TOPSPOS

Sample datafill for table TOPSPOS appears in the following example.

MAP example for table TOPSPOS

```

POSNO          VCCKT          VCPDGRP        CARDCODE
DATAPATH
POSAREA
-----
300            TMS 1 0 15  NPDGP        DS1SIG
TMS MP ASCII 27 0
OPR 2 QMSCAM CORECAM 6
    
```

QMS Host/Remote Queuing (continued)

Datafilling table TQCATNAM

The TOPS QMS Call Category Name is a table that defines the call category names in use in the controlled traffic profile tables. To train operators, controlled traffic is required.

You can add or change tuples at any time. You cannot delete tuples when references to the specified call class name in table TQCATDEF or TQCTPROF are present.

Descriptions of the fields appear in the following table:

Datafilling table TQCATNAM

Field	Subfield or refinement	Entry	Description
CATNUM		0 to 254	Call category number to index to table. This field is the key field of the table.
CATNAME		1 to 15 characters	Call category name definition. Enter a string of 1 to 15 characters that represent a call category name. Use of this string occurs in tables TQCATDEF and TQCTPROF.

Datafill example for table TQCATNAM

Sample datafill for table TQCATNAM appears in the following example.

Map example for table TQCATNAM

CATNUM	CATNAME
0	0_PLUS
1	1_PLUS
2	DIRASST

Datafilling table TQCATDEF

The TOPS QMS Call Category Definition is a new table that associates a call queue with a category name for controlled traffic. To train operators, controlled traffic is required. You can add, change or delete tuples at any time.

QMS Host/Remote Queuing (continued)

Descriptions of the fields appear in the following table.

Datafilling table TQCATDEF

Field	Subfield or refinement	Entry	Explanation and action
CT4Q		Call queue name	Call queue name that table CT4QNAMS defines.
CATNAME		Call category name	Call category name that table TQCATNAM defines.

Datafill example for table TQCATDEF

Sample datafill for table TQCATDEF appears in the following example.

MAP example for table TQCATDEF

CT4Q	CATNAME
ZPLUS	0_PLUS
ONEPLUS	1_PLUS
DA_411	DIRASST
DA_555	DIRASST

Datafilling table TQCTPROF

The TOPS QMS Call Queue Profile is a table that groups call category names in controlled traffic profiles.0. To train an operator, controlled traffic is required.

You can add or change tuples at any time. You cannot delete tuples when references to the specified Controlled Traffic Profile number in table TQOPROF are present. An operator can log on with the Controlled Traffic Profile number in the operator profile in table TQOPROF. When that operator is logged on, you cannot delete tuples.

QMS Host/Remote Queuing (continued)

Descriptions of the fields appear in the following table:

Datafilling table TQCTPROF

Field	Subfield or refinement	Entry	Explanation and action
PROFNUM		0 to 254	Controlled traffic profile number. This entry is the key to the table from table TQOPROF.
DLAYCT4Q		CT4Q from CT4QNAMS	Call type for queuing for delay calls. Enter a CT4Q name defined in table CT4QNAMS. This queue is for delay calls which an operator with the call queue profile initiates. This action allows the operator to separate and track delay calls for force management and statistical purposes.
CATLIST		1 to 128 names from TQCATNAM	Call category names list. Enter a maximum of 128 call category names defined in table TQCATNAM. When less than 128 names are required, end the list with a \$ (dollar sign).

Datafill example for table TQCTPROF

Sample datafill for table TQCTPROF appears in the following table.

MAP example for table TQCTPROF

PROFNUM	DLAYCT4Q	CATLIST
0	DLAYCT	(0_PLUS) \$
1	DLAYCT	(0_PLUS) (1_PLUS) \$
2	DLAYCT	(0_PLUS) (DIRASST) \$
3	DLAYCT	(DIRASST) \$

In the previous example, an operator with a Controlled Traffic Profile of 2 receives calls with CT4Qs of ZPLUS, DA_411 and DA_555. These call types are for queuing that associates with category names 0_PLUS and DIRASST.

Datafilling table QAPLNDEF

The QMS Application Definition is a table that specifies the call and agent queuing bounds for each application. Use of these limits allocate internal data store for the application.

The system allocates first data store when entry of a tuple against the application name in table QAPLNDEF occurs. The system deallocates the data store after the deletion of a tuple occurs.

QMS Host/Remote Queuing (continued)

You can change the field values in a QAPLNDEF tuple for an application. This action must not decrease the size of the following field values:

- CALLQS
- CQELEMS
- AGENTQS
- NUMAGNTS

The size of these fields and the associated deallocation of data store can decrease when you delete the complete tuple. When you add the tuple again, include the smaller field size. You can delete the tuple after you delete application entries in table QMSCQDEF. This action requires you to turn off the queueing functionality for the application. Leave the functionality off until you enter the QAPLNDEF tuple and QMSCQDEF entries again. Another option is to reduce the field size(s) as part of the dump and restore process during BCS upgrades.

When you increase the size of these fields with the change command, the system immediately allocates the additional data store. This action does not require a restart.

Descriptions of the fields appear in the following table.

Datafilling table QAPLNDEF

Field	Subfield or refinement	Entry	Description
APLNAME		Refer to subfield	Application name. This field has subfield APLNAME.
	APLNAME	TOPS	Application name. This field is the key and must be one of a predefined set of values. Enter TOPS.
CALLQS		1 to 255	Call queues. This field specifies the number of allocated call queues for the application. The maximum for this field is 8,191 call queues. Each application can enforce lower maximums. For TOPS, the maximum acceptable value is 255.

QMS Host/Remote Queuing (continued)

Datafilling table QAPLNDEF

Field	Subfield or refinement	Entry	Description
CQELEMS		1 to 32767	<p>Call queues elements. This field specifies the number of call queues elements allocated for the application. This field indicates the maximum number of calls allowed in queue at one time.</p> <p>Enter the CQELEMS field with a value that indicates the maximum number of calls expected to wait in call queues. The calls wait for an available agent. This value must be high enough that applications never exceed the value. A safe method is to sum the values to enter in the CQMAXSIZ field in table QMSCQDEF. Sum the values for each call queue defined. Enter this value in the CQELEMS field.</p> <p>When calls exceed the CQELEMS threshold during call processing, call queue overflow occurs. The system deflects calls from every call queue in the application. This deflection occurs until the total number of calls in queue falls below the CQELEMS threshold.</p> <p>The OM register CQELHIGH in OM Group QMSDATA allows the monitoring of the maximum number of call queue elements in use at one time for each QMS application. This action occurs for a specified OM reporting period. When the CQELHIGH register indicates the current CQELEMS maximum is too high during busy hours, reduce the CQELEMS field value.</p>
AGENTQS		1 to 255	<p>Agent queues. This field indicates the number of queues allocated for idle agents (operator positions). The MAP display indicates the range is 1 to 2047. For TOPS, the maximum value is 255.</p> <p>When groups of agents handle different types of calls, you must specify separate agent queues for each agent group. This action improves search performance. Field AGENTQS datafill must contain the total number of agent queues required.</p> <p>For example, when DA and TA call type agents are segregated, a check of the specified agent queues must occur. (DA or TA). When the call type agents are not segregated, a check of each agent (DA and TA) in the one queue occurs.</p>

QMS Host/Remote Queuing (continued)**Datafilling table QAPLNDEF**

Field	Subfield or refinement	Entry	Description
NUMAGNTS		1 to 1023	Number of agents. This field indicates the maximum number of agents that can log on TOPS positions at any one time. The MAP display indicates the range is 1 to 16383. For TOPS, the maximum value is 1023.
CTSEARCH		0 to 254	<p>Controlled traffic search depth. This field indicates the Controlled Traffic Agent Queue maximum search depth for an agent. This agent serves the call class associated with a TOPS call that arrives. The recommended value is 10 when an application uses Controlled Traffic Profiles. When an application does not use Controlled Traffic Profiles, use 0. For TOPS, the maximum value is 254.</p> <p>Controlled traffic agent profiles are for agent training purposes. Normal call processing routes different call classes to the same call queue. Controlled traffic uses the call type to route calls to controlled traffic agents. This action allows an agent to learn how to handle one call type at a time.</p> <p>Do not overuse the Controlled Traffic mechanism because the amount of time agent training requires. For incoming calls, the system considers a controlled traffic agent before a normal operator. The system does not consider calls already in queue when a controlled traffic agent becomes idle.</p> <p>You cannot set field CTSEARCH to 0 when the system denies an agent with a Controlled Traffic profile for the application. These agents do not receive calls when the idle Controlled Traffic agent queue search depth is 0.</p>

Datafill example for table QAPLNDEF

Sample datafill for table QAPLNDEF appears in the following example.

MAP example for table QAPLNDEF

APLNAME	CALLQS	CQELEMS	AGENTQS	NUMAGNTS	CTSEARCH
TOPS	255	3000	20	1023	10

QMS Host/Remote Queuing (continued)

Datafilling table QMSCQDEF

Queue Management System Call Queue Definition is a table that defines the characteristics of the call queues that each application requires. A two-part key that contains the application name and a call queue number indexes this table.

You can add tuples at any time. The specified application can use the tuples immediately.

You can change tuples at any time. These changes take effect immediately. For example, an agent with office-wide call queue priority profile that contains TOPS call queue 0 can handle a call. A change in the priority of call queue 0 from 20 to 10 can occur. When this event occurs, the change in priority takes immediate effect. The updated call queue priorities in the profile of the agent determine the call selected for the agent from queue. This process occurs the next time the agent becomes available.

You cannot delete a tuple when the call queue under removal is present in the call queue profile of an agent. The call queue profile is table TQCQPROF. An agent is table TQOPROF. You cannot delete tuples when calls in the call queue are under removal.

Descriptions of the fields appear in the following table:

Datafilling table QMSCQDEF

Field	Subfield or refinement	Entry	Description
APPLNCQ		refer to subfields	Application name and call queue number. This field is the key to the table and contains the subfields APLNAME and CALLQNUM.
	APLNAME	TOPS	Application name. Enter TOPS.
	CALLQNUM	0 to 8190	Call queue number. The call queue number must be lower than the CALLQS value in table QAPLNDEF for the application. For example, when CALLQS=10, you can enter call queues in the range 0 to 9 in table QMSCQDEF.

QMS Host/Remote Queuing (continued)

Datafilling table QMSCQDEF

Field	Subfield or refinement	Entry	Description
CQPRIO		0 to 126	<p>Call queue priority. This field indicates the priority of the call queue. The value 0=lowest priority and the value 126=highest priority. The system considers calls in queues with a higher priority first. The call age (field CQAGS) does not affect the way the system considers calls. The system chooses calls in queues with the same priority according to call age (field CQAGS).</p> <p>This field provides complete priority. Field CQAGS provides relative priority.</p> <p>For additional information, refer to table TQCQPROF to the paragraphs about field PRIOTYPE that follow the datafill example.</p>
CQAGS		10 to 80	<p>Call queue assignable grade of service aging. This field allows artificial aging of a call. You can select a value between 10 and 80 to represent aging factors from 1.0X to 8.0X. The system multiplies the age of the oldest call in a queue by the aging factor of the queue. Use of this age occurs for comparison with the oldest calls in other served queues. For no aging, enter 10.</p> <p>For example, when a call is 3 sec old and CQAGS=18, the adjusted age is $3 * 1.8 = 5.4$ seconds.</p> <p>The system serves calls in a queue with a higher priority (field CQPRIO) first. The system chooses calls with the same priority according to age (field CQAGS). The system serves the oldest call first.</p> <p>This field provides relative priority. Field CQPRIO provides complete priority.</p> <p>For additional information, refer to table TQCQPROF to the sections about field PRIOTYPE that follow the datafill example.</p>

QMS Host/Remote Queuing (continued)

Datafilling table QMSCQDEF

Field	Subfield or refinement	Entry	Description
CQMAXSIZ		0 to 32766	<p>Call queue maximum size. This field defines the maximum number of calls allowed in the queue. When the number of calls exceeds this number, the system deflects additional calls. This action occurs for calls with a deflect status of NO DEFLECT (field ALLOWDEF = N). This action normally occurs for a 0 minus call when operators are not available. The system deflects the call and sends the call to treatment. On the second attempt, when operators are not available, the status of the call becomes NO DEFLECT.</p> <p>The system maintains a single pool of call queuing elements for each application in table QAPLNDEF. The CQMAXSIZ field does not allow a call queue or a subset of call queues in an application to consume the call queuing elements. These elements are for the application. This action occurs when the call queues are in an extreme overload condition. This action makes sure that other call queues not in an overload condition can continue to function normally.</p> <p>You must set the CQMAXSIZ value so that calls do not exceed the value during anticipated peak traffic conditions. Use the CQCETIME field to control the input of calls to the call queues. This action makes sure that calls do not exceed the CQMAXSIZ thresholds.</p>
DEFLAREA		refer to subfield	Deflect area. This field has subfield ALLOWDEF and refinements.

QMS Host/Remote Queuing (continued)

Datafilling table QMSCQDEF

Field	Subfield or refinement	Entry	Description
	ALLOWDEF	Y or N	<p>Allowed deflection. This field indicates when the system must consider a deflection threshold before the system queues a call.</p> <p>If this field is set to N, the predicted wait time does not affect how the system queues calls. The CQMAXSIZ limit and the limited number of call queue elements available do affect how the system queues calls. The CQELEMS field size in table QAPLNDEF determines the number of call queue elements available. Additional refinements do not require datafill.</p> <p>The system can deflect calls marked for this call queue. This deflection can occur when the predicted wait for a call exceeds the threshold specified in field CQCETIME. To allow the system to deflect these calls, enter Y. Enter data in refinements CQCETIME and MINODEFL.</p>

QMS Host/Remote Queuing (continued)

Datafilling table QMSCQDEF

Field	Subfield or refinement	Entry	Description
	CQCETIME	0 to 32766	<p>Call queue call deflection time. Enter the predicted call wait time (in tenths of seconds) before the system deflects the call from the queue.</p> <p>When the predicted wait time for new calls exceeds the CQCETIME value, the system deflects these calls from the queue. The system deflects the calls until the predicted wait time drops below this threshold.</p> <p>One exception is a 0 minus call on the second attempt where the system cannot deflect the call (Deflect Status = NO DEFLECT). When this condition occurs, the system attempts to place the call in the call queue. The CQCETIME threshold that is subject to the CQMAXSIZ and CQELEMS constraints does not affect this action.</p> <p>To determine the predicted wait time, monitor the rate at which the system handles calls from the specified queue. Monitor this rate for the preceding 60 s, updated every 10 s. Check the number of calls in queue. For example, when the system handles 120 calls in the previous 60 s and the queue holds 29 calls, the projected wait time for a new call is $(29 + 1)/2$, or 15 s.</p> <p>Calls served include calls the system presents to an operator and calls that the system abandons.</p> <p>The system does not always handle calls for a specified call queue in the preceding 60 s. When this condition occurs, the system cannot predict the wait time of a call that arrives. The system does not deflect calls from this queue until the system handles a call. When the system handles this call, the system updates the 60-second total to reflect the call. The system does not deflect calls from this queue until the system obtains a correct predicted wait time.</p>

QMS Host/Remote Queuing (continued)

Datafilling table QMSCQDEF

Field	Subfield or refinement	Entry	Description
	MINODEFL	0 to 32766	Minimum no deflection. Enter the minimum number of calls in queue below which the system does not deflect calls. The system continues to deflect calls when calls exceed the value in CQCETIME. This action does not allow the premature deflection of calls from call queues with very low or erratic throughput. When the number of calls in queue equals or exceeds MINODEFL, the system applies CQCETIME.
PRAQAREA		refer to subfield	Priority agent queue area. This field contains subfield PRIOAQ and refinements.

QMS Host/Remote Queuing (continued)

Datafilling table QMSCQDEF

Field	Subfield or refinement	Entry	Description
	PRIOAQ	Y or N	<p>Priority agent queue. This field indicates when a priority agent queue must associate with the specified call queue (CALLQNUM).</p> <p>You can set this field to Y. This value allows the agent queue specified in field AQNUM to search for an agent to serve incoming calls first. The system overlooks agents in other agent queues that can serve the call.</p> <p>When agents in the priority queue cannot serve the call, the system searches the agent queues that remain. This action occurs when the predicted wait time for the call that arrives exceeds the PRTHTIME threshold specified. The system compares the agent age to the age of the oldest agent that can serve the call. The call is in the other agent queues. This action occurs when the system locates an agent. The length of time the agent waits in the agent queue determines the age of the agent. The system transfers the call to the agent that waits the longest.</p> <p>When the predicted wait time does not exceed the threshold or the system cannot predict the wait time, the system queues the call.</p> <p>When you set this field to N, the system considers every agent queue that contains agents that can serve the call equally. The system transfers the call to the agent idle the longest.</p> <p>When you set this field to Y, enter refinements AQNUM and PRTHTIME. When set to N, additional refinements do not require datafill.</p> <p>You can use priority agent queues to route specified types of calls to operators with more experience. The system bypasses less preferred operators that wait longer for a call for these operators.</p> <p>Do not overuse priority agent queues. Overuse of these queues distorts the normal distribution of calls to operator positions that are most-idle. For example, the system can overlook operators in priority agent queues while other operators sit idle.</p>

QMS Host/Remote Queuing (continued)

Datafilling table QMSCQDEF

Field	Subfield or refinement	Entry	Description
	AQNUM	0 to 2046	Agent queue number. Use the agent queue value specified in table QAPLNDEF to enter the agent queue to receive priority in the range 0 to x (where x = AGENTQS - 1).
	PRTHTIME	0 to 32766	Priority threshold time. When an agent is not waiting in the priority agent queue to serve a call, the system considers other agent queues. The system performs this action when the predicted wait time for the call exceeds this threshold. The wait time is in tenths of seconds.

Datafill example for table QMSCQDEF

Sample datafill for table QMSCQDEF appears in the following example.

MAP example for table QMSCQDEF

APPLNCQ	CQAGS	ALLOWDEF	MINODEFL	AQNUM
CQPRI0	CQMAXSIZ	CQCETIME	PRI0AQ	PRTHTIME
TOPS 0	20 18	300 Y	600 5	Y 4 100
TOPS 1	20 10	200 N	600 5	Y 4 0
TOPS 2	35 18	300 Y	600 5	Y 3 100
TOPS 3	35 10	240 Y	600 5	N

Datafilling table TQCQPROF

The TOPS QMS Call Queue Profile is a table that specifies which call queues an operator receives calls from. The system uses the call queue assignment process to assign each incoming TOPS call. The system assigns the call queue to one of a maximum 255 call queues. You can create different profiles to allow different groups of operators to handle calls from different subsets of these call queues.

This table associates lists of call queues with a call queue profile number. You can associate each operator number with one of these profile numbers. Datafill for profiles common to several operators is central for easier maintenance and reduced data store use.

QMS Host/Remote Queuing (continued)

Descriptions of the fields appear in the following table:

Datafilling table TQCQPROF

Field	Subfield or refinement	Entry	Description
CQPROFNM		refer to subfield CQPROFNM	Call queue profile number. This field is the key to the table. Use table TQOPROF to index this table. This field has subfield CQPROFNM.
	CQPROFNM	0 to 254	Call queue profile number. This number associates with lists of call queues. You can associate each operator number in table TQOPROF with one of these profile numbers.
DLAYCT4Q		CT4Q name from table CT4QNAMS	Call type for queuing for delay calls. This field specifies the CT4Q name for delay calls that an operator with the specified Call Queue profile initiates. Table CT4QNAMS defines this CT4Q name. This action allows you to separate and track delay calls for force management and statistical purposes.
AGENTQ		AQ0 to AQ254	<p>The TOPS QMS agent queue number. Enter the agent queue where the system places an operator when idle and available to handle calls.</p> <p>The value in field AGENTQS, table QAPLNDEF limits the range. For example, when AGENTQS=5, table TQCQPROF datafill must contain agent queues in the range AQ0 to AQ4.</p> <p>When this agent queue is to be prioritized, enter this queue in table QMSCQDEF, field AQNUM. For additional information about priority agent queues, refer to table QMSCQDEF, field PRIOAQ.</p> <p>You can use field AGENTQ to facilitate a search of agent queues. For additional information about field AGENTQ, refer to the section on field AGENTQ that follows the datafill example.</p>
PRIOAREA		refer to subfield	Call queue priority type selector. This field has subfield PRIOTYPE.

QMS Host/Remote Queuing (continued)

Datafilling table TQCQPROF

Field	Subfield or refinement	Entry	Description
	PRIOTYPE	OFC or PROF	<p>Call queue priority type. The values follow:</p> <ul style="list-style-type: none"> • OFC—table QMSCQDEF determines call queue priorities and AGS values office-wide. This process applies to call queues in refinement CQLIST. Value OFC is the easiest to enter and results in the application of the same priorities and AGS values to every operator. Enter data in refinement CQLIST. For additional information, refer to the sections on field PRIOTYPE that follow the datafill example. • PROF—specifies priority and AGS values for each call queue. The PROF does not specify priority and AGS values office-wide. Enter refinements PRIO3, PRIO2, PRIO1 and PRIO0. You can enter a maximum of four multiples of each specified priority level. These levels are PRIO3 (highest priority), PRIO2, PRIO1 and PRIO0 (lowest priority). When less than four multiples are required, end the list with a \$. See the sections on field PRIOTYPE that follow the datafill example for additional information.

QMS Host/Remote Queuing (continued)

Datafilling table TQCQPROF

Field	Subfield or refinement	Entry	Description
	CQLIST	CQ0 to CQ254	<p>Call queue list. When the entry in subfield PRIOTYPE is OFC, enter this refinement. Enter a value for each call queue that the profile includes.</p> <p>Additional refinements do not require datafill.</p> <p>Before functionality QMS Customer Service Enhancements (ADVQ0006) in NA006, the entry of a minimum of one queue was required. This requirement does not apply to NA006. The SOC state of this functionality does not affect this change. Entry of an empty office-wide call queue profile affects operators that use this profile. The state of the functionality does not affect this condition.</p> <p>This field defines the list of office-wide call queues which an operator that uses the profile serves. This list does not apply to operators that use controlled traffic profiles instead of call queue profiles entered in table TQOPROF. This list does not apply to operators that use call queue profiles that apply to profiles and are not office-wide. Table TQCQPROF contains these call queue profiles.</p> <p>When the call queue list for an operator is empty, the operator does not receive subscriber or general assistance calls. The operator continues to receive directed assistance calls.</p>
	PRIO3	refer to subfields	<p>Priority level 3. When the entry in subfield PRIOTYPE is PROF, enter data in this refinement. This field is the highest priority level and has subfields CALLQ and AGS.</p>

QMS Host/Remote Queuing (continued)

Datafilling table TQCQPROF

Field	Subfield or refinement	Entry	Description
	CALLQ	CQ0 to CQ254	<p>Call queue. When the entry in subfield PRIOTYPE is PROF, enter data in this refinement. Enter a maximum of 32 call queues to include in the profile. When less than 32 queues are required, end the list with a \$ (dollar sign).</p> <p>Field CALLQS in table QAPLNDEF limits the range of call queues. For example, when CALLQS is set to 10, enter data in call queues in the range CQ0 to CQ9 in table TQCQPROF. Table QMSCQDEF must contain each call queue specified.</p>
	AGS	10 to 80	<p>Assignable grade of service. When the entry in subfield PRIOTYPE is PROF, enter data in this refinement. Enter the aging factors from 1.0X to 8.0X for the grade of service to apply to the call queue, refinement CALLQ, for the purposes of this profile. When you do not require aging, enter 10. The system handles the oldest call first.</p>
	PRIO2	refer to subfields	<p>Priority level 2. When the entry in subfield PRIOTYPE is PROF, enter data in this refinement. This field is the second highest priority level and has subfields CALLQ and AGS.</p>
	CALLQ	CQ0 to CQ254	<p>Call queue. When the entry in subfield PRIOTYPE is PROF, enter data in this refinement. Enter a maximum of 32 call queues to include in the profile. When you require less than 32 queues, end the list with a \$.</p> <p>Field CALLQS in table QAPLNDEF limits the range of call queues. For example, when you set CALLQS to 10, table TQCQPROF must contain call queues in the range CQ0 to CQ9. Table QMSCQDEF must contain each call queue specified.</p>

QMS Host/Remote Queuing (continued)

Datafilling table TQCQPROF

Field	Subfield or refinement	Entry	Description
	AGS	10 to 80	Assignable grade of service. If the entry in subfield PRIOTYPE is PROF, enter data in this refinement. Enter the aging factors from 1.0X to 8.0X for the grade of service to apply to the call queue, refinement CALLQ, for this profile. When you do not require aging, enter 10. The system handles the oldest call first.
	PRIO1	refer to subfields	Priority level 1. When the entry in subfield PRIOTYPE is PROF, enter data in this refinement. This field is the third highest priority level and has subfields CALLQ and AGS.
	CALLQ	CQ0 to CQ254	Call queue. When the entry in subfield PRIOTYPE is PROF, enter data in this refinement. Enter a maximum of 32 call queues to include in the profile. When you require less than 32 queues, end the list with a \$. Field CALLQS in table QAPLNDEF limits the range of call queues. For example, you can set CALLQS to 10. When you use this value, table TQCQPROF must contain call queues in the range CQ0 to CQ9. Table QMSCQDEF must contain each call queue specified.
	AGS	10 to 80	Assignable grade of service. When the entry in subfield PRIOTYPE is PROF, enter data in this refinement. Enter the aging factors from 1.0X to 8.0X for the grade of service to apply to the call queue, refinement CALLQ, for this profile. When you do not require aging, enter 10. The system handles the oldest call first.
	PRIO0	refer to subfields	Priority level 0. When the entry in subfield PRIOTYPE is PROF, enter data in this refinement. This field is the lowest priority level and has subfields CALLQ and AGS.

QMS Host/Remote Queuing (continued)

Datafilling table TQCQPROF

Field	Subfield or refinement	Entry	Description
	CALLQ	CQ0 to CQ254	<p>Call queue. When the entry in subfield PRIOTYPE is PROF, enter data in this refinement. Enter a maximum of 32 call queues to include in the profile. When you require less than 32 queues, end the list with a \$.</p> <p>Field CALLQS in table QAPLNDEF limits the range of call queues. For example, you can set CALLQS to 10. When you use this value, table TQCQPROF must contain call queues in the range CQ0 to CQ9. Table QMSCQDEFE must contain each call queue specified.</p>
	AGS	10 to 80	<p>Assignable grade of service. When the entry in subfield PRIOTYPE is PROF, enter data in this refinement. Enter the aging factors from 1.0X to 8.0X for the grade of service to apply to the call queue, refinement CALLQ, for this profile. When you do not require aging, enter 10. The system handles the oldest call first.</p>

Datafill example for table TQCQPROF

Sample datafill for table TQCQPROF appears in the following example.

MAP example for table TQCQPROF

CQPROFNM	AGENTQ	DLAYCT4Q	PRIOAREA
0	DLAYCQ	AQ0	OFC (CQ1) (CQ4) (CQ0) \$
1	DLAYCQ	AQ0	OFC (CQ2) \$
2	DLAYCQ	AQ0	OFC (CQ1) (CQ2) \$
3	DLAYCQ	AQ0	OFC (CQ0) \$
4	DLAYCQ	AQ1	PROF (CQ5 10) \$ (CQ6 20) (CQ10 30) (CQ11 10) \$
5	DLAYCQ	AQ1	PROF (CQ7 15) (CQ9 10) \$ \$ (CQ6 10) (CQ10 10) \$ (CQ11 10) \$ (CQ5 10) \$
6	DLAYCQ	AQ1	PROF (CQ8 25) (CQ6 10) \$ \$ \$ \$

QMS Host/Remote Queuing (continued)

The following sections use the example above to provide additional information about fields AGENTQ and PRIOTYPE:

- Field AGENTQ

Field AGENTQ facilitates the search of agent queues. The system performs the search when a call arrives and idle agents are present in the agent queues. You can use a single agent queue for an complete TOPS configuration. Correct use of multiple agent queues results in real time savings. Operators can be in separate functional groups determined by the type of calls the operator receives. When this event occurs, use a separate agent queue for each group.

The above example specifies two different agent queues. The TA operators serve call queues CQ0 to CQ4. The system places these operators in agent queue AQ0 when idle. The DA operators serve call queues CQ5 to CQ11. The system places these operators in agent queue AQ1 when idle.

The advantage to this split occurs when many DA operators are idle. The system queues these operators in AQ1. The TA operators are busy and AQ0 is empty. When a TA call is marked for call queue CQ3, the system checks AQ0. The system places the call in call queue CQ3 because AQ0 is empty. Every TA and DA operator can be assigned to a single agent queue. When this event occurs, the search continues through each idle DA agent in the agent queue. When the system determines that every TA operator is busy, the system queues the call.

- Field PRIOTYPE

You can specify absolute (table QMSCQDEF, field CQPRIO) and relative (table QMSCQDEF, field CQAGS) call queue priorities for all applications (table TQOPROF, field PRIOTYPE = OFC). You can specify absolute (table QMSCQDEF, field CQPRIO) and relative (table QMSCQDEF, field CQAGS) call queue priorities for each agent (table TQOPROF, field PRIOTYPE = PROF). Specification of each agent allows the configuration of groups of agents that the concept of primary work/secondary work differentiation determines.

For example, in a specified application, one agent group can serve calls of category A. This agent group serves category A calls at a higher priority than calls of category B. A different agent group can serve calls of category B at a higher priority than calls of category A. Each group can perform the same types of work and prioritize the mix of calls in a different way.

An example of an application that requires primary work/secondary work differentiation follows. Groups of directory assistance operators provide assistance for specified localities. These operators provide backup for operator groups that serve other localities in the area. The configuration of

QMS Host/Remote Queuing (continued)

each group can allow each group to handle calls for a specified locality at a high priority. This event is primary work. The groups handle calls from outside this locality (secondary work) at a lower priority.

A second example follows:

- Operator team A serves Directory Assistance calls first. This team serves Toll and Assist calls when Directory Assistance calls are not in queue.
- Operator team B serves Toll and Assist calls first. This team serves Directory Assistance calls when Toll and Assist calls are not in queue.

For this example, office-wide priorities are not enough. Priorities for specified profiles are required to allow two or more different teams to serve the same sets of call queues at different priority levels.

In the above example, profile number 0 has a priority type of OFC. The system searches the call queues specified. The system performs the search according to the office-wide priority and AGS values that table QMSCQDEF defines. This action occurs when an operator of this profile type becomes available.

Profile number 4, has a priority type of PROF. This priority debate indicates that the system searches call queues specified in the tuple as the order of the call queue lists indicate.

When an operator with profile 4 becomes available, the system transfers the highest priority call queue list (PRIO3) for profile 4 first. The PRIO3 contains call queue CQ5, which the system checks first. The AGS that associates with CQ5 in the CQ/AGS couplet does not affect this condition. This event occurs because one call queue in the PRIO3 list is present. When a call waits in CQ5, the system transfers the call to the operator.

When calls are not present in CQ5, the system checks the list of queues at PRIO2 (CQ6, CQ10 and CQ11). The system weights the oldest call in each queue. The system weights this call according to the Assignable Grade of Service weight specified for each queue. The system selects the oldest weighted call.

The system considers the PRIO1 call queue list when calls are not present in CQ5, CQ6, CQ10 or CQ11. This list contains call queues CQ7 and CQ9.

A call queue list is not specified for PRIO0. The system does not always find a call in the listed call queues. When this event occurs, the system places the operator in the idle agent queue that field AGENTQ specifies.

QMS Host/Remote Queuing (continued)

Datafilling table TQOPROF

The TOPS QMS Operator Profile is a table that specifies which call selection and service profiles apply to an operator number.

An operator can log on to an operator position that has an appropriate configuration. When this event occurs, the system presents calls according to the call selection profile of the operator. When a call arrives at a position, the operator can provide the call with a service. The service profile of the operator for the call defines this service.

In TOPS QMS, each CT4Q associates with a single call queue. Each call queue associates with a single service name. The Service Profile of the operator must contain the services that Controlled Traffic or Call Queue Profile of an operator requires. The service profile is in table TQSVPROF.

You can add tuples at any time. You cannot change tuples during an attempt to alter the Call Selection type and/or Service Profile number. The attempt, for this condition, occurs while the operator is logged on. Changes to the Call Selection Profile number do not take effect until the operator logs on again.

When you enter data in QMS, enter the assistants in table OPRDAT for each position type except MPX. You must enter the assistant in table TQOPROF as if the assistant is an operator.

In TOP06 and earlier, when you delete a tuple, the system does not reset the associated password to the default (TOPS). The password remains set to the current value when you delete the tuple. This value does not change when you add the same operator number back to the table. The value of table OFCENG parameter TOPS_PASSWORD_ENABLE (Y or N) does not affect this condition.

In TOP07, when you delete a tuple, the system resets the associated password to the default (TOPS). The password does not change when you add the same operator number back to the table. The value of table OFCENG parameter TOPS_PASSWORD_ENABLE does not affect this condition.

QMS Host/Remote Queuing (continued)

Descriptions of the fields in the following table:

Datafilling table TQOPROF

Field	Subfield or refinement	Entry	Description
OPRNUM		refer to subfield	Operator number. This field has subfield OPRNUM. This field is the key field of the table.
	OPRNUM	0 to 9997	<p>Operator number. Enter the number of the operator for which profile is defined for.</p> <p>The operator enters this number at login. Table OPRDAT must contain the Assistant and In-Charge operator numbers. Table OPRDAT must contain these numbers because TOPS Assistance processing uses a separate call distribution. This call distribution is independent of TOPS QMS. Table TQOPROF must contain the assistances on MPX positions. Do not enter these assistances in table OPRDAT.</p> <p>For TOPS offices in between TOPS internal ACD and TOPS QMS, you cannot specify the same operator numbers in specified tables. These tables are tables OPRDAT and TQOPROF.</p>
DFLTTEAM		1 to 30	<p>Default team number. This field indicates which team, or Traffic Office, the operator belongs to when not logged on. This information is for TOPS Force Management purposes. When logged on, the operator belongs to the team entered for the position in table TOPSPOS. Tables TEAMACD, TOPSPOS, OPRDAT and TOPSDEV contain this team number. You cannot enter a team number greater than the value in TOPS_NUM_TRAFFIC_OFFICES in table OFCENG. Refer to functionality TOPS ACD Features (OSB00001) for additional team information.</p>
SVCPRNUM		number from TQSVPROF	<p>Service profile number. Enter the TOPS QMS service profile number that indicates which QMS services the operator provides. Table TQSVPROF defines this number. Table TOPSPOS uses this number.</p>
SELAREA		refer to subfield	<p>Call selection area. This field has subfield CALLSEL and refinements.</p>

QMS Host/Remote Queuing (continued)

Datafilling table TQOPROF

Field	Subfield or refinement	Entry	Description
	CALLAREA	CONTRAF, CALLQ	Call selection type. This selector indicates when Call Queue or Controlled Traffic call selection is active. The values follow: <ul style="list-style-type: none"> • CONTRAF—the system uses the datafill in table TQCTPROF that associates with field CTPROFNM to select calls for the operator. The system uses datafill refinement field CTPROFNM next. • CALLQ—The system uses the datafill in table TQCQPROF that associates with field CQPROFNM to select calls for the operator. The system uses datafill refinement field CQPROFNM next.
CQPROFNM		number from TQCQPROF	Call queue profile number. When the entry in subfield CALLSEL=CALLQ, enter data in this refinement. Enter the call queue profile number that indicates which call queues the operator serves. Table TQCQPROF must first define this entry.
CTPROFNM		number from TQCQPROF	Control traffic profile number. When the entry in subfield CALLSEL=CONTRAF, enter this refinement. Enter the controlled traffic profile number that indicates which call categories the operator serves. Table TQCTPROF must first define this entry.

Datafill example for table TQOPROF

Sample datafill for table TQOPROF appears in the following example.

MAP example for table TQOPROF

OPRNUM	DFLTTEAM	SVCPRNUM	CALLSEL	
0	1	0	CALLQ	3
1	1	2	CONTRAF	2
100	2	2	CALLQ	2
9097	3	4	CALLQ	2
9098	3	2	CALLQ	4

QMS Host/Remote Queuing (continued)

In the above example, operator number 0 receives calls from the call queues that Call Queue Profile number 3 in table TQCQPROF defines. This operator provides the services that Service Profile number 0 in table TQSVPROF defines. When operator 0 is not logged on, the system considers operator number 0 as a part of team 1.

Operator number 1 receives calls that belong to the call categories that Controlled Traffic Profile number 4 in table TQCTPROF defines. This operator provides the services that Service Profile number 2 in table TQSVPROF defines. When operator 1 is not logged on, the system considers operator number 1 as a part of team 1.

Datafilling table TQCQINFO

The TOPS QMS Call Queue Information is a table. This table uses the CALLQ assigned in table TQMSFCQA to mark the service of first call arrivals. Do not use this table to assign service for calls that recall to an operator after the operator serves the call. A service value already associates with a recall.

Descriptions of the fields appear in the following table:

Datafilling table TQCQINFO

Field	Subfield or refinement	Entry	Description
CALLQ		CQ0 to CQ254	QMS call queue number. When the CALLQ that associates with a call is not in this table, CQ0 determines QMSSERV, CWOFF, CWON and TREAT. When this event occurs, the system sounds a minor software alarm and generates log EXT106. Table OFCENG parameter TOPS_QMS_MAX_ACTIVE_CALL_QUEUES determines the maximum number of call queues you can enter in this table.
QMSSERV		name from table TQMSSERV	QMS service. Enter a QMS service name, that table TQMSSERV defines, to assign to calls in the queue of field CALLQ. Table TQMSSERV defines this service name.

QMS Host/Remote Queuing (continued)

Datafilling table TQCQINFO

Field	Subfield or refinement	Entry	Description
CWOFF		0 to 32767	<p>Call waiting off. Enter the call age when the CW display is off. The entry is in tenths of seconds. Each time the system queues a call for an operator, the system determines the projected wait time for the call. The system uses the number of calls in queue and the rate at which calls leave the queue. The system uses this information to project the wait time. The projected wait time can exceed the CWON threshold. When this event occurs, the Calls Waiting (CW) Indicator appears on Operator Positions that serve the call queue. The projected wait time for calls can fall below the CWOFF threshold for the call queue. When this event occurs the system erases the CW Indicator.</p> <p>An operator can serve more than one call queue and calls can exceed the CW threshold for these call queues. When this event occurs, the CW Indicator appears on the screen of the operator. The projected wait times can fall below the CWOFF threshold for all call queues that the operator serves. When this event occurs, the system removes the Indicator from the screen. The CWON field value must be greater than the CWOFF value. The system enforces this restriction when you enter the values. When you specify the maximum value (32766) in the CWON field, the system interprets this value as an infinite age. When you specify this value, the CW Indicator is not turned on for the specified call queue. You can set the CWOFF field to any value because the CWOFF field does not affect this condition.</p>
CWON		0 to 32767	<p>Call age when CW display is on. The entry is in tenths of seconds. For additional information, refer to field CWOFF.</p>
TREAT		name from table TMCNTL.TREAT	<p>Treatment from table TMCNTL when call deflects from the requested call queue.</p>

QMS Host/Remote Queuing (continued)

Datafill example for table TQCQINFO

Sample datafill for table TQCQINFO appears in the following example.

MAP example for table TQCQINFO

CALLQ	QMSSERV	CWOFF	CWON	TREAT
CQ0	TOPS_TA	10	25	EMR4
CQ1	TOPS_TA	10	25	EMR4
CQ2	TOPS_TA	10	25	EMR4
CQ3	TOPS_TA	10	25	EMR3
CQ30	TOPS_DA	40	60	EMR3
CQ40	TOPS_DA	40	60	EMR5
CQ42	TOPS_DA	40	60	EMR5
CQ43	TOPS_DA	40	60	EMR5
CQ16	CNA	40	60	EMR5

Datafilling table TQMSFCQA

The TOPS QMS Final Call Queue Assignment is a table that provides the final call queue assignment for initial calls and recalls. Initial calls are field CALLQ. Recalls are field RECALLQ.

After the assignment of CALLQ, the call routes to an operator that serves that call queue. After the operator releases the call, the call can recall. When this event occurs, the call requires additional operator assistance. For example, a DA call where the subscriber remains off-hook after an automated recording unit (ARU) announcement to return to a live operator.

The system normally handles recalls before calls that an operator does not handle. To perform this process, the system routes recalls to higher priority queues. Tables QMSCQDEF and TQCQPROF determine these priority queues.

A minor software alarm and log associates with table TQMSFCQA. A call can complete CT4Q refinements with a CT4Q that is not in this table. When this event occurs, the system generates an EXT106 software alarm log. The system uses the UNSPEC tuple to determine the CALLQ or the recall queue (RECALLQ).

QMS Host/Remote Queuing (continued)

Descriptions of the fields appear in the following table:

Datafilling table TQMSFCQA

Field	Subfield or refinement	Entry	Description
CT4Q		refer to subfield	Call type for queuing. This field has subfield CT4Q. This field is the key field of the table.
	CT4Q	name from table CT4QNAMS	Call type for queuing. Enter a final call type for queuing (CT4Q) value that table CT4QNAMS defines. You must enter two tuples. Enter CAMA for centralized automatic message accounting and UNSPEC for unspecified.
CALLQ		CQ0 to CQ254	Call queue. Enter the Queue Management System (QMS) call queue assigned to non-recalls that finish call type refinement with the specified CT4Q. Table QMSCQDEF must first define this call queue. For the first CAMA and UNSPEC entries in field CT4Q, enter CQ0.
RECALLQ		CQ0 to CQ254	Recall queue. Enter the QMS call queue assigned to recalls that finish call type refinement with the given CT4Q. Table QMSCQDEF must first define this call queue. For the first CAMA and UNSPEC entries in field CT4Q, enter CQ0.

Datafill example for table TQMSFCQA

Sample datafill for table TQMSFCQA appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table TQMSFCQA

CT4Q	CALLQ	RECALLQ
0_MINUS	CQ0	CQ70
0_PLUS	CQ0	CQ71
1_PLUS	CQ0	CQ71
CAMA	CQ15	CQ15
RCAMA	CQ15	CQ15
UNSPEC	CQ0	CQ70
EMERG_911	CQ1	CQ88
NEW_SERVICE1	CQ4	CQ4
NEW_SERVICE2	CQ5	CQ72
0_MIN_RESTRICTED	CQ20	CQ71
0_MIN_COIN	CQ21	CQ71
RESTRICTED_55	CQ11	CQ71
0_MINUS_CAR1	CQ22	CQ75
0_MIN_RES_CAR1	CQ23	CQ75
0_MIN_RES_55_CAR1	CQ24	CQ75
DA_411	CQ30	CQ80
DA_555	CQ40	CQ80
DA_411_OA	CQ31	CQ80
DA_555_OA	CQ41	CQ80
DA_411_LIGHT	CQ34	CQ80
INTC	CQ50	CQ80
HOM_555	CQ42	CQ80
FOR_555	CQ43	CQ80
0_PLUS_FROM_ACTS	CQ62	CQ71
0_AABS_FRENCH	CQ63	CQ77
0_AABS_ENGLISH	CQ64	CQ78
0_SPANISH	CQ65	CQ79
1_TIME_AND_WEATHER	CQ13	CQ83
1_PROTOTYPE_SERVICE	CQ12	CQ84
1_BIZ_OFC	CQ15	CQ85
1_CNA	CQ16	CQ101
0_MIN_DISABLED	CQ25	CQ91
DA_411_DOWNTOWN	CQ32	CQ80
0_MINUS_SPANISH	CQ26	CQ95
0_MINUS_FRENCH	CQ27	CQ96

The CAMA and UNSPEC are reserved values that are always present. You cannot delete these values. In table CT4QNAMS, CAMA is a reserved name. This limit allows an operator to enter the REQ CAMA key to request a CAMA call from the CAMA call queue. Table TQMSFCQA specifies the CAMA call queue. In the above example, CQ15 is the CAMA (/RCAMA) queue.

QMS Host/Remote Queuing (continued)

The TOPS QMS can handle RCAMA calls the same way that non-QMS TOPS handles the calls. To perform this action, RCAMA calls must route to the same queue as CAMA calls. The CAMA and RCAMA calls must have a unique call queue. Calls that do not have a unique call queue can occur. When this event occurs, the system cannot support CAMA calls and the REQ CAMA key function.

In non-QMS TOPS, maintenance of the separate queuing facilities associated with CAMA calls is internal. To maintain current TOPS functionality, set up the CAMA queuing facilities through TOPS QMS datafill.

Table TQMSFCQA does not always contain the CT4Q associated with a call when the system attempts final call queue assignment. When this condition occurs, the system sounds a minor software alarm. The assignment occurs for recalls and non-recalls. The system generates log EXT106. The value entered against the reserved CT4Q value UNSPEC to route the call. When table TQMSFCQA does not contain UNSPEC, the system uses CQ0.

In the preceding example, several CT4Q values can map to a single queue. The number of queues available to the call processing application does not affect the number of CT4Q values.

Datafilling table TRKGRP

The QMS Host/Remote Queuing datafill for table TRKGRP appears in the following table. The fields that apply to QMS Host/Remote Queuing appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TRKGRP

Field	Subfield or refinement	Entry	Description
			This table does not require change. Use a looparound trunk for table TQOGTKEY to connect senior operators.

Datafill example for table TRKGRP

Sample datafill for table TRKGRP appears in the following table.

QMS Host/Remote Queuing (continued)

MAP example for table TRKGRP

```

GRPKEY GRPINFO
-----
TOPSLNO IT 0 TLD NCRT OG DD MIDL 619 NPRT NSCR 619 000 N N $
TOSSIC TOPS 0 TLD NCRT IC MIDL 619 PTOP NLCA NSCR Y SP
          COMBINED N Y 0 0000 OSS 16 10 10 Y WINK $
    
```

Datafilling table TQOGTKEY

The TOPS QMS Outgoing Trunk Key is a table. This table allows operators to change the CT4Q of a call while the call is at position.

Table TQOGTKEY determines the OGT values of operator positions entered in TOPSPOS as QMSCAM. The operator positions can be TOPS MP, TOPS SP, or TOPS BP. .

All TOPS MP positions on a TPC must use the same ACD (QMSCAM or TOPSACD).

The TOPS BP position must use keys entered as OT or CT4Q in table TQOGTKEY. The BP cannot assign LANG, DUALANG, or request ASST through OGT key functions.

When an operator assigns a new CT4Q, determine the associated call queue through table TQMSFCQA. From the call queue, determine the service through table TQCQINFO. The service associates with a CT4Q.

Descriptions of the fields appear in the following table:

Datafilling table TQOGTKEY

Field	Subfield or refinement	Entry	Description
KEYNUM		0 to 99	OGT key number. This field is the key to the table. Enter the number of the outgoing trunk (OGT) key.
LABEL		1 to 8 characters	Key label. Enter a key label character display.
KEYINFO		refer to subfield	Operator key information. This field has subfield KEYTYPE and refinements.

QMS Host/Remote Queuing (continued)

Datafilling table TQOGTKEY

Field	Subfield or refinement	Entry	Description
	KEYTYPE	ASST, OT, LANG, DUALANG, CT4Q, SO	<p>OGT key type. The descriptions of the values follow:</p> <ul style="list-style-type: none"> • ASST — Assistant. Connect to a TOPS MP assistance operator. The refinements do not require datafill. • OT — Out trunks. Speed dial a specific DN to connect to a fire, police, or other external DN. An operator can use this outrunks function to transfer a call. When this event occurs, the datafill must assign the same CT4Q assigned when the subscriber dials the correct access code. For example, 411. Enter subfields CLDNO, SCRNTYPE and BILLNUM. • LANG — Language. Mark the language of the calling or called parties, TOPS SP and TOPS MP. Functionality French/English AABS (ABS00005) provides this capability. Enter subfield LANGUAGE. • DUALANG - Dual language. Mark the language of the calling and called parties, TOPS SP and TOPS MP. Functionality French/English AABS provides this capability. Enter subfields FRNTLANG and BACKLANG. • CT4Q — Change the CT4Q of the call. Enter subfield CT4Q.
	KEYTYPE (continued)		<p>OGT key type (continued). The descriptions of the values follow:</p> <ul style="list-style-type: none"> • SO — Senior operator. Speed dial a specified DN to use a looparound trunk to connect to a senior operator. Functionality Host QMS provides this capability. Enter subfields CLDNO, SCRNTYPE and BILLNUM.

QMS Host/Remote Queuing (continued)

Datafilling table TQOGTKEY

Field	Subfield or refinement	Entry	Description
	CLDNO	1 to 18 digits	Called number. Enter this field when KEYTYPE=OT or KEYTYPE=SO.
	SCRNTYPE	OPER or CUST	Screen type. Enter this field when KEYTYPE=OT or KEYTYPE=SO. Check if operator (OPER) or originator (CUST) screening applies.
	BILLNUM	Y or N	Billing number. Enter this field when KEYTYPE=OT or KEYTYPE=SO. Enter Y to include the CLDNO in billing information. When you do not require this information (N), enter subfield AMAINDEX.
	AMAINDEX	0 to 99	AMA index. When BILLNUM=N, specify the number to enter in the AMA record in place of the called number.
	LANGUAGE	from table TOPSLANG	Language. Enter this field when KEYTYPE=LANG. Enter the language to use with the call when the associated OGT key is activated. Table TOPSLANG must contain this language.
	FRNTLANG	from table TOPSLANG	Front language. Enter this field when KEYTYPE=DUALANG. Specify the calling number language to use with the associated OGT key. Table TOPSLANG must contain this language.
	BACKLANG	from table TOPSLANG	Back language. Enter this field when KEYTYPE=DUALANG. Enter the called number language to use with the associated OGT key. Table TOPSLANG must contain this language.
	CT4Q	from table CT4QNAMS	Call type for queueing. Enter this field when KEYTYPE=CT4Q. Specify the new CT4Q to assign after the activation of the associated OGT key occurs.

Datafill example for table TQOGTKEY

Sample datafill for table TQOGTKEY appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table TQOGTKEY

KEYNUM	LABEL	KEYINFO	KEYINFO
0	HELP	ASST	
1	ENGLISH	LANG	ENG
2	FRENCH	LANG	FRE
3	CARRIER1	CT4Q	OA_CARRIER1
4	CARRIER2	CT4Q	OA_CARRIER2
5	FIRE	OT	2122204444 OPER N 4
6	SENIOR	SO	9992711234 CUST N 5
7	FRE-FRE	DUALANG	FRE FRE

Datafilling table TQFMNAMS

The TOPS QMS Force Management Names is a table that defines FM call types. Other FM tables use these FM call types.

Descriptions of the fields appear in the following table:

Datafilling table TQFMNAMS

Field	Subfield or refinement	Entry	Explanation and action
FMCTNUM		refer to subfield	Force management call type number. This field has subfield FMCTNUM. This field the key field of the table.
	FMCTNUM	0 to 2046	Force management call type number. Enter the value in use as an index that associates with the force management call type (FMCT). The default values are 0 (zero) and 1.
FMCTNAME		alphanumeric (1 to 32 characters)	Force management call type name. Enter the value in use as the name in the other FMCT tables. When the default value in subfield FMCTNUM is 0 (zero), the default value in field FMCTNAME is UNSPEC (unspecified). When the default value in subfield FMCTNUM is 1, the default value in field FMCTNAME is CAMA (centralized automatic message accounting).

Datafill example for table TQFMNAMS

Sample datafill for table TQFMNAMS appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table TQFMNAMS

FMCTNUM	FMCTNAME
-----	-----
0	UNSPEC
1	0_MINUS
2	CAMA
3	GENERAL
4	DA_411

Entries UNSPEC and CAMA are default datafill.

Datafilling table TQFMCT4Q

The TOPS QMS Force Management Call Type for Queueing is a table. This table maps the final CT4Q associated with the call to an initial FMCT value. When a break down the FMCT values past the final CT4Q values is not required, the other FMCT tables can remain empty. The first FMCT value can serve as the final FMCT value. A break out of calls in more detail for FMCT than for CT4Q can be required. When this event occurs, use this table as a starting point.

Descriptions of the fields appear in the following table:

Datafilling table TQFMCT4Q

Field	Subfield or refinement	Entry	Description
CT4Q		refer to subfield	Call type for queueing. This field has subfield CT4Q. This field is the key field of the table.

QMS Host/Remote Queuing (continued)

Datafilling table TQFMCT4Q

Field	Subfield or refinement	Entry	Description
	CT4Q	name from table CT4QNAMS	<p>Call type for queueing. This field is the final CT4Q of the call after refinement from table TQMSFCQA. Tables CT4QNAMS and TQMSFCQA must first define this name.</p> <p>The default entries are UNSPEC and CAMA. You can change the UNSPEC and CAMA tuples. You cannot delete these tuples</p>
FMCT		name from table CT4QNAMS	<p>Force management call type. This field is the initial force management call type to assign the call in field CT4Q. Additional refinement of this FMCT do not always occur in the other FM tables. When this event occurs, this field is the final FMCT associated with the call. Enter a value for the force management call type (FMCT).</p> <p>Table TQFMNAMS must first define this field.</p> <p>The default entries are UNSPEC and CAMA. You can change the UNSPEC and CAMA tuples You cannot delete these tuples.</p>

Datafill example for table TQFMCT4Q

Sample datafill for table TQFMCT4Q appears in the following example.

MAP example for table TQFMCT4Q

CT4Q	FMCT
----	----
UNSPEC	UNSPEC
0_MINUS	0_MINUS
CAMA	CAMA
GENERAL	GENERAL
DA_411	DA_411
DA_411_FRE	DA_411

Datafilling in table TQFMCLAS

The TOPS QMS Force Management Class is a table that uses the class of service to modify the base FM call type.

QMS Host/Remote Queuing (continued)

Descriptions of the fields appear in the following table:

Datafilling table TQFMCLAS

Field	Subfield or refinement	Entry	Description
OLDFMCT		name from table TQFMNAMS	Old force management call type. This field is the first of a two-part key field of the table. Enter the old force management call type (FMCT). Table TQFMNAMS must first define the entry in this field.
CLASCRIT		UNKNOWN_CLAS, COIN, STATION, HOTEL, or RESTRICTED	Class of service criterion. This field is the second of a two-part key field of the table. Enter a value that specifies the class of service. When you do not know the class of service, enter UNKNOWN_CLAS.
NEWMFCT		name from table TQFMNAMS	New force management call type. Enter a new FM call type name to assign a call that meets the criterion. Table TQFMNAMS must define this name.

Datafill example for table TQFMCLAS

Sample datafill for table TQFMCLAS appears in the following example.

MAP example for table TQFMCLAS

OLDFMCT	CLASCRIT	NEWMFCT
0_MINUS	STATION	0_MIN_MSTA
0_MINUS	COIN	0_MIN_MCN
0_MINUS	HOTEL	0_MIN_MHTL
0_MINUS	RESTRICTED	0_MIN_RES

Datafilling table TQFMREST

TOPS QMS Force Management Restricted Billing criterion is a table that uses the restricted billing index to modify the FM call type.

QMS Host/Remote Queuing (continued)

Descriptions of the fields appear in the following table:

Datafilling table TQFMREST

Field	Subfield or refinement	Entry	Explanation and action
OLDFMCT		name from table TQFMNAMS	Old force management control type. This field is the first of the two-part key field for this table. Enter a value for the old FMCT. Table TQFMNAMS must first define the entry in this field.
RESTRIT		0 to 100	Restricted billing index criterion. This field is the second of the two-part key field for this table. Enter a restricted billing index value.
NEWMFCT		name from table TQFMNAMS	New force management control type. Enter a new FM call type name to assign a call that meets the criterion. Table TQFMNAMS must define this name.

Datafill example for table TQFMREST

Sample datafill for table TQFMREST appears in the following example.

MAP example for table TQFMREST

OLDFMCT	RESTRIT	NEWMFCT
0_RES	55	0_RES_55

Datafilling table TQFMCLDT

The TOPS QMS Force Management Called Number Type is a table that uses the called number type to modify the FM call type.

QMS Host/Remote Queuing (continued)

Descriptions of the fields appear in the following table:

Datafilling table TQFMCLDT

Field	Subfield or refinement	Entry	Explanation and action
OLDFMCT		name from table TQFMNAMS	Initial FM call type that table TQFMNAMS defines. This field is a key to the table.
CLDTCRIT		CLDNIL, DOM, DOMIC, OVS VFY, OPR, LOCAL, VCA, UCA, OGT, ZEN, SRV, REQ	Called number type criterion. This is the second part of the two-part key field for the table. The definition of the types follow: <ul style="list-style-type: none"> • CLDNIL - unkown • DOM - toll (intralata) • DOMIC - toll (interlata) • OVS - overseas • VFY - verify • OPR - operator • LOCAL - local • VCA - vacant code announcement • UCA - unauthorized code • OGT - outgoing trunk • ZEN - Zenith • SRV - service • REQ - required
NEWMFCT		name from table TQFMNAMS	New FM call type name to assign a call that meets the criterion. Table TQFMNAMS defines the name.

Datafill example for table TQFMCLDT

Sample datafill for table TQFMCLDT appears in the following example.

MAP example for table TQFMCLDT

OLDFMCT	CLDTCRIT	NEWMFCT
0_MSTA	DOM	0_MSTA_DOM
0_MSTA	OVS	0_MSTA_OVS

QMS Host/Remote Queuing (continued)

Datafilling table TQCLSNAM

The TOPS Queue Class Name is a table that defines the call classes that QMS calls use. Force management statistics use this table.

The IPS, RPS, TPS, CBWV and AWT associated with each QMS FM Call Class appears in the QMS Basic FM reports. Table TQCLSNAM defines each QMS FM Call Class. Calls associated with the call class do not always arrive at position during the report interval. When this condition occurs, the system records a 0 for the IPS, RPS, TPS, CBWV and AWT.

CLASSNUM 0 is reserved for the UNDEFINED class. The system groups the call types that table TQCLSDEF does not map to a call class in the UNDEFINED class. The CLASSNUM 0 does not appear when the table is listed. The QMFADS, QFADS, QTADS and study registers reports include CLASSNUM 0 data.

Descriptions of the fields appear in the the following table:

Datafilling table TQCLSNAM

Field	Subfield or refinement	Entry	Description
CLASSNUM		0 to 15	Index to table.
CLASSNAM		1 to 10 characters	Call class name definition.

Datafill example for table TQCLSNAM

Sample datafill for table TQCLSNAM appears in the following table.

QMS Host/Remote Queuing (continued)

MAP example for table TQCLSNAM

Table TQCLSNAM

CLASSNUM	CLASSNAM
1	DELAY
2	COIN_RECALL
3	DA_RECALL
4	CAMA
5	OVERSEAS
6	NCN-0MINUS
7	CN-0MINUS
8	NCN-0PLUS
9	CN-0PLUS
10	NCN-0PLUS
11	HOTEL
12	INWARDS
13	DA
14	EMERGENCY
15	COMBINED

Datafilling table TQCLSDEF

TOPS Queue Class Definition is a table that associates a call type with a call class. Force management statistics use this table.

Descriptions of the fields appear in the following table:

Datafilling table TQCLSDEF

Field	Subfield or refinement	Entry	Explanation and action
FMCT		Call type	QMS FM call type that table TQFMNAMS defines.
CLASSNAM		Class name	QMS FM class name that table TQFMNAMS defines.

A QMS FM call type and a QMS FM call class can have the same ASCII name.

Datafill example for table TQCLSDEF

Sample datafill for table TQCLSDEF appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table TQCLSDEF

Table TQCLSDEF

FMCT	CLASSNAM
DA_411	DA
DA_555_FOR	DA
DA_555_DOM	DA
NCN_0MIN_FRENCH	NCN-0MINUS
NCN_0MIN_ENGLISH	NCN-0MINUS
NCN_0MIN_SPANISH	NCN-0MINUS
COIN_RECALL	COIN-RECALL
131	INWARDS
NCN_0PLUS_FRENCH	NCN-0PLUS
NCN_0PLUS_ENGLISH	NCN-0PLUS
911	EMERGENCY
DELAY	DELAY

Datafilling table TOPSDEV

The QMS Host/Remote Queuing datafill for table TOPSDEV appears in the following table. The fields that apply to QMS Host/Remote Queuing appear

QMS Host/Remote Queuing (continued)

in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TOPSDEV

Field	Subfield or refinement	Entry	Description
	DEVSEL	QMFADS, QTADS, QFADS	<p>You can enter the following new devices:</p> <ul style="list-style-type: none"> • QMFADS—prints mechanized QMS FM reports. You can enter one QMFADS device. Enter refinements MEMVAR, CARDCODE, and PROTOCOL. • QTADS—prints QMS team management reports. You can enter a QTADS device against each TOPS traffic office. You can enter a maximum of 30 QTADS devices (field TRAFOfc). You can enter QTADS devices for traffic offices that table TEAMACD contains as QMSCAM. Enter refinements LANG, TRAFOfc, MEMVAR, CARDCODE, and PROTOCOL. • QFADS—prints switch-wide statistics. You can enter one QMFAD. Enter refinements LANG, MEMVAR, CARDCOE, and PROTOCOL.
	PROTOCOL	BELL108 and BELL202	<p>Protocol. For QFADS and QTADS devices, enter BELL108 or BELL202. For QMFADS devices, enter BELL202.</p> <p>When the switch uses the BELL108 protocol, the DMS switch can output a maximum of 21600 characters every 15 min. When you use the BELL202 protocol, the DMS switch can output a maximum of 72000 characters every 15 min.</p>

Datafill example for table TOPSDEV

Sample datafill for table TOPSDEV appears in the following example.

QMS Host/Remote Queuing (continued)

MAP example for table TOPSDEV

DEVNO					DEVTYPE
5	QMFADS	TM8	1 13	2X72AC	BELL202
7	QFADS E	DTC	0 2 13	2X72AC	BELL108
8	QTADS 1 F	TM8	1 15	2X72AC	BELL202
9	QTADS 2 E	TM8	1 17	2X72AC	BELL108

Datafilling table TOPSPARM

The QMS Host/Remote Queuing datafill for table TOPSPARM appears in the following table. The fields that apply to QMS Host/Remote Queuing appear in the table.

Datafilling table TOPSPARM

Parameter name	Description
TOPS06_DEVICE_ENHANCEMENTS	<p>This parameter enables additional information in the output reports for TOPS TTY devices for the commands listed below. Enter Y to enable or N to disable the new information. Value Y is the default. Following are the commands, devices, and new information:</p> <ul style="list-style-type: none"> RA/EA (assign a study register) - Used on TADS, SADS, SADSHADS, and QTADS devices. The response, when successful, now indicates how many study registers are in use by the team and how many are available for assignment. RQ/EN (query study register assignments) - Used on TADS and QTADS devices. The response now indicates how many study registers are available for assignment. <p>This parameter is non-optional, that is, it is valid regardless of the SOC state of functionality QMS Customer Service Enhancements, OSB00101. Also, this parameter is applicable in the TOPSACD and QMS environments.</p> <p>For more information about these commands, refer to the applicable (TOPS MP, MPX, or IWS) Force Management Guide.</p>

Datafill example for table TOPSPARM

Sample datafill for table TOPSPARM appears in the following table.

QMS Host/Remote Queuing (continued)

MAP example for table TOPSPARM

PARAM	VALUE
TOPS06_DEVICE_ENHANCEMENTS	Y

Datafilling table MPC

Table MPC associates a location, an equipment code and a load file with a logical EMPC number. Refer to *GFX273: DMS-100 Family Multi-Protocol General Description* for a general description of the MPC.

The QMS Host/Remote Queuing datafill for table MPC appears in the following table. The fields that apply to QMS Host/Remote Queuing appear in this table. See the data schema section of this document for a description of the other fields

Datafilling table MPC

Field	Subfield or refinement	Entry	Explanation and action
EQ		1X89BA	Equipment code. The TOPS QMS uses an EMPC card which has an equipment code of 1X89BA.
DLDFILE		MPC4X	Download file name. The TOPS QMS uses the 1984 X.25 protocol. The load file name must begin with <i>MPC4</i> . Enter MPC4X where X is remainder of file name.

Datafill example for table MPC

Sample datafill for table MPC appears in the following table.

MAP example for table MPC

MPCNO	MPCIOC	IOCCCT	EQ	DLDFILE
10	4	4	1X89BA	MPC434BN
22	1	32	1X89BA	MPC434BN

QMS Host/Remote Queuing (continued)

Datafilling table MPCLINK

Table MPCLINK specifies link and protocol information for cards entered in table MPC.

The QMS Host/Remote Queuing datafill for table MPCLINK appears in the following table. The fields that apply to QMS Host/Remote Queuing appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table MPCLINK

Field	Subfield or refinement	Entry	Description
MPCNO		see MPCNO	MPC number. Enter the value from field MPCNO in table MPC.
LINKNO		3	Link number. Each EMPC has one 56-Kbps link (link 3).
PROTOCOL		X2584, X25ORIG, ASYNC, X2580,	Protocol. The recommended value is X2584. Other values are valid when the MIS side of the link uses the same protocol. The X2584 package must be included for X2584 protocol to be valid. When you use X2584, the DMS switch side of the EMPC defaults to a DCE in hardware and X.25 protocol.
LINKNABL		0 to 32767	Link enable. The recommended value is 55.

QMS Host/Remote Queuing (continued)

Datafilling table MPCLINK

Field	Subfield or refinement	Entry	Description
CONVNABL		0 to 32767	Conversation enable. The recommended value is 55.
PARMSEL		CLKSRCE, NODETYPE, L2WINDOW, L3WINDOW, L3DATA, ELECSPEC	<p>Parameter selector. To communicate with the MIS, six optional parameters are recommended. These parameters are CLKSRCE, NODETYPE, L2WINDOW, L3WINDOW, L3DATA, and ELECSPEC.</p> <p>The recommended value for NUMPVCS is 1.</p> <p>You can choose any DCE NODETYPE. This selection must coordinate with the MIS. The MIS must be DTE and the DMS switch must be DCE, or the reverse.</p> <p>ELECSPEC V35 is for 56 Kbps and ELECSPEC RS232 is for 19.2 Kbps or below.</p> <p>The recommended values for the optional parameters appear in the example that follows this table.</p>

Datafill example for table MPCLINK

Sample datafill for table MPCLINK appears in the following table.

MAP example for table MPCLINK

```

LINKKEY
PRTCLDAT
-----
10 3
X2584 55 55 (NUMPVCS 1) (CLKSRCE EXTERNAL) (NODETYP DCE)
(L2WINDOW 7)(L3WINDOW 7)(L3DATA P256)(ELECSPEC V35) $ $
22 3
X2584 55 55 (NUMPVCS 1) (CLKSRCE EXTERNAL) (NODETYPE DCE)
(L2WINDOW 7)(L3WINDOW 7)(L3DATA P256)(ELECSPEC V35) $ $
    
```

Datafilling table QMSMIS

The QMS Management Information System is a table that specifies the links for the TOPS QMS MIS interface. The table contains two fields, the TOPS QMS MIS application, and the MLCs that associate with the application. Each

QMS Host/Remote Queuing (continued)

MLC contains an MPC number, Link number, and Conversation number. In BCS34, TOPS is the QMS MIS application.

Descriptions of the fields appear in the following table:

Datafilling table QMSMIS

Field	Subfield or refinement	Entry	Description
INDEX		refer to subfield	QMS Management Information System index. This field has subfield K.
	K	TOPS, QMSNILAP	QMS Management Information System application in use. This field is the key field of the table. Enter TOPS for the application.
MLCLIST		refer to subfields	<p>Multiprotocol controller link conversation list. This field has subfields M, L and C. Separate each subfield with a single space. You can enter a maximum of 16 multiples of the subfields. When you require less than 16 multiples, end the list with a (\$).</p> <p>Entries in field MLCLIST must match entries in tables MPC and MPCLINK.</p> <p>The Queue Management System Management Information System (QMS MIS) application supports permanent virtual circuits (PVC).</p> <p>A minimum of two links must always be entered for the TOPS application. This provision prevents data loss when one link fails. You can enter a maximum of 16 links for the TOPS application.</p> <p>You can enter more than one link against the TOPS application. When this event occurs, the DMS switch shares the data transmission load sending buffers across the least currently used link entered.</p>
	M	0 to 255	Multiprotocol controller number. Enter the multiprotocol controller (MPC) number. Table MPC must first contain this entry.

QMS Host/Remote Queuing (continued)

Datafilling table QSMIS

Field	Subfield or refinement	Entry	Description
	L	0 to 3	Link number. Enter the link number. Table MPCLINK must first contain this entry. Note: The link numbers must be 2 or 3 for QMS MIS applications.
	C	0 to 255	Conversation number. Enter the conversation number.

Datafill example for table QSMIS

Sample datafill for table QSMIS appears in the following example.

MAP example for table QSMIS

INDEX	MLCLIST
TOPS	(22 3 1) (10 3 1) \$

Datafilling table TQMSOPT

The TOPS QMS Parameters is a table that contains parameters for TOPS QMS.

QMS Host/Remote Queuing (continued)

Descriptions of the fields appear in the following table:

Datafilling table TQMSOPT

Field PARMNAM	Field PARMVAL	Description
QMS_ACTIVE_CQA_OR RDER_TABLE	TQORDERA or TQORDERB	This parameter selects the active table that orders the CT4Q refinement tables. Refer to tables TQORDERA and TQORDERB for additional information. The default is TQORDERA.
QMS_BLOCK_RECALL _SERVICE_CHANGE	Y or N	The user can key a QMS service, language and CT4Q. When this event occurs, this parameter prevents the loss of the original service keyed on recalls and call transfers. The loss of the original service occurs because the keyed CT4Q maps to a new service. The range is Y or N. The default is N. Table TOPSPARM parameter CZECH_OFFICE must be Yes to activate parameter QMS_BLOCK_RECALL_SERVICE_CHANGE when you set this parameter to Y.
QMS_DEFAULT_XFER _STATUS_CT4Q	MARK or TRANSFER	This parameter specifies the default transfer status (transfer or mark) that the DMS switch. The switch uses this status when an operator uses the outgoing trunk (OGT) keys. The operator uses these keys to change the call type for queuing (CT4Q) for the call. Refer to table TQOGTKEY for additional information about QMS OGT keying. The default is TRANSFER.
QMS_DEFAULT_XFR_ STATUS_LANG	MARK or TRANSFER	This parameter specifies the default transfer status that the DMS switch uses. The switch uses this status when an operator uses the outgoing trunk (OGT) keys to change the language for the call. Refer to table TQOGTKEY for additional information about QMS OGT keying. The default is MARK.

QMS Host/Remote Queuing (continued)

Datafilling table TQMSOPT

Field PARMNAM	Field PARMVAL	Description
QMSFM_BASIC	Y or N	<p>This parameter allows the system to collect and report QMS statistics. The range is Y (enable) and N (disable). The default is Y. Changes to QMSFM_BASIC affect the system immediately.</p> <p>Set this parameter to Y to output the real time displays and reports. This action activates all QMS FM commands as follows:</p> <ul style="list-style-type: none"> • The system generates reports at QMFADS, QFADS, and QTADS devices. • The system updates real time QMS information at In-Charge and Assistance positions. • The system updates QMS operator statistics at Force Management (FM) TTYs or through operator Feedback displays. • The system activates the commands that query the status of positions, real-time operator information, or services from Force Management TTYs. The commands are L, P, F, R, and C. <p>When you set this parameter to N, the system does not allow any of the above functionalities. The system normally collects, collates and reports on system data. When this parameter is N, the DMS switch does not perform these operations and saves CPU time.</p>
QMSFM_DISPLAY_AWT	Y or N	<p>This parameter controls the display of system average work time (AWT) that appears with the operator feedback or study register data.</p> <p>Enter Y when the system AWT appears on operator terminals when feedback data appears. The system AWT and the data for the operator appear in printouts of feedback register and study register data. The location of the initiation of the option does not affect this function. These locations are the operator terminal or the QTADS TTY F or R commands.</p> <p>Enter N when the data for the operator appears in these situations.</p> <p>The default is Y.</p>

QMS Host/Remote Queuing (continued)

Datafilling table TQMSOPT

Field PARMNAM	Field PARMVAL	Description
QMSFM_DISPLAY_ST	Y or N	The ST can appear at the terminal of an operator when this parameter is active and the operator is assigned a study register. The values are Y (enable) and N (disable). The default is Y.
QMSFM_DUMP_STUDY_REG	Y or N	<p>This parameter selects the study register of the operator or the feedback data of the operator to print. This action occurs when a study register is assigned to the operator and a request for a printout of statistics occurs. This request originates from the terminal of the operator.</p> <p>When set to Y the system prints a study register information dump that the QTADS R command performs. When set to N, the printout contains the feedback registers of the operator. This printout appears like the printout of a study register that is not assigned. The default is Y.</p>
QMSFM_PASSWORD_ENABLE	Y or N	<p>This parameter activates the QMS password administration facility. The values are N (disable) and Y (enable). The default is N. Changes to this parameter affect the system immediately.</p> <p>When set to N, operators do not require a password. The entry of QMS password administration commands cannot occur from QMS TTYs.</p> <p>When set to Y, operators must use a password to log on and change the old password. When this action occurs, the system accepts QMS password administration commands from QMS TTYs. The available commands are WP, WI, WR, WD, and WA.</p>
QMSFM_POLLING_ID	Two ASCII characters	<p>This parameter defines the characters sent to a QMFADS device to trigger a QMFADS report. When the characters are sent to the QMFADS device, the QMFADS device sends a report every 15 min in response.</p> <p>Enter two ASCII characters. The first character is alphabetical. The second character is alphanumeric. The default is aa. Changes to this parameter affect the system immediately.</p>

QMS Host/Remote Queuing (continued)**Datafilling table TQMSOPT**

Field PARMNAM	Field PARMVAL	Description
QMSFM_ZERO_FB_REG	Y or N	<p>This parameter activates the QTADS FI and FZ commands and allows, on condition, the operators to the zero feedback registers. The values are Y (allowed) and N (not allowed). The default is Y.</p> <p>Value Y allows, on condition, operators to zero feedback registers. Operators can perform this action because the active QTADS FI and FZ commands control when each operator can zero feedback registers.</p>
QMS_MIS_COMPOSE_POS_ON	Y or N	<p>This parameter allows the composition and sending of QMS management information system (MIS) position event messages. The composition and sending of these messages occurs on in-service MPC links when this parameter is active. The values are Y (enable) and N (disable). The default is N.</p> <p>A value of N for parameter QMS_MIS_CAM_ON in table TQMISOPT overrides this parameter. This process disables event messages. The disable does not change when QMS_MIS_COMPOSE_POS_ON is set to Y.</p>

Datafill example for table TQMSOPT

Sample datafill for table TQMSOPT appears in the following table.

MAP example for table TQMSOPT

PARMNAM	PARMVAL
QMSFM_BASIC	Y
QMSFM_POLLING_ID	AA
QMSFM_PASSWORD_ENABLE	N
QMSFM_ZERO_FB_REG	Y
QMSFM_DISPLAY_AWT	Y
QMSFM_DUMP_STUDY_REG	Y
QMS_DEFAULT_XFR_STATUS_CT4Q	TRANSFER
QMS_DEFAULT_XFR_STATUS_LANG	MARK
QMSFM_DISPLAY_ST	Y
QMS_ACTIVE_CQA_ORDER_TABLE	TQORDERB
QMS_MIS_COMPOSE_POS_ON	N
QMS_BLOCK_RECALL_SERVICE_CHANGE	Y

QMS Host/Remote Queuing (continued)

Datafilling table TQMISOPT

The TOPS QMS MIS Office Parameters is a table that provides office parameters for the Queue Management System (QMS).

Descriptions of the fields appear in the following table:

Datafilling table TQMISOPT

Field PARMNAM	Field PARMVAL	Description
QMS_MIS_MPC_BUFF _XMIT_TIMEOUT	1 to 59	<p>This parameter sets the maximum wait time before the system sends the management information system (MIS) a message about an event. The range is 1 s to 59 s. The default is 10.</p> <p>For example, when you set this parameter is to 2, the DMS switch waits a maximum of 2 s. After this time expires, the switch sends an EMPC buffer. This buffer contains messages about force management (FM) events.</p> <p>The switch buffers FM event messages in a large memory area. This action saves real-time costs incurred when the DMS switch sends data across the EMPC links. This memory area is inside the DMS switch. When event messages fill this buffer, the system sends the buffer across the links to the MIS. During periods of high traffic volume, a large buffer can fill with event messages very quickly. The MIS identifies a specified queue or position event soon after the queue or event occurs. During periods of low traffic volume, the buffer can take a large amount of time to fill. To keep real-time data of position, call and queue states up to date, the MIS must receive event messages soon after the event occurs.</p>

QMS Host/Remote Queuing (continued)

Datafilling table TQMISOPT

Field PARMNAM	Field PARMVAL	Description
QMS_MIS_CALL_PLACED_IN_Q_THRESH	0 to 32767	<p>This parameter sets the threshold for the number of calls the system places in queue events. This event occurs from the last call the system presents to operator or call abandoned event occurs. The range is 0 to 32767. The default is 5. A value of 0 means that each Call Placed In Queue event generates a message.</p> <p>Do not send a message each time a Call Placed In Queue event occurs. This action saves the real-time incurred when the system composes and sends an FM message. Under normal traffic conditions, the MIS system can examine closely monitor queue size in real time. To perform this action, the MIS system examines messages that the system generates when calls leave the queue. The MIS system can calculate answer time from the messages that the system generates when calls leave queues. A message that the system generates from a Call Placed In Queue event normally does not include data that can help.</p> <p>Not enough datafill or a traffic spike can increase the size of a queue when calls do not leave the queue. The MIS does not always receive a message when the system places a call in queue. When this event occurs, the MIS does not know about the queue growth.</p> <p>This parameter provides real time compared to statistical granularity trade off. This parameter provides a threshold value for the number of Call Placed In Queue events that occurs at a specified queue. These events occur from the last Call Presented To Operator or Call Abandoned event. After events reach the threshold, additional Call Placed In Queue events generate messages. This action continues until a Call Presented To Operator or Call Abandoned event occurs.</p> <p>For example, you can set this parameter to five. Five Call Placed In Queue events can occur from the last Call Presented To Operator or Call Abandoned event. When this event occurs, the next Call Placed In Queue event generates a call queue event message. When the system presents the call to the operator earlier, the system does not generate the message. Less than five Call Placed In Queue events can occur. When this event occurs, the next Call Placed In Queue event does not generate a call queue event message.</p>

QMS Host/Remote Queuing (continued)

Datafilling table TQMISOPT

Field PARMNAM	Field PARMVAL	Description
QMS_MIS_FM_REPORT_PERIOD	1 to 6, 10, 12, 15, and 30	<p>This parameter provides the information accumulation time before the next report. Acceptable values in minutes are 1 to 6, 10, 12, 15, and 30. The default value is 15. The system sends reports at normal time of day clock intervals. For example, when you select 15, the system sends reports every 15 min.</p> <p>This parameter provides the interval of time the MIS expects to collect information before the MIS generates an updated report. The TOPS QMS MIS helps the MIS separate event messages. These messages limit a single buffer to messages from a single FM report period. To perform this action, the TOPS QMS MIS closes off a filling buffer. The TOPS QMS MIS can detect the end of report period. When this event occurs, the TOPS QMS MIS sends the buffer on the EMPC link. The TOPS QMS MIS detects an end of report period when the system generates an event message or a QMS_MIS_MPC_BUFF_XMIT_TIME_OUT occurs. The next buffer sent contains the FM Report Period Boundary Reached field in the information message set to True. Under very low traffic, the TOPS QMS MIS does not send this information until an event message or a buffer transmission timeout occurs. When events did not occur from the last timeout and events reach a boundary, the buffer contains an information message. This message indicates that events reach a boundary.</p>

QMS Host/Remote Queuing (continued)

Datafilling table TQMISOPT

Field PARMNAM	Field PARMVAL	Description
QMS_MIS_MINOR_ALARM_THRESH	0 to 16	<p>This parameter indicates when the system generates a minor alarm. When the number of links to an MIS decreases to the threshold, the system turns the alarm on. When the number of links to an MIS exceeds the threshold, the system turns the alarm off. The range is 0 to 16. The default is 1.</p> <p>The EMPC link goes out of service over all switch restarts. The alarm comes ON and goes OFF when the links return to service and the links exceed the alarm threshold. When you change the value in this parameter, the system can turn an alarm on or off.</p> <p>When a switch starts again, the EMPC link goes out of service. The alarm comes ON and goes OFF when the links return to service and the links exceed the alarm threshold.</p> <p>When you change this parameter, the system can generate an alarm. For example, you can change this parameter from 2 to 1. You can change the number of links available to an MIS is 1. When this condition occurs, the system turns the alarm ON. You can change this parameter from 2 to 1 and the number of links available to an MIS is 2. When this condition occurs, the system turns the alarm OFF.</p>

QMS Host/Remote Queuing (continued)

Datafilling table TQMISOPT

Field PARMNAM	Field PARMVAL	Description
QMS_MIS_MAJOR_ALARM_THRESH	0 to16	<p>This parameter indicates when the system generates a major alarm. When the number of links to an MIS decreases to the threshold, the system turns the alarm on. When the number of links to an MIS exceeds the threshold, the system turns the alarm off. The range is 0 to 16. The default is 1.</p> <p>The EMPC link goes out of service over all switch restarts. The alarm comes ON and goes OFF when the links return to service and the links exceed the alarm threshold. When you change the value in this parameter, the system can turn an alarm on or off.</p> <p>When a switch starts again, the EMPC link goes out of service. The alarm comes ON and goes OFF when the links return to service and links exceed the alarm threshold.</p> <p>When you change this parameter, the system can generate an alarm. For example, you can change this parameter from 2 to 1. You can change and the number of links available to an MIS is 1. When this condition occurs, the system turns the alarm ON. You can change this parameter from 2 to 1 and the number of links available to an MIS is 2. When this condition occurs, the system turns the alarm OFF.</p>

QMS Host/Remote Queuing (continued)**Datafilling table TQMISOPT**

Field PARMNAM	Field PARMVAL	Description
QMS_MIS_CRITICAL_ ALARM_THRESH	0 to16	<p>This parameter indicates when the system generates a critical alarm. When the number of links to an MIS decreases to the threshold, the system turns the alarm on. When the number of links to an MIS exceeds the threshold, the system turns the alarm off. The range is 0 to 16. The default is 0.</p> <p>The EMPC link goes out of service over all switch restarts. The alarm comes ON and goes OFF when the links return to service and the links exceed the alarm threshold. When you change the value in this parameter, the system can turn an alarm on or off.</p> <p>When a switch starts again, the EMPC link goes out of service. The alarm comes ON and goes OFF when the links return to service and the links exceed the alarm threshold.</p> <p>When you change this parameter, the system can generate an alarm. For example, you can change this parameter from 2 to 1. You can change the number of links available to an MIS is 1. When this condition occurs, the system turns the alarm ON. You can change this parameter from 2 to 1 and the number of links available to an MIS is 2. When this condition occurs, the system turns the alarm OFF.</p>
QMS_MIS_CAM_ON	Y or N	<p>This parameter allows messages (queue event and information), logs and alarms. The messages, logs and alarms include messages, logs and alarms that QMS_MIS_COMPOSE_POS_ON in table TQMISOPT controls. This parameter does not affect the MPC Child Process alarm.</p> <p>The range is Y (enable) and N (disable). The default is N.</p>

Datafill example for table TQMISOPT

Sample datafill for table TQMISOPT appears in the following table.

QMS Host/Remote Queuing (continued)

MAP example for table TQMISOPT

PARMNAM	PARMVAL
QMS_MIS_MPC_BUFF_XMIT_TIMEOUT	10
QMS_MIS_CALL_PLACED_IN_Q_THRESH	5
QMS_MIS_FM_REPORT_PERIOD	15
QMS_MIS_MINOR_ALARM_THRESH	1
QMS_MIS_MAJOR_ALARM_THRESH	1
QMS_MIS_CRITICAL_ALARM_THRESH	0
QMS_MIS_CAM_ON	Y

Datafilling table TOPSTOPT

This table determines when a call that an operator handles on a specified trunk must go to QMS or ACD (non-QMS). This action allows for gradual cut-over to TOPS QMS.

The QMS Host/Remote Queuing datafill for table TOPSTOPT appears in the following table. The fields that apply to QMS Host/Remote Queuing appear in the table. See the data schema section of this document for a description of the other fields.

Datafilling table TOPSTOPT

Field	Subfield or refinement	Entry	Description
GRPKEY			GRPKEY. When you do not enter data in a trunk, the system handles calls that the operator handles on that trunk. This event occurs as in non-TOPS QMS.
ACDDATA		refer to subfield	Automatic call distribution data. This field has subfield ACD.

QMS Host/Remote Queuing (continued)**Datafilling table TOPSTOPT**

Field	Subfield or refinement	Entry	Description
	ACD	QMSCAM or TOPSACD	<p>Automatic call distribution. Select the type of handling for operator calls for each trunk group. The entries are as follows:</p> <ul style="list-style-type: none"> • TOPSACD — Selects ACD. The system determines the first call origination type from table TOPS. The system uses the other three mechanisms. Descriptions of these mechanisms appear in the previous background section. Additional refinements do not require datafill. • QMSCAM — Selects QMS. The first CT4Q is derived from table QMSTOPS. Enter refinements LOCATION and ORG_AREA.
	LOCATION	CORECAM or APCAM	Location. Enter this field when field ACD=QMSCAM. Indicate the location of the QMSCAM system. The CORECAM value is the acceptable value.
	ORG_AREA	refer to refinements	Originating area. Enter this field when field ACD=QMSCAM. This field has subfield ORGCRIT_SEL and refinements.
	ORGCRIT_SEL	Y or N	Originating criteria selector. When the originating criteria must CT4Q refine calls, enter Y and enter refinement ORGCRIT. The originating criteria is table CTQORIG and associated tables. When the criteria is not available, enter N and do not enter ORGCRIT.
	ORGCRIT	name from TQORGNAM	Enter call originating location name from table TQORGNAM. This entry segregates traffic for separate trunk groups. Table CT4QORIG uses this information.

QMS Host/Remote Queuing (continued)

Datafilling table TOPSTOPT

Field	Subfield or refinement	Entry	Description
DISPCLG		Y or N	Display calling number. Enter Y to display the calling number. When you do not require this display, enter N.
ADASERV		NONE, ADAS, or ADASPLUS	<p>Automated directory assistance service availability. The correct ADAS service for calls on trunk. The values are as follows:</p> <ul style="list-style-type: none"> • NONE - Do not to use an ADAS system. • ADAS - Use the ADAS system in functionality ADAS, OSDA0004. • ADASPLUS - Use the ADAS system in functionality DA Automation I/F, OSDA0006. <p>The default value is NONE.</p>

Datafill example for table TOPSTOPT

Sample datafill for table TOPSTOPT appears in the following table.

MAP example for table TOPSTOPT

GRPKEY	ACDDATA		DISPCLG	ADASERV
DOWNTOWN	QMSCAM	CORECAM Y	DOWNTOWN_TRK	N NONE
UPTOWN	QMSCAM	CORECAM Y	UPTOWN_TRK	N NONE
TBFRENCH2	QMSCAM	CORECAM Y	FRENCH_AREA	N NONE
TBSPANSH1	QMSCAM	CORECAM Y	SPANISH_AREA	N NONE
TBXWYZ75	QMSCAM	CORECAM N		N NONE

Tools for verifying translations

This section describes three new tools for QMS:

- The QCALL utility provides a micro-view of the call queue assignment.
- The QVIEW utility provides a macro-view of the call queue assignment.
- The TQMIST utility serves as a call trace tool.

QCALL utility

Two CI level utilities (QCALL and QVIEW) help you to understand and visualize the Call Queue Assignment (CQA) datafill.

QMS Host/Remote Queuing (continued)

Entry of a single CQA table implies the partition of queues across a single criterion. This process is easy to visualize. Entry of a set of CQA tables with criteria that intersect, overlap and override, introduces too many variables. A person cannot visualize the complete system. An example of this condition in the world of the DMS switch is the field of rating.

The TOPS rating tables include SERVSCRN, SRVRS, SCHED, LCLRS, ORIGRC, TERMAC, and TMZONE. The RATE is a CI-level MAP terminal tool. This tool explains the affect of datafill on the rating of an incoming call. This tool applies to the entry of all the tops rating tables. Call Queue Assignment provides a similar utility (QCALL). With a date, time and class of service, RATE can provide the path through the ratings tables. With the CQA criteria that associates with an incoming call, QCALL provides the path through the CQA tables.

The QCALL utility provides a micro-view of the CQA datafill. The QCALL uses the CQA tables to refine and to assign a call queue and service for a call. The user specifies the characteristics of the call with the subcommands for QCALL. For example, an operating company can use the calling exchange and time of day criteria to refine the incoming directory assistance traffic. The QCALL can determine which call queue and service is assigned to an incoming directory assistance call.

To simplify use, QCALL has an intelligent prompting mechanism. This prompter uses the characteristics that the user provides and at the CQA datafill. The prompter uses these characteristics to determine additional call characteristics. In the above example, the QCALL prompter requires the calling number and the time of day for a DA call. The prompter does not require the restricted billing index. The prompter requests the criteria that the CQA datafill uses to refine a call.

QCALL contains an explanation facility that describes the steps to refine a call and assign the call to a call queue and service. This facility delineates how the CQA datafill uses the characteristics of a call to refine the call. When the user requires the final call queue assignment, the explanation facility can be disabled. Enter QCALL at the CI level to access the directory. The QCALL responds with the QCALL: prompt. You can now access additional QCALL commands.

QMS Host/Remote Queuing (continued)

QCALL commands

Term	Definition
HELP	<p>This parameter provides command information. The arguments are:</p> <ul style="list-style-type: none">• HELP (display help text for each of the QCALL commands)• QUIT (display syntax for the argument)• SHOW (display syntax for the argument)• USE (display syntax for the argument)• ORDER (display syntax for the argument)• START (display syntax for the argument)• PROMPTIME (display syntax for the argument)• CT4Q (display syntax for the argument)• CO (display syntax for the argument)• LASTCT4Q (display syntax for the argument)• CLAS (display syntax for the argument)• REST (display syntax for the argument)• CAR (display syntax for the argument)• PFXT (display syntax for the argument)• CLD (display syntax for the argument)• ORIGCLG (display syntax for the argument)• ORIGTRNK (display syntax for the argument)• TIME (display syntax for the argument)• AUTO (display syntax for the argument)• LANG (display syntax for the argument)• EXPLAIN (display syntax for the argument)• blank (display a short description of QCALL and a list of commands) <p>Examples:</p> <p>>help</p> <p>>help help</p>

QMS Host/Remote Queuing (continued)

QCALL commands

Term	Definition
AUTO	<p>This parameter corresponds to the automated service from which this call returns. This parameter applies when the automated service routing refines the ordering. The arguments are:</p> <ul style="list-style-type: none"> • AABS_BILLED_CONNECTED - The call goes to AABS and the called party connects. • AABS_NOT_CONNECTED - The call goes to AABS and the called party does not connect. • MCCSACCS - The call goes to MCCS or ACCS. • ACTS - The call goes to ACTS. • ADACC - The call goes to ADACC. • ADAS - The call goes to ADAS. • NO_AUTO - The call does not go to a service. • blank (display current value of AUTO) <p>Examples:</p> <p>>auto</p> <p>>auto acts (set to acts)</p>
CAR	<p>This parameter corresponds the inter-LATA carrier characteristic of the call. This parameter applies when the carrier characteristic refines the ordering. The arguments are:</p> <ul style="list-style-type: none"> • 000-999 (access code for the inter-LATA carrier) • UNKNOWN_CARCRIT (carrier access code is not available) • blank (display current value of CAR) <p>Examples:</p> <p>>car</p> <p>>car 666 (set to 666)</p>

QMS Host/Remote Queuing (continued)

QCALL commands

Term	Definition
CLAS	<p>This parameter corresponds to the class of service characteristic of the call. This characteristic applies when the class of service refines the CQA ordering. The arguments are:</p> <ul style="list-style-type: none"> • COIN • STATION • HOTEL • RESTRICTED • UNKNOWN_CLAS (class not available) • blank (display current value of CLASS) <p>Examples:</p> <p>>clas</p> <p>>clas unknown_clas (set to unknown class)</p>
CLD	<p>This parameter corresponds to the dialed digits characteristic of the call. This parameter applies when the called number refines the ordering. The arguments are:</p> <ul style="list-style-type: none"> • 1 to 18 digits (called digits that remain after the call goes through translations) • UNKNOWN_CLDCRIT (called number is not present. For example, a 0- call) • blank (display current value of CLD) <p>Warning: Do not use the UNKNOWN_CLDCRIT argument when the called number is present.</p> <p>Examples:</p> <p>>cld</p> <p>>cld 5551111 (set to 5551111)</p>
CO	<p>This parameter sets the call origination characteristic for the call. This parameter is the first characteristic that call queue assignment uses. When you set this parameter, the system ignores command CT4Q. The arguments are:</p> <ul style="list-style-type: none"> • ct4q name (from table CT4QNAMS) • blank (display current value of CO) <p>Examples:</p> <p>>co</p> <p>>co oh (set to oh)</p>

QMS Host/Remote Queuing (continued)

QCALL commands

Term	Definition
CT4Q	<p>This parameter sets or displays the value of the QCALL parameter CT4Q. This parameter starts a specified CT4Q to allow a shortcut of the refinement process. This action eliminates the need to set a QCALL parameter, which refines the call up to this CT4Q. When this parameter is set, the system ignores command CO. The arguments are:</p> <ul style="list-style-type: none"> • ct4q name (from table CT4QNAMS) • blank (display current value of CT4Q) <p>Examples:</p> <p>>ct4q</p> <p>>ct4q 0_minus (set to 0_minus)</p>
EXPLAIN	<p>This parameter details each step of the refinement and call queue assignment of the call. The arguments are:</p> <ul style="list-style-type: none"> • ON [activate this capability (default)] • OFF (disable this capability) • blank (display current value of EXPLAIN) <p>Examples:</p> <p>>explain</p> <p>>explain on (set to on)</p>
LANG	<p>This parameter associates with the language characteristic. This parameter applies when the language refines the ordering. Table TQLANGNM specifies the language. The arguments are:</p> <ul style="list-style-type: none"> • language name (language of the caller, from table TQLANGNM) • blank (display current value of LANG) <p>Examples:</p> <p>>lang</p> <p>>lang eng (set to eng)</p>

QMS Host/Remote Queuing (continued)

QCALL commands

Term	Definition
LASTCT4Q	<p>This parameter is for the RECALL and POSTAUTO ordering. This parameter corresponds to the last CT4Q name assigned. The CT4Q name is assigned before the call goes to the operator (RECALL) or the automated service (POSTAUTO). The arguments are:</p> <ul style="list-style-type: none"> • ct4q name (from table CT4QNAMS) • blank (display current value of LASTCT4Q) <p>Examples:</p> <p>>lastct4q</p> <p>>lastct4q cama (set to cama)</p>
ORDER	<p>This parameter determines the ordering of the CT4Q refinement tables. The arguments are:</p> <ul style="list-style-type: none"> • PREOPR (preoperator) • POSTAUTO (post automated service) • RECALL (recall) • blank (display current value of ORDER) <p>Examples:</p> <p>>order</p> <p>>order recall (set to recall)</p>
ORIGCLG	<p>This parameter corresponds to the calling number characteristic of the call. This parameter applies when the calling number refines the ordering. The arguments are</p> <ul style="list-style-type: none"> • 1 to 18 digits (calling number) • UNKNOWN_ORGCRIT (calling number not present. For example, a 0- call) • blank (display current value of ORIGCLG) <p>Warning: Do not use the UNKNOWN_ORGCRIT argument when the calling number is present.</p> <p>Examples:</p> <p>>origclg</p> <p>>origclg 5551111 (set to 5551111)</p>

QMS Host/Remote Queuing (continued)

QCALL commands

Term	Definition
ORIGTRNK	<p>This parameter corresponds to the originating trunk group characteristic of the call. This parameter only applies when the originating trunk group refines the ordering. The arguments are:</p> <ul style="list-style-type: none"> • trunk CLLI (set to CLLI name) • blank (display current value of ORIGTRNK) <p>Examples:</p> <p>>origtrnk</p> <p>>origtrnk ttu (set to ttu)</p>
PFXT	<p>This parameter corresponds to the prefix type characteristic of the call. This parameter applies when the prefix types refines the ordering. The arguments are:</p> <ul style="list-style-type: none"> • OA (operator assisted) • DD (direct dialed) • blank (display the current value of PFXT) <p>Examples:</p> <p>>pfxt</p> <p>>pfxt oa (set to oa)</p>
PROMPTIME	<p>Prompts for the important QCALL parameter/command values. Use of the previous set values determine which additional parameter/command values are required. Description of the characteristics of the call can occur without CQA datafill knowledge. When the system prompts you for a parameter that already has a value, that value appears. When you must change this value, enter the new value over the old value. When you trace a call and want to change some characteristics, use the appropriate commands. The recommended method to set up a call for QCALL is to use this prompt facility.</p> <p>Example:</p> <p>>promptme</p>
QUIT	<p>Exit QCALL</p> <p>Example:</p> <p>>quit</p>

QMS Host/Remote Queuing (continued)

QCALL commands

Term	Definition
REST	<p>This parameter corresponds to the restriction characteristic of a restricted class call. This parameter applies when the call is restricted class of service and the restricted billing index refines the ordering. The arguments are:</p> <ul style="list-style-type: none">• 0 to 99 (restricted billing index of the restricted class call)• NO_DATA (restricted billing index is not present. Set index to 100)• blank (display current value of REST) <p>Examples:</p> <p>>rest</p> <p>>rest 99 (set to 99)</p>
SHOW	<p>Displays current values of all QCALL parameters.</p> <p>Example:</p> <p>>show</p>
START	<p>Starts the QCALL trace for the call that the parameter values specify. You must use the commands/parameters for QCALL to enter the call characteristics. Use the PROMPTME command to make sure that the important call parameters are set for the call you require.</p> <p>Examples:</p> <p>>start</p>

QMS Host/Remote Queuing (continued)

QCALL commands

Term	Definition
TIME	<p>This parameter corresponds to the time of day characteristic of the call. This parameter applies when the time of day refines the ordering. The arguments are:</p> <ul style="list-style-type: none"> • JAN to DEC (month) • 1 to 31 (day) • 0 to 23 (hour) • 0 to 59 (minute) • blank (display current value of TIME) <p>Examples:</p> <p>>time</p> <p>>time dec 25 23 59 (set to Dec. 25 23:59)</p>
USE	<p>This parameter determines which CQA tables the system uses. The arguments are:</p> <ul style="list-style-type: none"> • ACTIVE (use active set of tables (default value)) • INACTIVE (use set of tables that are not active) • blank (display current value of USE) <p>Examples:</p> <p>>use</p> <p>>use active (set to active)</p>

QVIEW utility

The QVIEW utility provides a macro-view of the call queue assignment. The QCALL utility provides a micro-view. The QVIEW returns a graphical summary of the Call Queue Assignment tables. The QVIEW provides the refinement and call queue assignment of a whole set of calls for all of the possible characteristics. The QCALL utility describes the refinement and call queue assignment of one specified call. The QVIEW presents the CQA datafill in one flowchart.

The QVIEW allows you to choose the depth or the width of the summary. A range of CT4Q refinement tables specifies depth. The QVIEW traces ALL CT4Qs refined in these tables. A set of CT4Qs or Call Origination (CO) types specifies the width. The QVIEW traces the refinement of each of the CT4Qs or COs specified through ALL of the CT4Q refinement tables. The QVIEW does not require you to choose a depth and a width at the same time.

QMS Host/Remote Queuing (continued)

The following two examples help clarify the advantage of QVIEW.

- An operating company can swap the time of day table (CT4QTIME) and the called number table (CT4QCLD) in the inactive ordering table. This action changes the refinement ordering. Before the activation of this new ordering, the operating company can use QVIEW. The QVIEW determines the effects of the change on the segregation of incoming traffic. The depth of overview ability can specify a table range that starts from the CT4Q table. This table range precedes the changed tables (CT4QTIME and CT4QCLD) and ends at the last table in the order. The operating company must not change the refinement ordering often. The operating company must first determine the ramifications of a change before the implementation of the change.
- An operating company can require information on the refinement and assignment to call queues. This information relates to the incoming local directory assistance traffic (CO 411). The operating company can use the width of overview ability to define a single element set that contains the desired CO (411).

The QVIEW provides an optional summary with the queue assignment report. This summary contains the following information:

- refinement table ordering
- the number of refinements for each table in the trace
- indications of call types not assigned to a call queue
- indications of call queues not assigned to a QMS service

The first part of the QVIEW output is the QVIEW report header. The header states the parameters of the QVIEW trace. In the example, the user performs the trace on the inactive table for the PREOPR call queue assignment ordering. The user performs this trace for the call origination types that table QMSTOPS lists. The system traces these call origination types and the additional refinements through the CT4Q tables that the PREOPR ordering lists.

The next part of the report contains the actual QVIEW trace for each call origination type specified. The call origination type appears with the first CT4Q. This CT4Q is assigned in table QMSTOPS. Each CT4Q refinement has a separate line of output. The indentations indicate descendent relationships. In addition, each CT4Q line provides the following:

- the value of the criterion field
- the table in which the criterion appears
- the call queue and QMS service assigned to this CT4Q

QMS Host/Remote Queuing (continued)

The final part of the report contains the summary for the complete trace. This summary contains the following information:

- an ordered list of the CT4Q tables in use during the trace
- an indication of CT4Qs traced but not assigned to a call queue in table TQMSFCQA
- an indication of call queues traced but not assigned to a QMS service in table TQCQINFO

The system indicates the errant CT4Qs and call queues in the actual trace. These CT4Qs and call queues are not assigned in the datafill to a call queue and QMS service. An example of this condition appears in the sample output in the CT4Q refinement DA_411_UPTOWN of call origination type 411. The information between the question marks indicates the default value that the CQA feature assigned to handle this condition.

Sample output from QVIEW appears in the following figure.

QMS Host/Remote Queuing (continued)

Example QVIEW report (part 1 of 2)

```

-----
-QVIEW REPORT on INACTIVE Table for PREOPR Ordering -
-from ALL Call Organization(s) through ALL CT4Q Tables. -
-----

<----- Call Queue Assignment for PREOPR Ordering ----->

OH
-----
0_Minus

CT4Q          CRITERION          QMSTOPS          CQ0  TOPS_TA
-----          -----          -----          ---  -----
0_MIN_RES     RESTRICTED          CT4QCLAS         CQ20 TOPS_TA
0_MIN_RES_55  55                  CT4QREST         CQ11 TOPS_TA
0_MIN_RES_55_CARI CARI              CT4QCAR          CQ24 TOPS_TA
0_MIN_RES_CARI CARI              CT4QCAR          CQ22 TOPS_TA

0_MIN_COIN    COIN                CT4QCLAS         CQ21 TOPS_TA

0_MIN_FRENCH  FRENCH              CT4QLANG         CQ27 TOPS_TA

411
-----
DA_411

CT4Q          CRITERION          QMSTOPS          CQ30 TOPS_DA
-----          -----          -----          ---  -----
DA_411_OA     OA                  CT4QPFXT         CQ31 TOPS_DA

DA_411_UPTOWN UPTOWN_TRK         CT4QORIG         ?CQ0? TOPS_DA
DA_411_LIGHT  LIGHT_TRAFFIC     CT4TIME          CQ34 TOPS_DA

DA_411_DOWNTOWN DOWNTOWN_TRK     CT4QORIG         CQ32 TOPS_DA
DA_411_LIGHT  LIGHT_TRAFFIC     CT4QTIME         CQ34 TOPS_DA

```

QMS Host/Remote Queuing (continued)

Example QVIEW report (part 2 of 2)

```

-----
- SUMMARY
-----

CT4Q REFINEMENT TABLE ORDERING:

ORDER      TABLE      REFINEMENTS
-----
PREOPR:
           CT4QCLAS      2
           CT4QREST      1
           CT4QCAR        2
           CT4QPFXT       1
           CT4QORIG       2
           CT4QTIME       2
           CT4QLANG       1
           CT4QAUTO       0

   >> Table CT4QAUTO is listed but not used <<

CT4Q'S NOT ASSIGNED TO A CALL QUEUE:

ORDER      CT4Q      TABLE
-----
PREOPR:
           DA_411_UPTOWN      CT4QORIG

CALL QUEUES NOT ASSIGNED TO A QMS SERVICE:

NONE

```

Enter QVIEW at the CI level to access the directory. QVIEW responds with the QVIEW: prompt.

QMS Host/Remote Queuing (continued)

Descriptions of the QVIEW subcommands appear in the following table provides:

QVIEW commands

Term	Example Definition
HELP	<p>This parameter provides command information. The arguments are:</p> <ul style="list-style-type: none"> • HELP (display help text for each of the QCALL commands) • QUIT (display syntax for the argument blank) • SHOW (display syntax for the argument blank) • USE (display syntax for the argument blank) • ORDER, START (display syntax for the argument blank) • TRACECO (display syntax for the argument blank) • TRACECT4Q (display syntax for the argument blank) • FROMTABLE (display syntax for the argument blank) • TOTABLE (display syntax for the argument blank) • or SUMMARY (display syntax for the argument blank) • blank (display a short description of QCALL and a list of commands) <p>Examples:</p> <p>>help</p> <p>>help help</p>
FROMTABLE	<p>This parameter specifies the CT4Q that begins the trace. When this parameter is set, the system ignores parameters TRACECO and TRACECT4Q. The arguments are:</p> <ul style="list-style-type: none"> • CT4Q name (the CT4Q that begins the trace. The name is from table CT4QNAMS.) • FIRST (the trace begins from the first CT4Q table in the ordering) • blank (display current value of FROMTABLE) <p>Examples:</p> <p>>fromtable</p> <p>>fromtable ct4qrest (set to ct4qrest)</p>

QMS Host/Remote Queuing (continued)

QVIEW commands

Term	Example Definition
ORDER	<p>This parameter determines ordering of the CT4Q refinement tables. The arguments are:</p> <ul style="list-style-type: none"> • PREOPR (preoperator) • POSTAUTO (post automated service) • RECALL (recall) • blank (display current value of ORDER) <p>Examples:</p> <p>>order</p> <p>>order recall (set to recall)</p>
QUIT	<p>Exit QVIEW.</p> <p>Example:</p> <p>>quit</p>
SHOW	<p>The parameter displays current values of all QVIEW parameters.</p> <p>Example:</p> <p>>show</p>
START	<p>This parameter starts the QVIEW report for the call origination types, across every table. This event occurs for every ordering. The report includes a summary.</p> <p>Example:</p> <p>>start</p>
SUMMARY	<p>This parameter specifies when the system includes a summary in the report.</p> <ul style="list-style-type: none"> • REPORT_ONLY (generates a detail report without a summary) • SUMMARY_ONLY (generates a summary without a detail report) • REPORT_AND_SUMMARY (generates a summary and a detail report) • blank (display current value of SUMMARY) <p>Examples:</p> <p>>summary</p> <p>>summary report_only (set to report_only)</p>

QMS Host/Remote Queuing (continued)

QVIEW commands

Term	Example Definition
TOTABLE	<p>This parameter specifies the last CT4Q table in the trace. When this parameter is set, the system ignores parameters TRACECO and TRACECT4Q. The arguments are:</p> <ul style="list-style-type: none"> • ct4q name (last CT4Q in the trace. This name is from table CT4QNAMS.) • LAST (the trace ends with the last CT4Q table in the ordering) • blank (display current value of TOTABLE) <p>Examples:</p> <p>>totable</p> <p>>totable ct4qrest (set to ct4qrest)</p>
TRACECO	<p>This parameter sets or displays the call origination (CO) type(s) that QVIEW traces. The QVIEW traces these types through the call queue assignment tables in the specified ordering. When this parameter is set, the system ignores the TRACECT4Q, FROMTABLE, and TOTABLE parameters. The arguments are:</p> <ul style="list-style-type: none"> • co type - Add a CO type (in single quotes) to the set to be traced. • call origination and count - Start with this CO type in table CT4QNAMS and add the number of CO types that must be traced. • ALL - Traces all CO types in table CT4QNAMS. This argument is the default argument for TRACECO. • blank - Display current value of TRACECO. <p>Examples:</p> <p>>traceco</p> <p>>traceco oh (add oh)>traceco oh 4 (add 4 CO types from table CT4QNAMS; e.g., oh, oa, dd, cama)</p>

QMS Host/Remote Queuing (continued)

QVIEW commands

Term	Example Definition
TRACECT4Q	<p>This parameter sets or displays the CT4Q(s) in table CT4QNAMS to trace. When this parameter is set, the system ignores parameters TRACECO, FROMTABLE, and TOTABLE. The arguments are:</p> <ul style="list-style-type: none"> • ct4q name - Add a single ct4q from table CT4QNAMS to the traced set. • ct4q name and count - Start with this ct4q in table TC4QNAMS and add the number of ct4qs traced. • ALL - Traces all ct4qs in table CT4QNAMS. • blank - Display current value of TRACECT4Q) <p>Examples:</p> <pre>>tracect4q >tracect4q 0_minus (set to 0_minus)>tracect4q 0_minus 4>tracect4q all</pre>
USE	<p>This parameter determines which CQA tables the system uses. The arguments are:</p> <ul style="list-style-type: none"> • ACTIVE - Use active set of tables (default value). • INACTIVE - Use inactive set of tables. • blank - Display current value of USE. <p>Examples:</p> <pre>>use >use active (set to active)</pre>

TQMIST utility

The TQMIST is a Command Interpreter (CI) increment that functions as a call trace tool. This tool uses specified selection criteria to trace a call and capture Queue Management System (QMS) Management Information System (MIS) event messages. The system stores the data that TQMIST captures during the call trace in a buffer. This information appears on the screen of the user.

The DMS composes a messages that concerns events associated with Force Management that occur at a position. The DMS composes a messages that concerns events which cause the system to count important pieces of data. Examples of events that associate with Force Management include login, call arriving and seating a headset. Examples of events that cause the system to count this data include Initial Position Seizure and Call Busy time. An important event that affects a Traffic Operator Position System (TOPS) QMS call can occur. When this event occurs, the DMS switch generates a message.

QMS Host/Remote Queuing (continued)

This message informs the MIS about the event and the current state of the queue.

The TQMIST uses the selection criteria that the user specifies to capture these messages. For example, the user can select operator 340 and specify that TQMIST must capture all messages. This criteria prompts the TQMIST to capture QMS MIS call queue event and position event messages during the call trace. These messages are for operator 340. The selection criteria include each of the following:

- position number
- team number
- profile identifier
- service profile number
- operator number
- call queue
- service
- FM call type
- originating trunk CLLI
- originating trunk group member ID
- switch ID
- call type for queuing

The terms multiuser and single-user do not accurately describe this tool. One session of TQMIST can operate at a time. A MAP can access this session.

The activation of TQMIST can cause a real time impact.

Data that the TQMIST message buffer stores does not survive restarts. The TQMIST trace tool parameters remain over restarts.

Use the CI command TQMIST at a MAP terminal to activate the TQMIST utility. In the TQMIST environment, you can use the subcommands to set up the parameters for a call trace.

QMS Host/Remote Queuing (continued)

Descriptions of the TQMIST subcommands appear in the following table:

TQMIST commands

Term	Example definition
ALLOC	<p>This command sets the size of the buffer that stores the information the system captures during the call trace. The buffer size is in units of 1024 bytes. To change the size of the buffer, turn off tracing and clear the buffer of the previous contents. To perform this action, enter TRACE OFF and CLR.</p> <p>Note: You can use this command for deallocation. Deallocation is the allocation of a smaller buffer size. Complete deallocation of the buffer cannot occur because the minimum value for the buffer size is 1 K.</p>
CLR	<p>This command clears the buffer of previous call trace data. This command does not effect the size of the buffer. When you enter CLR while a call trace is in progress, the system erases the data that the buffer stores.</p>
DUMP	<p>This command dumps the buffer contents to the MAP screen. This action allows users to view the data that TQMIST captures during the call trace. This information appears in a format of the oldest message to the newest message. This command does not clear the buffer of the current contents. An example dump appears after the command descriptions.</p>
HELP	<p>This command displays online documentation that relates TQMIST. When you provide a valid subcommand as a parameter, the syntax for that subcommand appears. When you do not provide a valid subcommand, the system provides a short description of TQMIST and a list of correct subcommands.</p> <p>Example commands are:</p> <p>>help (provides general information and list of commands)</p> <p>>help help (provides information about the help command)</p> <p>>help `subcommand' (provides information about a specified subcommand)</p>
INFO	<p>This command turns the ability of TQMIST to capture information IDs ON or OFF. When you set INFO to ON, TQMIST captures the information ID of a message and the message during a call trace. The default is OFF.</p> <p>Example commands are:</p> <p>>info on >info off> info</p>

QMS Host/Remote Queuing (continued)

TQMIST commands

Term	Example definition
EVENT	<p>This command selects the types of QMS MIS event messages that TQMIST must capture during a call trace. You can select call queue event messages, position event messages, or the two messages.</p> <p>Example commands are:</p> <p>>event cqevent</p> <p>>event posevent>event both</p>
MISCHILD	<p>This command recreates the QMS MIS IP child process if it dies and cannot restart itself.</p>
QUIT	<p>This command terminates the current TQMIST session and exits out of the TQMIST environment.</p> <p>Note: This command cannot stop a call trace when a call trace is in progress. This command cannot reset the call trace parameters.</p>
RST	<p>This command resets the call trace parameters to the default values. The RST command does not perform this action for the buffer size. Do not reset the buffer size to 8 K. This action prevents possible fragmentation of data store. After the use of this command, selection criteria is not set.</p>

QMS Host/Remote Queuing (continued)

TQMIST commands

Term	Example definition
SEL	<p>This command sets the call trace selection criteria. This selection criteria determines when TQMIST captures the chosen type(s) of messages or does not capture these messages. You can use this command several times to obtain the selected selection criteria for a call trace. When you select the EVERY criterion, TQMIST captures all messages. The criteria and valid values are as follows:</p> <ul style="list-style-type: none"> • EVERY • POS <POSITION NUMBER> 0-9999 • TEAM <TEAM NUMBER> 1-30 • PROF <PROFILE ID> 0-254 • SVCPROF <SERVICE PROFILE NUMBER> 0-254 • OPER <OPERATOR NUMBER> 0-9999 • CALLQ <CALL QUEUE> 0-254 • TRKMEM <TRUNK GROUP MEMBER ID> 0-9999 • FMCT <FM CALL TYPE> 0-2046 • SVC <SERVICE> 0-62 • TRKCLLI <ORIGINATING TRUNK CLLI>0-8191 • SWID <SWITCH ID> 0-254 • CT4Q <CALL TYPE FOR QUEUING> 0-2046 <p>Example commands are:</p> <p>>sel oper 340</p> <p>>sel every</p>
UNSEL	<p>This command turns off call trace selection criteria. You can enter this command with a specified selection criterion. You can choose ALL to unselect the selection criteria.</p> <p>Example commands are:</p> <p>>unsel oper</p> <p>>unsel all</p> <p>Valid criteria are all of the criteria listed under the SEL command. Correct criteria includes EVERY and ALL.</p>

QMS Host/Remote Queuing (continued)

TQMIST commands

Term	Example definition
SHOW	<p>This command displays the settings for the current call trace parameters. An example display is as follows.</p> <pre>TQMIST TOOL SUMMARY-----TQMIST BUFFER SIZE IS: 10240TQMIST BUFFER IS CURRENTLY 0% FULLTRACE IS CURRENTLY: OFFMSG TYPE(s) TO CAPTURE IS: POSEVENT AND CQEVENTINFO ID CAPTURE IS: OFF# ENTRIES IN BUFFER IS: 0TIME FIRST MSG CAPTURED:TIME LAST MSG CAPTURED:SELECTION CRITERIA IS:EVERYPOS 100</pre>
TRACE	<p>This command turns the call trace on or off. While TRACE is ON, TQMIST uses the current call trace parameters to capture messages.</p> <p>Example commands are:</p> <pre>>trace off >trace on</pre>

Sample display from the dump command appears in the following example.

QMS Host/Remote Queuing (continued)

Example TQMIST dump command display

```

-----
- QVIEW REPORT on INACTIVE Table for PREOPR Ordering -
- from ALL Call Origination(s) through ALL CT4Q Tables. -
-----

<----- Call Queue Assignment for PREOPR Ordering ----->

OH
-----
0_MINUS

CT4Q          CRITERION          QMSTOPS          CQ0          TOPS_TA
-----          -----          -----          -----          -----
0_MIN_RES          RESTRICTED          CT4QCLAS          CQ20          TOPS_TA
0_MIN_RES_55          55          CT4QREST          CQ11          TOPS_TA
0_MIN_RES_55_CAR1          CAR1          CT4QCAR          CQ24          TOPS_TA
0_MIN_RES_CAR1          CAR1          CT4QCAR          CQ22          TOPS_TA

0_MIN_COIN          COIN          CT4QCLAS          CQ21          TOPS_TA

0_MIN_FRENCH          FRENCH          CT4QLANG          CQ27          TOPS_TA

411
-----
DA_411

CT4Q          CRITERION          QMSTOPS          CQ30          TOPS_DA
-----          -----          -----          -----          -----
DA_411_OA          OA          CT4QPFXT          CQ31          TOPS_DA

DA_411_UPTOWN          UPTOWN_TRK          CT4QORIG          ?CQ0?          TOPS_TA
DA_411_LIGHT          LIGHT_TRAFFIC          CT4TIME          CQ34          TOPS_DA

DA_411_DOWNTOWN          DOWNTOWN_TRK          CT4QORIG          CQ32          TOPS_DA
DA_411_LIGHT          LIGHT_TRAFFIC          CT4QTIME          CQ34          TOPS_DA

```

QMS Host/Remote Queuing (end)

Example TQMIST dump command display (continued)

```
-----
- SUMMARY
-----
```

```
CT4Q REFINEMENT TABLE ORDERING:
```

ORDER	TABLE	REFINEMENTS
-----	-----	-----
PREOPR:		
	CT4QCLAS	2
	CT4QREST	1
	CT4QCAR	2
	CT4QPFXT	1
	CT4QORIG	2
	CT4QTIME	2
	CT4QLANG	1
	CT4QAUTO	0

```
>> Table CT4QAUTO is listed but not used <<
```

```
CT4Q'S NOT ASSIGNED TO A CALL QUEUE:
```

ORDER	CT4Q	TABLE
-----	-----	-----
PREOPR:		
	DA_411_UPTOWN	CT4QORIG

```
CALL QUEUES NOT ASSIGNED TO A QMS SERVICE:
```

```
NONE
```

SERVORD

QMS Host/Remote Queuing does not use SERVORD.

Queue by Called Type

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS10 and up

Queue by Called Type was introduced in TOPS10.

Prerequisites

To operate, Queue by Called Type has the following prerequisites:

- Base Generic, BAS00001
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- QMS Host/Remote Queueing, OSB00101

Description

This functionality changes the existing queue management system (QMS) functionality by adding new call type refinement table CT4QCALT. This table segregates traffic by the called number type category. The categories are international, local, non-local, and unknown.

This type of call separation is available for QMS force management statistics to monitor the called number types.

The QMS tools, QCALL and QVIEW, are updated to include this new table.

QMS, released in BCS34, consists of the following functionality:

- QMS Host/Remote Queueing, OSB00101

This functionality is provided by the following feature:

Feature number	Feature name
AF7574	QMS Queue by Call Type Category

Operation

As mentioned above, table CT4QCALT segregates traffic by the called number type category. However, the call types defined by the DMS switch are more and different than the call type categories defined in table CT4QCALT. Also,

Queue by Called Type (continued)

the call types vary according to the dialing plans: North American and open numbering. Therefore, the DMS switch defined call types must be mapped to the table CT4QCALT defined call type categories according to the numbering plan.

North American dialing plan

The following table shows the association for North America.

North American call type mapping

DMS switch called number type	maps to CT4QCALT called number type category	Meaning
DOM, DOMIC	NONLOCAL	Domestic (DOM) and Domestic InterLATA (DOMIC) are national, non-local numbers.
OVS	INTERNATIONAL	Overseas (OVS) are international numbers.
LOCAL	LOCAL	Local are local national numbers.
CLD_NIL	UNKNOWN	Called Nil (CLD_NIL) means that there is no B number and a called number type cannot be determined until a B number is entered. This call refines by UNKNOWN.
(OA international)	INTERNATIONAL	Operator assisted (OA) international calls must be flagged as international calls in subtable STDPRTCT.STDPRT. For this functionality, OA means that a B number is present, while operator handled (OH) means that there is no B number.
OGT, SRV, REQ, and so forth	not applicable	Other called number types not listed above do not map to a call type category and cannot be used for refinement through table CT4QCALT. Example are OGT (outgoing trunk number), SRV (service number), REQ (requested number), and so forth. When an entry is not found in table CT4QCALT, the CT4Q assigned to the call up to that point remains unchanged.

Queue by Called Type (continued)

The above table shows how the DMS switch defined call types automatically map to table CT4QCALT, except for the last two entries. OA international calls require datafill in table STDPRTCT and call types that do not map to CT4QCALT can not be refined.

Open numbering dialing

Open Numbering dialing for R1 and R2 signalling sets the called number type by the CLASS option in universal translations datafill. R1 and R2 only support CLASS options LOCAL, ICNTL, INTL, and IOPRA.

Global Operator Services Signalling System #7 (GOSS7) sets the called number type by the Nature of Address (NOA) information in the Initial Address Message (IAM). If the NOA is set to a value not recognized by the TOPS system, the called number type is set to CLD_NIL. In this case, the universal translations CLASS option is examined for the called number type as done with R1 and R2 signalling.

The following table shows mapping for R1, R2, and unrecognized GOSS7 signaling of calls that are not handled by an operator.

Open numbering (R1, R2, and unrecognized GOSS7) call type map

Universal translations CLASS option	maps to DMS switch called number type	which maps to CT4QCALT called number type category
LOCAL (local)	LOCAL	LOCAL
ICNTL (intercontinental)	OVS	INTERNATIONAL
INTL (international)	OVS	INTERNATIONAL
IOPRA (international operator assisted)	OVS	INTERNATIONAL
all others	DOM	NONLOCAL

Queue by Called Type (continued)

The following table shows mapping for R1, R2, and unrecognized GOSS7 signaling of operator handled calls.

Open numbering (R1, R2, and unrecognized GOSS7) call type map for operator handled calls

Signaling	maps to DMS switch called number type	which maps to CT4QCALT called number type category
R1	CLD_NIL	UNKNOWN
R2	DOM	NONLOCAL
GOSS7	CLD_NIL	UNKNOWN

QCALL tool

The QCALL CI increment tool has new command CALT (call type).

Command CALT sets or displays the Call Type criterion for a hypothetical call queue assignment. When no parameter is entered, the current setting is displayed. The valid values are LOCAL, NONLOCAL, INTERNATIONAL, and UNKNOWN.

The HELP and PROMPTME commands contain the new CALT command.

QVIEW tool

Table CT4QCALT is available in the existing FROMTABLE and TOTABLE commands for the QVIEW CI increment tool.

SOC

Software Optionality Control (SOC) option OSB00101 controls this functionality. Tables CT4QCALT, TQORDERA, and TQORDERB can be filled and the tools (QCALL and QVIEW) are operational regardless of the SOC state. But, the SOC state must be ON for call type for refinement (CT4Q) by table CT4QCALT.

Translations table flow

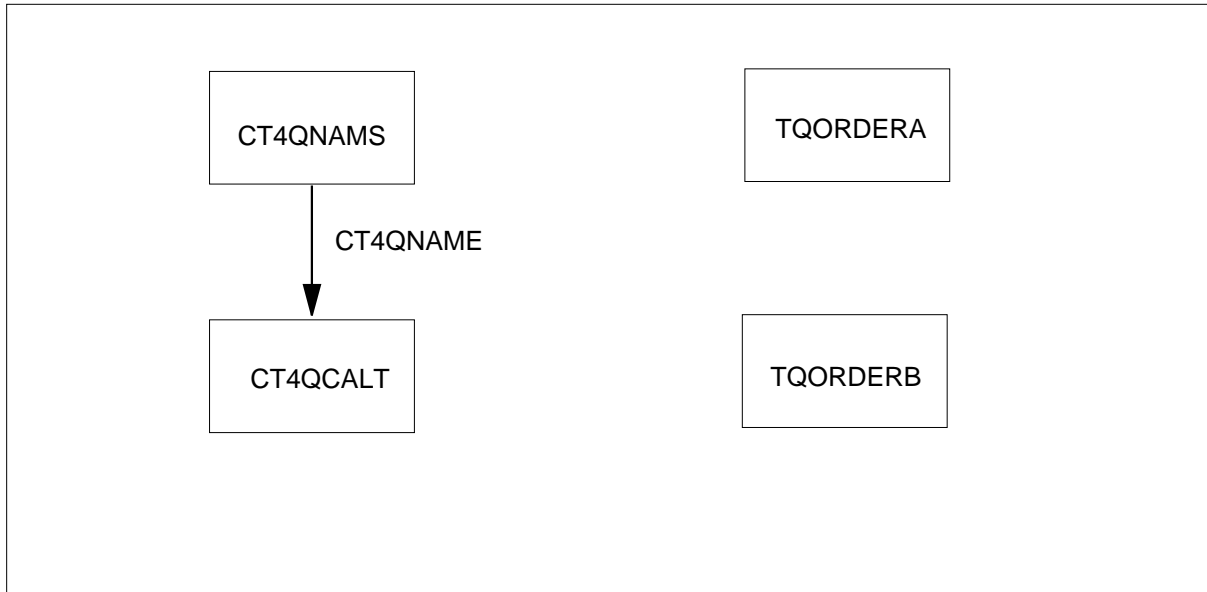
The Queue by Called Type translations tables are described in the following list:

- Table CT4QNAMS defines CT4Q names.
- Table CT4QCALT refines call types by called number type category.
- Tables TQORDERA and TQORDERB indicate the order of the refinement tables.

Queue by Called Type (continued)

The Queue by Called Type translation process is shown in the flowchart that follows.

Table flow for Queue by Called Type



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

Datafill example for Queue by Called Type

Datafill table	Example data
CT4QNAMS	8 0_PLUS_DOM N TOPSOPR Y 0P_DOM N N N
CT4QCALT	0_PLUS NONLOCAL 0_PLUS_DOM
TQORDERA	CT4QCALT 2 0 0 0
TQORDERB	CT4QCALT 2 0 0 0

Limitations and restrictions

The following limitations and restrictions apply to Queue by Called Type:

- The maximum number of CT4Qs (defined in table CT4QNAMS) is 2047. Therefore, it may be important to conserve the number of new called number type of CT4Qs.
- The maximum number of call queues (CQs) is 255.

Queue by Called Type (continued)

Interactions

Queue by Called Type has no functionality interactions.

Activation/deactivation by the end user

Queue by Called Type requires no activation or deactivation by the end user.

Billing

Queue by Called Type does not affect billing.

Station Message Detail Recording

Queue by Called Type does not affect Station Message Detail Recording.

Datafilling office parameters

Queue by Called Type does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement Queue by Called Type. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Queue by Called Type

Table	Purpose of table
CT4QNAMS	Call Type for Queueing defines CT4Q names used by other QMS tables.
CT4QCALT	Call Type for Queueing Called Number Type refines CT4Qs by the called number type category.
TQORDERA	TOPS QMS Order A indicates the order of access for the CT4Q refinement tables.
TQORDERB	TOPS QMS Order B indicates the order of access for the CT4Q refinement tables.
STDPRTCT. STDPRT	Standard Pretranslator Control provides initial translations.

Datafilling table CT4QNAMS

The following table shows the datafill specific to Queue by Called Type for table CT4QNAMS. Only those fields that apply directly to Queue by Called

Queue by Called Type (continued)

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

Datafilling table CT4QNAMS

Field	Subfield or refinement	Entry	Explanation and action
CT4QNAME		up to 32 characters	This table is not changed. Add tuples for new queue names in table CT4QCALT.

Datafill example for table CT4QNAMS

The following example shows sample datafill for table CT4QNAMS.

MAP display example for table CT4QNAMS

CT4QNUM	CT4QNAME	NOAMA	SYSAREA
8	O_PLUS_DOM	N	TOPSOPR Y OP_DOM N N N
9	O_PLUS_OVS	N	TOPSOPR Y OP_OVS N N N

Datafilling table CT4QCALT

Call Type for Queueing Call Type Category is a new table that refines the CT4Q by the called number type.

The CT4Q must be defined in table CT4QNAMS before ist can be datafilled in table CT4QCALT.

The following is a description of the fields.

Datafilling table CT4QCALT

Field	Subfield or refinement	Entry	Explanation and action
OLDCT4Q		name from table CT4QNAMS	Old call type for queueing. This field is part of the key to the table. Enter the name of the previous CT4Q defined in table CT4QNAMS that requires refinement.

Queue by Called Type (continued)

Datafilling table CT4QCALT

Field	Subfield or refinement	Entry	Explanation and action
CALTCRIT		LOCAL, NONLOCAL, INTERNATION AL, and UNKNOWN	Called number type criteria. This field is part of the key to the table. Indicate the called number type for this segregation of traffic.
NEWCT4Q		name from table CT4QNAMS	New call type for queueing. Enter the CT4Q name from table CT4QNAMS that meets the criteria in field CALTCRIT.

Datafill example for table CT4QCALT

The following example shows sample datafill for table CT4QCALT.

MAP display example for table CT4QCALT

OLDCT4Q	CALTCRIT	NEWCT4Q
0_PLUS	NONLOCAL	0_PLUS_NONLOCAL
0_PLUS	INTERNATIONAL	0_PLUS_INTL

Datafilling tables TQORDERA and TQORDERB

The following table shows the datafill specific to Queue by Called Type for tables TQORDERA and TQORDERB. Only those fields that apply directly to Queue by Called Type are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling tables TQORDERA and TQORDERB

Field	Subfield or refinement	Entry	Explanation and action
CT4QTABL		CT4QCALT	Call type for queueing. New value CT4QCALT automatically appears with default values (zeros) for the fields.

Datafill example for tables TQORDERA and TQORDERB

The following example shows sample datafill for table TQORDERA.

Queue by Called Type (continued)

MAP display example for tables TQORDERA and TQORDERB

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

Datafilling subtable STDPRTCT.STDPRT

This table only applies to North American dialing.

The following table shows the datafill specific to Queue by Called Type for subtable STDPRTCT.STDPRT. Only those fields that apply directly to Queue by Called Type are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling subtable STDPRTCT.STDPRT

Field	Subfield or refinement	Entry	Explanation and action
			This table is not changed. For North American dialing, operator assisted (OA) international calls must be flagged as international calls in this table to use table CT4QCALT.
PRETRTE		see subfield	Pretranslation route. This field consists of subfield PRERTSEL and refinements TYPCALL, NOPREDIG, and TRANSYS.
	PRERTSEL	N, P, or R	Pretranslation route selector. Selectors N, P, and R cause refinement TRANSYS to appear where international (IN) can be specified.
	TYPCALL	OA	Type of call. Enter OA for operator assistance.

Queue by Called Type (end)

Datafilling subtable STDPRTCT.STDPRT

Field	Subfield or refinement	Entry	Explanation and action
	NOPREDIG	0 to 7	Number of prefix digits.
	TRANSYS	IN	Translation system. Enter IN for international translations.

Datafill example for subtable STDPRTCT.STDPRT

The following example shows sample datafill for subtable STDPRTCT.STDPRT

MAP display example for subtable STDPRTCT.STDPRT

FROMDIGS	TODIGS	PRETRTE
011	011	N OA 3 IN

Translation verification tools

Queue by Called Type does not use translation verification tools.

SERVORD

Queue by Called Type does not use SERVORD.

Remote MP OC Data Link

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: does not apply

Release applicability

BCS26 and later versions

Requirements

The Remote MP OC Data Link has the following requirements:

- BAS Generic, BAS00003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y

Description

The following features provide this functionality:

Feature number	Feature name
AF0807	Remote TOPS MP OC Data Link Handling
BR0602	Remote ONI via OC

This package provides the following:

- Remote OC for TOPS MP. The Operator Centralization (OC) feature allows an Operating Company to service traffic for several remote toll centers at one centralized operator location. This feature provides an optional software package for TOPS MP application to DMS-200 TOPS OC-Remote offices. This feature allows the remote office to use TOPS MP positions provided by the TOPS host office.
- Remote Operator Number Identification (RONI) is a feature available to a Toll office for Operator Number Identification (ONI) and Automatic Number Identification Fail (ANIF) calls. The toll office can use this feature instead of CAMA boards.

Operation

The information required to understand this document appears in the following documents.

- Host OC Data Link Handling, OSB00101
- Remote OC Data Link Handling, OSB00101

Remote MP OC Data Link (continued)

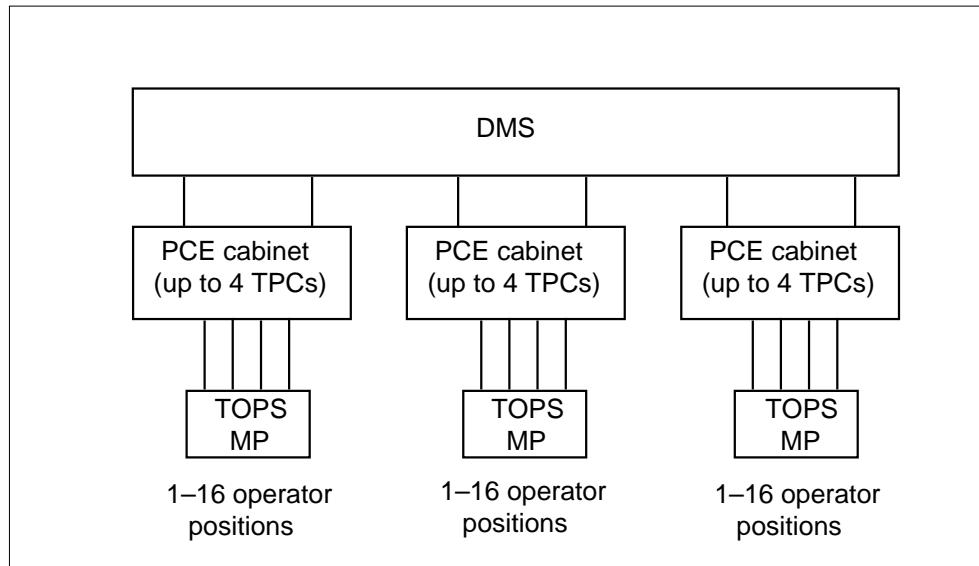
- TOPS Closedown, OSB00101
- TOPS Position Controller (TPC) Version , TPC00002

TOPS MP Overview

The TOPS MP is a call processing system that automates operator assistance functions. The TOPS MP provides the traffic operator with the resources of the toll switching system.

The TOPS MP System is a Position Controller Equipment (PCE) cabinet that contains a maximum of four TOPS Position Controllers (TPCs). Each PCE cabinet provides control for a maximum of 16 TOPS MP Operator Positions. The TOPS MP system appears in the following figure.

TOPS MP system office



Each TPC receives voice and data calls that the DMS Central Control distributes. The TPC manages the screen display for each TOPS MP Operator Position. These functions provide each TOPS MP Operator Position with call processing ability.

AF0807 TOPS MP OC call process

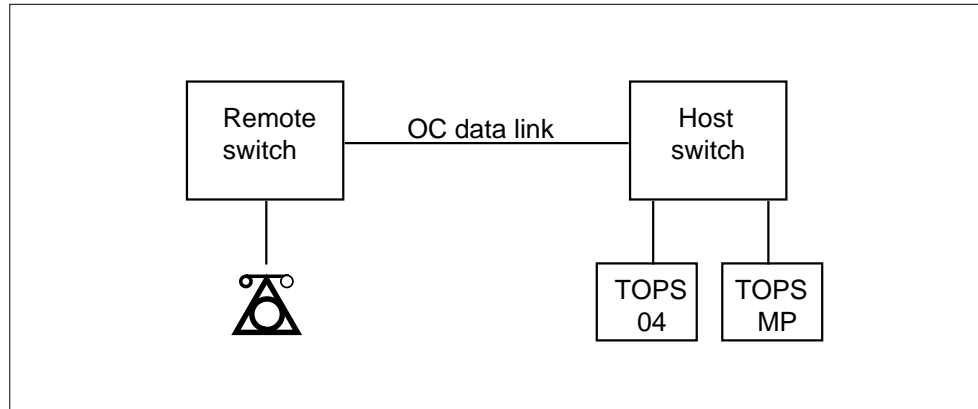
The operators handle subscriber-originated calls that appear at the host or remote switch in the same way. The current TOPS operating practices do not change.

When a subscriber originates a call, the remote switch recognizes that the call requires an operator. The call assigns a virtual circuit to the call. A virtual

Remote MP OC Data Link (continued)

circuit is a logical identifier that links the calls in the host and remote switches. When the switch assigns a virtual circuit, the switch assigns the circuit a data link number. The remote switch sends a request for an operator message to the host switch. The remote switch sends the request over the data link that uses the assigned virtual circuit.

Host and remote switches



The TOPS 04 and TOPS MP Operator Positions are attached to the host switch. When the host switch receives a request for an operator, the host switch obtains an idle Operator Position. The host switch sends a message to the remote switch over the data link. The message indicates that the host switch releases an Operator Position. The message also indicates the position type, the position controller type, and the data link rate. The position type is TOPS 04 or TOPS MP. The position controller type is TPC TOPS MP or NT4X71 TOPS 04. With this information, the remote switch selects the type of commands to send (TOPS 04 or TOPS MP).

The remote switch stores the position information for the length of the call. The remote switch uses this information to send and process messages and commands for the correct position type. The remote TOPS software handles the call. This software sends messages over the data link to the host switch. The messages notify the host switch what to display at the TOPS position that handles the call. The host switch updates the operator screen as the remote switch directs.

The operator can release the call from the position after completion of the call. When this event occurs, a direct connection occurs between the calling and called trunks, and a release message goes to the host switch. The host switch releases the position and sends a message to the remote switch. This message indicates the release of resources. The remote switch releases the virtual circuit.

Remote MP OC Data Link (continued)

Compatibility of host and remote switch software

Host and remote switches with different versions of TOPS software can be not compatible. For example, a remote switch with TOPS MP software cannot communicate with a host switch with TOPS 04 software. The host switch cannot tell the remote switch the type of positions of the host. The remote switch does not know if to send TOPS MP or TOPS 04 commands. A TOPS 04 remote switch and a TOPS MP host switch cannot communicate if the call has an associated TOPS MP position. The remote switch cannot send TOPS MP commands.

Upgrading OC offices to TOPS MP: A 3-step procedure upgrades OC offices to TOPS MP. At your current location:

1. Update the software in the host switch without adding any in-service MP positions.
2. Update the software in all the remote switches.
3. Put the TOPS MP positions on the host in service. Refer to TOPS MP Interface, OSB00101, for datafill of TOPS MP positions.

Remote OC for TOPS MP

An OC data link carries all call processing information between a host and remote TOPS office. The TOPS MP positions require different messaging between the host and remote offices to support TOPS MP capability.

The host office assigns an operator position to calls that originate from a remote TOPS office serve. If the host selects a TOPS MP position, the remote must contain this optional TOPS MP software package. The host must contain this software package to communicate correctly with the TOPS MP position.

The messages for screen displays and key functions on TOPS MP differ from the messages that earlier versions of TOPS used. This feature supplies the software to support the new TOPS MP control messages. The software supports the messages over the OC data link the remote office uses to the position in the host office.

BR0602 Remote ONI via OC

The RONI feature is available to a Toll office for handling ONI and ANIF calls. The Toll office uses ONI and ANIF instead of CAMA boards. This office can use RONI circuits to access TOPS operators located in another office. The call connects over the RONI circuits to an operator. The operator keys in the calling number the CAMA office requires to complete the call. The RONI circuits contain two parallel trunks which the system considers a single entity. The voice trunk receives call-defining zip tones from the CAMA office. The trunk provides a talking path between the operator and customer. The data

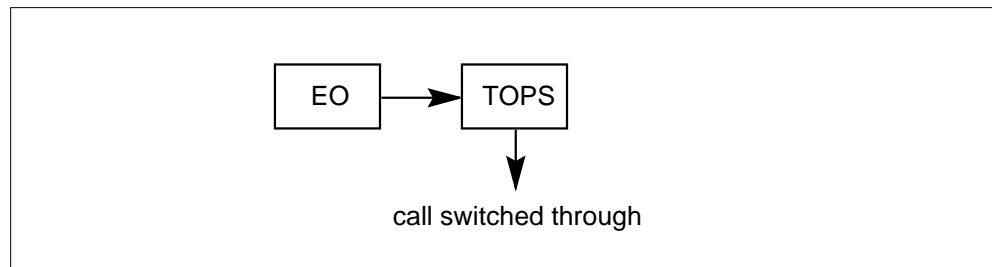
Remote MP OC Data Link (continued)

trunk or keypulse path provides data communication. For example, the trunk or path carry the MF calling number signals to the CAMA office as the operator keys.

The OC is a feature that centralizes a TOPS operator work force. The OC allows a single TOPS switch, the host, to provide services for several DMS Toll switches, remotes. This feature is a cost effective way to extend TOPS operator services. This feature supports the performance of a large operator group that requires only single force administration. This feature creates standards of operator services in a serving area. This configuration can provide TOPS to other Toll areas without altering routing patterns or backhauling. Any calls that arrive in a remote switch that requires operator assistance are handled over OC links to the host. The appearance is that the TOPS operators are in the remote office. Two links provide communication from the remote to the host. The interchange of data between the host and remote requires a data link. The voice link provides communication between the operator and the calling party.

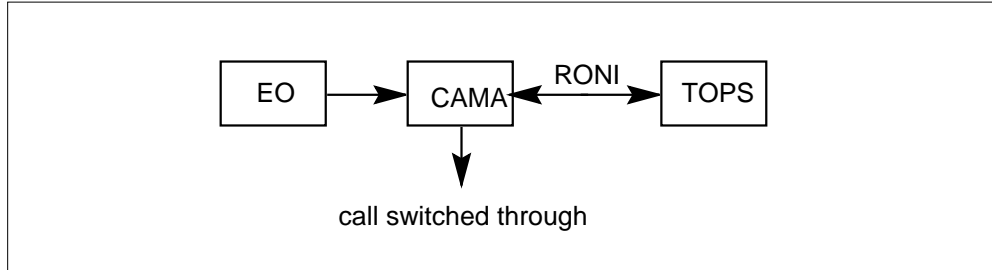
Any TOPS office that provides RONI service placed in an OC configuration loses the use of RONI. An OC office cannot add on RONI services. This feature makes RONI compatible with the OC environment and standalone. The call order will be from end office to the CAMA office, to the OC remote office. The call uses the TOPS operators in the host. An operator cannot detect the difference between RONI call arrival now and as the original RONI feature defines.

The possible configurations of CAMA call order appear in the following figure.

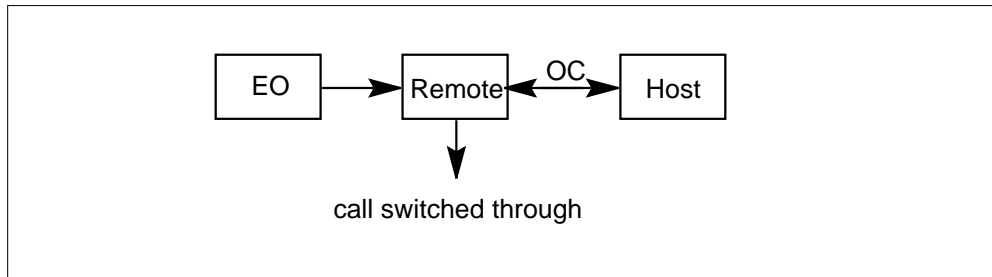
CAMA call: end office to TOPS office

Remote MP OC Data Link (continued)

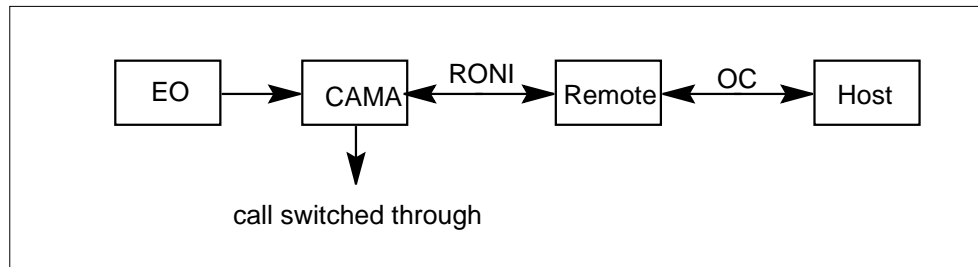
RONI call: end office to CAMA office and CAMA via RONI to TOPS office



OC call: end office to remote and remote via OC to host TOPS



RONI OC call: end office to CAMA office, CAMA via RONI to remote, and remote via OC to host TOPS



Translations table flow

Remote MP OC Data Link does not affect translations table flow.

Limits

The following limits apply to Remote MP OC Data Link:

Host and remotes with different versions of TOPS software can be not compatible.

Remote MP OC Data Link (continued)

Upgrading OC offices to TOPS MP

The following procedure describes how to upgrade OC offices to TOPS MP.

At your current location:

1. Update the software in the host. Do not add any in-service TOPS MP positions.
2. Update the software in all the remotes.
3. Put the TOPS MP positions on the host into service.

Interactions

Remote MP OC Data Link does not have functionality interactions.

Activation/deactivation by the end user

Remote MP OC Data Link does not require activation or deactivation by the end user.

Billing

Remote MP OC Data Link does not affect billing.

Station Message Detail Recording

Remote MP OC Data Link does not affect Station Message Detail Recording.

Datafilling office parameters

Remote MP OC Data Link does not affect office parameters.

Datafill sequence

The tables that require datafill to implement Remote MP OC Data Link appear in the following table. The tables appear in the correct entry order.

Datafill requirements for Remote MP OC Data Link

Table	Purpose of table
TRKGRP.RONI	Datafill OC data link.

Remote MP OC Data Link (end)

Datafilling table TRKGRP.RONI

Datafill for Remote MP OC Data Link for table TRKGRP.RONI appears in the following table. The fields that apply to Remote MP OC Data Link appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TRKGRP

Field	Subfield or refinement	Entry	Explanation and action
GRPTYP		RONI	Enter RONI.

Datafill example for table TRKGRP

Sample datafill for table TRKGRP appears in the following example.

MAP example for table TRKGRP

Table TRKGRP (RONI)											
GRPKEY	GRPINFO										
RONIL	RONI	0	AA	NCRT	IC	NT	LOOP			2541	613
RONICEN1	RONI	0	AB	NCRT	IC	TSPS	EANDM	N	OFF	5983	919
RONIT	RONI	0	AC	NCRT	IC	TSPS	EANDM	Y	ON	0000	613

Tools for verifying translations

Remote MP OC Data Link does not use translation verification tools.

SERVORD

Remote MP OC Data Link does not use SERVORD.

Remote OC Data Link

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

BCS36 and up

Prerequisites

To operate, Remote OC Data Link requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This functionality is provided by the following features:

Feature number	Feature name
F1317	Operator Centralization Remote (F1317 = BV0776, BC0564, BC0565, BC0694-BC0696, BC0699, and BC1128)
UT312449 (BCS36)	BCS34 : Site is having trouble networking
BR0602	Remote ONI Via OC
NT89870 and UV801070	Cannot add tuple to TRKSGRP
UV000432	Unexpected Release Call message
BR22321	Add datafillable alarm thresholds for DA links
50039957	DA positions in an OC network
59006865	EOL Notification & EOL of TOPS ACD (TOPS12)

Operator Centralization (OC) allows one DMS-200, or DMS-100/200 TOPS switch to perform the operator functions for up to 15 remotely located DMS-200, or DMS-100/200 switches. Operator Centralization is provided by the following functionalities:

- Host OC Data Link, OSB00101
- Remote OC Data Link, OSB00101

Remote OC Data Link (continued)

The maximum of 15 switches indicated above is affected by later functionalities as follows:

- Functionality Enhanced TOPS OC and Increased Remote Support (ETMS OC), ENSV0101, changes the limit to 31 switches for ETMS OC data links. For DCM data links, the 15 limit is not changed.
- Functionality Host/Remote Networking by Queue Type (HRNQT), OSB00101, changes the limit to 30 switches, except for DCM data links, which is still 15. HRNQT has precedence over ETMS OC, so the 30 limit is not changed with the presence of ETMS OC.

A difference of up to three BCS levels (e.g., BCS28 to BCS31) between the TOPS host and remote OC switches is permitted. However, Northern Telecom recommends that the host and remote TOPS switches be maintained at the same BCS.

Prior to BCS32, the host switch must be the first switch in a TOPS operator centralization network to be upgraded to the higher BCS release. With BCS32, The HRNQT functionality removes this restriction by allowing a TOPS office to serve as either a host or a remote, depending on queue type. Thus, the restriction that the host office be the first switch to be upgraded to the higher BCS release is removed once both the host and the remotes are at BCS32 or greater. This restriction is removed if functionality HRNQT is present.

F1317 - Operator Centralization - Remote

F1317 provides the Operating Company with the capability of handling traffic for several remote toll centers at one centralized operator location. A DMS-200 or DMS-100/200 TOPS host switch extends operator services to remote DMS-200 or DMS-100/200 toll centers.

UT312449 (BCS36)

The following restriction is lifted: Remote voice and data links cannot be datafilled in table OCGRP when TOPS_OC_ENVIRONMENT is set to REMOTE when HRNQT is present. Therefore, reference to this restriction is deleted from the table OCGRP section.

BR0602 - Remote ONI Via OC

Refer to functionality TOPS Remote CAMA, OSB00001, for a detailed description of the Remote ONI Via OC feature.

Remote OC Data Link (continued)

Supplementary Operator Centralization Trunk Group

The Supplementary Operator Centralization (SOC) trunk group (IT trunk group type) allows an Operating Company to provide the following services between a TOPS host switch and remote(s) switch.

- Busy Line Verification (BLV)
- Bill-to-Third Acceptance (Delay Calls).

The SOC trunk group is used for operator-originated calls only if no trunk groups exist between the host and remote switches. Where local practice allows, delay call trunks and verify trunks can be combined on a single SOC trunk group from the host switch to a remote OC switch.

NT89870 and UV801070 - Cannot add tuple to TRKSGRP**Problem**

Unable to add a TRKSGRP tuple per the example datafill in this package (Data Assignment section) for voice links for a host/remote configuration.

Solution

The example shows NP and IM signalling. This is incorrect. Only DP and IM signalling is acceptable by the DMS.

UV000432 - Unexpected Release Call message**Problem**

An Operating Company reported its operators were receiving numerous calls that are dropping off before being handled. These calls are originating from remote OC switches in BCS28. Reloading the DCMs clears the problem, but the problem reoccurs the next evening.

Solution

A total outage of OC data links had occurred, caused by the Operating Company removing the data links from service inadvertently or purposely. This should not have been done, especially since the Operating Company has all data links over a single facility. Secondly, incorrect datafill (voice links not set for RMB:Table TRKSGRP, field REMBSY=N) results in the voice trunks going into lockout at the host causing unexpected message logs to be generated.

BR22321 - Add datafillable alarm thresholds for DA links

Datafillable alarm thresholds will be added to TABLE SERVICES. This will allow customers to datafill the severity of DAS alarms. Previously, the link thresholds were hardcoded in TOPS code.

Remote OC Data Link (continued)

Background

With the introduction of TOPS DA, a remote Directory Assistance System (DAS) was interfaced to the DMS via MPC datalinks. A Software alarm capability was provided to inform the office personnel when there were problems with the MPC links to the DAS. If only one MPC link to the vendor was up, a minor alarm was set. This alarm was meant to communicate with the DAS office personnel that their ability to communicate with the DAS was relying on only one link. If no MPC links to the vendor were up, a critical alarm was set. This alarm was meant to tell the office personnel that all communication to the DAS was down. The datalink set that communicated to the remote DAS was datafilled as TOPSVR in TABLE MPCFASTA.

Later, split vendors were introduced for Directory Assistance. One vendor's DAS could handle Intercept calls and another vendor's DAS could handle Directory Assistance calls. Each DAS needed its own unique set of MPC datalinks associated with it. Since there were now two independent sets of datalinks, two sets of DAS alarms were needed. Each set of alarms contained both a minor and a critical alarm. A minor alarm was set whenever the number of datalinks available fell to 1 or lower, and canceled when the number of datalinks reached 2 again. A critical alarm was set when no datalinks were available, and canceled when some were. The datalink sets for the two DASs are now datafilled as TOPSVR1 and TOPSVR2 in TABLE MPCFASTA.

Description

This fix introduces datafillable thresholds for minor, major, and critical alarms. Customers want the ability to specify the severity of the DAS alarms. Each set of DAS alarms not only contain a minor and a critical, but also an additional major alarm. These three alarm thresholds will be datafilled in table SERVICES. These replace the hardcoded values. A minor alarm will be set when the number of datalinks available falls to the minor threshold or lower, and canceled when the number of datalinks reaches higher than the minor threshold. A major alarm will be set when the number of datalinks available falls to the major threshold or lower, and canceled when the number of datalinks reaches above this threshold. A critical alarm will be set when the number of datalinks available falls to the critical threshold or lower, and canceled when the number of datalinks is higher than the critical threshold.

50039957 - DA positions in an OC network

In a TOPS OC network, operator positions that provide directory assistance (DA) or intercept services must have unique position numbers in table TOPSPOS. This applies across the network and to all software releases. Position numbers must be different between the host and its remotes, and between remotes off the same host.

Remote OC Data Link (continued)

Operation

TOPS Standalone Configuration

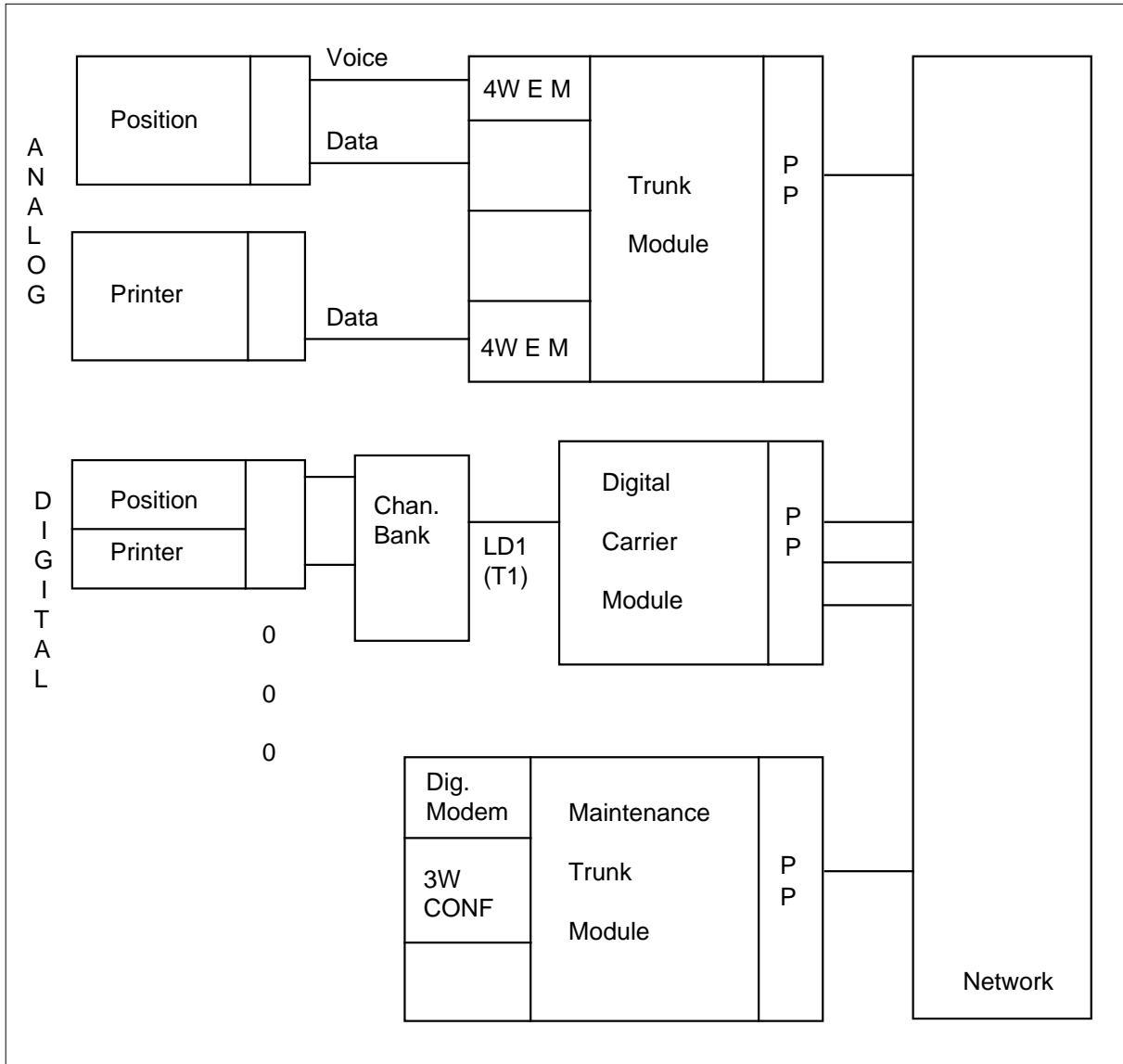
TOPS comprises Operator Positions, management and supervisory positions, printers, and service circuits, all of which are terminated on the DMS-200 peripheral subsystem.

Voice and data circuits of the Operator Positions are terminated on the peripherals of the DMS-200 that are appropriate to the type of transmission facilities used. For example, trunk modules for analog trunks or Digital Carrier Modules (DCM) or Digital Trunk Controllers (DTC) for DS-1 digital trunks.

Where analog facilities are used, each position is terminated through 4-wire trunk circuits. A TOPS position requires one 4-wire trunk circuit for voice and one for data. If digital facilities are used, a maximum of 12 positions can share one 24-channel DCM or DTC input (two channels per position). See the following figure.

Remote OC Data Link (continued)

Termination of TOPS Components on the DMS-200



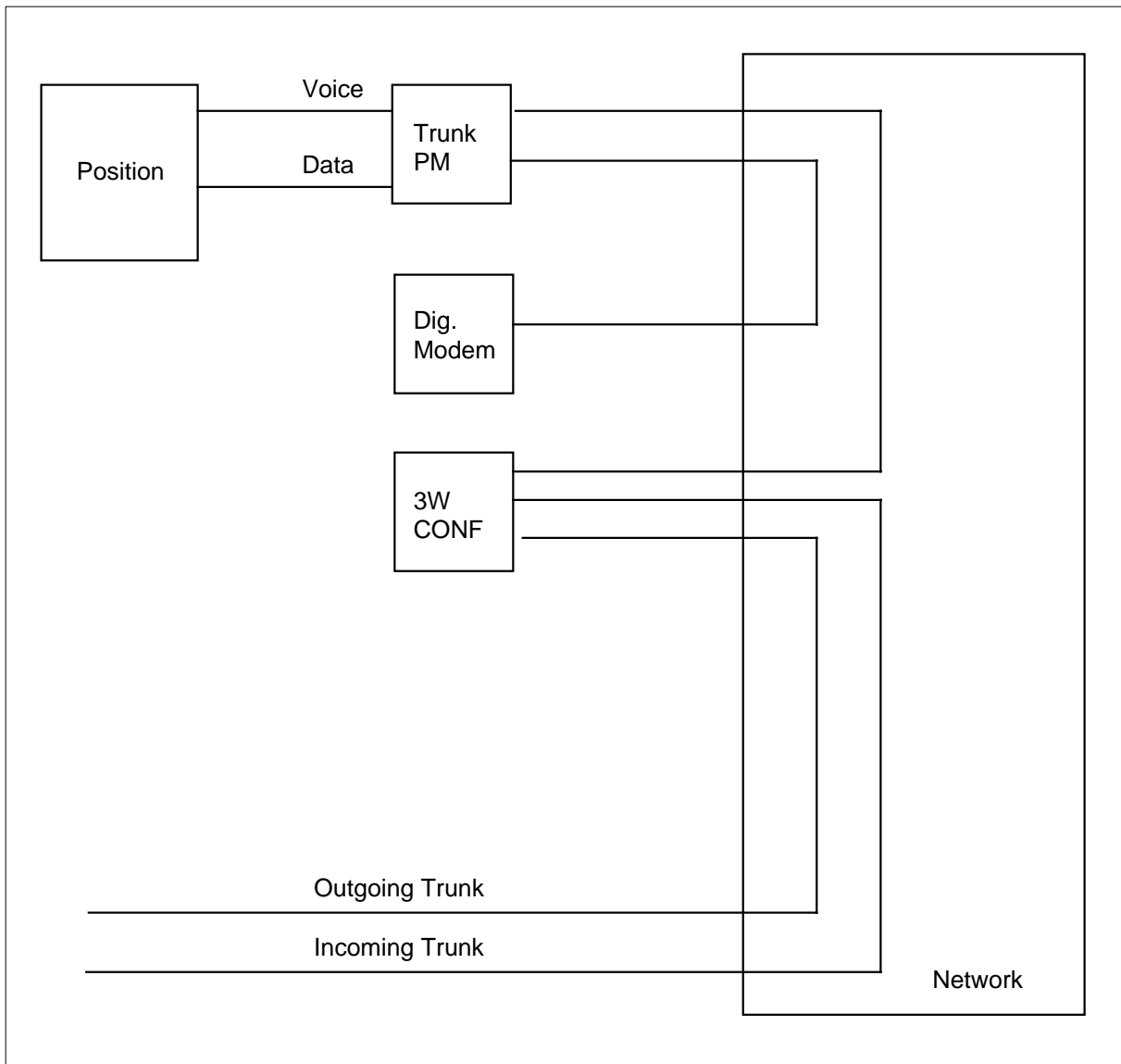
The data channels of the Operator Positions, supervisory positions, and printers are connected through the switching network to digital modems located on the Maintenance Trunk Module (MTM). The connections between the Operator Position and the digital modem associated with the position are not reestablished on every call, but are dedicated to the network at position initialization.

When a call is delivered to the Operator Position, the voice channel of the Operator Position is connected through the switching network to a dedicated

Remote OC Data Link (continued)

port of a 3-port conference circuit. The other two ports are connected to the calling and called parties when a call is routed to the position. See the following figure.

Operation Position Ready to Receive Calls



TOPS OC Configuration

Two types of links are required between the host and remote switches. The links are data and voice.

Remote OC Data Link (continued)

Data links carry all call processing information between the two switches. The data link handles all messages during call establishment and any recalls. Each data link can be shared by several calls. This is accomplished by considering each data link to be composed of virtual circuits.

Voice links are provided to connect the host operator to the calling party. The connection is made by a 3-port conference circuit at the remote switch. Voice links are required on a per call basis.

Voice and data links are common controlled equipment. One data link can serve up to 50 positions of traffic load, whereas one voice circuit is required for each position load.

TOPS OC Successful Call Process

Subscriber-originated calls appearing at the host or remote switch are handled in exactly the same manner by the operators. There is no change in the existing methods of TOPS operating practices.

When a subscriber originates a call, the remote switch recognizes that an operator is required and a virtual circuit is assigned to the call. A virtual circuit is a logical identifier that links the calls in the host and remote switches together. When a virtual circuit is allocated to a call, it is assigned a physical data link member on a round-robin basis. The remote switch sends a request for operator to the host switch over a data link using the virtual circuit that has been assigned. Refer to functionality Host OC Data Link for call processing flow diagrams.

When the request for operator is received by the host switch, an idle Operator Position is obtained. A voice link is then selected and connected to the Operator Position. The host switch sends a message to the remote switch over the data link indicating that an Operator Position and voice have been obtained.

The remote switch connects the selected voice link to the incoming subscriber trunk using a 3-port conference circuit. The remote switch then sends an update screen message indicating that the remote connections have been made.

TOPS operators at the host switch press position keys to service the call. Messages are sent to the remote switch, indicating the keys pressed.

The remote switch processes the messages received by executing the key functions corresponding to the position keys. Messages are sent to the host switch to update the operator screen with key function results. The host switch updates the screen as directed by messages sent by the remote switch.

Remote OC Data Link (continued)

When the operator obtains enough information to connect the called party, the remote switch connects the outgoing trunk to a 3-port conference circuit and the forward number is outpulsed.

When the operator releases the call from the position by pressing the Position Release key (POS RLS), a direct connection is made between the calling and called trunks freeing the 3-port conference circuit. The voice link is then released and a release message is sent to the host switch.

The host switch releases the voice link, the Operator Position, and the virtual circuit, and sends a message to the remote switch indicating that resources have been released.

The remote switch releases the virtual circuit. When the call terminates, an Automatic Message Accounting (AMA) record is generated.

TOPS OC Resource Allocation

Several resources are required for successful OC call processing. The resources are listed below.

- Virtual Circuit
- Operator Position
- Voice Link
- Voice Link Connections
- 3-port Conference Circuit
- 3-port Conference Circuit Connection
- Direct Connection between Called and Calling Trunks.

Each resource is described identifying possible resource allocation deficiencies that could affect successful OC call processing.

When a resource cannot be obtained, the general response is to send the call to treatment. The treatments used are EMR4 for 0- call types and EMR3 for all other 0+ call types. If a call cannot be queued because there is no room in the call waiting queue, the call queue overflow (CQOV) treatment is used. These treatments are datafilled in Table TMTCNTL to provide a proper announcement or default announcement (reorder). Calls of type 0- can be retried by datafilling the treatment to route the call back to the operator queue after the announcement has been applied.

Remote OC Data Link (continued)

Virtual Circuit

A virtual circuit is a logical identifier that links calls in the host and remote switches together.

When the remote switch obtains a virtual circuit, a request for an operator message is sent to the host switch. When the remote switch attempts to obtain a virtual circuit, but is unsuccessful, the remote switch routes the call to treatment.

Operator Position

When the request for an operator message is received at the host switch, a free operator is obtained.

If no operator is available, the call waiting queue is checked. If there is room in the call waiting queue, the call is added to the queue and a message is sent to the remote switch indicating that the call is queued for an operator. The remote switch returns ringing to the subscriber indicating that the subscriber is in the call waiting queue. When a position becomes available, the position is obtained for the call.

If there is no room in the call waiting queue, the host switch takes down the virtual circuit and sends a message to the remote switch indicating that there is no room in the call waiting queue. The remote switch then routes the call to treatment.

Voice Link

When an Operator Position is available, the host switch selects a voice link. If a voice link is unavailable, the Operator Position is released, the call is taken down at the host switch, and a message is sent to the remote switch indicating the problem. The remote switch routes the call to treatment (EMR4 for 0-, EMR3 for 0+).

Voice Link Connections

When a voice link is connected to an Operator Position, the host switch sends a message to the remote switch indicating that the connection has been made.

If the voice link connection fails and it is the first attempt to make connection, the host switch releases the operator, releases the voice link, and attempts to obtain a new position and voice link.

If the voice link connection fails and it is not the first attempt to make connection, the host switch takes down the virtual circuit and sends a message to the remote switch indicating the resource failure. The remote switch releases the virtual circuit and routes the call to treatment.

Remote OC Data Link (continued)

3-Port Conference Circuit

When the remote switch receives the message from the host switch indicating that the operator and voice link connections have been completed, the remote switch selects a 3-port conference circuit and a recording unit (RU).

If a 3-port conference circuit or RU is unavailable, the remote switch outputs a TOPS107 log report indicating the resource failure, releases the voice link, and sends a no resources available message to the host switch. The host switch releases the voice link, makes the Operator Position busy and places the call back in the call waiting queue. The Operator Position is made busy to prevent a loop that could occur from resources not being available in the remote switch, from the position being released, from the call going back into queue, and from the call coming out of queue by obtaining the same position just released.

3-Port Conference Circuit Connection

When the 3-port conference circuit and RU have been successfully obtained, the remote switch connects the voice link to the subscriber trunk using the 3-port conference circuit.

If the connection fails and it is the first attempt to make connection, the remote switch releases the 3-port conference circuit, the RU, and the voice link. A message is sent to the host switch, indicating connection failure. The host switch then releases the voice link and tries to get another voice link to connect successfully.

If this is not the first failed attempt to connect the voice link to the subscriber trunk using the 3-port conference circuit, the remote switch takes down the call and sends a release operator message to the host switch. The host switch then releases the Operator Position and takes down the call.

Called and Calling Trunk Connection

When the operator releases the call, the remote switch releases the voice link and sends a released operator message to the host switch. The host switch responds to the message by releasing all its resources and sends a released message back to the remote switch. The remote switch then frees its virtual circuit.

After the remote switch releases its voice link, it attempts to make a direct connection between the called and calling parties to free the 3-port conference circuit. If the direct connection between the called and calling trunks fails, the remote switch retries to make the connection every 30 seconds, until successful or until the call is terminated.

Remote OC Data Link (continued)

When the call is terminated, an AMA record is generated by the remote switch.

Resource Failures

The following describes the various routes for an OC call if resource failures occur. Resources described are listed below.

- Data Links
- Voice Links.

Data Links

If a data link is not operating, all messaging is shifted to a healthy data link. However, if a data link failure occurs after the operator has been connected to the call, the call is terminated and the subscriber receives proper treatment from the End Office (such as dial tone or reorder).

If there are not enough active data links to accomplish the message load, some messages may be lost. If there are no active data links, communication between the host and remote switches cannot occur. When a TOPS call originates at the remote switch and there are no data links available, the call is terminated.

If you datafill 4 data links, they will all be used on a load sharing basis. Each new call selects the next link on a round robin basis and will continue to use that link as long as it remains in service.

If a datalink fails, the switch automatically reassigns calls in progress to the links which are still in service. When the link is returned to service, new calls again start selecting it as described above.

We strongly recommend that if the traffic at a remote OC office requires 150 positions, 4 datalinks should be provided so that there will still be sufficient capacity if a single link fails. If only three links are datafilled, the limit should be 100 positions, and if two links are provided the limit is 50. We do not recommend installation of only one link.

Ideally, we would also recommend that facilities be independently routed for all datalinks, so a single facility failure can only take one link out of service. Alternatively, all the links could be provided with duplicated facilities with protection switching. In that case, the datalinks would recover quickly after a facility outage. It would be best if the facilities were normally set up so that half of the links were on each route, so that a failure of either route would only interrupt service on half of the links, while the others continued uninterrupted.

Unless there is adequate backup for the facilities, so that a single failure will only cause one link to fail (or alternatively a single failure will only interrupt

Remote OC Data Link (continued)

half of the facilities for a few seconds), an OC remote with 4 OC datalinks should be rated for 100 positions, not 150.

Voice Links

If a voice link fails after it has been connected, voice communications are lost. If the system detects the failure, the call is terminated and the subscriber receives proper treatment from the End Office (such as dial tone or reorder). If the system does not detect failure, the operator or the subscriber should recognize the loss of voice and either party can terminate the call.

Implementation

The following are estimated memory requirements for this functionality and are not to be interpreted as actual requirements.

- Program Store - 28K bytes
- Data Store - 12K words

F1317 - Operator Centralization - Remote

Appropriate analog/digital Trunk Module (TM)/ Digital Carrier Module (DCM) either or Digital Trunk Controller (DTC) interface for the voice links is provided on the basis of one circuit per voice link at both the host and remote switches.

A DCM interface and a T-span interface for each data link at both the host and remote switches are required. With DCM, unused channels 2 through 24 can be used for OC voice links, special operator service routes, or any other miscellaneous trunk applications. The T-span interface can be circuit 0, timeslot 1.

Host and remote OC voice links are provisioned on a loss basis with 0.1% blocking using the full availability poisson P.001 capacity table. OC voice link requirements are calculated as follows:

$$CCS = \frac{BHH \times AWT \times 2}{100}$$

CCS equals the number of calls per hundred seconds which are read into the P.001 table to determine the minimum number of OC voice links. BHH equals the busy half hour calls. AWT equals average work time.

Recommended OC voice link sparing level is 10% of the calculated quantity.

Remote OC Data Link (continued)

One 3-port conference circuit is required for each call connected to an operator. Minimum provisioning requirements for 3-port conference circuits equals the calculated value for OC voice circuits plus the following additional requirements:

- Automatic Coin Toll Service (ACTS) served coin overtime recalls, ACTS served time and charge quotes, and ACTS served notify messages all require a 3-port conference circuit per call/recall.
- Calls held on loop require a 3-port conference circuit.

The minimum requirement for TOPS 3-ports in a DMS-200 TOPS remote switch equals the calculated value of OC voice links plus the engineered busy hour value for all ACTS call/recalls and calls held on loop plus a spare level of 5%.

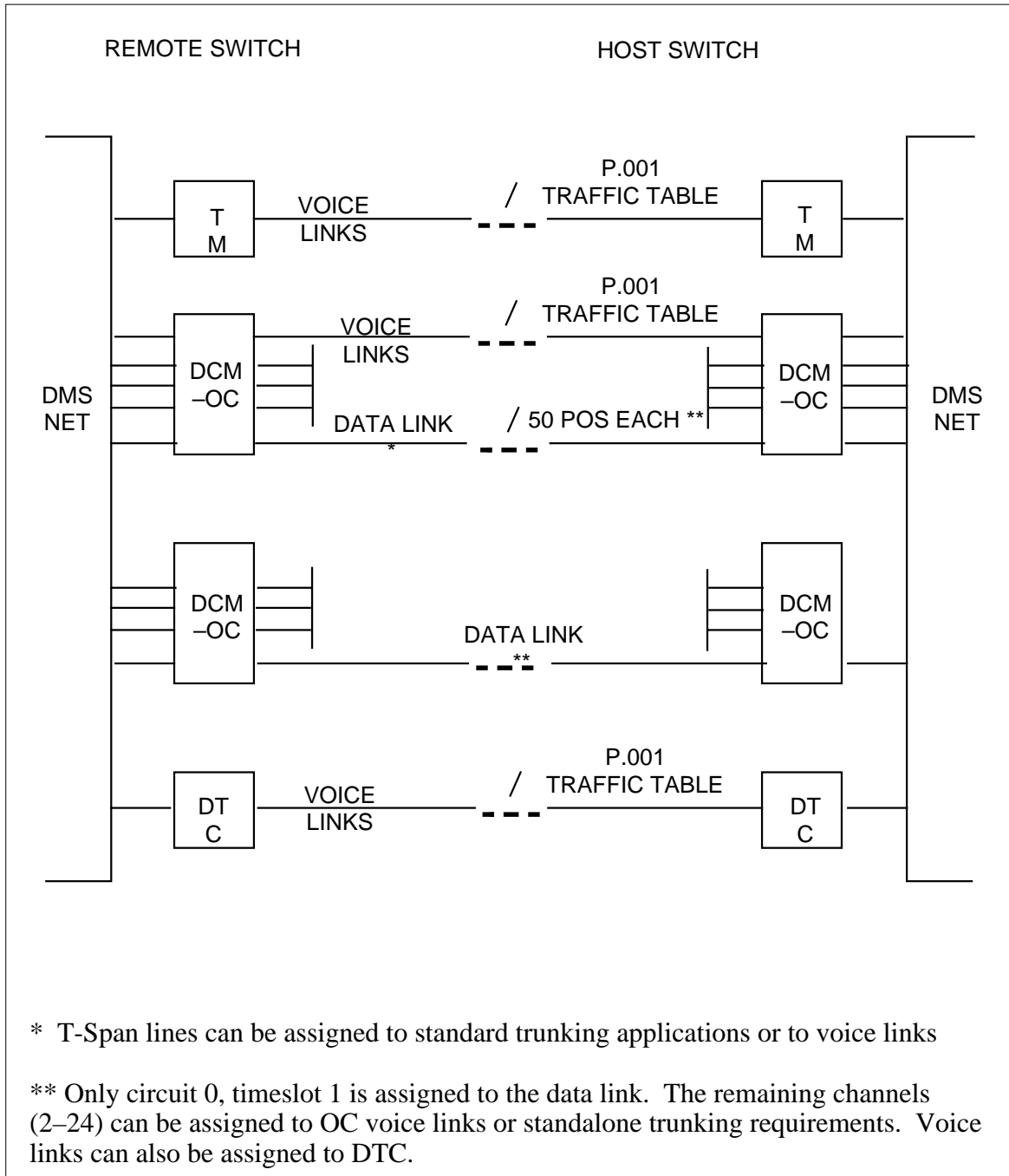
The data links are implemented as either four 4-wire facilities and operate in full duplex at 56 kbps over a single 64-kbps channel. These facilities can be analog or digital end-to-end and meet or exceed a Bit Error Rate (BER) of 1 times 10^{-5} . The round trip signal propagation delay should not exceed 20 milliseconds.

The data links are implemented as either four 4-wire facilities and operate in full duplex at 56 kbps over a single 64-kbps channel. These facilities can be analog or digital end-to-end and meet or exceed a Bit Error Rate (BER) of 1 times 10^{-5} . The round trip signal propagation delay should not exceed 20 milliseconds.

Data links are implemented as either T1, fiber, digital microwave, or any combination of these. These data links provide signaling between the host and remote switch. The host DMS-200 TOPS sends all call control instructions, as keyed by the operator, to the remote location over the same data link. One digital data link (plus standby) provides sufficient capacity for 50 TOPS positions. See the following figure for the host and remote line configuration.

Remote OC Data Link (continued)

OC Host/Remote Lines



The data link is implemented using two DCM, one at each end of the data link. The High-Speed Data Link Controller (HDLC) is part of the DCM and is provided at both the host and remote switches.

Remote OC Data Link (continued)

Voice links and data links are totally independent of each other. The voice links are equivalent 4-wire toll grade facilities and can be either analog or digital.

The following teletypewriters (TTY) must be engineered in both the host and remote switches:

- Record (REC) TTY
- Voicequote (VQ) TTY
- Autoquote (AQ) TTY
- Hotel Administration Data System (HADS) TTY
- Dial-Up Autoquote (DUAQ) TTY
- Network Operation Trunking Information System (NOTIS).

Digital modems terminate the functions and are required for all TTY.

The following TOPS devices are assigned in the host switch only:

- System Administration Data System (SADS)
- Force Administration Data System (FADS)
- Force Management Cathode-Ray Tube (FMCRT)
- Mechanized Force Administration Data System (MFADS).

Note: All Force Management functions are performed in the host switch.

Hardware for TOPS positions and Force Management is in the host switch only. All other TOPS-related hardware is in both the host and remote switches.

Common Channel Interoffice Signaling (CCIS) links can be in both the host and remote switches. Normally, CCIS links are in the host switch only.

Datafill

Tables CLLI, TRKGRP, TRKSGRP, TRKMEM, DCMINV, and TOPSHDLC must be datafilled to identify the circuitry implements the voice and data links.

Table CLLI is datafilled to identify the names used for referencing all voice link groups and data link groups.

Tables TRKGRP, TRKSGRP, and TRKMEM identify the circuits and characteristics of each voice link group.

Remote OC Data Link (continued)

Table DCMINV characterizes a DCM so that it can implement an OC data link.

Table TOPSHDLC associates the data links in a data link group with DCM circuits.

Table OCGRP is indexed by office and associates each office with the voice link group and data link group that connect it. Table OCGRP designates whether the connected office is a host or remote and field BCSLEVEL indicates the lower BCS level of the 2 connected switches.

Table OCHOST is datafilled to specify the host switch, unless Host/Remote Networking by Queue Type is present.

Table VLMEM associates an office with the individual voice links in its voice link group.

All tables required for rating and routing normally found in a TOPS office should be datafilled in the TOPS OC remote office, with the exception of the following tables:

- Table OPRDAT
- Table TOPSPOS

All routing is performed exactly as if the TOPS positions were located at the Remote switch. The delay call route to operators is still performed using pseudo CLI TOPSPOS.

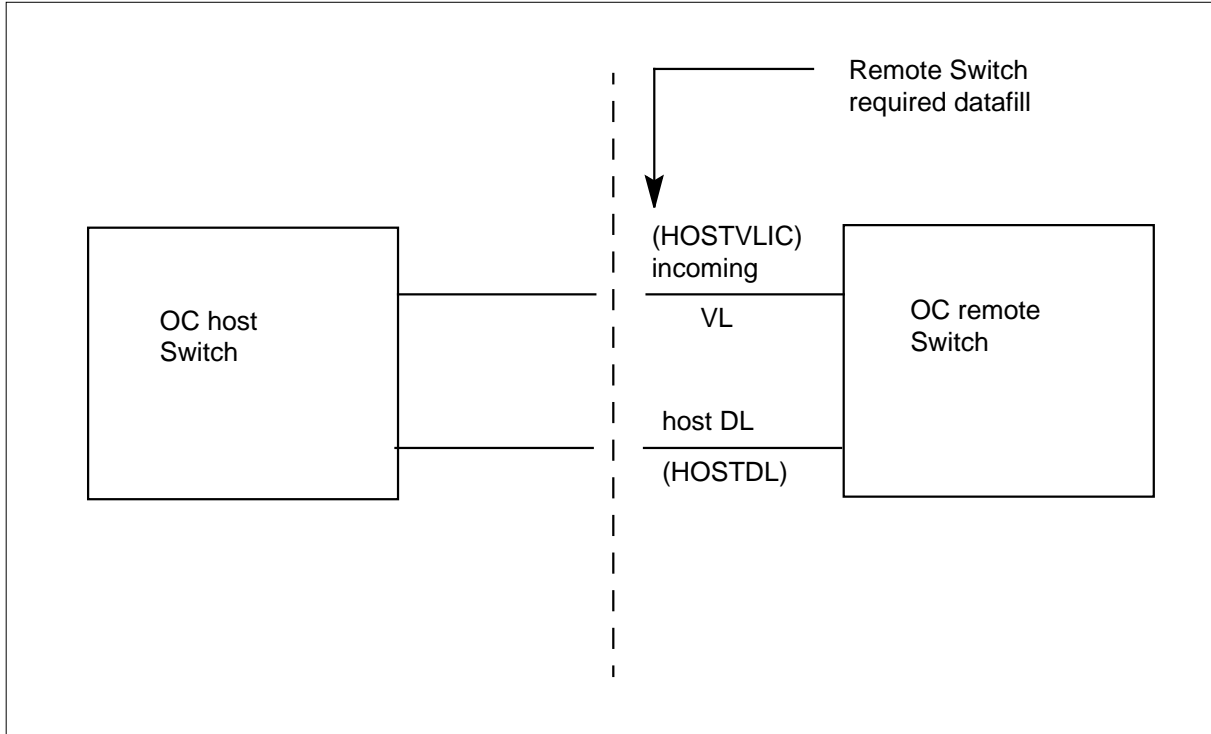
The following datafill is required in a Remote switch to identify its host switch(es) and their associated links.

- host switch name(s)
- Incoming voice links
- host data links.

See the following figure for an example of the OC configuration.

Remote OC Data Link (continued)

Operator Centralization Configuration



Translations table flow

Translations table flow is not provided.

Limitations and restrictions

The following limitations and restrictions apply to Remote OC Data Link:

A given DMS-200 TOPS OC switch can be connected (via table OCGRP) to, at most, 15 other switches (i.e., the maximum number of tuples in OCGRP is 15). This limit is increased to 31 for functionality ETMS OC or 30 for Host/Remote Networking by Queue Type. But for DCM links, the limit is not changed.

Host and remote data link provisioning is based on a maximum of 50 remote positions of traffic per data link with one backup data link. A minimum of two and a maximum of four data links are allowed. The data links provide a maximum of approximately 150 positions served by a remote switch. One data link is provisioned for redundancy. Functionality ETMS OC increases the 150 limit to an engineerable traffic level.

Remote OC Data Link (continued)

A maximum of 255 voice links are provided to each switch. Functionality ETMS OC increases this limit to 2047.

There can be a maximum of 320 virtual circuits or twice the available voice links, whichever is less. Virtual circuits are data packets with a unique header message (1-320) carried on each data exchanged between the host and remote switches. Once a call ends, the header identification (virtual circuit number) is reused on a new call.

TOPS OC host and remote switches are different DMS switches, unless functionality Host?Remote Networking by Queue Type (HRNQT) is present. With HRNQT, it is possible for a switch to be a Host for calls on some (0- call) queries, a Remote for calls on some queries, and a Standalone for calls on some queries. The TOPS OC host switch must always be upgraded to a new BCS before any of the remote switches are upgraded. HRNQT made base OC changes with field BCSLEVEL that affect BCS upgrade whether HRNQT is present or not. Refer to the HRNQT, OSB00101, description for upgrade procedures.

TOPS OC host and remote switches must be on compatible BCS releases that do not cross general release boundaries (every third BCS). During the upgrade process, the host and remote switches may be up to one general BCS apart. TOPS OC switches should not run on different BCS releases for extended periods.

Some features for OC operation introduced in a BCS may or may not work until all switches in the configuration are upgraded to the same BCS which contains the feature. Existing features are not affected.

Interactions

The following paragraphs describe the interactions between Remote OC Data Link and other functionalities.

This functionality interacts with functionality TOPS Call Processing Features.

Activation/deactivation by the end user

Remote OC Data Link requires no activation or deactivation by the end user.

Billing

Remote OC Data Link does not affect billing.

Station Message Detail Recording

Remote OC Data Link does not affect Station Message Detail Recording.

Remote OC Data Link (continued)

Datafilling office parameters

The office parameter in the following table must be set in the host and remote switches.

The following table shows the office parameter used by Remote OC Data Link. This office parameter must be set in the host and remote switches. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by Remote OC Data Link

Table name	Parameter name	Explanation and action
OFCENG	TOPS_OC_ENVIRONMENT	Specifies whether the switching unit is a host or remote switch. The parameter value is TOPS_OC_ENVIRONMENT_RANGE. The range default is HOST. In the remote switch, the range must be set to REMOTE. The TOPS_OC_ENVIRONMENT office parameter must be set to HOST to allow datafill of OC tables and should not be changed afterwards.

Note: If functionality Host/Remote Networking by Queue Type, ADVQ0005, is present, this parameter is used differently. Refer to the ADVQ0005 description for further information.

Datafill sequence

The following table lists the tables that require datafill to implement Remote OC Data Link. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Remote OC Data Link

Table	Purpose of table
CLLI	Identify names of voice and data link groups.
TRKGRP	Identify circuits and characteristics of each voice link group.
TRKSGRP	Identify circuits and characteristics of each voice link group.
TRKMEM	Identify circuits and characteristics of each voice link group.
DCMINV	Define DCM for data link.
TOPSHDLC	Associates the data links in a data link group with DCM circuits.

Remote OC Data Link (continued)

Datafill tables required for Remote OC Data Link

Table	Purpose of table
SERVICES	Set thresholds for minor, major, and critical alarms.
OCGRP	Associates each office with the voice link group and data link group.
VLMEM	Associates an office with the individual voice links in its voice link group.
MPCFASTA	Define data links for remote DAS.
OCOFC	matches an office name to a numeric so that OFCNAME can be used as a key for OCGRP.
TOPSPOS	TOPS Position. This table specifies functions and characteristics of TOPS positions and devices.

Datafilling table CLLI

Table Common Language Location Identifier (CLLI) contains CLLI codes that uniquely identify each announcement, tone, or trunk group, the trunk group size, and administrative information. All voice link group CLLIs and data link group CLLIs to the host switch should be defined.

Datafill example for table CLLI

The following example shows sample datafill for table CLLI.

MAP display example for table CLLI

CLLI	TRKGRSIZ	ADMININF
HOSTVLIC	64	HOST_VOICE_LINK_INCOMING
HOSTDL	32	HOST_DATA_LINK

The following message is output when a user attempts to change the TRKGRSIZ field in table CLLI to a value larger than 255, if the CLLI being changed is being used as a voice link group in table OCGRP. The change is denied.

This CLLI is being used in table OCGRP as a VLGRP CLLI. TRKGRSIZ greater than 255 is disallowed.

Functionality ETMS OC removes the above restriction.

Remote OC Data Link (continued)

Datafilling table TRKGRP

Table Trunk Group (TRKGRP) identifies trunk groups in a TOPS DMS-200 or DMS-100/200 switch. The voice link CLLI must be datafilled in Table TRKGRP. The trunk group type is intertoll (IT). The direction of the remote voice links that connect to the host switch is incoming (IC). All voice links to the host switch must be datafilled.

Datafill example for table TRKGRP

The following example shows sample datafill for table TRKGRP.

MAP display example for table TRKGRP

GRPKEY	GRPINFO
HOSTVLIC	IC IA MIDL
IT 99 EML6 NCTC	316 NPRT NSCR 316 000 N N

Datafilling table TRKSGRP

Table Trunk Subgroup (TRKSGRP) identifies the supplementary information for each subgroup that is assigned to one of the trunk groups listed in Table TRKGRP. The voice link CLLI must be datafilled in Table TRKGRP. The direction of the remote voice links that connect to the host switch is incoming (IC). All voice links to the host switch must be datafilled. Field REMBSY must be set to Y for the Voice links in an OC Remote/OC Host configuration.

Note: DP and IM signalling (fields IPULSTYPE and ISTARTSG) is the only one that works. An Operating Company had error messages when attempting to add data for voice links in an OC remote with NP and IM signalling.

Datafill example for table TRKSGRP

The following example shows sample datafill for table TRKSGRP.

MAP display example for table TRKSGRP

SGRPKEY	CARCODE	SGRPVAR
HOSTVLIC	0 DS1SIG	STD IC DP IM 0 0 NO NO N N Y 70

Datafilling table TRKMEM

Table Trunk Member (TRKMEM) identifies the data associated with each trunk that is assigned to one of the trunk groups or subgroups specified in Table

Remote OC Data Link (continued)

TRKGRP and Table TRKSGRP. All voice links to the host switch must be datfilled.

Datafill example for table TRKMEM

The following example shows sample datafill for table TRKMEM.

MAP display example for table TRKMEM

CLLI	EXTRKNM	SGRP	MEMVAR
HOSTVLIC	3701	0 DCM	0 0 21
HOSTVLIC	3702	0 DCM	0 0 22
HOSTVLIC	3703	0 DCM	0 0 23

Datafilling table DCMINV

Table Digital Carrier Module Inventory (DCMINV) lists the assignment data specifying whether the DCM is intended for a TOPS OC datalink application.

Datafill example for table DCMINV

The following example shows sample datafill for table DCMINV.

MAP display example for table DCMINV

DCMNM	FRTYPE	FRNO	SHPOS	FLOOR	ROW	FRPOS	EQPEC	LOAD	LKDATA	EXECS
DCM 0	DCE	0 18	6	B	20		2X31AC			
(1 0)	(0 27)	(0 42)					RDCMHA02			(1 26)\$
							DCMEX OCDL DCM (0 DEFAULT N)			
							(1 DEFAULT N)			
							(2 DEFAULT N)			
							(3 DEFAULT N)			
							(4 DEFAULT N)			
DCM 1	DCE	0 32	6	B	20		2X31AC			
(1 18)	(0 38)	(0 17)					RDCMHA02			(1 44)\$
							DCMEX OCDL DCM (0 DEFAULT N)			
							(1 DEFAULT N)			
							(2 DEFAULT N)			
							(3 DEFAULT N)			
							(4 DEFAULT N)			

Remote OC Data Link (continued)

Datafilling table TOPSHDLC

Table TOPS High-Speed Data Link Controller (TOPSHDLC) lists the data links provided for the host and remote switches and their Digital Carrier Module (DCM) assignments. Up to 4 (3 regular and 1 spare) OC data link assignments may be made per remote switch with a limit of 150 positions. The DCM data link assignments must be made on DCM circuit 0 and DCM timeslot 1 for each data link. Each data link must be assigned to a unique DCM. Data links to the host switch must be datafilled.

Datafill example for table TOPSHDLC

The following example shows sample datafill for table TOPSHDLC.

MAP display example for table TOPSHDLC

DLGRP	EXTRKNM	DLDCMVAR
HOSTDL	1	DCM 0 0 1
HOSTDL	2	DCM 1 0 1

Datafilling table OCOFC

Table Operator Centralization Office (OCOFC) matches an office name to a numeric so that OFCNAME can be used as a key for Table Operator Centralization Group (OCGRP). Each OC office name must be entered in this table before it can be referenced elsewhere. Specify office names at the other end of the OC links. In the Remote switch specify the host switch name.

Datafill example for table OCOFC

The following example shows sample datafill for table OCOFC.

MAP display example for table OCOFC

VALUE	SYMBOL
1	HOSTOFFICE

Datafilling table OCGRP

Table Operator Centralization Group (OCGRP) is required to identify the voice and data link groups that connect to the offices datafilled in Table OCOFC. Table OCGRP also designates whether the connected office is a host or remote. In a remote switch, the office type must always be specified as host. For example, specify the host switch(es) name and its associated links.

Remote OC Data Link (continued)

In BCS32, functionality Host/Remote Networking by Queue Type (HRNQT) added field BCSLEVEL and changed the OC upgrade procedure for base OC. Therefore, starting with BCS32, field BCSLEVEL is present and OC upgrade procedure for base OC are changed whether HRNQT is present or not.

Incorrect datafill of field BCSLEVEL, a base OC change, could cause outage. Refer to the HRNQT description in OC upgrade procedures for datafilling field BCSLEVEL whether HRNQT is present or not.

Datafill example for table OCGRP

The following example shows sample datafill for table OCGRP.

MAP display example for table OCGRP

OFFICE	OFCTYPE	VLGRP	DLOVRLAY	BCSLEVEL
HOSTOFFICE	HOST	HOSTVLIC	HDLC	HOSTDL 33

The following message is output when a user attempts to add an entry to table OCGRP, and the CLI being used for the VLGRP has been datafilled in table CLI with a TRKGRSIZ larger than 255. The change is denied.

```
VLGRP CLI size larger than 255 is disallowed.
```

Functionality ETMS OC removes the above restriction.

Datafilling table OCHOST

Table Operator Centralization host (OCHOST) is required in the remote switch only. Datafill the CLI name of the host switch that has been specified in Table OCOFC.

Datafill example for table OCHOST

The following example shows sample datafill for table OCHOST.

MAP display example for table OCHOST

OFFICETYPE	HOSTOFC
HOST	HOSTOFFICE

Datafilling table VLMEM

Table Voice Link Member (VLMEM) maps voice link terminations between OC-equipped switches. Table VLMEM associates an office with the

Remote OC Data Link (continued)

individual voice links in its voice link group. The VLGRP CLLI should correspond with Table CLLI. The order of these entries is not important.

Datafill example for table VLMEM

The following example shows sample datafill for table VLMEM.

MAP display example for table VLMEM

VLKEY	VLGRP	VLEXTRK
HOSTOFFICE 0	HOSTVLIC	3701
HOSTOFFICE 1	HOSTVLIC	3702
HOSTOFFICE 2	HOSTVLIC	3703

The size of Table VLMEM is controlled by the CLLI of the VLGRP associated with a given office. This association occurs in table OCGRP, and the size is specified in table CLLI by the TRKGRSIZ field for the VLGRP CLLI. To increase the size of VLMEM for a particular office, the TRKGRSIZ field in table CLLI for the VLGRP being affected should be increased. The trunk members must be busied out, all entries in table VLMEM for the affected office name must be deleted and re-added, the trunk members should be returned to service.

Datafilling table MPCFASTA

For a remote Directory Assistance System prior to BCS32, the datalink set that communicates to the remote DAS is datafilled as TOPSVR in table MPCFASTA.

In BCS32, PRS BR22321, the datalink sets for two DASs (split vendors) are datafilled as TOPSVR1 and TOPSVR2 in table MPCFASTA.

Datafill example for table MPCFASTA

The following example shows sample datafill for table MPCFASTA.

MAP display example for table MPCFASTA

INDEX	AUDITFRQ	UNITS	RECOVERY	MLCLIST
TOPSVR1 0		SECONDS	REGULAR	1 2 1 \$
TOPSVR2 0		SECONDS	REGULAR	1 2 1 \$

Remote OC Data Link (continued)

Datafilling table SERVICES

With PRS BR22321 in BCS32, datafillable thresholds for minor, major and critical alarms are available in table SERVICES.

Datafill example for table SERVICES

The following example shows sample datafill for table SERVICES.

MAP display example for table SERVICES

INDEX	SERVDATA
1	DASERV IBM MPC1 0000 2 1 0
2	TASERV

Datafilling table TOPSPOS

The following table shows the datafill specific to Remote OC Data Link for table TOPSPOS. Only those fields that apply directly to Remote OC Data Link are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TOPSPOSs

Field	Subfield or refinement	Entry	Explanation and action
POSNO		numeric (0 to 9999)	Position number. In a TOPS OC network, operator positions that provide directory assistance (DA) or intercept services must have unique position numbers. This applies across the network and to all software releases. Position numbers must be different between the host and its remotes, and between remotes off the same host.

Datafill example for table TOPSPOS

The following example shows sample datafill for table VLMEM.

Remote OC Data Link (end)

MAP display example for table TOPSPOS

```
POSNO      VCCKT      VCPDGRP    CARDCODE
DATAPATH
POSAREA

-----

100        TM8 0 24      NPDGRP     2X72AA
DMODEM SP ASCII TM8 0 25 NPDGRP BELL108
OPR 1 TOPSACD TASERV $ GEN XFR1 $
```

Translation verification tools

Remote OC Data Link does not use translation verification tools.

SERVORD

Remote OC Data Link does not use SERVORD.

RU Robustness

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS11 and up

RU Robustness was introduced in TOPS11.

Prerequisites

To operate, RU Robustness requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

The TOPS Recording Unit (RU) is the primary internal structure to store data about a TOPS call in progress. This feature overhauls many RU usage practices to provide increased robustness and reliability. All of the changes provided by this feature are internal only, so they are invisible to the user.

This functionality is provided by the following feature:

Feature number	Feature name
AF7830	TOPS RU Robustness

Operation

The RU Robustness does not require a description of the operation.

Translations table flow

The RU Robustness does not have a translations table flow.

Limitations and restrictions

RU Robustness has no limitations or restrictions.

Interactions

RU Robustness has no functionality interactions.

RU Robustness (end)

Activation/deactivation by the end user

RU Robustness requires no activation or deactivation by the end user.

Billing

RU Robustness does not affect billing.

Station Message Detail Recording

RU Robustness does not affect Station Message Detail Recording.

Datafilling office parameters

RU Robustness does not affect office parameters.

Datafill sequence

There are no datafill requirements.

Translation verification tools

RU Robustness does not use translation verification tools.

SERVORD

RU Robustness does not use SERVORD.

Screened Service Routing

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

The BCS33 and later versions

Requirements

To operate, Screened Service Routing has the following requirements:

- BAS Generic, BAS00003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y

Description

The following features provide this functionality:

Feature number	Feature name
AJ0167	TOPS Service Number Routing
AG0933	Service Number Routing
AF3023	TOPS Service Number Routing on MP

The Traffic Operator Position System (TOPS) operator must dial the forward party while in conference with the calling customer that dials `0'. This procedure completes the call. The customer dials a seven or ten digit directory number (DN) for service. The local office connects the customer to the service that the dialed DN specifies.

When a customer dials `0' for service, the local office connects the customer to the TOPS operator in the DMS TOPS office. The TOPS operator performs the following action. The TOPS operator references a service number directory. The TOPS operator uses the seven or ten digit scheme previously mentioned to dial forward for the requested service.

The operator has new and alternate dialing methods for quick completion of calls to service numbers. These methods reduce TOPS operator work time while dialing forward to reach a service agency directory number. The new functions are:

- when the service number requested serves all callers from one or more NXX, perform the following action. Key a single digit service number

Screened Service Routing (continued)

code (SNCD) instead of the complete directory number for the system to outpulse.

- when more than one directory number exists for the requested service agency from the NXX of the caller, perform the following action. Key an additional two digit reference code (REFCD).
- when more than one directory number exists for the requested service agency from the NXX of the caller, perform the following action. Key SNCD and REFCD together, if known.

Press the following keys to outpulse the DN required to reach the service.

KP SN + {SNCD}	+ START (TOPS 04)
KP SN + {REFCD}	+ START (TOPS 04)
KP SN + {SNCD} {REFCD}	+ START (TOPS 04)
Fncs + 38 + START + {SNCD}	+ START (TOPS MP)
Fncs + 38 + START + {REFCD}	+ START (TOPS MP)
Fncs + 38 + START + {SNCD} {REFCD}	+ START (TOPS MP)

Operation

This feature contains two new tables, TOPSSNCD and TOPSSN. The tables allow the DMS system to identify the number to outpulse for the TOPS Operator to reach a requested service number (SN). The Numbering Plan Area (NPA) and NXX of a calling customer and an operator dialed service code determine the number that the system must outpulse.

Table TOPSSNCD maps from NPA-NXX of the calling party and local service code (SNCD) to an SNID. The actual billcode (ACTUALBC) in Table TOPSBC can replace the NPA-NXX if the TOPS trunk is the originating agency. Field SNID = 0 is reserved to cause routing to vacant code treatment and dispense with indexing Table TOPSSN.

Table TOPSSN maps a 1 to 4 digit service number index (Field KEY) to a 1 to 10 digit SN for outpulsing or display.

The NPA code for customers that reach a TOPS operator occurs in the datafill for the incoming line (Table LINEATTR). The NPA code also occurs in a DMS 100/200 TOPS or trunk (Table TRKGRP) circuit. ANI equipment or the TOPS Operator through the *KP BACK* + calling number + *START* sequence for ONI or ANI failure condition calls provides the calling party NXX.

Use Table TOPSBC to replace the NPA-NXX of the calling number. Replace the NPA-NXX with the actual billcode used for billing purposes.

Screened Service Routing (continued)

Keying examples

The operator can use the datafill for Tables TOPSSNCD and TOPSSN to enter:

- for caller in 613-23X to reach the fire service

KP SN + 0 + START (TOPS 04) or
Fncts + 38 + START + 0 + START (TOPS MP)

- outpulses 2321551
- for caller in 613-256 to reach the fire service

KP SN + 0 + START (TOPS 04) or
Fncts + 38 + START + 0 + START
(TOPS MP)

- outpulses 2561234
- for caller in 819-771 to reach the ambulance service

KP SN + 2 + START (TOPS 04) or
Fncts + 38 + START + 2 + START
(TOPS MP)

- causes 7704444 to display, followed by one space and the letter N to display in the called number field. The N display indicates that no outpulsing occurs at this time. The N display indicates an alternate SN is available. To cause outpulsing at this point, key START. To select the alternate SN, release the forward connection, if the forward connection exists. Key

KP SN + START (TOPS 04) or
Fncts + 38 + START + START (TOPS
MP)

- to outpulse 8289171.
- for caller in 819-771 to reach the police service

KP SN + 1 + START (TOPS 04) or
Fncts + 38 + START + 1 + START
(TOPS MP)

- outpulses 5951122. The letter A follows the displayed SN that indicates an alternate SN is present. To select the alternate SN, release the forward connection and key

Screened Service Routing (continued)

KP SN + START (TOPS 04) or
Fncts + 38 + START + START (TOPS
MP)

- to outputse 5951234
- for caller in 613-824 to reach the fire service

KP SN + 0 + START (TOPS 04) or
Fncts + 38 + START + 0 + START
(TOPS MP)

- causes the digit 0 to flash in the called number field. The MAN follows this display. The MAN indicates that manual interaction is a requirement to find the number. The operator references the hard copy listing to see if 613-824 has a reference code specified. The operator asks the caller for the required number. An associated reference code is present next to the number in the operator hard copy. An example is `21'. In this event, the operator inputs this information into the system, continuing with the example, and keys

KP SN + 21 + START (TOPS 04) or
Fncts + 38 + START + 21 + START
(TOPS MP)

- to outputse 8242511
- if the operator knows the reference code before dialing, the following procedure occurs. To add the reference code to the service number code, key

KP SN + 021 + START (TOPS 04)
or
Fncts + 38 + START + 021 + START
(TOPS MP)

- to outputse 8242511
- if the operator dialed the reference code incorrectly, the operator performs the following procedure. Release the forward connection and again dial the reference code for the corrected outputting to occur.

Screened Service Routing (continued)

Translations table flow

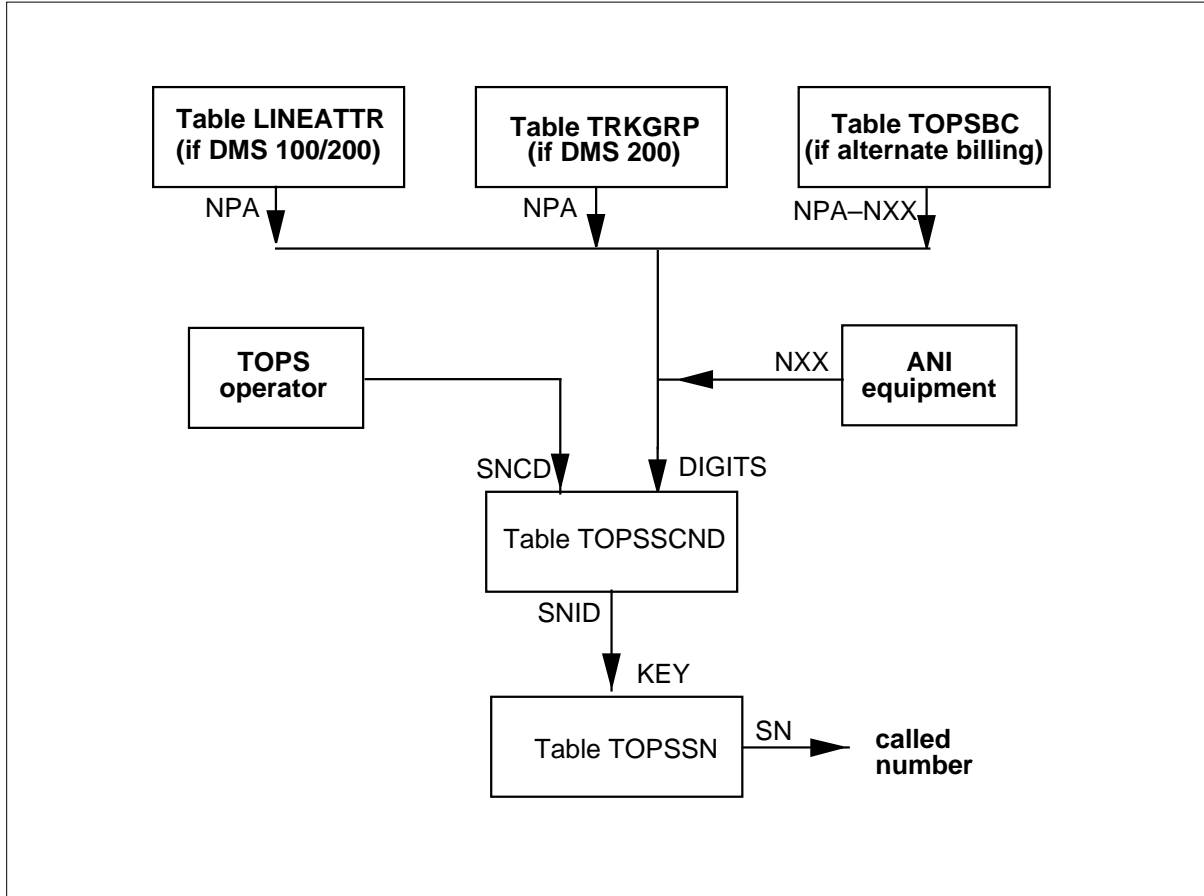
The Screened Service Routing translations table flow follows:

1. A customer reaches a TOPS operator.
2. Table LINEATTR provides the customer NPA for a DMS 100/200. Table TRKGRP provides the NPA for a DMS 200.
3. For TOPS type trunks, use Table TOPSBC to replace the NPA-NXX of the calling number. Replace the NPA-NXX of the calling number with the actual billcode used for billing purposes.
4. The ANI equipment or the TOPS Operator through the KP BACK + calling number + START sequence for ONI or ANI failure condition calls provides the calling party NXX.
5. The operator enters a service number code (SNCD) to index field SNCD in Table TOPSSNCD.
6. Table TOPSSNCD maps from NPA-NXX of the calling party field (FIELD DIGITS) and SNCD to an SNID. Field SNID is an index into Table TOPSSN.
7. Table TOPSSN maps a 1 to 4 digit service number index (field KEY) to a 1 to 10 digit SN for the system to output or display.

The Screened Service Routing translation process appears in the following flowchart.

Screened Service Routing (continued)

Table flow for Screened Service Routing



Details of the preceding call flow appear in the following list:

- Calling number—613-23X
- Called number—`O' (wants fire service)
- SNCD—Operator enters 0 for fire service
- Outpulse—2321551

Datafill content used in the flowchart appears in the following table.

Datafill example for Screened Service Routing

Datafill table	Example data
TOPSSCND	0 61323 \$ 1
TOPSSN	1 2321551 NIL

Screened Service Routing (continued)

Limits

Screened Service Routing does not have limits.

Interactions

The following paragraphs describe the interactions between Screened Service Routing and other functionalities.

Screened Service Routing interacts as follows.

The KP SN (TOPS 04) and Fncts + 38 + START (TOPS MP) keys ignore the office parameter TOPS_HOLD_LOC when outpulsing.

The entry in Table TOPSSN indicates a DISPLAY type alternate. The SN must appear before you can depress the START key. The SN is not outpulsed until you depress the START key again. The retrieval and display of the SN occurs on the operator CRT in the calling number field.

Enter a calling number with the KP BACK key for calls that do not have a calling number. Calls do not have a calling number because of ANI Failure or ONI condition.

The SSR does not affect service billing when service an operator provides service like toll assist or directory assist.

The SSR is available in both Toll and Assistance and Directory Assistance (DA) services.

Activation/deactivation by the end user

Screened Service Routing occurs when the customer calls the operator, asks for a service, and the operator enters:

KP + code + START (TOPS 04)
Fncts + 38 + START + code + START (TOPS MP)

Billing

The DA AMA is the same as TOPS EBAF, OSB00101. For TA AMA, the report indicates the service number outpulsed from the TOPS operator position.

Station Message Detail Recording

Screened Service Routing does not affect Station Message Detail Recording.

Screened Service Routing (continued)

Datafilling office parameters

Screened Service Routing does not affect office parameters.

Datafill sequence

The tables that require datafill to implement Screened Service Routing appear in the following table. The tables appear in the correct entry order.

Datafill requirements for Screened Service Routing

Table	Purpose of table
TOPSSN	TOPS Mapping SNID to Service Number (SN) Table. Outpulse or display service number.
TOPSSNCD	TOPS Mapping SNCD, NPA-NXX and Locality Index to SNID Table. Map calling NPA-NXX and operator entered service number to index for Table TOPSSN.

Datafilling table TOPSSN

Datafill for Screened Service Routing for Table TOPSSN appears in the following table. The fields that apply to Screened Service Routing appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table TOPSSN

Field	Subfield or refinement	Entry	Explanation and action
KEY		1 - 9999	Key into table from Table TOPSSNCD, Field SNID.
SN		0 - 9, up to 11 digits.	Service number the system outpulses or displays.
ALTAREA		see subfields	Alternate area. This field consists of the subfields ALTTYPE and SNID.

Screened Service Routing (continued)

Datafilling table TOPSSN

Field	Subfield or refinement	Entry	Explanation and action
	ALTTYPE	NIL, DISPLAY, OUTPULSER	Alternate service area. Enter NIL if the system is to outpulse value in Field SN. Enter DISPLAY if the following conditions apply. The system displays SN but not does not outpulse and the system outpulses an alternate service number identified in Field SNID. Enter OUTPULSE when the system is to outpulse SN and field SNID, this identifies an alternate service number.
	SNID	service number index or balnk	When ALTTYPE=NIL, leave this field blank. If this condition does not apply, enter service number index in this table, Field KEY.

Datafill example for table TOPSSN

Sample datafill for Table TOPSSN appears in the following example.

MAP example for Table TOPSSN

KEY	SN	ALTTYPE	SNID
1	2321551	NIL	
2	2374545	NIL	
3	2561234	NIL	
4	2562222	NIL	
5	2562489	NIL	
6	5644600	NIL	
7	5675455	OUTPULSE	236
9	2306211	NIL	
131	8242511	NIL	
132	8242512	NIL	
233	8195951122	OUTPULSE	234
234	8195951234	NIL	
235	8197704444	DISPLAY	237
237	8289171	NIL	
238	8392112	NIL	
239	7371100	NIL	
1236	8197707221	NIL	

Screened Service Routing (continued)

Not all SNIDs are entered. The SNID 11 is omitted. The operator requires manual interaction. The alternate for SNID 233 is 234 and for SNID 235 is 237.

The SN is for the service dialed from the TOPS office. The SN must not be from the end office of the customer dialing the TOPS operator.

Datafilling table TOPSSNCD

Datafill for Screened Service Routing for Table TOPSSNCD appears in the following table. The fields that apply to Screened Service Routing appear in this table. See the data schema section of this document for a description of other fields.

Datafilling table TOPSSNCD

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	Key in table. Table consists of subfields SNCD, DIGITS, and REFCD.
	SNCD	Service number code	The SNCD that the operator enters.
	DIGITS	Calling number	Calling number NPA-NXX.
	REFCD	code for service agency	Enter code for service agency that calling number requests if more than one service agency is in NXX.
SNID		Service number index	Service number index into Table TOPSSNCD, field KEY.

Datafill example for table TOPSSNCD

Sample datafill for Table TOPSSNCD appears in the following example.

Screened Service Routing (end)**MAP example for table TOPSSNCD**

SNCD	DIGITS	REFCD	SNID
0	61323	\$	1
0	613256	\$	3
0	613824	21	131
0	613824	22	132
0	613839	\$	238
0	819771	\$	234
1	61323	\$	9
1	613256	\$	4
1	613839	\$	237
1	819771	\$	233
2	61323	\$	2
2	613256	\$	5
2	613839	\$	2
2	819771	\$	235
3	61323	\$	6
3	613256	\$	7
3	613839	\$	6
3	819771	\$	1236
5	61323	\$	11
6	613231	\$	0
8	613	\$	239

In the preceding example, 6 613231 \$ 0 entry routes the operator to VCA treatment. The routing occurs if the calling party NPA/NXX is 613231 and the operator keys KP SN 6 START.

Residents in NXX 824 specify REFCD 21 or 22 to get either service for SNCD 0.

Tools for verifying translations

Screened Service Routing does not use tools for verifying translations.

SERVORD

Screened Service Routing does not use SERVORD.

Table LATANAME Expansion

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS12 and up

TOPS12 introduced Table LATANAME Expansion.

Requirements

To operate, TOPS Carrier RLT has the following prerequisites:

- BAS Generic, BAS0003
- Operator Services Basic, OSB00101, and table TOPSFTR tuple
TOPS_ON_OFF_SWITCH = Y

Description

This feature provides a new method of determining whether a call should be handled by a carrier. This new method uses a zone in place of a local access and transport area (LATA). A zone is defined by the operating company and can range from a city to a portion of a country, or even an entire country. This new method replaces LATA screening with zone screening.

This functionality is provided by the following feature:

Feature number	Feature name
59006827	LATA Screening Alternative

Operation

This section provides details of the feature.

Background

Zones

The concept of a zone was introduced for country direct calls in functionality Carrier Selection, OSB00101. For the Global environment, functionality Global Competitive Access II, GOS00103, adopted zones and expanded their use to screening. This capability is necessary since LATAs only exist in North America.

Table LATANAME Expansion (continued)

LATA screening

LATA screening uses the terminating number to determine whether the number is an inter-LATA or intra-LATA call. If a call crosses a LATA boundary, it is an inter-LATA call and it is usually handled by an inter-exchange carrier (IEC). Otherwise, if the call does not cross a LATA boundary, then the call is an intra-LATA call, and a local exchange carrier (LEC) handles it.

LATA screening accesses table LATA XLA to determine whether the called number is in the same LATA. The index into the table is a two-part key that includes the LATA name obtained from table TOPEATR K and a subset of the dialed digits. Datafill in LATA XLA provides the following information about a call:

- whether it is inter-LATA or intra-LATA
- whether it is inter-state or intra-state
- whether it requires special handling

LATA screening occurs for all incoming traffic on TOPS trunk groups that are in table TOPEATR K and the LATA name is in table TOPEATR K field LATANM. Screening occurs for all numbers, regardless of the signaling type. So, this screening is performed even if using COMFGD or EAOSS trunks, which are specifically used to carry EA traffic. If an entry does not exist in table LATA XLA, then the LATA status is set to intra-LATA, and the state is set to intra-state.

However, when the TOPS office provides LEC operator services on behalf of a competitive local exchange company (CLEC) with presence across the country, table LATANAME creates a limitation. The table, which defines valid LATAs for an office, only allows 31 LATAs.

New functionality

Zones allow an unlimited number of areas to be used in place of LATAs. Also, regions are introduced as a parallel to states as used in LATA screening.

Note, for references to tables in this section, refer to the datafill procedure section at the end of this module for details.

Table LATANAME Expansion (continued)

Datafill

This feature uses the tables as follows:

- TOPEATRK - New field SCRNFLDS selects between LATA and zone screening for the trunk group. For zone screening, a zone can be assigned to the trunk for the calling number.

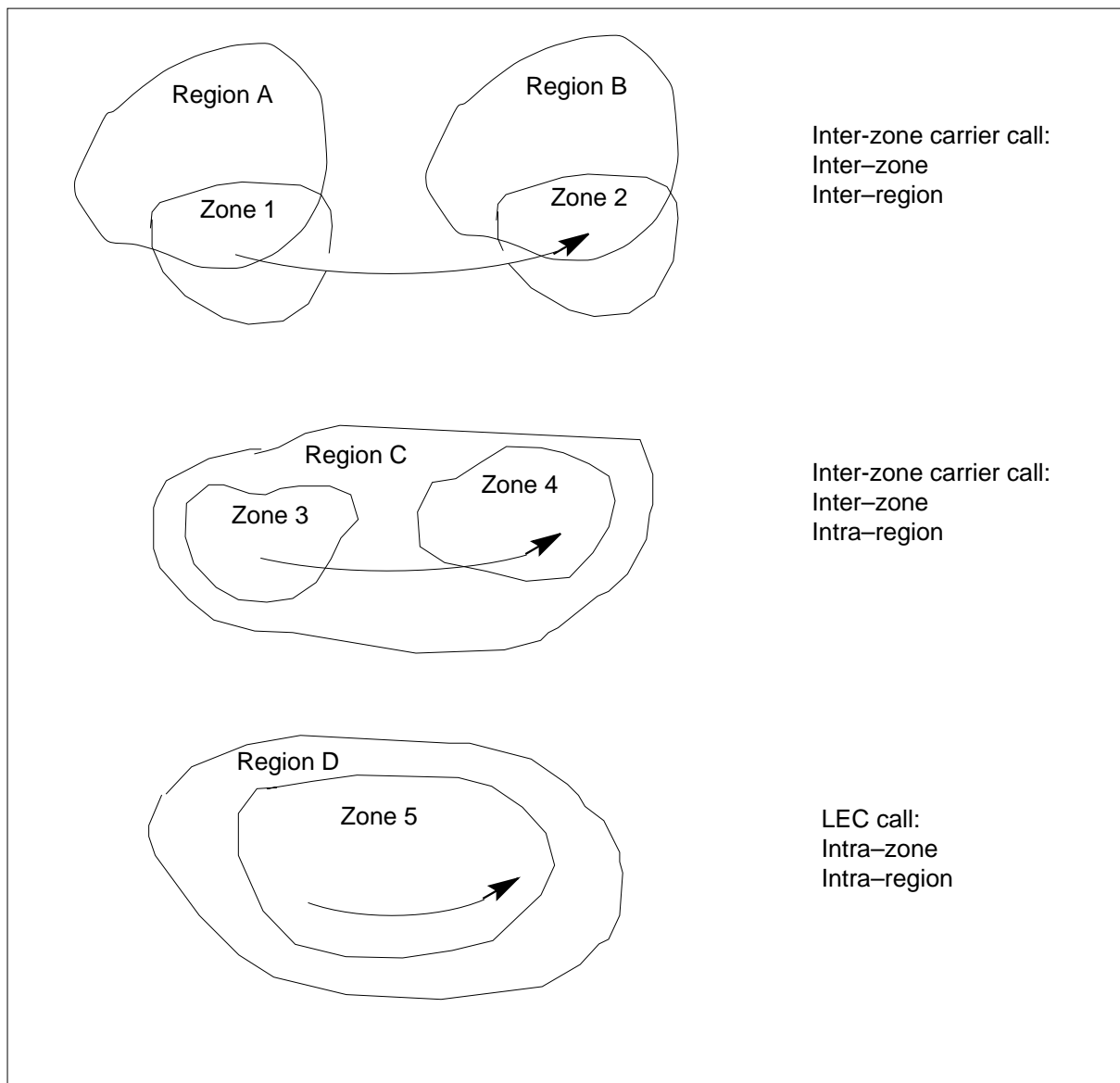
Note, for LATA screening only, table LATAXLA field EATYPE provides special handling for non-EA, privilege, and corridor calls. Therefore, in order to use this special handling, select LATA screening.

- TOPSZONE - Zone names are defined for use in other tables.. If a call crosses a zone boundary, the call requires a carrier.
- ZONENAT - Zones names can be assigned to calling and called numbers. For the calling number, this table allows zone assignment on a directory number (DN) basis in place of the trunk group basis, which is in table TOPEATRK. A trunk group basis minimizes datafill. Assignment of the called number zone is only on a DN basis.
- EAREGN - Region names are defined for use in other tables. A region correlates to a state in LATA screening. Whereas, a zone correlates to a LATA.
- EASCRN - A listing of originating and terminating zones indicate if the call is an intra- or inter-region call. All calls defined in this table are inter-zone carrier calls. Therefore, if the call is not found in the table, the call is handled by the local exchange carrier (LEC). Exceptions are overseas and country direct (CDIR) calls. Details are given below.

The possible types calls are shown in the figure as follows. The figure shows that inter-zone calls are handled by inter-zone carriers and intra-zone calls are handled by the LECs.

Table LATANAME Expansion (continued)

Zone screening types



LATA screening call flow

The figure that follows shows the call processing for LATA screening. The only change from before this functionality is the check in table TOPEATRК subfield SCRNTYP for value LATA. Then, subfield LATANM indicates the LATA for the calling party as before this functionality.

Table LATANAME Expansion (continued)

LATA screening call flow

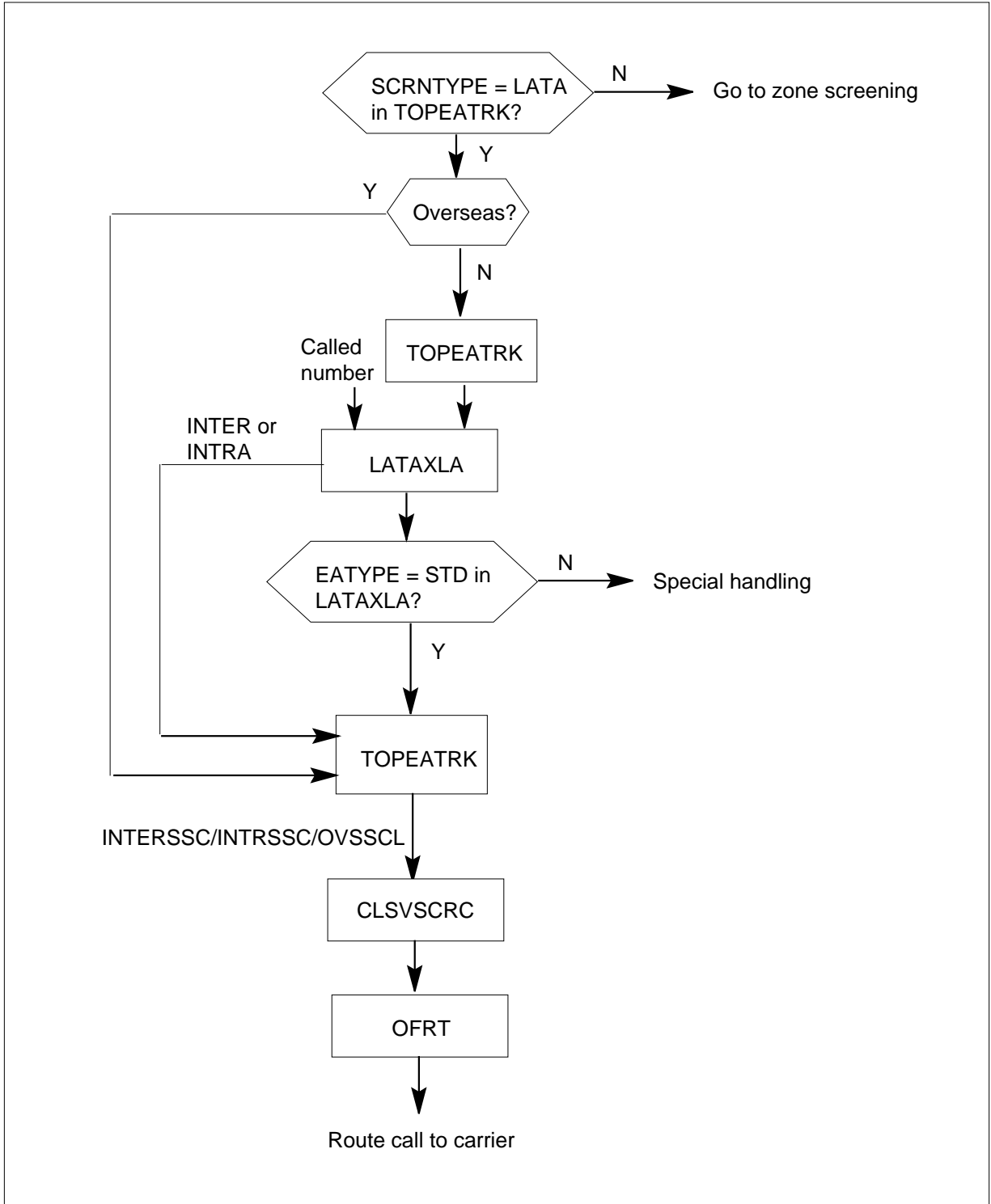


Table LATANAME Expansion (continued)

For LATA screening, table LATAXLA field EATYPE allows special handling for non-EA, privilege, and corridor calls that is not available for zone screening. Refer to the datafill procedure section for more details.

Zone screening call flow

The figure that follows shows the call processing for zone screening. The call processing steps are as follows:

1. Check table TOPEATRK subfield SCRNTYPE for value ZONE to enable zone screening.
2. If the dialed digits indicate an overseas call (regular or CDIR), it is marked as inter-zone and overseas region.

Note, software optionality code (SOC) OSB00101 (Auto Country Direct) must be ON to originate a CDIR call.

3. Table TOPEATRK is checked for a zone, which is on a trunk group basis for the calling number. If a zone is given, table ZONENAT does not need to be checked for a zone on a DN basis.
4. If a zone is not given in table TOPEATRK for a non-overseas CDIR call, the calling number is not relevant. Therefore, the zone cannot be assigned on a DN basis in table ZONENAT. The call is marked as intra-zone and intra-region and handled by an LEC.
5. After assignment of a calling number zone in either table TOPEATRK or ZONENAT, the called number is expanded to 10 digits, if necessary, and used to check for a zone in table ZONENAT. If a zone is not found, the call is marked as intra-zone and intra-region, which is handled by an LEC.
6. At this step, the called and calling number zones are defined. Table EASCRN is checked using the calling and called zones. The possible results are as follows:
 - If an entry is found, the call is marked as inter-zone and the region as indicated in table EASCRN. Table EASCRN can use operating company defined regions. If the new EA translations described in step 7 are not used, the region must be INTRA or INTER. Otherwise, operating company defined regions default to intra-region. The region designation allows different routes to be selected for class of screening service.
 - If an entry is not found, but the call is signalled as a carrier call, the call is marked as inter-zone and intra-region, which is handled by an inter-zone carrier. However, if the call is not signalled as a carrier call, the call is marked as intra-zone and intra-region, which is handled by an LEC.

Table LATANAME Expansion (continued)

7. Inter-zone calls are handled by inter-zone carriers. These calls can have the optional new equal access (EA) translations given in functionality UNBN OPRTRNS and EA, UNBN0101. The new EA translations are selected by table TOPEATRK field XLASCHEM = Y.
8. Table CLSVSCRC provides class of screening service to select a route in table OFRT.

Table LATANAME Expansion (continued)

Zone screening call flow

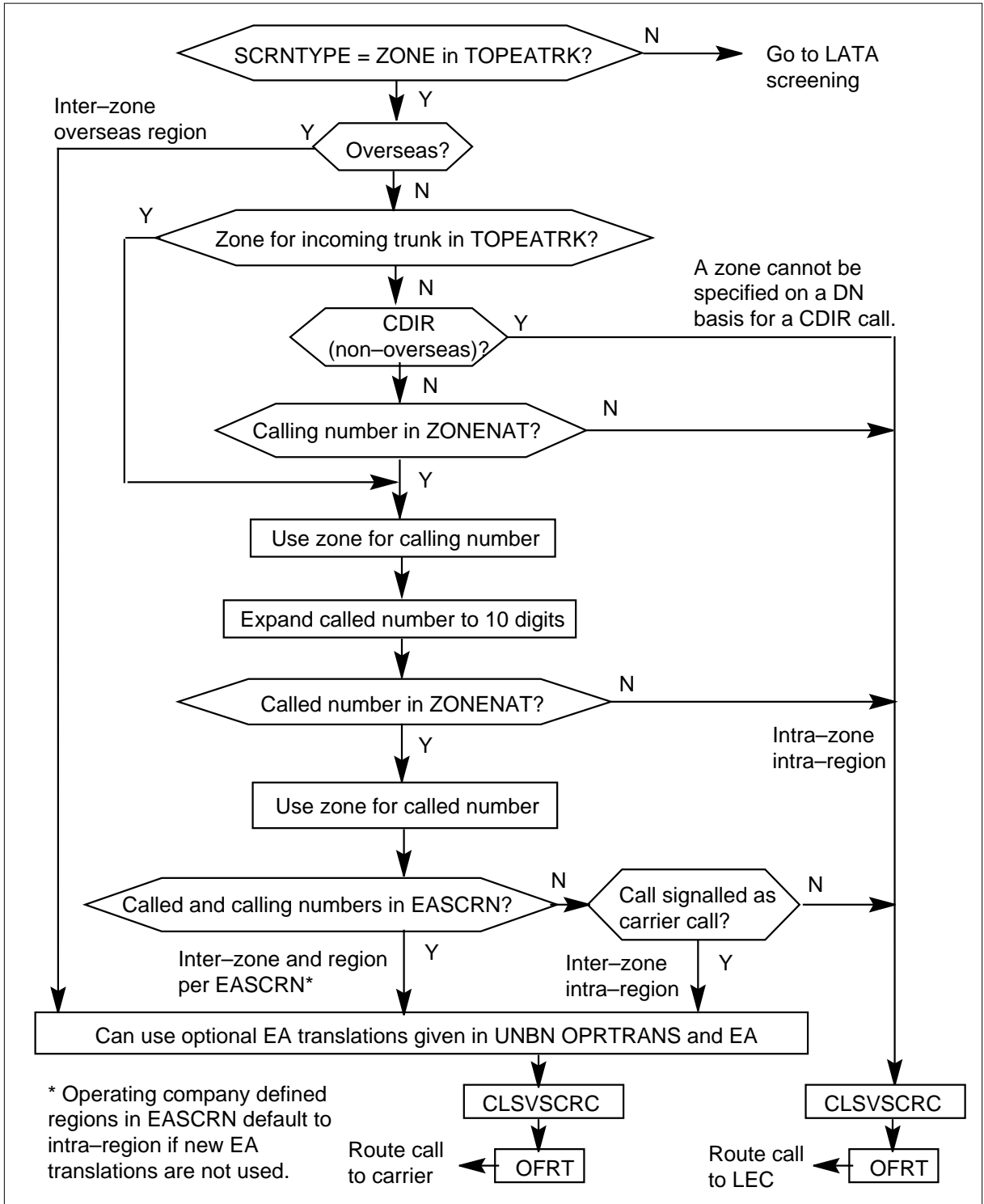


Table LATANAME Expansion (continued)

Call flow examples

This section shows call flow examples. The tables that follow define zones and regions for the example datafill in this section.

MAP example for table TOPSZONE

INDEX	TOPSZONE
0	RALEIGH
1	BURLINGT
2	WASHINGT
3	MIDWEST
4	CARIBBEAN
5	PARIS

MAP example for table EAREGN

REGION
INTRA
INTER
OVERSEAS
BURLXWASH

Scenario 1: The call characteristics are as follows:

- The originating number is 919-991-2012.
- The incoming trunk group is TRUNKL1.
- The subscriber dials 201-220-1234.

Table TOPEATRK is accessed, shown below, and the TRUNKL1 tuple is referenced.

Table LATANAME Expansion (continued)

MAP example for table TOPEATRK

TRUNKGRP DFLTPIC	ENDOFFCE BYPASS	CARRIER	SCRNFLDS			XLASCHEM	DNLOOK
TRUNKL1	CONFORM N	0111	LATA	LATA1	N	STRA STER OVS 619	N
TRKGRP1	CONFORM N	0321	ZONE Y	RALEIGH	N	STRA STER OVS 619	N
TRKGRP2	CONFORM N	0123	ZONE N	N	N	STRA STER OVS 619	N

Since the SCRNTYPE field is datafilled as LATA, the LATA screening method is in effect for the trunk group. Since a LATA is indicated for the trunk group, LATA1 is the LATA of the originator. Table LATA XLA is then accessed, shown below, with the LATA of the originator and a subset of the called digits.

MAP example for table LATA XLA

LATACODE	LATA	STATE	EATYPE
LATA1 201	INTER	INTER	STD
LATA1 212	INTRA	INTRA	STD

For this call, a call originating in LATA1 and with called digits of 201 is an interlata call since the LATA field is INTER. As well, the call is interstate since the STATE field is INTER. Therefore, class of service screening uses the interstate designation to route the call.

Scenario 2: The call characteristics are as follows:

- The originating number is 919-991-2012.
- The incoming trunk group is TRKGRP1.
- The subscriber dials 202-232-1234.

Table TOPEATRK is accessed, shown below, and the TRKGRP1 tuple is referenced.

Table LATANAME Expansion (continued)

MAP example for table TOPEATRK

TRUNKGRP DFLTPIC	ENDOFFCE BYPASS	CARRIER	SCRNFLDS			XLASCHEM	DNLOOK				
TRUNKL1	CONFORM	0111	LATA	LATA1	N	STRA	STER	OVS	619	N	
	N	\$									
TRKGRP1	CONFORM	0321	ZONE	Y	RALEIGH	N	STRA	STER	OVS	619	N
	N	\$									
TRKGRP2	CONFORM	0123	ZONE	N	N	STRA	STER	OVS	619	N	
	N	\$									

Since the SCRNTYPE field is datafilled as ZONE, the Zone screening method is in effect for the trunk group. Since a zone is indicated for the trunk group, RALEIGH is assigned as the zone for the calling party. For the zone of the terminating party, table ZONENAT is accessed, shown below, since the terminating number is a national number.

MAP example for table ZONENAT

KEY	TOPSZONE
202 202	WASHINGTONT
336 336	BURLINGT
44 77	MIDWEST
8875551 8875558	HOTLINES
919 919	RALEIGH

The tuple that is referenced is based on the dialed digits. As a result, a zone of WASHINGTONT is assigned to the terminating number for dialed digits 202.

Table EASCRN is then accessed, shown below, with both the originating and terminating zone to determine if the call crosses a zone boundary (interZONE) and must be handled by a carrier.

Table LATANAME Expansion (continued)

MAP example for table EASCRN

CALLINFO		REGION
BURLINGT	RALEIGH	INTRA
BURLINGT	WASHINGTON	BURLXWASH
RALEIGH	BURLINGT	INTRA
RALEIGH	WASHINGTON	INTER
WASHINGTON	RALEIGH	INTER
WASHINGTON	BURLINGT	INTER

For this call, a call originating in Raleigh and terminating in Washington is a carrier call since there is an entry in the table. Based on the EASCRN field REGION, The call is considered an INTER region call. Therefore, class of service screening uses the INTER region designation to route the call.

Scenario 3: The call characteristics are as follows:

- The originating number is 336-364-4749.
- The incoming trunk group is TRKGRP2.
- Subscriber dials 202-232-1234.

Table TOPEATRK is accessed, shown below, and the TRKGRP2 tuple is referenced. Since the SCRNTYPE field is datfilled as ZONE, the Zone screening method is in effect for the trunk group.

MAP example for table TOPEATRK

TRUNKGRP	ENDOFFCE	CARRIER	SCRNFLDS			XLASCHEM	DNLOOK
DFLTPIC	BYPASS						
TRUNKL1	CONFORM	0111	LATA	LATA1	N STRA	STER OVS 619	N
N	\$						
TRKGRP1	CONFORM	0321	ZONE Y	RALEIGH	N STRA	STER OVS 619	N
N	\$						
TRKGRP2	CONFORM	0123	ZONE N	N STRA	STER OVS 619		N
N	\$						

Since a zone is NOT indicated for the trunk group, the zone of the originator must be determined. ZONENAT is accessed, shown below, since the calling number is a national number (calling number is currently always national), and the tuple that is referenced is based on the calling digits.

Table LATANAME Expansion (continued)**MAP example for table ZONENAT**

KEY	TOPSZONE
202 202	WASHINGTONT
336 336	BURLINGT
44 77	MIDWEST
8875551 8875558	HOTLINES
919 919	RALEIGH

As a result, a zone of BURLINGT is assigned to the originating number for calling digits 336. For the called number, table ZONENAT is accessed since it is a national number. The tuple that is referenced is based on the dialed digits. As a result, a zone of WASHINGTONT is assigned to the terminating number for dialed digits 202.

Table EASCRN is then accessed, shown below, with both the originating and terminating zone to determine if the call crosses a zone boundary (interZONE) and must be handled by a carrier.

MAP example for table EASCRN

CALLINFO	REGION
BURLINGT RALEIGH	INTRA
BURLINGT WASHINGTONT	BURLXWASH
RALEIGH BURLINGT	INTRA
RALEIGH WASHINGTONT	INTER
WASHINGTONT RALEIGH	INTER
WASHINGTONT BURLINGT	INTER

For this call, a call originating in Burlington and terminating in Washington is a carrier call since there is an entry in the table.

Based on EASCRN field REGION, The region designation is BURLXWASH. However, since the old method of EA translations is in effect for the trunk group, the region designation is assumed to be INTER region. Therefore, class of service screening uses the INTER region designation to route the call.

Note: if the XLAGRP method of screening was in effect for the trunk group, the XLAGRP could be refined based on the BURLXWASH region designation. For more information, please refer to functionality UNBN Unbundling OPRTRANS, UNBN0101.

Table LATANAME Expansion (continued)

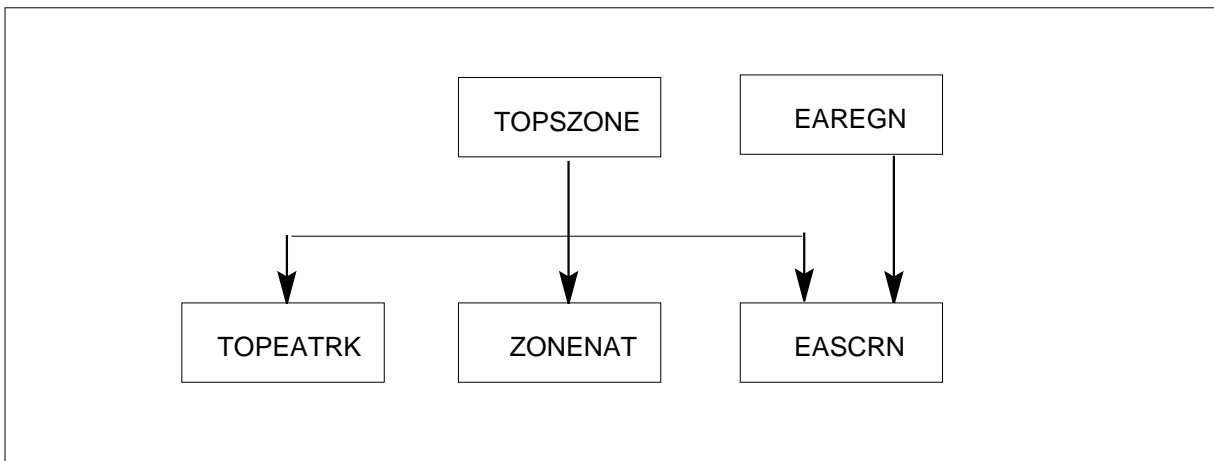
Translations table flow

The list that follows includes the Table LATANAME Expansion translations tables:

- Table TOPSZONE defines available zones for originating and terminating numbers.
- Table TOPEATRK contains EA information for each trunk. In this table, either zone or LATA screening can be selected.
- Table ZONENAT can assign a zone to an originating number; this assignment is based on the calling party's digits. This table can also assign a zone to a national terminating number; this assignment is based on the called party's digits.
- Table EAREGN contains the list of all possible region designation identifiers. It can contain up to 2000 entries.
- Table EASCRN uses the zones of the originating and terminating numbers to determine if the LEC call becomes an EA carrier call.

The flowchart that follows provides the Table LATANAME Expansion translations process for the LATA screening alternative.

Table flow for Table LATANAME Expansion



The table that follows lists the datafill content used in the flowchart.

Datafill example for Table LATANAME Expansion

Datafill table	Example data
TOPSZONE	0 RALEIGH
TOPSZONE	2 WASHINGT

Table LATANAME Expansion (continued)

Datafill example for Table LATANAME Expansion

Datafill table	Example data
TOPEATRK	TRKGRP1 CONFORM 0321 ZONE Y RALEIGH N STRA STER OVS 619 N N \$
ZONENAT	202 202 WASHINGT
EAREGN	INTER
EASCRN	RALEIGH WASHINGT INTER

Limitations and restrictions

The limitations and restrictions that follow apply to Table LATANAME Expansion:

The zone of the originating call is not assigned for a country direct call. The calling number is not relevant with country direct calls. However, this type of call does have the capability of determining whether the call is an inter-zone call but only on a trunk group basis.

Note: If SOC OSB00101 is inactive, then a country direct type cannot be originated. This SOC exists in loads for North America and global markets.

Interactions

The paragraph that follows describes how Table LATANAME Expansion interacts with other functionalities.

Zone screening can use the method to index into class of service screening that TOPS12 feature 59006822 in functionality UNBN OPRTRANS and EA introduces. This feature uses a method of translations and screening where table TOPSDP provides the service translation scheme (STS) and screening class. For EA calls, field ORIGSCRN in table TOPSDP corresponds to the screening class needed to index table CLSVSCRC. If the method of EA translations implemented prior to feature 59006822 is used, then the region of designation indicated in table EASCRN must be INTER or INTRA. Otherwise, the default value is INTRA for the region designation (for national calls only).

Billing

Table LATANAME Expansion does not generate billing records or changes.

Table LATANAME Expansion (continued)

Station Message Detail Recording

Table LATANAME Expansion does not require Station Message Detail Recording.

Office parameters used by Table LATANAME Expansion

Table LATANAME Expansion does not generate office parameters.

Datafill sequence

The table that follows lists the tables that require datafill to put Table LATANAME Expansion into operation. You must enter data into the tables in this order.

Datafill requirements for Table LATANAME Expansion

Table	Purpose of table
TOPSZONE	TOPS Zone Table defines available zones for originating and terminating numbers.
LATAXLA	Equal access local access and transport area translation defines attributes of domestic calls.
TOPEATRK	TOPS Equal Access Table contains EA information for each trunk. This table determines if LATA or zone screening applies to a trunk group.
ZONENAT	Zone National Table assigns a zone to an originating number; this assignment is based on the calling party's digits. The table also determines the zone for the terminating number; this function is based on the called party's digits.
EAREGN	Equal Access Region defines region names.
EASCRN	Equal Access Screening uses the zones of the originating and terminating numbers to determine whether the call is a carrier call.

Table LATANAME Expansion (continued)

Datafill related to Table LATANAME Expansion for table TOPSZONE

The table that follows provides the datafill related to Table LATANAME Expansion for table TOPSZONE. This table includes only those fields that apply directly to Table LATANAME Expansion.

Datafill related to table TOPSZONE

Field	Subfield	Entry	Explanation and action
INDEX		0 to 1999	Index. This field is the index to the table. It allows for ease of table cross-checks and changing field TERMZONE without having to delete and re-add. The range of this field is increased from {0-255} to {0-1999}.
TOPSZONE		up to 32 alphanumeric characters	TOPS zone. Enter a terminating country name or zone name. This name is used in other tables. For tables CDCSOPTS and CCCSOPTS, the name must have a field INDEX value in the range {0-255}. Values above this range are not allowed.

Datafill example for table TOPSZONE

The figure that follows shows sample datafill for table TOPSZONE.

MAP example for table TOPSZONE

INDEX	TOPSZONE
0	RALEIGH
1	BURLINGT
2	WASHINGT
3	MIDWEST
4	CARIBBEAN
5	PARIS

Table LATANAME Expansion (continued)

Datafill related to Table LATANAME Expansion for table LATA XLA

The table that follows provides the datafill related to Table LATANAME Expansion for table LATA XLA. This table includes only those fields that apply directly to Table LATANAME Expansion.

Datafill related to table LATA XLA

Field	Subfield	Entry	Explanation and action
EATYPE		STD, NON_EA, PRIVILEGE, or CORRIDOR	<p>Equal access type. This table is not changed. For LATA screening, this field allows special handling for certain numbers. For zone screening, this special handling is not available for non-EA, PRIVILEGE, and CORRIDOR calls. Therefore, LATA screening must be used in order to use this field. The values for EATYPE are as follows:</p> <ul style="list-style-type: none"> • STD — The terminating number is datafilled in table LATA XLA. This call is an EA call. This value is the assumed standard for zone screening. • NON_EA — The terminating number is datafilled in table LATA XLA. This call is a not an EA call. This type of handling is not available for zone screening. • PRIVILEGE — The terminating number is datafilled in table LATA XLA. If the terminating number was dialed without 10XXX prefix, the call is considered inter-LATA. However, the call is not routed over the trunks of the carrier. Instead, the call is routed over the trunks of the LEC. If the terminating number is dialed 10XXX, then the call is routed to the carrier. This type of handling is not available for zone screening. • CORRIDOR — The terminating number is datafilled in table LATA XLA. Either the primary inter-LATA carrier (PIC) of the operating telephone company (OTC) is dialed or the subscriber is set up to be assigned to the OTC carrier. The call is considered inter-LATA, but it is not routed over the trunks of the carrier. The call is routed over the trunks of the LEC. This type of handling is not available for zone screening.

Table LATANAME Expansion (continued)

Datafill example for table LATA XLA

The figure that follows shows sample datafill for table LATA XLA.

MAP example for table LATA XLA

LATACODE	LATA	STATE	EATYPE
LATA1 201	INTER	INTER	STD
LATA1 212	INTRA	INTRA	STD

Datafill related to Table LATANAME Expansion for table TOPEATR K

The table that follows provides the datafill related to Table LATANAME Expansion for table TOPEATR K. This table includes only those fields that apply directly to Table LATANAME Expansion.

Datafill related to table TOPEATR K

Field	Subfield	Entry	Explanation and action
SCRNFLDS		see subfields	Screening fields. This new field consists of subfield SCRNTYPE.
	SCRNTYPE	LATA or ZONE	Screening type. This subfield indicates the method of screening for the trunk group as follows: <ul style="list-style-type: none"> LATA - Use LATA screening and enter datafill in subfield LATANM. ZONE - Use zone screening and enter datafill in subfield TRKZONE.
	LATANM	name from LATA XLA or NILLATA	LATA name. This subfield appears if subfield SCRNTYPE = LATA. This field indicates the LATA of the calling party that is used with the called digits as an index into table LATA XLA. The name must be defined in tables LATA XLA and LATANAME. Enter NILLATA if there is no entry in table LATA XLA for this tuple.

Table LATANAME Expansion (continued)

Datafill related to table TOPEATRK

Field	Subfield	Entry	Explanation and action
	TRKZONE	Y or N	Trunk zone. This subfield appears if subfield SCRNTYPE = ZONE. This subfield indicates if a zone is designated for the incoming trunk group. Enter Y to indicate a zone and enter datafill in subfield ZONENM. Otherwise, enter N for no zone.
	ZONENM	name from TOPSZONE	Zone name. This subfield appears if subfield TRKZONE = Y. This subfield indicates the zone of the calling party. The name must be defined in table TOPSZONE.

Datafill example for table TOPEATRK

The figure that follows shows sample datafill for table TOPEATRK.

MAP example for table TOPEATRK

TRUNKGRP DFLTPIC	ENDOFFCE BYPASS	CARRIER	SCRNFLDS	XLASCHEM	DNLOOK
TRUNKL1	CONFORM N	0111	LATA LATA1	N STRA STER OVS 619	N
TRKGRP1	CONFORM N	0321	ZONE Y RALEIGH	N STRA STER OVS 619	N
TRKGRP2	CONFORM N	0123	ZONE N	N STRA STER OVS 619	N

Datafill related to Table LATANAME Expansion for table ZONENAT

This table is used for zone assignment as follows:

- If a calling number is not assigned to a zone on a trunk group basis in table TOPEATRK, table ZONENAT can make this assignment on a DN basis. Trunk group assignment conserves datafill.
- The called number can be assigned. Note, the called number cannot be assigned on a trunk group basis.

If a zone assignment for the calling number is not found in either table TOPEATRK nor ZONENAT, the call is marked as an LEC call.

Table LATANAME Expansion (continued)

If a zone assignment is found for the calling number in TOPEATRК or ZONENAT but not the called number in table ZONENAT, the call is marked as an LEC call.

Exceptions to the above are as follows:

- Overseas (regular and CDIR) calls do use table ZONENAT.
- For a non-overseas CDIR call, the zone of the calling number cannot be assigned in ZONENAT because the number is irrelevant with CDIR. But, the number can be assigned on a trunk group basis in table TOPEATRК.

The table that follows provides the datafill related to Table LATANAME Expansion for table ZONENAT. This table includes only those fields that apply directly to Table LATANAME Expansion.

Datafill related to table ZONENAT

Field	Subfield	Entry	Explanation and action
Key		see subfields	Key. This field is the key to the table and consists of subfields FROMDIG and TODIG. This field indicates the called or calling number for the zone in field TOPSZONE. The range of the subfields is changed from a maximum of 7 to 18 digits.
	FROMDIG	up to 18 digits	From digits. Enter the starting number of the range of the called or calling digits.
	TODIG	up to 18 digits	To digits. Enter the ending number of the range of the called or calling digits.
TOPSZONE		name from TOPSZONE	TOPS Zone. This field indicates the zone. The name must be defined in table TOPSZONE.

Datafill example for table ZONENAT

The figure that follows shows sample datafill for table ZONENAT.

MAP example for table ZONENAT

KEY	TOPSZONE
202 202	WASHINGTONT
336 336	BURLINGT
44 77	MIDWEST
8875551 8875558	HOTLINES
919 919	RALEIGH

Table LATANAME Expansion (continued)

Datafill related to Table LATANAME Expansion for table EAREGN

Equal Access Region is a new table that defines region names for use in other tables. A region is used in zone screening and correlates to a state in LATA screening.

Datafill related to table EAREGN

Field	Subfield	Entry	Explanation and action
REGION		Up to 32 characters; default tuples are INTRA, INTER, and OVERSEAS	Region. Define a name that indicates the relationship between the calling and called regions. The values are as follows: <ul style="list-style-type: none"> • INTRA - The call is within the region. This value is a default tuple. • INTER - The call is between different regions. This value is a default tuple. • OVERSEAS - The call is overseas. This value is a default tuple. • Operating company defined. If the new EA translations (Unbundling OPRTRANS, UNBN0001) are not used, an operating company defined region defaults to INTRA. The new EA translations are selected by table TOPEATRK field XLASCHEM = Y.

Datafill example for table EAREGN

The figure that follows shows sample datafill for table EAREGN.

MAP example for table EAREGN

REGION <hr/> INTRA INTER OVERSEAS BURLXWASH

Datafill related to Table LATANAME Expansion for table EASCRN

Equal Access Screening is a new table that provides zone screening. Selection of zone or LATA screening is made in table TOPEATRK field SCRNTYPE. Table EASCRN uses the originating and terminating zones to determine whether a call is a carrier call. Presence of an entry indicates the call is a carrier call, handled by an inter-zone carrier. If an entry is not present, the zone is

Table LATANAME Expansion (continued)

considered intra-zone, the region defaults to intra-region, and the call is marked as a local exchange carrier (LEC) call. If a call is signaled as a carrier call and an entry fails to appear in table EASCRN, then that call remains a carrier call.

For EA calls, the region designation allows different routes to be selected for class of service screening.

If the new EA translations (Unbundling OPRTRANS, UNBN0001) are not used, the region must be INTRA or INTER, not Operating Company defined. Otherwise, an operating company defined region defaults to INTRA. The new EA translations are selected by table TOPEATRK field XLASCHEM = Y.

Table EASCRN is not used to screen overseas regular calls nor overseas country direct (CDIR) calls since they are automatically marked as inter-zone and with a region of overseas.

For non-overseas CDIR calls, the calling number zone can only be given on a trunk group basis in table TOPEATRK. (The DN basis in table ZONENAT is not possible.) So, if the zone is not given in TOPEATRK, the call is automatically marked as intra-zone and intra-region. But if the zone is given in TOPEATRK, table EASCRN is used to mark the call as inter-zone and to indicate the region.

Datafill related to table EASCRN

Field	Subfield	Entry	Explanation and action
CALLINFO		see subfields	Calling Information. This key field consists of subfields ORIGZONE and TERMZONE.
	ORIGZONE	name from TOPSZONE	Originating zone. This subfield indicates the zone assigned to the originating number. The name must be defined in table TOPSZONE.
	TERMZONE	name from TOPSZONE	Terminating zone. This subfield indicates the zone assigned to the terminating number. The name must be defined in table TOPSZONE.
REGION		name from EAREGN	Region. This field specifies the region designation. The name must already exist in table EAREGN.

Datafill example for table EASCRN

The figure that follows shows sample datafill for table EASCRN.

Table LATANAME Expansion (end)

MAP example for table EASCRN

CALLINFO		REGION
BURLINGT	RALEIGH	INTRA
BURLINGT	WASHINGTONT	BURLXWASH
RALEIGH	BURLINGT	INTRA
RALEIGH	WASHINGTONT	INTER
WASHINGTONT	RALEIGH	INTER
WASHINGTONT	BURLINGT	INTER

Translation verification tools

Table LATANAME Expansion does not use translation verification tools.

SERVORD

Table LATANAME Expansion does not use the Service Order System (SERVORD).

Table TOPSDISP Expansion

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS11 and up

Table TOPSDISP Expansion was introduced in TOPS11.

Prerequisites

To operate, Table TOPSDISP Expansion requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This functionality expands the size of table TOPSDISP and its associated index into tables TRKGRP and ISUPTRK.

The functionality that modifies table TOPSDISP to extend the trunk display from six to eight characters does not affect TOPS MP positions. The feature 50096311 ensures that the trunk information display continues to properly show the first six characters in this field.

This functionality is provided by the following feature:

Feature number	Feature name
AF7833	Table TOPSDISP Expansion
50096311	TOPS MP Support for Table Expansion (TOPS11)

Operation

Refer to the datafill procedure section.

Table TOPSDISP Expansion (continued)

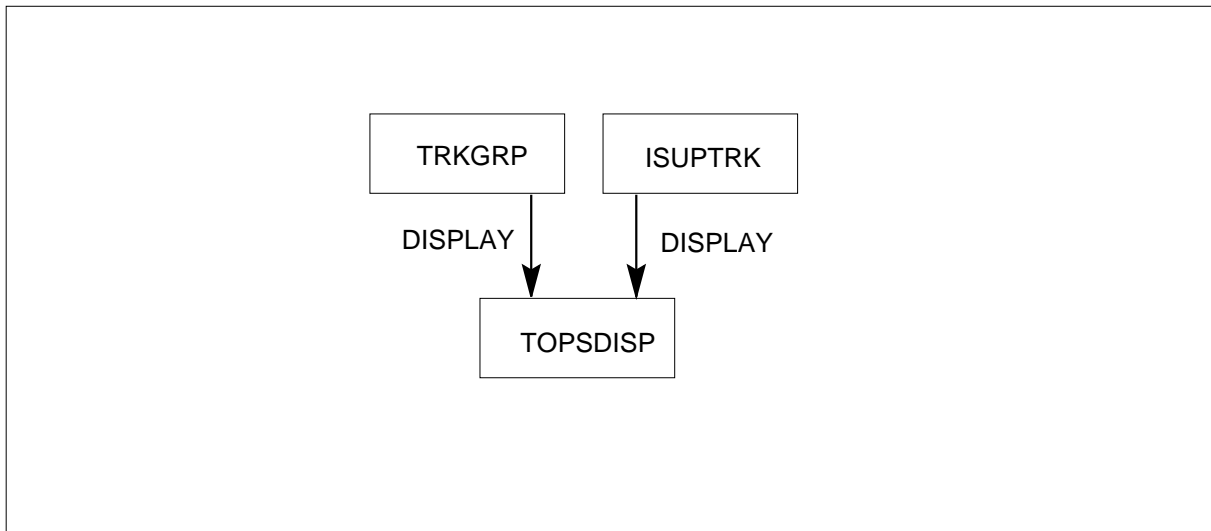
Translations table flow

The Table TOPSDISP Expansion translations tables are described in the following list:

- Table TRKGRP defines characteristics of trunk groups.
- Table ISUPTRK provides information for ISUP trunks that interact with the TOPS environment.
- Table TOPSDISP assigns special instructional displays based on the incoming TOPS trunk group.

The Table TOPSDISP Expansion translation process is shown in the flowchart that follows.

Table flow for Table TOPSDISP Expansion



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

Datafill example for Table TOPSDISP Expansion

Datafill table	Example data
TRKGRP	TBELL2W2 TOPS 0 TLD NCRT 2W MIDL 619 619 PTOP NLCA NSCR Y SP COMBINED Y Y 3 0000 NONE BELL TOPSBC 16 10 10 Y N OFFHK N N \$
ISUPTRK	ISUP2WITALT NONE NLCA TOPSBC 1 TERM Y NONE N N 20 NONE
TOPSDISP	3 USTOPS 20 ISUP

Table TOPSDISP Expansion (continued)

Limitations and restrictions

The following limitations and restrictions apply to Table TOPSDISP Expansion:

Table TOPSDISP field INSTRUCT expands from six to eight characters. Since TOPS MP positions are limited to six characters, the INSTRUCT value is truncated to six characters.

Interactions

The following paragraphs describe the interactions between Table TOPSDISP Expansion and other functionalities.

This feature does not change any existing functionality. It only expands the key range for table TOPSDISP from {0 to 31} to {0 to 254} and field INSTRUCT from six to eight characters.

Activation/deactivation by the end user

Table TOPSDISP Expansion requires no activation or deactivation by the end user.

Billing

Table TOPSDISP Expansion does not affect billing.

Station Message Detail Recording

Table TOPSDISP Expansion does not affect Station Message Detail Recording.

Datafilling office parameters

Table TOPSDISP Expansion does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement Table TOPSDISP Expansion. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Table TOPSDISP Expansion

Table	Purpose of table
TOPSDISP	TOPS display assigns special instructional displays based on the incoming TOPS trunk group.

Table TOPSDISP Expansion (continued)

Datafill tables required for Table TOPSDISP Expansion

Table	Purpose of table
TRKGRP	Trunk group defines characteristics of trunk groups.
ISUPTRK	ISUP trunk group provides information for ISUP trunks that interact with the TOPS environment.

Datafilling table TOPSDISP

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

Datafilling table TOPSDISP

Field	Subfield or refinement	Entry	Explanation and action
DiSPNO		0 to 254	Display number. This field is the key into the table. It is indexed from tables TRKGRP and ISUPTRK. The range of this field is expanded from {0 to 31} to {0 to 254}.
INSTRUCT		up to 8 characters	Instructions. This field specifies special instructions for display to the operator on a trunk group basis. The range of this field is increased from 6 to 8 characters.

Datafill example for table TOPSDISP

The following example shows sample datafill for table TOPSDISP.

MAP display example for table TOPSDISP

DISPNO	INSTRUCT

2	TPCAMF
3	USTOPS
4	USTOPS
20	ISUP
31	ROCH

Datafilling table TRKGRP

The following table shows the datafill specific to Table TOPSDISP Expansion for table TRKGRP. Only those fields that apply directly to Table TOPSDISP

Table TOPSDISP Expansion (continued)

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

Datafilling table TRKGRP

Field	Subfield or refinement	Entry	Explanation and action
	DISPLAY	0 to 254	Display. This field is an index into table TOPSDISP, which specifies special instructions for display to the operator on a trunk group basis. The range of this field is expanded from {0 to 31} to {0 to 254}.

Datafill example for table TRKGRP

The following example shows sample datafill for table TRKGRP.

MAP display example for table TRKGRP

```

GRPKEY
-----
TBELL2W2
TOPS 0 TLD NCRT 2W MIDL 619 619 PTOP NLCA NSCR Y SP COMBINED Y Y 3
0000 NONE BELL TOPSBC 16 10 10 Y N OFFHK N N $
GRPINFO
    
```

Datafilling table ISUPTRK

The following table shows the datafill specific to Table TOPSDISP Expansion for table ISUPTRK. Only those fields that apply directly to Table TOPSDISP Expansion are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table ISUPTRK

Field	Subfield or refinement	Entry	Explanation and action
	DISPLAY	0 to 254	Display. This field is an index into table TOPSDISP, which specifies special instructions for display to the operator on a trunk group basis. The range of this field is expanded from {0 to 31} to {0 to 254}.

Datafill example for table ISUPTRK

The following example shows sample datafill for table ISUPTRK.

Table TOPSDISP Expansion (end)

MAP display example for table ISUPTRK

GRPKEY	CONNTYPE	LCANAME	BILLCD	CALLSRC	ANI2CLI
RLT	SNTPDRST	DNLKUP	DISPLAY	ININTWRK	

ISUP2WITALT	NONE	NLCA	TOPSBC 1	TERM	Y
NONE	N	N	20	NONE	

Translation verification tools

Table TOPSDISP Expansion does not use translation verification tools.

SERVORD

Table TOPSDISP Expansion does not use SERVORD.

TCAP TRID Replacement

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

TOPS07 and up

TCAP TRID Replacement was introduced in TOPS07.

Prerequisites

To operate, TCAP TRID Replacement requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y

Description

The Transaction Identifier (TRID) interface is replaced by the Identifier Pool (IDPL) interface. A TRID is used in each Transaction Capabilities Application Part (TCAP) query to a database. A TCAP query is used by the External Real-Time Rating System (RTRS) and Originating Line Number Screening (OLNS).

This functionality is provided by the following feature:

Feature number	Feature name
AF6625	TOPS TCAPTRID Replacement

Operation

Prior to this functionality, TRID usage was calculated and allocated in table TCAPTRID. Now, IDPL usage is automatic, so no calculation or datafill allocation is required. Therefore, prior datafill in table TCAPTRID can be removed for functionalities External RTRS Interface (ENSV0103) and TOPS OLNS Interface (ABS00101). It is recommended to remove this datafill to avoid unnecessary memory allocation of extension blocks.

Table TOPSPARM parameters RTRS_TIMEOUT and OLNS_TIMEOUT are still applicable. These parameters determine the response time for an RTRS and OLNS query, respectively.

TCAP TRID Replacement (continued)

LOGS

The following existing logs are used:

- IDPL300 - This log is generated when the IDPL audit facility has found identifiers that are reserved but not currently in use and cleaned them up. To avoid generating this report at unnecessary frequency, it only occurs after fifty identifiers have been cleaned up.
- IDPL800 - This log is generated when the number of allocated transaction identifiers is within approximately 80% of the specified maximum for the application.
- IDPL801 - This log is generated when the maximum number of transaction identifiers for the application have been allocated. This means that no further identifiers of this type are available. Call processing may be effected if all identifiers were in use at the same time.
- IDPL900 - This log is generated when the IDPL audit facility has found an identifier that is reserved but not currently in use and cleaned it up.

Translations table flow

The TCAP TRID Replacement has no translations table flow.

Limitations and restrictions

There are no new restrictions or limitations introduced by this activity. The following is a partial list of existing restrictions and limitations for the RTRS and OLNS activities:

- Communication with the External RTRS and OLNS data base must be done over a CCS7 ANSI-2 TCAP interface.
- RTRS supports only the North American (NA) numbering plan (that is, NPA-NXX-XXXX) for calling numbers. OLNS is only supported for the NA market.
- CCS7 type MSB7s cannot exist in an office which uses this feature. CCS7 type MSB7s only support applications with a subsystem numeric value of 70 or less. The RTRS and OLNS applications value is greater than 70. Therefore, LIU7s must be used instead of MSB7s.
- DMS TCAP applications have the option of using the TESTSS facility to test CCS7 Subsystems. The RTRS activity does not make use of that facility since similar functionality exists in the RTRS XRate tool.
- Automatic call gapping (ACG) for the RTRS and OLNS activities are done on a global basis. Whenever an ACG directive is received from a query response, the ACG control applies to all TOPS calls requiring RTRS or OLNS. This occurs even if the queries are sent to different data bases.

TCAP TRID Replacement (continued)

- If a message from the data base contains a valid package type but does not contain a responding transaction id, an error notification is not sent to the application. The illegal message is however logged.
- It is necessary to upgrade and activate the OLNS LIDB data base prior to upgrading the TOPS DMS software.

Interactions

The following paragraphs describe the interactions between TCAP TRID Replacement and other functionalities.

This activity interacts with other features in the RTRS and OLNS projects. Also, this activity depends on base DMS CCS7 software.

Activation/deactivation by the end user

TCAP TRID Replacement requires no activation or deactivation by the end user.

Billing

TCAP TRID Replacement does not affect billing.

Station Message Detail Recording

TCAP TRID Replacement does not affect Station Message Detail Recording.

Datafilling office parameters

TCAP TRID Replacement does not affect office parameters.

Datafill sequence

This functionality does not require datafill sequence.

Datafilling table TCAPTRID

The following table shows the datafill specific to TCAP TRID Replacement for table TCAPTRID. Only those fields that apply directly to TCAP TRID Replacement are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TCAPTRID

Field	Subfield or refinement	Entry	Explanation and action
			This table is not changed. Remove tuples for RTRS and OLNS. Refer to these functionalities for further details.

TCAP TRID Replacement (end)

Datafill example for table TCAPTRID

The following example shows sample datafill for table TCAPTRID.

MAP display example for table TCAPTRID

TCAPAPPL	NUMTRIDS	NUMCOMPS
OLNS	25	0
RTRS	25	0

The above example shows the tuples that can be deleted.

Translation verification tools

TCAP TRID Replacement does not use translation verification tools.

SERVORD

TCAP TRID Replacement does not use SERVORD.

TMS Networking

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

BCS32

Prerequisites

To operate, TMS Networking has the following prerequisites:

- BAS Generic, BAS00003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y

Description

This functionality is provided by the following features:

Feature number	Feature name
AF2592	TMS Datafill for Intra/Inter Office TMS Networking

This feature provides TMS datafill for intra/inter office TMS networking. Datafill is provided for:

- DCH to DCH connectivity
- DCH to DS1 connectivity through the network
- SPECCONN table datafill

Operation

Background

The TOPS Message Switch (TMS) is an ISDN Line Trunk Controller (LTC) hardware/software base peripheral. The added TMS features provide high speed message communication for the TOPS-MP positions to reach the services such as Operator Reference DataBase (ORDB) and Directory Assistance (DA). The communication from the operator positions to services is concentrated by the TMS to reduce facilities used for database and CC access.

The ISDN LTC is an extended Peripheral Module (XPM) consisting of four processors: the Master processor (MP), Signalling Processor (SP), ISDN Signalling Processor (ISP), and D Channel Handler (DCH). The DCH processor is connected to the DS0 channels of the external DS1 links. These

TMS Networking (continued)

DS1 links can be connected to a terminal or TOPS Position Controllers (TPCs), DA systems, ORDB systems, and other services which operators may require.

Presently, each TMS must have at least one DS1 card dedicated for database access. In addition, DS1s dedicated for database access are under utilized. For example, a DS1 dedicated for OIA access is less than 10% utilized. This deficiency of under utilized DS1s is compounded in an office with several TMSs.

Inter-DCH communications also under-utilize DS1s. Two DS1s per TMS are allocated exclusively for inter-DCH communications, if ORDB is used. The DS1s are required because two of the four DCHs have no direct ORDB access. These non-ORDB DCHs are linked to and routed by the other two DCH's connected to the ORDB services.

Description

TMS Networking implements the CC base for TMS networking providing the following functionality and benefits:

- Inter-DCH networking
- Eliminates two DS1s used for inter-DCH communications

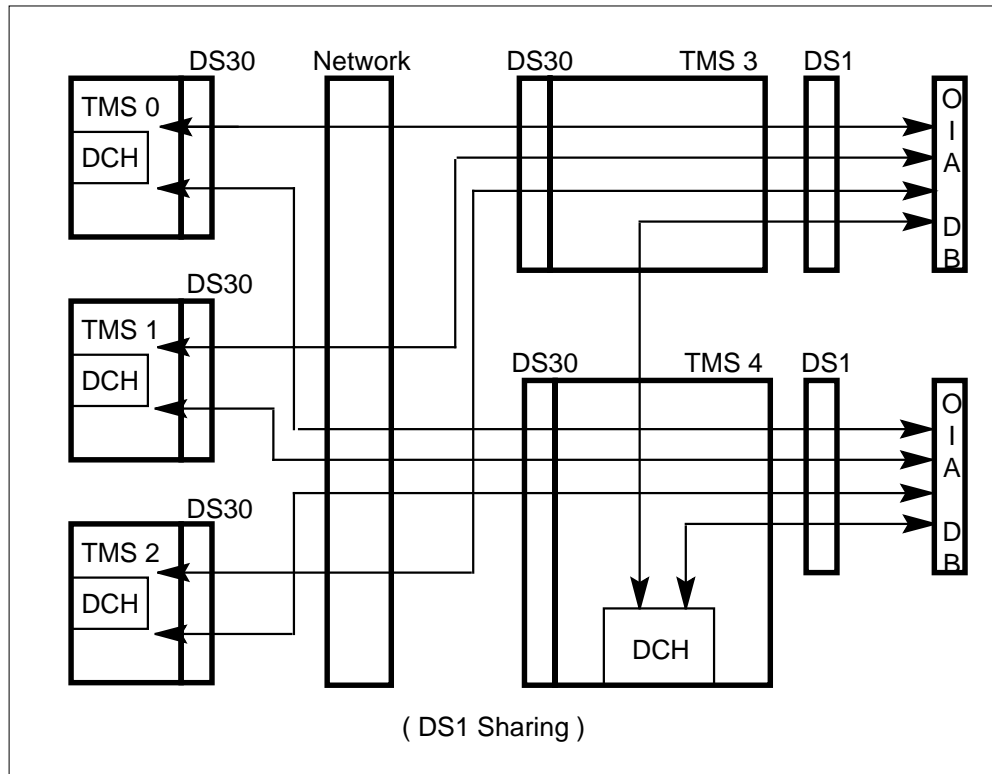
TMS Networking provides a method for networking TMSs within an office. TMS networking can reduce the number of database links required for a host TOPS office. Links are reduced by using Inter-TMS networking.

An inter-TMS connection is made between TMSs in the same office via the network.

Inter-TMS networking - DCH to DS1 connection between TMS units

By networking DCHs to DS1s on several TMSs, the unused DS0 channels of a DS1 in one TMS can be terminated on another TMS in the same office via the network module. This scheme is only useful for low usage OIA databases (for example ORDB). Refer to the following figure.

Implementation of this configuration requires minor changes to tables TMSPSDEV and SPECCONN.

TMS Networking (continued)**DCH to DS1 Intra-Office TMS Networking**

The above diagram shows TMS 0, 1 and 2 interfacing to the OIA databases via the DS1 interface card located on TMSs 3 and 4. Each TMS would occupy a separate channel on the DS1 to the OIA database.

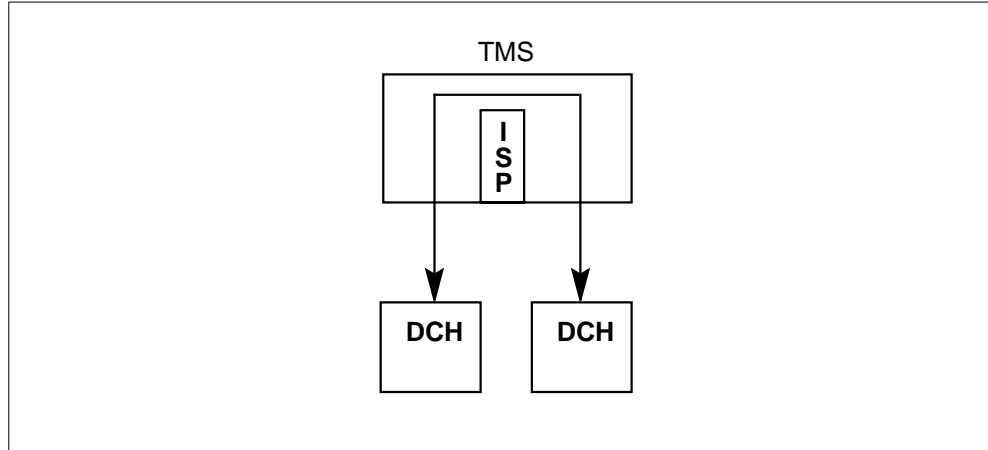
With four DCHs per TMS, 2 DCHs will be selected to have one link each interfaced to a separate DS1 channel. The DS1s going to the OIA databases should not subtend the same TMS. This is to handle one point failures.

Inter-DCH networking

A DCH to DCH SPECCONN connection within a TMS eliminates the requirement of looping two DS1s back to back for inter-DCH communications. The SPECCONN connection is internal to the TMS versus through the network. Refer to the following figure.

TMS Networking (continued)

DCH to DCH Communications



Potential voice & network DS30 channel allocation conflict

Background

TMS was implemented using two different DS30 channel allocation algorithms for TMS voice trunks and TMS Special Connections (SPECCONN). The TMS SPECCONN DS30 channel allocation algorithm reduced the number of DS30 links required per TMS from 16 to 8. This was accomplished by using unequipped DS30 links for the Special Connections internal to the TMS. Voice trunks used equipped DS30 links, preventing any channel allocation conflict.

Problem

There is a potential DS30 channel allocation conflict between voice trunks and SPECCONN when the Special Connections are to be made external to the TMS through the network. External SPECCONN through the network are allocated channels on equipped DS30 links.

The two DS30 channel allocation algorithms can conflict when a TMS SPECCONN has reserved a DS30 channel that the trunk allocation algorithm is also trying to allocate. This conflict arises since TMS SPECCONN uses a scanning algorithm and the voice trunk algorithm uses a DS1 to DS30 mapping.

The error would be seen in Table TOPSPOS when datafilling a position. The error message would be `FAIL TO ADD VOICE TRUNK TO PM.'

TMS Networking (continued)

Solution

There are two installation/datafill recommendations that prevent any cside channel allocation conflict:

- Add a 9th DS30

For those TMSs with 8 DS30 links already datafilled, add a 9th DS30 link on each TMS to be interconnected via the network. The voice trunk mapping algorithm uses a 5 DS1 to 4 DS30 mapping. TMSs are datafilled with 10 DS1s. The SPECCONN algorithm starts scanning at the highest equipped DS30 link to allocate channels for connections through the network. Since the voice trunk mapping will only use the first 8 DS30 links, the 9th DS30 link will provide 30 channels for network connections.

-OR-

- Reserve voice trunks in advance

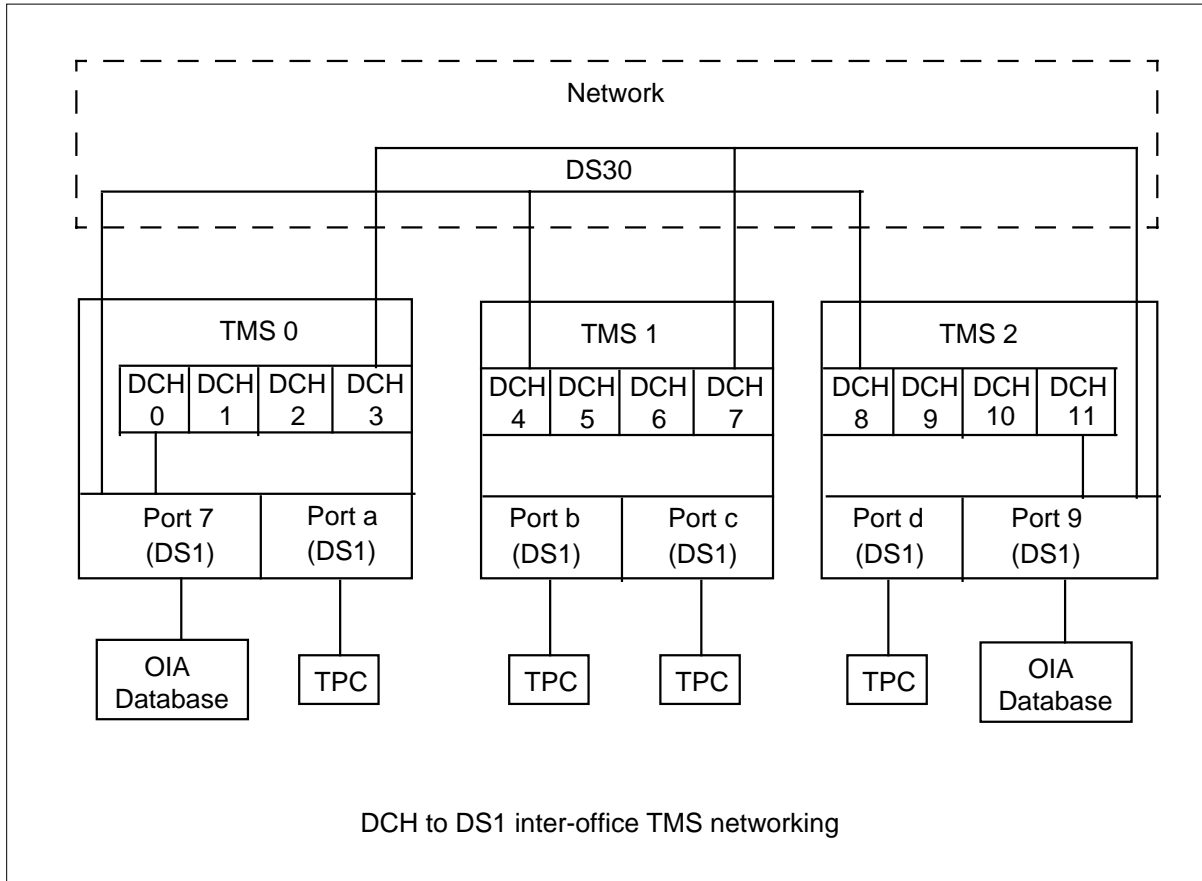
For TMSs to have inter-network connections, datafill all possible TOPS positions to reside on those TMSs before datafilling any SPECCONNs through the network. This will ensure all voice trunks are reserved in advance. The SPECCONNs through the network will be allocated the highest equipped DS30 channel starting from the highest numbered DS30 link. The number of network connections available will be the remainder of the total DS30 channels minus the voice trunks datafilled.

Hardware provisioning

The following diagram describes a possible inter-TMS connectivity using 3 TMSs.

TMS Networking (continued)

3 TMS configuration with inter-TMS connectivity



In the previous figure, three TMSs are configured so that the inside TMS (TMS1) communicates on channels with the DS1 located on the outer TMSs (TMS0/2). For redundancy, TMS2 can also use TMS0's DS1 card (and vice-versa). This configuration uses ports 7 and 9 to connect to the databases. Port 7 uses channel 1 for TMS 0, 2 for TMS 1, and 3 for TMS 2. And, port 9 uses channel 1 for TMS 0, 2 for TMS 1, and 3 for TMS 2. This configuration can be set up by datafilling two tables, table SPECCONN and table TMSPSDEV. To datafill an inter-TMS connectivity configuration, follow these steps:

1. In TMSPSDEV determine the port (DS1) used to interface the OIA database. Next check for that port in table TMSPSDEV and allocate a number of channels to match the number of TMSs in the office. For

TMS Networking (continued)

example in the previous diagram, three channels are configured for both port 7 on TMS 0 and port 9 on TMS 2.

The following sample datafill shows the changes required to support the 3 TMS configuration with inter-TMS connectivity shown in the previous figure.

MAP display example for table TMSPSDEV

CKTTAB	DEVNAME	TMSNO	
	DA	1	0
(6 CHNLS	(1) (2) (3) (4) \$)\$		
	DA	2	0
(8 CHNLS	(1) (2) (3) (4) \$)\$		
	DA	3	1
(6 CHNLS	(1) (2) (3) (4) \$)\$		
	DA	4	1
(8 CHNLS	(1) (2) (3) (4) \$)\$		
	DA	5	2
(6 CHNLS	(1) (2) (3) (4) \$)\$		
	DA	6	2
(8 CHNLS	(1) (2) (3) (4) \$)\$		
	ORDB	1	0
(7 CHNLS	(1) (2) (3) \$)\$		%%NOTE-1 channel per TMS
	ORDB	2	0
(9 CHNLS	(1) (2) (3) \$)\$		%%Can leave in-not used
	ORDB	3	1
(7 CHNLS	(1) (2) (3) \$)\$		%%Can leave in-not used
	ORDB	4	1
(9 CHNLS	(1) (2) (3) \$)\$		%%Can leave in-not used
	ORDB	5	2
(7 CHNLS	(1) (2) (3) \$)\$		%%Can leave in-not used
	ORDB	6	2
(9 CHNLS	(1) (2) (3) \$)\$		%%NOTE-1 channel per TMS

Note: Ports 7 and 9 are used for ORDB. Assign one channel per TMS in configuration. For example, in this configuration there are 3 TMSs, therefore 3 channels are assigned on the DS1s to the ORDB (TMS 0

TMS Networking (continued)

uses channel 1, TMS 1 uses channel 2 and TMS 2 uses channel 3 - see table SPECCONN).

Following is the procedure for changing entries in Table TMSPSDEV.

- a. OFFLINE all DCHCHNLs connected to the DS1 channels allocated for an entry to be deleted in Table TMSPSDEV.
 - b. DELETE all associated DS1 channels in Table SPECCONN.
 - c. ADD or DELETE entries in Table TMSPSDEV.
 - d. ADD new DS1 channels in Table SPECCONN.
 - e. RTS the DCHCHNLs.
2. In TDCDEF, ensure the protocol parameter is set to X25DCEL for each affected ISG and CHANNEL. Following is sample datafill.

MAP display example for table TDCDEF

```
ISGNO
TDCTAB
-----
0
(1 X25DCEL TPC 100)(2 X25DCEL TPC 103)(3 X25DCEL ORDB 100)
(5 X25DCEL TPC 101)(6 X25DCEL TPC 104)(7 X25DCEL ORDB 201)
(9 X25DCEL TPC 102)(10 X25DCEL TPC 105)(11 X25DCEL ORDB 202)
(13 X25DCEL TPC 159)(14 X25DCEL TPC 156)(17 X25DCEL TPC 165)
(18 X25DCEL TPC 162)(21 X25DCEL TPC 171)(22 X25DCEL TPC 168)
```

Following is the procedure for changing the PROTOCOL field in Table TDCDEF in BCS32:

- a. OFFLINE primary and secondary data link pair
- b. DELETE associated entries in Table SPECCONN
- c. CHANGE field PROTOCOL for the links in Table TDCDEF

TMS Networking (continued)

- d. ADD the data link tuples back into SPECCONN
 - e. RTS the links
3. In SPECCONN, datafill the connections from the DCHs to the DS1 ports as follows:
- a. TMS0 will use channel 1 on both ports 7 (TMS0) and 9 (TMS2)
 - b. TMS1 will use channel 2 on both ports 7 (TMS0) and 9 (TMS2)
 - c. TMS2 will use channel 3 on both ports 7 (TMS0) and 9 (TMS2)
- Normally (based on standard datafill), channel 3 is used for OIA access on the lowest and highest numbered DCHs on a TMS (TMS0 - DCH0 and 3, TMS1 - DCH 4 and 7, TMS2 - DCH 8 and 11). In SPECCONN, the following datafill is used:
- d. DCH 0 channel 3 to TMS 0 port 7 channel 1
 - e. DCH 3 channel 3 to TMS 2 port 9 channel 1
 - f. DCH 4 channel 3 to TMS 0 port 7 channel 2
 - g. DCH 7 channel 3 to TMS 2 port 9 channel 2
 - h. DCH 8 channel 3 to TMS 0 port 7 channel 3
 - i. DCH 11 channel 3 to TMS 2 port 9 channel 3

Note: For redundancy, TMS0 port 7 provides one connection to an OIA database while TMS2 port 9 provides the other. Also TMS1 (has no direct connection to OIA database), interfaces to both TMS0 and 2, directly to the DS1 interface cards.

These connections would appear in table SPECCONN as follows:

MAP display example for table SPECCONN

ENDPT1	ENDPT2	CONTYPE	STATUS
DCHCHNL 0 3	DS1 TMS 0 7 1	CON	ACTIVE
DCHCHNL 3 3	DS1 TMS 2 9 1	CON	ACTIVE
DCHCHNL 4 3	DS1 TMS 0 7 2	CON	ACTIVE
DCHCHNL 7 3	DS1 TMS 2 9 2	CON	ACTIVE
DCHCHNL 8 3	DS1 TMS 0 7 3	CON	ACTIVE
DCHCHNL 11 3	DS1 TMS 2 9 3	CON	ACTIVE

TMS Networking (continued)

The following sample datafill shows the changes required to support the 3 TMS configuration with inter-TMS connectivity.

MAP display example for table SPECCONN datafill for 3 TMS configuration with inter-TMS connectivity

ENDPT1	ENDPT2	CONTYPE	STATUS
DCHCHNL 0 1 DS1 TMS 0 0 1		CON	ACTIVE
DCHCHNL 0 2 DS1 TMS 0 1 1		CON	ACTIVE
DCHCHNL 0 3 DS1 TMS 0 7 1		CON	ACTIVE %% Direct ORDB link
DCHCHNL 0 5 DS1 TMS 0 2 1		CON	ACTIVE
DCHCHNL 0 6 DS1 TMS 0 3 1		CON	ACTIVE
DCHCHNL 0 7	DCHCHNL 1 7	CON	ACTIVE %% Inter-DCH link
DCHCHNL 0 9 DS1 TMS 0 4 1		CON	ACTIVE
DCHCHNL 0 10 DS1TMS 0 5 1		CON	ACTIVE
DCHCHNL 0 11	DCHCHNL 2 11	CON	ACTIVE %% Inter-DCH link
DCHCHNL 0 13 DS1TMS 0 1 4		CON	ACTIVE
DCHCHNL 0 14 DS1TMS 0 0 4		CON	ACTIVE
DCHCHNL 0 17 DS1TMS 0 1 6		CON	ACTIVE
DCHCHNL 0 18 DS1TMS 0 0 6		CON	ACTIVE
DCHCHNL 0 21 DS1TMS 0 1 8		CON	ACTIVE
DCHCHNL 0 22 DS1TMS 0 0 8		CON	ACTIVE
DCHCHNL 0 25 DS1TMS 0 6 1		CON	ACTIVE
DCHCHNL 0 26 DS1TMS 0 8 1		CON	ACTIVE
DCHCHNL 1 1 DS1 TMS 0 0 3		CON	ACTIVE
DCHCHNL 1 2 DS1 TMS 0 1 3		CON	ACTIVE
DCHCHNL 1 5 DS1 TMS 0 2 3		CON	ACTIVE
DCHCHNL 1 6 DS1 TMS 0 3 3		CON	ACTIVE
DCHCHNL 1 9 DS1 TMS 0 4 3		CON	ACTIVE
DCHCHNL 1 11	DCHCHNL 3 11	CON	ACTIVE %% Inter-DCH link
DCHCHNL 1 10 DS1TMS 0 5 3		CON	ACTIVE
DCHCHNL 1 13 DS1TMS 0 1 2		CON	ACTIVE
DCHCHNL 1 14 DS1TMS 0 0 2		CON	ACTIVE
DCHCHNL 1 17 DS1TMS 0 3 6		CON	ACTIVE
DCHCHNL 1 18 DS1TMS 0 2 6		CON	ACTIVE
DCHCHNL 1 21 DS1TMS 0 3 8		CON	ACTIVE
DCHCHNL 1 22 DS1TMS 0 2 8		CON	ACTIVE
DCHCHNL 1 25 DS1TMS 0 6 2		CON	ACTIVE
DCHCHNL 1 26 DS1TMS 0 8 2		CON	ACTIVE
DCHCHNL 2 1 DS1 TMS 0 0 5		CON	ACTIVE
DCHCHNL 2 2 DS1 TMS 0 1 5		CON	ACTIVE
DCHCHNL 2 5 DS1 TMS 0 2 5		CON	ACTIVE
DCHCHNL 2 6 DS1 TMS 0 3 5		CON	ACTIVE
DCHCHNL 2 7	DCHCHNL 3 7	CON	ACTIVE %% Inter-DCH link
DCHCHNL 2 9 DS1 TMS 0 4 5		CON	ACTIVE

(continued)

TMS Networking (continued)

MAP display example for table SPECCONN datafill for 3 TMS configuration with inter-TMS connectivity (continued)

ENDPT1	ENDPT2	CONTYPE	STATUS
DCHCHNL 2 10	DS1TMS 0 5 5	CON	ACTIVE
DCHCHNL 2 13	DS1TMS 0 3 2	CON	ACTIVE
DCHCHNL 2 14	DS1TMS 0 2 2	CON	ACTIVE
DCHCHNL 2 17	DS1TMS 0 3 4	CON	ACTIVE
DCHCHNL 2 18	DS1TMS 0 2 4	CON	ACTIVE
DCHCHNL 2 22	DS1TMS 0 4 8	CON	ACTIVE
DCHCHNL 2 25	DS1TMS 0 6 3	CON	ACTIVE
DCHCHNL 2 26	DS1TMS 0 8 3	CON	ACTIVE
DCHCHNL 3 1	DS1 TMS 0 0 7	CON	ACTIVE
DCHCHNL 3 2	DS1 TMS 0 1 7	CON	ACTIVE
DCHCHNL 3 3	DS1 TMS 2 9 1	CON	ACTIVE %% Inter-TMS link
DCHCHNL 3 5	DS1 TMS 0 2 7	CON	ACTIVE
DCHCHNL 3 6	DS1 TMS 0 3 7	CON	ACTIVE
DCHCHNL 3 9	DS1 TMS 0 4 7	CON	ACTIVE
DCHCHNL 3 13	DS1TMS 0 5 2	CON	ACTIVE
DCHCHNL 3 14	DS1TMS 0 4 2	CON	ACTIVE
DCHCHNL 3 17	DS1TMS 0 5 4	CON	ACTIVE
DCHCHNL 3 18	DS1TMS 0 4 4	CON	ACTIVE
DCHCHNL 3 21	DS1TMS 0 5 6	CON	ACTIVE
DCHCHNL 3 22	DS1TMS 0 4 6	CON	ACTIVE
DCHCHNL 3 25	DS1TMS 0 6 4	CON	ACTIVE
DCHCHNL 3 26	DS1TMS 0 8 4	CON	ACTIVE
DCHCHNL 4 1	DS1 TMS 1 0 1	CON	ACTIVE
DCHCHNL 4 2	DS1 TMS 1 1 1	CON	ACTIVE
DCHCHNL 4 3	DS1 TMS 0 7 2	CON	ACTIVE %% Inter-TMS link
DCHCHNL 4 5	DS1 TMS 1 2 1	CON	ACTIVE
DCHCHNL 4 6	DS1 TMS 1 3 1	CON	ACTIVE
DCHCHNL 4 7	DCHCHNL 5 7	CON	ACTIVE %% Inter-DCH link
DCHCHNL 4 9	DS1 TMS 1 4 1	CON	ACTIVE
DCHCHNL 4 10	DS1TMS 1 5 1	CON	ACTIVE
DCHCHNL 4 11	DCHCHNL 6 11	CON	ACTIVE %% Inter-DCH link
DCHCHNL 4 13	DS1TMS 1 1 4	CON	ACTIVE
DCHCHNL 4 14	DS1TMS 1 0 4	CON	ACTIVE
DCHCHNL 4 17	DS1TMS 1 1 6	CON	ACTIVE
DCHCHNL 4 18	DS1TMS 1 0 6	CON	ACTIVE
DCHCHNL 4 21	DS1TMS 1 1 8	CON	ACTIVE
DCHCHNL 4 22	DS1TMS 1 0 8	CON	ACTIVE
DCHCHNL 4 25	DS1TMS 1 6 1	CON	ACTIVE
DCHCHNL 4 26	DS1TMS 1 8 1	CON	ACTIVE
DCHCHNL 5 1	DS1 TMS 1 0 3	CON	ACTIVE

(continued)

TMS Networking (continued)

MAP display example for table SPECCONN datafill for 3 TMS configuration with inter-TMS connectivity (continued)

ENDPT1	ENDPT2	CONTYPE	STATUS
DCHCHNL 5 2 DS1 TMS 1 1 3		CON	ACTIVE
DCHCHNL 5 5 DS1 TMS 1 2 3		CON	ACTIVE
DCHCHNL 5 6 DS1 TMS 1 3 3		CON	ACTIVE
DCHCHNL 5 9 DS1 TMS 1 4 3		CON	ACTIVE
DCHCHNL 5 10 DS1TMS 1 5 3		CON	ACTIVE
DCHCHNL 5 11	DCHCHNL 7 11	CON	ACTIVE %% Inter-DCH link
DCHCHNL 5 13 DS1TMS 1 1 2		CON	ACTIVE
DCHCHNL 5 14 DS1TMS 1 0 2		CON	ACTIVE
DCHCHNL 5 17 DS1TMS 1 3 6		CON	ACTIVE
DCHCHNL 5 18 DS1TMS 1 2 6		CON	ACTIVE
DCHCHNL 5 21 DS1TMS 1 3 8		CON	ACTIVE
DCHCHNL 5 22 DS1TMS 1 2 8		CON	ACTIVE
DCHCHNL 5 25 DS1TMS 1 6 2		CON	ACTIVE
DCHCHNL 5 26 DS1TMS 1 8 2		CON	ACTIVE
DCHCHNL 6 1 DS1 TMS 1 0 5		CON	ACTIVE
DCHCHNL 6 2 DS1 TMS 1 1 5		CON	ACTIVE
DCHCHNL 6 5 DS1 TMS 1 2 5		CON	ACTIVE
DCHCHNL 6 6 DS1 TMS 1 3 5		CON	ACTIVE
DCHCHNL 6 7	DCHCHNL 7 7	CON	ACTIVE %% Inter-DCH link
DCHCHNL 6 9 DS1 TMS 1 4 5		CON	ACTIVE
DCHCHNL 6 10 DS1TMS 1 5 5		CON	ACTIVE
DCHCHNL 6 13 DS1TMS 1 3 2		CON	ACTIVE
DCHCHNL 6 17 DS1TMS 1 3 4		CON	ACTIVE
DCHCHNL 6 18 DS1TMS 1 2 4		CON	ACTIVE
DCHCHNL 6 21 DS1TMS 1 5 8		CON	ACTIVE
DCHCHNL 6 25 DS1TMS 1 6 3		CON	ACTIVE
DCHCHNL 6 26 DS1TMS 1 8 3		CON	ACTIVE
DCHCHNL 7 1 DS1 TMS 1 0 7		CON	ACTIVE
DCHCHNL 7 2 DS1 TMS 1 1 7		CON	ACTIVE
DCHCHNL 7 3 DS1 TMS 2 9 2		CON	ACTIVE %% Inter-Tms link
DCHCHNL 7 5 DS1 TMS 1 2 7		CON	ACTIVE
DCHCHNL 7 6 DS1 TMS 1 3 7		CON	ACTIVE
DCHCHNL 7 10 DS1TMS 1 5 7		CON	ACTIVE
DCHCHNL 7 13 DS1TMS 1 5 2		CON	ACTIVE
DCHCHNL 7 14 DS1TMS 1 4 2		CON	ACTIVE
DCHCHNL 7 17 DS1TMS 1 5 4		CON	ACTIVE
DCHCHNL 7 18 DS1TMS 1 4 4		CON	ACTIVE
DCHCHNL 7 21 DS1TMS 1 5 6		CON	ACTIVE
DCHCHNL 7 22 DS1TMS 1 4 6		CON	ACTIVE
DCHCHNL 7 25 DS1TMS 1 6 4		CON	ACTIVE

(continued)

TMS Networking (continued)**MAP display example for table SPECCONN datafill for 3 TMS configuration with inter-TMS connectivity (continued)**

ENDPT1	ENDPT2	CONTYPE	STATUS
DCHCHNL 7 26 DS1 TMS 1 8 4		CON	ACTIVE
DCHCHNL 8 1 DS1 TMS 2 0 1		CON	ACTIVE
DCHCHNL 8 2 DS1 TMS 2 1 1		CON	ACTIVE
DCHCHNL 8 3 DS1 TMS 0 7 3		CON	ACTIVE %% Inter-TMS link
DCHCHNL 8 5 DS1 TMS 2 2 1		CON	ACTIVE
DCHCHNL 8 6 DS1 TMS 2 3 1		CON	ACTIVE
DCHCHNL 8 7	DCHCHNL 9 7	CON	ACTIVE %% Inter-DCH link
DCHCHNL 8 9 DS1 TMS 2 4 1		CON	ACTIVE
DCHCHNL 8 10 DS1 TMS 2 5 1		CON	ACTIVE
DCHCHNL 8 11 DCHCHNL 10 11		CON	ACTIVE %%Inter-DCH link
DCHCHNL 8 13 DS1 TMS 2 1 4		CON	ACTIVE
DCHCHNL 8 14 DS1 TMS 2 0 4		CON	ACTIVE
DCHCHNL 8 17 DS1 TMS 2 1 6		CON	ACTIVE
DCHCHNL 8 18 DS1 TMS 2 0 6		CON	ACTIVE
DCHCHNL 8 21 DS1 TMS 2 1 8		CON	ACTIVE
DCHCHNL 8 22 DS1 TMS 2 0 8		CON	ACTIVE
DCHCHNL 8 25 DS1 TMS 2 6 1		CON	ACTIVE
DCHCHNL 8 26 DS1 TMS 2 8 1		CON	ACTIVE
DCHCHNL 9 1 DS1 TMS 2 0 3		CON	ACTIVE
DCHCHNL 9 2 DS1 TMS 2 1 3		CON	ACTIVE
DCHCHNL 9 5 DS1 TMS 2 2 3		CON	ACTIVE
DCHCHNL 9 6 DS1 TMS 2 3 3		CON	ACTIVE
DCHCHNL 9 9 DS1 TMS 2 4 3		CON	ACTIVE
DCHCHNL 9 10 DS1 TMS 2 5 3		CON	ACTIVE
DCHCHNL 9 11 DCHCHNL 11 11		CON	ACTIVE %% Inter-DCH link
DCHCHNL 9 13 DS1 TMS 2 1 2		CON	ACTIVE
DCHCHNL 9 14 DS1 TMS 2 0 2		CON	ACTIVE
DCHCHNL 9 17 DS1 TMS 2 3 6		CON	ACTIVE
DCHCHNL 9 18 DS1 TMS 2 2 6		CON	ACTIVE
DCHCHNL 9 21 DS1 TMS 2 3 8		CON	ACTIVE
DCHCHNL 9 22 DS1 TMS 2 2 8		CON	ACTIVE
DCHCHNL 9 25 DS1 TMS 2 6 2		CON	ACTIVE
DCHCHNL 9 26 DS1 TMS 2 8 2		CON	ACTIVE
DCHCHNL 10 1 DS1 TMS 2 0 5		CON	ACTIVE
DCHCHNL 10 2 DS1 TMS 2 1 5		CON	ACTIVE
DCHCHNL 10 5 DS1 TMS 2 2 5		CON	ACTIVE
DCHCHNL 10 6 DS1 TMS 2 3 5		CON	ACTIVE
DCHCHNL 10 7 DCHCHNL 11 7		CON	ACTIVE %% Inter-DCH link
DCHCHNL 10 9 DS1 TMS 2 4 5		CON	ACTIVE
DCHCHNL 10 10 DS1 TMS 2 5 5		CON	ACTIVE
DCHCHNL 10 13 DS1 TMS 2 3 2		CON	ACTIVE

(continued)

TMS Networking (continued)

MAP display example for table SPECCONN datafill for 3 TMS configuration with inter-TMS connectivity (continued)

ENDPT1	ENDPT2	CONTYPE	STATUS
DCHCHNL 10 14 DS1	TMS 2 2 2	CON	ACTIVE
DCHCHNL 10 17 DS1	TMS 2 3 4	CON	ACTIVE
DCHCHNL 10 18 DS1	TMS 2 2 4	CON	ACTIVE
DCHCHNL 10 21 DS1	TMS 2 5 8	CON	ACTIVE
DCHCHNL 10 22 DS1	TMS 2 4 8	CON	ACTIVE
DCHCHNL 10 25 DS1	TMS 2 6 3	CON	ACTIVE
DCHCHNL 10 26 DS1	TMS 2 8 3	CON	ACTIVE
DCHCHNL 11 1 DS1	TMS 2 0 7	CON	ACTIVE
DCHCHNL 11 2 DS1	TMS 2 1 7	CON	ACTIVE
DCHCHNL 11 3 DS1	TMS 2 9 3	CON	ACTIVE %%Direct ORDB link
DCHCHNL 11 5 DS1	TMS 2 2 7	CON	ACTIVE
DCHCHNL 11 6 DS1	TMS 2 3 7	CON	ACTIVE
DCHCHNL 11 9 DS1	TMS 2 4 7	CON	ACTIVE
DCHCHNL 11 10 DS1	TMS 2 5 7	CON	ACTIVE
DCHCHNL 11 14 DS1	TMS 2 4 2	CON	ACTIVE
DCHCHNL 11 17 DS1	TMS 2 5 4	CON	ACTIVE
DCHCHNL 11 18 DS1	TMS 2 4 4	CON	ACTIVE
DCHCHNL 11 21 DS1	TMS 2 5 6	CON	ACTIVE
DCHCHNL 11 22 DS1	TMS 2 4 6	CON	ACTIVE
DCHCHNL 11 25 DS1	TMS 2 6 4	CON	ACTIVE
DCHCHNL 11 26 DS1	TMS 2 8 4	CON	ACTIVE

(end)

TMS Provisioning

Implementing the inter-TMS/DCH connectivity may save from 1 to 3 NT6X50 DS-1 circuit packs per TMS (depending upon configuration). The following diagram depicts a typical TMS PEC layout.

TMS Networking (continued)

Typical TMS shelf configuration

TMS shelf 0		TMS shelf 1	
DCH 17		DCH 19	
DCH 13		DCH 15	
port 9 DS1 port 8	OIA access	port 11 DS1 port 10	Inter DCH
	DA access		Inter DCH
port 5 DS1 port 4	TPC	port 7 DS1 port 6	OIA access
	TPC		DA access
port 1 DS1 port 0	TPC	port 3 DS1 port 2	TPC
	TPC		TPC

The DS-1 PEC for ports 10/11 can be eliminated with the implementation of the inter-DCH connectivity. Removing another circuit pack depends upon the configuration:

- DA/OIA Office (MP positions) - In order to preserve redundancy, it is recommended that OIA accesses be spread across two NT6X50 PECs. No further DS1 PEC savings can be realized, though DS1 facilities savings can be attained.
- DA/OIA Office (MPX positions) - The end TMSs (TMS 0 and 2 from example diagram) will not provide any more NT6X50 PECs savings, but the center TMS (TMS 1) can have both DS1 PECs (ports 6, 7, 8, 9) removed.
- OIA only (MP positions) - The end TMSs (TMS 0 and 2 from example diagram) will not provide any more NT6X50 PEC savings, but the center TMS (TMS 1) can have both NT6X50s removed (ports 6, 7, 8, 9).

DCH to DCH cut-over procedure

The following describes how to cut-over from inter-DCH links connected using DS1s to direct DCH to DCH connections. The description is applicable to both CCI DA and IBM DA datafill.

The cut-over procedure uses ISG number 0 through 3, the cut-over is applicable to any 4 ISGs assigned to a TMS. For more information refer to the

TMS Networking (continued)

TOPS DA Subtending TMS, OSB00101, package description paragraph labeled Multiple TMS datafill.

ISG 0 Channel 7 & ISG 1 Channel 7:

1. Offline ISG 0 channel 7 and ISG 1 channel 7
2. Delete from table SPECCONN the following entries:
 - DCHCHNL 0 7 and
 - DCHCHNL 1 7
3. Ensure the following protocol parameters in table TDCDEF:
 - ISG 0 channel 7 is set to X25DCEL
 - ISG 1 channel 7 is set to X25DTEL
4. Add to table SPECCONN the following entry:
 - DCHCHNL 0 7 DCHCHNL 1 7 CON ACTIVE
5. BSY and RTS ISG 0 channel 7 and ISG 1 channel 7

ISG 0 Channel 11 & ISG 2 Channel 11:

1. Offline ISG 0 channel 11 and ISG 2 channel 11
2. Delete from table SPECCONN the following entries:
 - DCHCHNL 0 11 and
 - DCHCHNL 2 11
3. Ensure the following protocol parameters in table TDCDEF:
 - ISG 0 channel 11 is set to X25DCEL
 - ISG 2 channel 11 is set to X25DTEL
4. Add to table SPECCONN the following entry:
 - DCHCHNL 0 11 DCHCHNL 2 11 CON ACTIVE
5. BSY and RTS ISG 0 channel 11 and ISG 2 channel 11

ISG 3 Channel 7 & ISG 2 Channel 7:

1. Offline ISG 3 channel 7 and ISG 2 channel 7
2. Delete from table SPECCONN entries:
 - DCHCHNL 3 7 and
 - DCHCHNL 2 7

TMS Networking (continued)

3. Ensure the following protocol parameters in table TDCDEF:
 - ISG 3 channel 7 is set to X25DCEL
 - ISG 2 channel 7 is set to X25DTEL
4. Add to table SPECCONN the following entry:
 - DCHCHNL 3 7 DCHCHNL 2 7 CON ACTIVE
5. BSY and RTS ISG 3 channel 7 and ISG 2 channel 7

ISG 3 Channel 11 & ISG 1 Channel 11:

1. Offline ISG 3 channel 11 and ISG 1 channel 11
2. Delete from table SPECCONN the following entries:
 - DCHCHNL 3 11 and
 - DCHCHNL 1 11
3. Ensure the following protocol parameters in table TDCDEF:
 - ISG 3 channel 11 is set to X25DCEL
 - ISG 1 channel 11 is set to X25DTEL
4. Add to table SPECCONN the following entry:
 - DCHCHNL 3 11 DCHCHNL 1 11 CON ACTIVE
5. BSY and RTS ISG 3 channel 11 and ISG 1 channel 11

Translations table flow

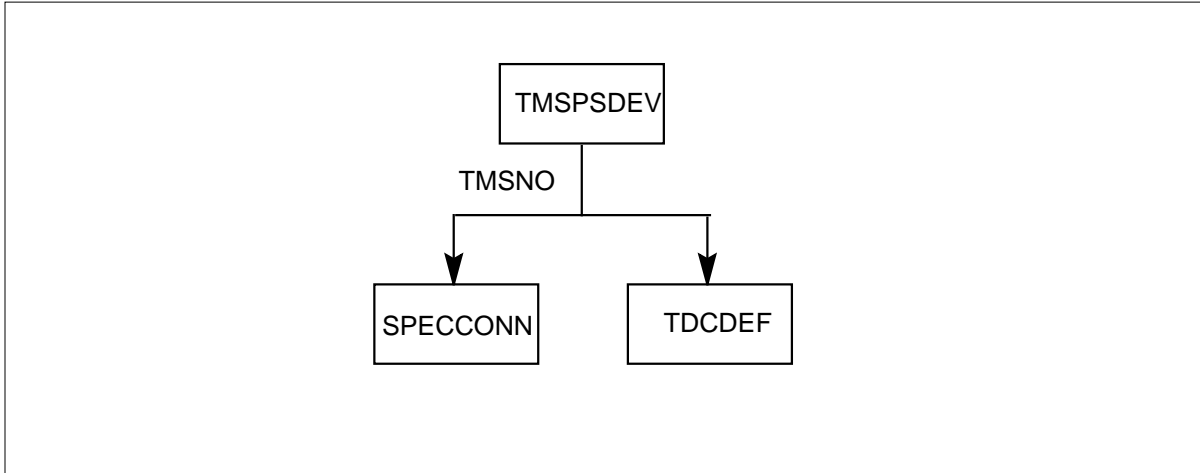
The TMS Networking translations tables are described in the following list:

- Table TMSPSDEV - Identifies database devices in terms of TMS number, p-side port and DS-1 channel.
- Table SPECCONN - Defines connections for DS-1 channels on TMS.
- Table TDCDEF - Provides routing for TMS DCH.

The TMS Networking translation process is shown in the following flowchart.

TMS Networking (continued)

Table flow for TMS Networking



Limitations and restrictions

The following limitations and restrictions apply to TMS Networking:

- TMS capacity

Implementing the inter-TMS connectivity will increase the messaging through the TMS. It is recommended that all System Engineering Bulletins (Ref. SEB 93-03-002) are consulted to ensure that this increased traffic is below the allowable threshold for the TMS. Failure to do this may cause the TMS to go into congestion/overload, degrading service.

- Potential Voice & Network DS30 Channel Allocation Conflict:

There is a potential DS30 channel allocation conflict between voice trunks and SPECCONN when Special Connections are made external to the TMS through the network. The error would be seen in Table TOPSPOS when datafilling a position. The error message would be "FAIL TO ADD VOICE TRUNK TO PM." For more information see "Potential voice & network DS30 channel allocation conflict".

Interactions

The following paragraph describes the interactions between TMS Networking and other functionalities.

This feature interacts with package TOPS DA Subtending TMS, OSB00101.

Activation/deactivation by the end user

TMS Networking requires no activation or deactivation by the end user.

TMS Networking (continued)

Billing

TMS Networking does not affect billing.

Station Message Detail Recording

TMS Networking does not affect Station Message Detail Recording.

Datafilling office parameters

TMS Networking does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement TMS Networking. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for TMS Networking

Table	Purpose of table
TMSPSDEV	Identifies database devices in terms of TMS number, p-side port and DS-1 channel.
TDCDEF	Provides routing for TMS DCH.
SPECCONN	Defines connections for DS-1 channels on TMS.

Datafilling table TMSPSDEV

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

Datafilling table TMSPSDEV

Field	Subfield or refinement	Entry	Explanation and action
			Table TMSPSDEV is not changed by this package.

Datafill example for table TMSPSDEV

The following example shows sample datafill for table TMSPSDEV. The sample datafill shows the changes required to support the 3 TMS configuration with inter-TMS connectivity.

TMS Networking (continued)

MAP display example for table TMSPSDEV

CKTTAB	DEVNAME	TMSNO	
	DA 1	0	
(6 CHNLS (1)	(2) (3) (4)	(\$)\$	
	DA 2	0	
(8 CHNLS (1)	(2) (3) (4)	(\$)\$	
	DA 3	1	
(6 CHNLS (1)	(2) (3) (4)	(\$)\$	
	DA 4	1	
(8 CHNLS (1)	(2) (3) (4)	(\$)\$	
	DA 5	2	
(6 CHNLS (1)	(2) (3) (4)	(\$)\$	
	DA 6	2	
(8 CHNLS (1)	(2) (3) (4)	(\$)\$	
	ORDB 1	0	
(7 CHNLS (1)	(2) (3)	(\$)\$	%%NOTE-1 channel per TMS
	ORDB 2	0	
(9 CHNLS (1)	(2) (3)	(\$)\$	%%Can leave in-not used
	ORDB 3	1	
(7 CHNLS (1)	(2) (3)	(\$)\$	%%Can leave in-not used
	ORDB 4	1	
(9 CHNLS (1)	(2) (3)	(\$)\$	%%Can leave in-not used
	ORDB 5	2	
(7 CHNLS (1)	(2) (3)	(\$)\$	%%Can leave in-not used
	ORDB 6	2	
(9 CHNLS (1)	(2) (3)	(\$)\$	%%NOTE-1 channel per TMS

Datafilling table TDCDEF

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

Datafilling table TDCDEF

Field	Subfield or refinement	Entry	Explanation and action
PRTCLPAR		X25DCEL	Ensure that each affected ISG and CHANNEL has field PRTCLPAR set to X25DCEL.

TMS Networking (continued)

Datafill example for table TDCDEF

The following example shows sample datafill for table TDCDEF.

MAP display example for table TDCDEF

```

ISGNO
TDCTAB
-----
0
(1 X25DCEL TPC 100)(2 X25DCEL TPC 103)(3 X25DCEL ORDB 100)
(5 X25DCEL TPC 101)(6 X25DCEL TPC 104)(7 X25DCEL ORDB 201)
(9 X25DCEL TPC 102)(10 X25DCEL TPC 105)(11 X25DCEL ORDB 202)
(13 X25DCEL TPC 159)(14 X25DCEL TPC 156)(17 X25DCEL TPC 165)
(18 X25DCEL TPC 162)(21 X25DCEL TPC 171)(22 X25DCEL TPC 168)
    
```

Datafilling table SPECCONN

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

Datafilling table SPECCONN

Field	Subfield or refinement	Entry	Explanation and action
ENDPT1		See subfield	Table control now allows DCH to DCH connections within a TMS unit and between TMS units. In addition, DCH to DS1 connections between TMS units are allowed.
ENDPT2		See subfield	See ENDPT1 above.

Datafill example for table SPECCONN

The following are examples of possible SPECCONN connections. The ISG number assignments can be assumed.:

- ISG 0 - 3 for DCHs on TMS 0.
- ISG 4 - 7 for DCHs on TMS 1.

The following example shows sample datafill for table SPECCONN.

TMS Networking (continued)

MAP display example for table SPECCONN

Between two TMSs (DCH to DS1)						
ENDPT1		ENDPT2		CONTYPE		STATUS

DCHCHNL 0 1		DS1 TMS 1 4 5		CON		ACTIVE
In the same TMS (DCH to DCH)						
ENDPT1		ENDPT2		CONTYPE		STATUS

DCHCHNL 1 2		DCHCHNL 2 2		CON		ACTIVE

Also, sample datafill shows the changes required to support the 3 TMS configuration with inter-TMS connectivity.

Error messages for table SPECCONN

The following error messages apply to table SPECCONN.

Error messages for table SPECCONN

Error message	Explanation and action
"TPC device cannot be used in network connections."	If an attempt is made to connect through the NETWORK either two ISG channels or an ISG to a DS1, with any ISG channel DEVICE set to TPC or the DS1 datafilled in table TPCINV
"ERROR: TPC device type cannot be used for ISG to ISG connections for:" "ISG 0 chnl 1 and ISG 3 chnl 5"	If an attempt is made to connect two ISG channels with either DEVICE set to TPC

TMS Networking (end)**Error messages for table SPECCONN**

Error message	Explanation and action
<p>"ERROR: PRTCL for ISG 0 chnl 1 and ISG 3 chnl 5 must beX25DCEL to X25DTElorX25DTEL to X25DCEL"</p> <p>or</p> <p>"ERROR: PRTCL for ISG 0 chnl 1 and ISG 3 chnl 5 must beLAPDCEL to LAPDTElorLAPDTEL to LAPDCEL"</p> <p>or</p> <p>"ERROR: PRTCL for ISG 0 chnl 1 and ISG 3 chnl 5 must beX25DCEL to X25DTElorX25DTEL to X25DCEL"LAPDCEL to LAPDTElorLAPDTEL to LAPDCEL"</p>	<p>If an attempt is made to connect two ISG channels with different PRTCL settings</p>
<p>"ERROR: DEVICE for ISG 0 chnl 1 and ISG 3 chnl 5 must match"</p>	<p>If an attempt is made to connect two ISG channels with different CTYPE settings</p>
<p>"ERROR: RATE for ISG 0 chnl 1 and ISG 3 chnl 5 must match"</p>	<p>If an attempt is made to connect two ISG channels with different RATE settings</p>
<p>"ERROR: Invalid endpoint combination for TMS"</p>	<p>If an attempt is made to connect two ISG channels on different TMS's together</p>
<p>"ERROR: IHDLIC for ISG 0 chnl 1 and ISG 3 chnl 5 must match"</p>	<p>If an attempt is made to connect two ISG channels with different IHDLIC settings</p>

Translation verification tools

TMS Networking does not use translation verification tools.

SERVORD

TMS Networking does not use SERVORD.

TMS Processor Upgrade

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

The TOPS03 and later versions

The TMS Processor Upgrade was introduced in TOPS03.

Requirements

To operate, TMS Processor Upgrade requires the following functional groups:

- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- TOPS DA Subtending TMS, OSB00101
- BAS Remotes Generic, BAS00012
- BAS Generic, BAS00003
- NIO ISDN Base, NIO00007

Description

The following features provide this functionality:

Feature number	Feature name
AN0288	TMS Processor Upgrade

This functionality provides increased memory and speed for the TMS.

Operation

The following are the terms in the feature:

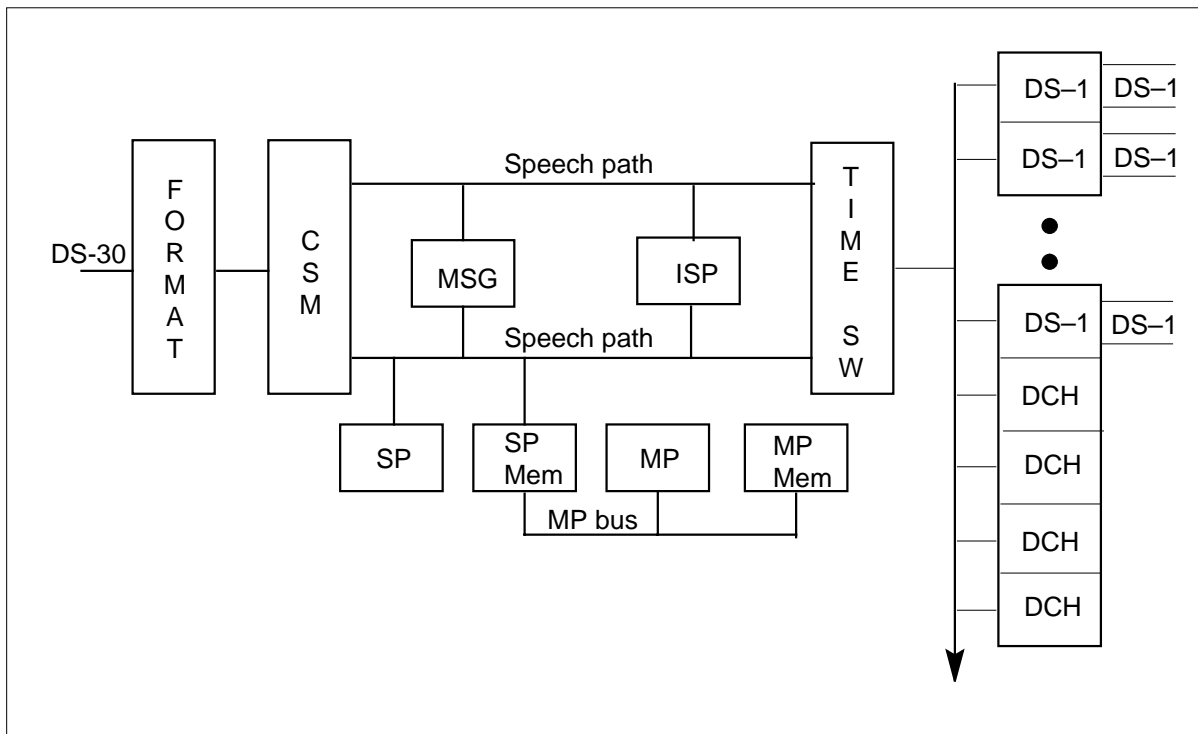
- The UP - Unified processor, NTMX77AA
- The EISP - Enhanced ISDN signalling processor, NTB01AB
- The EDCH - Enhanced D-channel handler, NTB02BA
- The TMS - TOPS Message Switch, DS-1 carrier type
- The UTM - TMS with PCM30 carriers for global market
- The ETMS -Enhanced TMS or UTM upgraded with the UP, EISP and EDCH processor packs

TMS Processor Upgrade (continued)

- The MP - Master processor
- The SP - Signal processor

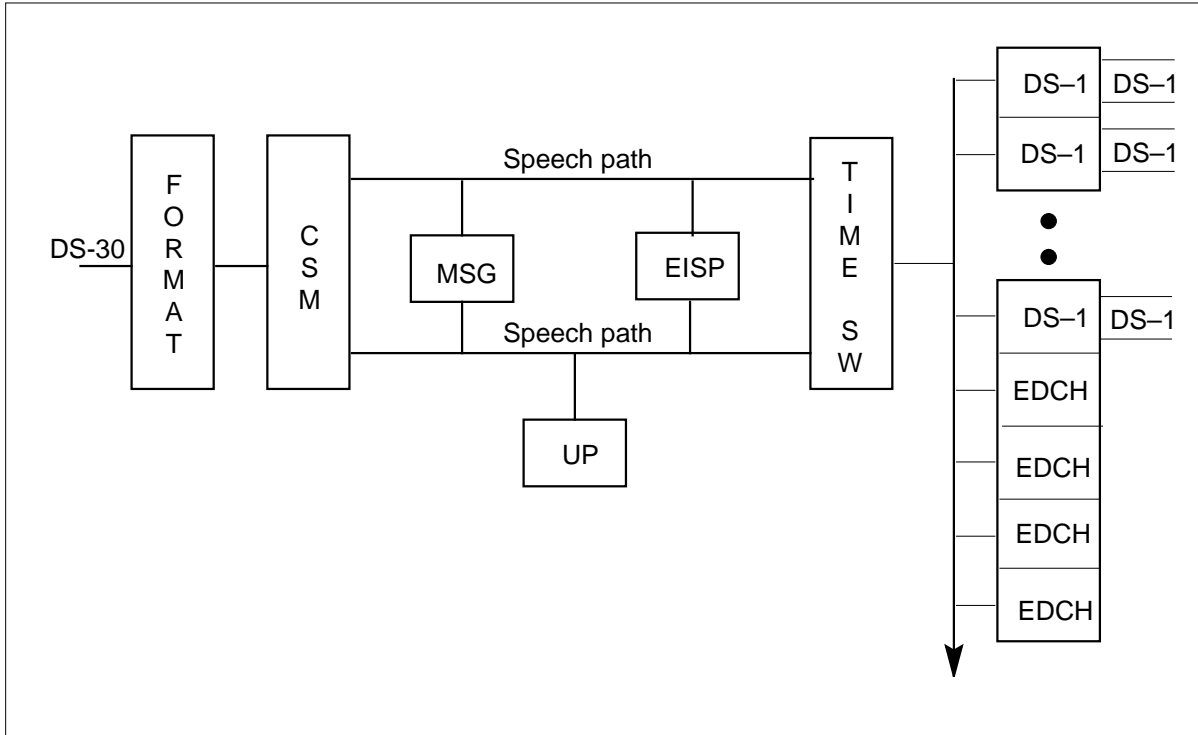
Previous and current TMS configurations appear in the following figures.

Standard TMS configuration



TMS Processor Upgrade (continued)

Enhanced TMS configuration



TMS Processor Upgrade (continued)

Software loads

Two software loads are available for each TMS, UTM, and DCH as follows. These loads are in table PMLOADS:

- Previous:
 - The TMSnnx - This load is in use when the XPM control complex includes the MP/SP and the ISP. This load is in use with DS-1 trunks.
 - The UTMnnx - This load is in use when the XPM control complex includes the MP/SP with the ISP. This load is in use with PCM-30 trunks.
 - The XCHnnx - This load is in use when the XPM control complex includes the MP/SP with the ISP. This load is in use in the DCH.
- Current:
 - The ETMnnxx - This load is in use when the XPM control complex includes the UP and the EISP. This load is in use with DS-1 trunks.
 - The EUTnnxx - This load is in use when the XPM control complex includes the UP and the EISP. This load is in use with PCM-30 trunks.
 - The EXCnnxx - This load is in use when the XPM control complex includes the UP and EISP. This load is in use in the EDCH.

Note: The nn = BCS/DRU number (for example, 35, 02, 03). The xx = version (for example, A, AA).

Hardware requirements

TMS

Consult all System Engineering Bulletins (Ref. 93-03-002) and ECM 468 to make sure that traffic is below the maximum threshold for the EISP/EDCH and UP. If you do not take this action, the ETMS becomes congested or overloaded. Congestion and overload degrades service.

ETMS

This functionality requires that both ETMS units have one NTMX77AA and one NTBX01AB circuit pack for each unit. Current TMS engineering rules determine the number of NTBX02BA circuit packs required. See the Change Application Procedure 1558 for complete information.

Note: The ETM, EUT, and EXC loads require MX77 hardware. Use the new PCL to install this hardware for TMS. Examples of the new PCL are TOPS003 and LET003. Do not attempt to load the ETM and EXC loads in a non-MX77 configuration.

TMS Processor Upgrade (continued)

The following is an example of the sequence of events for an office upgrade to TOPS03:

1. Load the DCHs on the TMS with XCH03x. Load the MP/SP TMS with TMS03x or UTM03x load.
2. Upgrade the CM to TOPS03 or greater.
3. Perform ETMS upgrade procedure on the TMS.

ETMS upgrade procedure

The following is a short non-inclusive summary upgrade to the ETMS installation procedure.

1. Preparation - test TMS. Put new loads on disk. Perform any additional preparations.
2. Start with one DCH and BSY and OFFL all ISG channels. BSY/OFFL DCH.
3. Replace DCH with EDCH. Update DCHPEC in table DCHINV.
4. BSY. Load the EDCH with XCH load. RTS. BSY/RTS all ISG channels that were not earlier in service.
5. Repeat steps 2-4 for the DCHs that remain.
6. BSY unit of TMS that is not active. Remove MP/SP and memory packs from the unit that is not active.
7. Perform wiring modifications to backplane. Add temporary SWACT modification to backplane. Add paddle card.
8. Insert UP and EISP in shelf. Perform PEC and load and firmware load table changes to table LTCINV.
9. Load busied unit with ETM load or EUT load if global. Perform an RTS for the unit. Reload firmware if necessary.
10. SWACT (warm) the units.
11. BSY inactive unit.
12. Perform wiring modifications to backplane. Remove SWACT modification. Add paddle card.
13. Insert UP and EISP in shelf. Perform PEC changes to LTCINV.
14. Load busied unit with ETM load or EUT load. Reload firmware if necessary. RTS the unit.
15. Start with one DCH to BSY and OFFL all ISG channels and BSY the EDCH. Update load in table DCHINV.

TMS Processor Upgrade (continued)

16. Load the EDCH with EXC load. RTS. BSY/RTS all ISG channels that were not earlier in service.
17. Repeat steps 15-16 for the EDCHs that remain.

Upgrade compatibilities

The charts on the following pages identify the CM load/upgrade strategies that upgrade the TMS to ETMS from BCS36 to TOPS04.

Observe the following rules when you upgrade the TMS/ETMS. Note, x refers to the current version of the load.

1. Replace the DCH with EDCHs. Reload the DCH with the XCH03x before the upgrade.
2. Load the TMS with the TMS03x load before the upgrade.
3. The TMS is Manufactured Discontinued (MD). An upgrade to the ETMS is necessary for TOPS05.
4. You can perform upgrades before or after an ONP to a new CM load. These upgrades are based on the versions of the old and new CM loads. See the following upgrade compatibility chart.

TMS Processor Upgrade (continued)

See the Installation Method (IM) #6802 for detailed TMS/ETMS upgrade procedures.

Upgrade compatibility chart

From CM load	To CM load	Upgrade steps
BCS36	TOPS02	<p><i>Perform upgrade after ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH03x 2. Load TMS with TMS03x loads 3. Perform ONP 4. Change DCHs to EDCH. Reload with XCH03x load 5. Upgrade TMS to ETMS. Load with ETM03Ax load 6. Reload EDCHs with EXC03Ax
BCS36	TOPS03	<p><i>Perform upgrade after ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH03x 2. Load TMS with TMS03x loads 3. Perform ONP 4. Change DCHs to EDCH. Reload with XCH03x load 5. Upgrade TMS to ETMS. Load with ETM03Bx load 6. Reload EDCHs with EXC03Bx
BCS36	TOPS04	<p><i>Perform upgrade after ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH03x load 2. Load TMS with TMS03x load 3. Change DCHs to EDCH, reload with XCH03x load 4. Upgrade TMS to ETMS, load with ETM05xx load 5. Reload EDCHs with EXC05xx
<p>Note: x, xx = the current version of the load</p>		

TMS Processor Upgrade (continued)

Upgrade compatibility chart

From CM load	To CM load	Upgrade steps
TOPS02	TOPS02	<p><i>Upgrade before ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH03x load 2. Load TMS with TMS03x load 3. Change DCHs to EDCH. Reload with XCH03x 4. Upgrade TMS to ETMS. Load with ETM03Ax load 5. Reload EDCHs with EXC03Ax <p><i>Or, upgrade after ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH03x load 2. Load TMS with TMS03x load 3. Perform ONP 4. Change DCHs to EDCH. Reload with XCH03x load 5. Upgrade TMS to ETMS. Load with ETM03Ax load 6. Reload EDCHs with EXC03Ax
TOPS02	TOPS03	<p><i>Upgrade before ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH03x load 2. Load TMS with TMS03x load 3. Change DCHs to EDCH. Reload with XCH03x 4. Upgrade TMS to ETMS. Load with ETM03Bx load 5. Reload EDCHs with EXC03Bx <p><i>Or upgrade after ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH03x 2. Load TMS with TMS03x loads 3. Perform ONP 4. Change DCHs to EDCH. Reload with XCH03x load 5. Upgrade TMS to ETMS. Load with ETM03Bx load 6. Reload EDCHs with EXC03Bx
<p>Note: x, xx = the current version of the load</p>		

TMS Processor Upgrade (continued)

Upgrade compatibility chart

From CM load	To CM load	Upgrade steps
TOPS02	TOPS04	<p><i>Upgrade before ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH03x load 2. Load TMS with TMS03x load 3. Change DCHs to EDCH. Reload with XCH05x 4. Upgrade TMS to ETMS. Load with ETM05xx load 5. Reload EDCHs with EXC05xx <p><i>Or, upgrade after ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH05x 2. Load TMS with TMS05x loads 3. Perform ONP 4. Change DCHs to EDCH. Reload with XCH05x load 5. Upgrade TMS to ETMS. Load with ETM05xx load 6. Reload EDCHs with EXC05xx
TOPS03	TOPS03	<p><i>Upgrade before ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH03x load 2. Load TMS with TMS03x load 3. Change DCHs to EDCH. Reload with XCH03x 4. Upgrade TMS to ETMS. Load with ETM03Bx load 5. Reload EDCHs with EXC03Bx <p><i>Or, upgrade after ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH03x 2. Load TMS with TMS03x loads 3. Perform ONP 4. Change DCHs to EDCH. Reload with XCH03x load 5. Upgrade TMS to ETMS. Load with ETM03Bx load 6. Reload EDCHs with EXC03Bx
<p>Note: x, xx = the current version of the load</p>		

TMS Processor Upgrade (continued)

Upgrade compatibility chart

From CM load	To CM load	Upgrade steps
TOPS03	TOPS04	<p><i>Upgrade before ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH05x load 2. Load TMS with TMS05x load 3. Change DCHs to EDCH. Reload with XCH05x 4. Upgrade TMS to ETMS. Load with ETM05xx load 5. Reload EDCHs with EXC05xx <p><i>Or, upgrade after ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH05x 2. Load TMS with TMS05x loads 3. Perform ONP 4. Change DCHs to EDCH. Reload with XCH05xx load 5. Upgrade TMS to ETMS. Load with ETM05xx load 6. Reload EDCHs with EXC05xx
TOPS03	TOPS05	<p><i>Perform upgrade before ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH05x load 2. Load TMS with TMS05x load 3. Change DCHs to EDCH. Reload with XCH05x 4. Upgrade TMS to ETMS. Load with ETM05xx load 5. Reload EDCHs with EXC05xx
<p>Note: x, xx = the current version of the load</p>		

TMS Processor Upgrade (continued)

Upgrade compatibility chart

From CM load	To CM load	Upgrade steps
TOPS04	TOPS04	<p><i>Upgrade before ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH05x load 2. Load TMS with TMS05x load 3. Change DCHs to EDCH. Reload with XCH05x 4. Upgrade TMS to ETMS. Load with ETM05xx load 5. Reload EDCHs with EXC05xx <p><i>Or upgrade after ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH05x 2. Load TMS with TMS05x loads 3. Perform ONP 4. Change DCHs to EDCH. Reload with XCH05xx load 5. Upgrade TMS to ETMS. Load with ETM05xx load 6. Reload EDCHs with EXC05xx
TOPS04	TOPS05	<p><i>Perform upgrade before ONP</i></p> <ol style="list-style-type: none"> 1. Load DCHs with XCH05x load 2. Load TMS with TMS05x load 3. Change DCHs to EDCH. Reload with XCH05x 4. Upgrade TMS to ETMS. Load with ETM05xx load 5. Reload EDCHs with EXC06xx 6. Reload ETMS with ETM06xx
<p>Note: x, xx = the current version of the load</p>		

TMS Processor Upgrade (continued)

Hardware provisioning

The pack fill differences between the current TMS and the enhanced TMS appear in the following tables.

Pack fill differences for TMS supporting DS-1 interfaces

Slot	Standard TMS	Enhanced TMS
1	DCH BX02AA	EDCH BX02BA
2	DCH BX02AA	EDCH BX02BA
3	DS-1 I/F 6X50AB	DS-1 I/F 6X50AB
4	DS-1 I/F 6X50AB	DS-1 I/F 6X50AB
5	DS-1 I/F 6X50AB	DS-1 I/F 6X50AB
6	filler	filler
7	filler	filler
8	MP 6X45BA	filler
9	MP Memory 6X47AB	filler
10	MP Memory 6X47AB/AC	filler
11	SP Memory 6X46BA	filler
12	SP 6X45BA	UP MX77AA
13	filler	filler
14	Timeswitch 6X44AA	Timeswitch 6X44AA
15	filler	filler
16	ISP BX01AA	EISP BX01AB
17	filler	filler
18	MSG/TONE 6X69xx	MSG/TONE 6X69xx
19	filler	filler
20	CSM 6X42AA	CSM 6X42AA
21	Formatter 6X41AA	Formatter 6X41AA

TMS Processor Upgrade (continued)**Pack fill differences for TMS supporting DS-1 interfaces**

Slot	Standard TMS	Enhanced TMS
22	DS-30 Card 6X40xx	DS-30 Card 6X40xx
23	DS-30 Card 6X40xx	DS-30 Card 6X40xx

Pack fill differences for TMS supporting PCM-30 interfaces

Slot	Standard TMS	Enhanced TMS
1	filler	filler
2	DCH BX02AA	EDCH BX02BA
3	DCH BX02AA	EDCH BX02BA
4	PCM-30 I/F 6X27xx	PCM-30 I/F 6X27xx
5	PCM-30 I/F 6X27xx	PCM-30 I/F 6X27xx
6	filler	filler
7	filler	filler
8	MP 6X45BA	filler
9	MP Memory 6X47AB	filler
10	MP Memory 6X47AB/AC	filler
11	SP Memory 6X46BA	filler
12	SP 6X45BA	UP MX77AA
13	filler	filler
14	Timeswitch 6X44EA	Timeswitch 6X44EA
15	filler	filler
16	ISP BX01AA	EISP BX01AB
17	filler	filler
18	MSG/TONE 6X69Lx	MSG/TONE 6X69Lx
19	PCM SIG 6X28AA/B	PCM SIG 6X28AA/B
20	CSM 6X42AA	CSM 6X42AA

TMS Processor Upgrade (continued)

Pack fill differences for TMS supporting PCM-30 interfaces

Slot	Standard TMS	Enhanced TMS
21	Formatter 6X41AA	Formatter 6X41AA
22	DS-30 Card 6X40xx	DS-30 Card 6X40xx
23	DS-30 Card 6X40xx	DS-30 Card 6X40xx

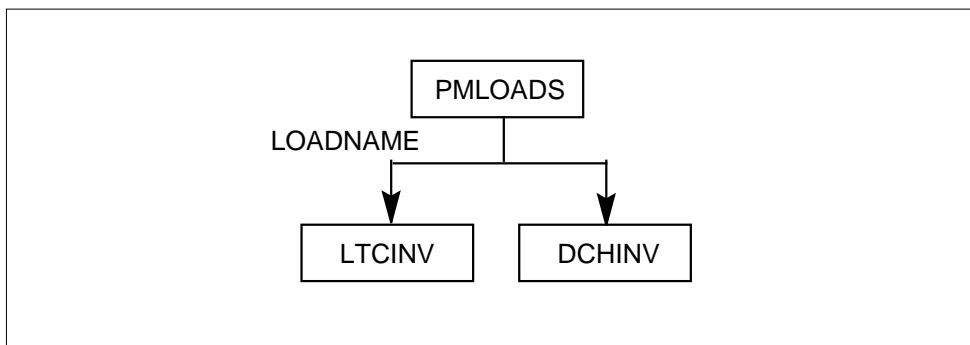
Translations table flow

The TMS Processor Upgrade translations tables are in the following list:

- Table PMLOADS - Define TMS load names
- Table LTCINV- Define line trunk controllers
- Table DCHINV - Define D-channel handlers

The TMS Processor Upgrade translation process appears in the following flowchart.

Table flow for TMS Processor Upgrade



The datafill content in the flowchart appears in the following table.

Datafill example for TMS Processor Upgrade

Datafill table	Example data
PMLOADS	ETM03AV ETM03AV S00DXPM ETM03AV S00DXPM N MX77NB05 MX77NB05 S00DXPM MX77NB05 S00DXPM N EXC03AV EXC03AV S00DXPM EXC03AV S00DXPM N
LTCINV	TMS 0 1005 LTE 0 18 0 L 2 6X02AA ETM03AV ABTRK DTCEX\$ 0 3 0 35\$ MSG6X69\$ NORTHAM MX77AA MX77AA MX77NB05\$ 6X40AA
DCHINV	0 TMS 0 BX02BA EXC03AV 17

TMS Processor Upgrade (continued)

Limits

The following limits apply to TMS Processor Upgrade:

The system does not support mixed configurations. The exceptions are the configurations required during the upgrade from the TMS to the Enhanced TMS platform. Examples of mixed configurations are MP/SP and EISP. An upgrade to the Enhanced TMS platform requires the installation of the UP and EISP at the same time. The EDCHs replace the DCH circuit packs one at a time. Supported TMS configurations appear in the following chart:

Supported TMS configurations

TMS processor	Load Req.	ISDN processor	DCH hardware	DCH load	Supported	Introduced
MP/SP	TMS/UTM	ISP	DCH	XCH	supported	BCS30
MP/SP	TMS/UTM	ISP	EDCH	XCH	supported (refer to note)	BCS36/ XPM02
UP	ETM/EUT	EISP	EDCH	EXC	supported	TOPS03/ XPM03

Note: Supported with XPM02 and later versions. Another name for XPM02 is BCS36.

The system supports an upgrade to ETMS when the CM load is at TOPS03 or later versions.

Interactions

The following paragraphs describe the interactions between TMS Processor Upgrade and other functionalities.

- the BAS Remotes Generic, BAS00012
- the BAS Generic, BAS00003
- the NIO ISDN Base, NIO00007

Activation/deactivation by the end user

The TMS Processor Upgrade does not require activation or deactivation by the end user.

Billing

The TMS Processor Upgrade does not affect billing.

TMS Processor Upgrade (continued)

Station Message Detail Recording

The TMS Processor Upgrade does not affect Station Message Detail Recording.

Datafilling office parameters

The TMS Processor Upgrade does not affect office parameters.

Datafill sequence

The tables that require datafill to implement TMS Processor Upgrade appear in the following table. The tables appear in the correct entry order.

Datafill requirements for TMS Processor Upgrade

Table	Purpose of table
PMLOADS	Peripheral module loads. Define software load names
LTCINV	Line trunk controller inventory. Define TMS hardware
DCHINV	D-Channel handler inventory. Define DCH hardware

TMS Processor Upgrade (continued)

Datafilling table PMLOADS

Datafill for TMS Processor Upgrade for table PMLOADS appear in the following table. The fields that apply to TMS Processor Upgrade appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table PMLOADS

Field	Subfield or refinement	Entry	Explanation and action
LOADNAME, ACTFILE, and BKPFIL			<p>Load name. Performed before upgrade procedure. Add:</p> <ul style="list-style-type: none"> • ETMnnxx for DS-1 or EUTnnxx for PCM-30 • MX77NByy (MX77 firmware load) • EXC03xx can be added <p>The DS-1 is in North America. The PCM-30 is for open numbering (international).</p>
ACTVOL and BKPVOL			<p>Specify device where load file is present. Where:</p> <ul style="list-style-type: none"> • nn=DRU (for example: 03) • xx=release (for example: AA) • yy=version (for example: 23)

Datafill example for table PMLOADS

Sample datafill for table PMLOADS appears in the following example.

TMS Processor Upgrade (continued)

MAP example for table PMLOADS in North America

LOADNAME	ACTFILE	ACTVOL	BKPFIL	BKPVOL	UPDACT
ETM03AV					
ETM03AV		S00DXPM			
ETM03AV		S00DXPM			N
MX77NB05					
MX77NB05		S00DXPM			
MX77NB05		S00DXPM			N
EXC03AV					
EXC03AV		S00DXPM			
EXC03AV		S00DXPM			N

MAP example for table PMLOADS in international

LOADNAME	ACTFILE	ACTVOL	BKPFIL	BKPVOL	UPDACT
EUT03AV					
EUT03AV		S00DXPM			
EUT03AV		S00DXPM			N
MX77NB05					
MX77NB05		S00DXPM			
MX77NB05		S00DXPM			N
EXC03AV					
EXC03AV		S00DXPM			
EXC03AV		S00DXPM			N

TMS Processor Upgrade (continued)

Datafilling table LTCINV

Datafill for TMS Processor Upgrade for table LTCINV appear in the following table. The fields that apply to TMS Processor Upgrade appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table LTCINV

Field	Subfield or refinement	Entry	Explanation and action
LOAD		ETMnnxx (for DS-1) or EUTnnxx (for PCM-30)	Load. Performed during upgrade procedure. Change to ETMnnxx for DS-1 or change to EUTnnxx for PCM-30. Where nn=DRU (for example: 03) and xx=release (for example: AA). The DS-1 is in North America. The PCM-30 is for open numbering (international).
PECS6X45		MX77AA MX77AA	Product engineering code. Change from 6X45BA 6X45BA to MX77AA MX77AA.
E2LOAD		MX77BNyy	Electrically erasable programmable read-only memory load name. Change to MX77BNyy. Where yy=version (e.g. 23).

Datafill example for table LTCINV

Sample datafill for table LTCINV appears in the following example.

TMS Processor Upgrade (continued)

MAP example for table LTCINV in international

```

LTCNAME
  ADNUM FRTYPE FRNO SHPOS FLOOR ROW FRPOS EQPEC  LOAD
                                EXECTAB
                                CSLNKTAB
                                OPTCARD

TONESET      PECS6X45
              E2LOAD

              OPTATTR

PEC6X40
-----
TMS 0
  1005  LTE    0    18    0    L    2    6X02AA  EUT03AV
                                (    ABTRK  DTCEX)$
              (0  3)(0 35)(1  3)(1 35)(2  3)(2 35)(1 30)(1 62)$
                                (    MSG6X69 )$

NORTHAM      MX77AA MX77AA
              MX77NB05

              $

6X40AA

```

MAP example for table LTCINV in North America

```

LTCNAME
  ADNUM FRTYPE FRNO SHPOS FLOOR ROW FRPOS EQPEC  LOAD
                                EXECTAB
                                CSLNKTAB
                                OPTCARD

TONESET      PECS6X45
              E2LOAD

              OPTATTR

PEC6X40
-----
TMS 0
  1005  LTE    0    18    0    L    2    6X02AA  ETM03AV
                                (    ABTRK  DTCEX)$
              (0  3)(0 35)(1  3)(1 35)(2  3)(2 35)(1 30)(1 62)$
                                (    MSG6X69 )$

NORTHAM      MX77AA MX77AA
              MX77NB05

              $

6X40AA

```

TMS Processor Upgrade (end)

Datafilling table DCHINV

Datafill for TMS Processor Upgrade for table DCHINV appear in the following table. The fields that apply to TMS Processor Upgrade appear in this table. See the data schema section of this manual for a description of the other fields.

Datafilling table DCHINV

Field	Subfield or refinement	Entry	Explanation and action
DCHPEC		BX02BA	D-channel handler product engineering code. Performed during upgrade procedure. Change to BX02BA.
LOAD		EXCnnxx	Load. Change to EXCnnxx. Where nn=DRU (for example: 03) and xx=release (for example: AA).

Datafill example for table DCHINV

Sample datafill for table DCHIN appears in the following example.

MAP example for table DCHINV

DCHNO	PMTYPE	PMNO	DCHPEC	LOAD	PORT
0	TMS	0	BX02BA	EXC03AV	17

Tools for verifying translations

The TMS Processor Upgrade does not use translation verification tools.

SERVORD

The TMS Processor Upgrade does not use SERVORD.

TOPS06 Robustness

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

NA006 and up

TOPS06 Robustness was introduced in NA006.

Prerequisites

To operate, TOPS06 Robustness requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

TOPS06 Robustness is provided by the following feature(s):

Features in functionality

Feature number	Feature name
AN1800	TOPS Evolution Decoupling (CCM DRU)
AN1807	TOPS Evolution Decoupling (TOPS DRU)

This functionality changes the TOPS software architecture to allow delivery of TOPS software with all DMS products. No new functionality is provided.

The following obsolete software is removed:

- CCIS6 INWATS database queries - This functionality is obsolete because CCIS6 databases no longer exist in the network. This functionality is replaced by E800. E800 uses CCIS7 LIDB databases to query for 800 numbers.
- signalling types A250, MOPS, UK250, and UK250X - Since TOPS no longer delivers with DMS250, the software for these signalling types is not included in the TOPS load.

Operation

Not applicable.

TOPS06 Robustness (continued)

Translations table flow

Not applicable.

Limitations and restrictions

TOPS06 Robustness has no limitations or restrictions.

Interactions

TOPS06 Robustness has no functionality interactions.

Activation/deactivation by the end user

TOPS06 Robustness requires no activation or deactivation by the end user.

Billing

TOPS06 Robustness does not affect billing.

Station Message Detail Recording

TOPS06 Robustness does not affect Station Message Detail Recording.

Datafilling office parameters

TOPS06 Robustness does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement TOPS06 Robustness. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for TOPS06 Robustness

Table	Purpose of table
TRKGRP	Trunk group. Unused signalling types are removed and a field is renamed for TOPS trunks.

Datafilling table TRKGRP

The following table shows the datafill specific to TOPS06 Robustness for table TRKGRP. Only those fields that apply directly to TOPS06 Robustness are

TOPS06 Robustness (end)

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

Datafilling table TRKGRP

Field	Subfield or refinement	Entry	Explanation and action
	GRPTYP	TOPS	Trunk group type. These changes only apply to TOPS trunk groups.
	SIGTYPE	AIS, AMR5, BELL, COMFGD, DANI, EAFGD, EAOSS, EAOSSIC, MODBELL, ONI, OPENNUM, OSS, R2	Signalling type. This field is renamed from CLGID to SIGTYPE. Also, signalling types A250, MOPS, UK250, and UK250X are no longer valid.

For dump and restore, all fields for TOPS trunks are copied from the old release to the new release, except for tuples with the CLGID field datafilled as A250, MOPS, UK250, or UK250X. Those tuples are not restored, and an error message is displayed.

Datafill example for table TRKGRP

The following example shows sample datafill for table TRKGRP.

MAP display example for table TRKGRP

```

GRPKEY
GRPINFO
-----
TBELLIC1
TOPS 0 TLD NCRT IC MIDL 629 PTOP NLCA NSCR Y SP COMBINED
N Y 0000 NONE BELL 16 10 10 Y N Y N N N

```

Translation verification tools

TOPS06 Robustness does not use translation verification tools.

SERVORD

TOPS06 Robustness does not use SERVORD.

TOPS ACD Features

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable TOPS ACD Features

Release applicability

TOPS03 and up

Prerequisites

To operate, TOPS ACD Features requires the following:

- Functionality BAS Generic, BAS00003
- Table TOPSFTR paramter TOPS_ON_OFF_SWITCH = Y

Description

This functionality is provided by the following features:

Feature number	Feature name
BV0382	Basic Operator Feedback
BV0185	Extended Operator Feedback (Breakdown by Call Type)
BV0322	Request Hotlist
BV0186	Broadcast (single traffic office operation)
BV0378	Data Summary 24 Hrs (single traffic office operation)
BV0376	Traffic PRT 15/30 Min (single traffic office operation)
BV0405	Manual Selection of Threshold (single traffic office operation)
BV0194	Monitor Position (single traffic office operation)
BV0386	Paging an Operator (single traffic office operation)
BV0242	Multittraffic Office Operation
BR0328	Position Occupancy Measurement
BR0286	Assignable Grade of Service
BR0333	Mechanized Force Administration Data System (MFADS)
BR0812	15-Minute Reports for MFADS

TOPS ACD Features (continued)

Feature number	Feature name
BV0290	Traffic Sampling
BV0190	Remote TOPS Maintenance
AJ0388	TOPS Administration 1200 Baud Printers
UN100159	SA/IC Queuing Enhancements
BR43535	TOPS_CALLS_WAITING_Q_SIZE formula is revised (TOPS03)
BR45555	Datafill affects use of XA and XD commands
59006865	MD Code Removal and ReEngineering (TOPS12)

This functionality features provide Force Management (FM) on all calls processed by the Traffic Operator Position System (TOPS).

FM statistics, FM and Traffic Office (TO) periodic reports and Automatic Message Accounting (AMA) records are generated for calls distributed by TOPS. This information is used by the Force Supervisor and/or the In-Charge Manager to administer the operator force.

The Single-Traffic Office operation features (BV0186, BV0378, BV0376, BV0382, BV0194, BV0386) are discussed under a single heading: "Single-Traffic Office Operation."

Release TOPS12 manufacturer discontinues the capabilities as follows:

- Automatic call distribution (ACD)
- SADS, FADS, TADS, MFADS, SPDEV, SADSHADS, and FADSHADS devices

Therefore, references to these capabilities in this functionality are removed. These capabilities are replaced by QMS Host/Remote Queueing, ADVQ0009. QMS force management provides parallel interfaces for the FADS, MFADS, TADS, and SADS TOPS FM devices. QMS uses QFADS, QMFADS, or QTADS to provide similar functionality for monitoring the performance of the QMS. No single system equivalent exists for SADS in QMS. A combination system of QFADS and QTADS provides similar functionality to ACD for a single traffic office QMS environment.

Operation

The following paragraphs describe the operation of TOPS ACD Features.

TOPS ACD Features (continued)

Force Management Overview

Force Management (FM) determines the right number of operators to handle calls requiring operator assistance so calls do not wait too long before being answered by an operator. To make this process easier and more accurate, the DMS provides complete FM statistics every half hour. The DMS can also provide statistics every 15 minutes on demand. The statistics determine the number of operators needed to promptly answer subscribers that require operator assistance.

The following Force Management terms are used throughout this document:

- A Work Force comprises all TOPS operators subtended by one DMS TOPS system. The work force can include from 1 to 30 traffic offices and up to 600 operators.
- A Traffic Office is an administrative grouping of operators for statistical and managerial purposes.
 - A Single-Traffic Office (STO) is a TOPS office in which the work force is in one administrative group (traffic office). Force Management statistics are gathered for the work force as a whole.
 - A Multitraffic Office (MTO) is a TOPS office in which the work force is divided into a maximum of 30 smaller administrative groups (traffic offices). Force management statistics are gathered for each traffic office (TO) as well as for the work force as a whole.
- Queue Management System (QMS) Force Administration Data System (QFADS) is a device that prints switch wide statistics. The QFADS report pegs data against the following criterion: traffic office, queue, service and call class. The data output by the QFADS report (except for traffic office data) is summed over all traffic offices.
- QMS Mechanized Force Administration Data System (QMFADS) is a device that outputs the mechanized QMS FM reports. Only one QMFADS device can be datafilled in table TOPSDEV. Each report contains report and system general information, as well as information on QMS services and QMS teams.
- QMS Traffic Office Administration Data System (QTADS) is an input/output TTY used in all traffic offices served by QMS. Each operator team has a QTADS, that is used to monitor operator statistics and operator status and to assign operator characteristics. Study registers and controlled traffic modes are examples of operator characteristics assignable at the QTADS. Broadcast messages can also be sent from the QTADS. A QTADS device can be datafilled against each TOPS traffic office for up to 30 QTADS devices.

TOPS ACD Features (continued)

- Combined Service Profile refers to the services that a specific operator can provide while logged in to a specific position. The service profile is based on the services that the position can provide (datafilled in table TOPSPOS). The services are Toll Assistance (TASERV), Directory Assistance (DASERV), Intercept (INTCSERV), or all of these services.
- In-Charge Position - A specially configured TOPS position in every Traffic Office, usually near the QTADS TTY.
- FM Position CRT - A specially configured TOPS position in the FMC, usually near the QFADS TTY.

TOPS Single-Traffic and Multitrafic Office Configurations

A Single-Traffic Office consists of one Traffic Office. A Multitrafic Office consists of up to 30 Traffic Offices and a Force Management Center (FMC). The following table lists the equipment used in each configuration.

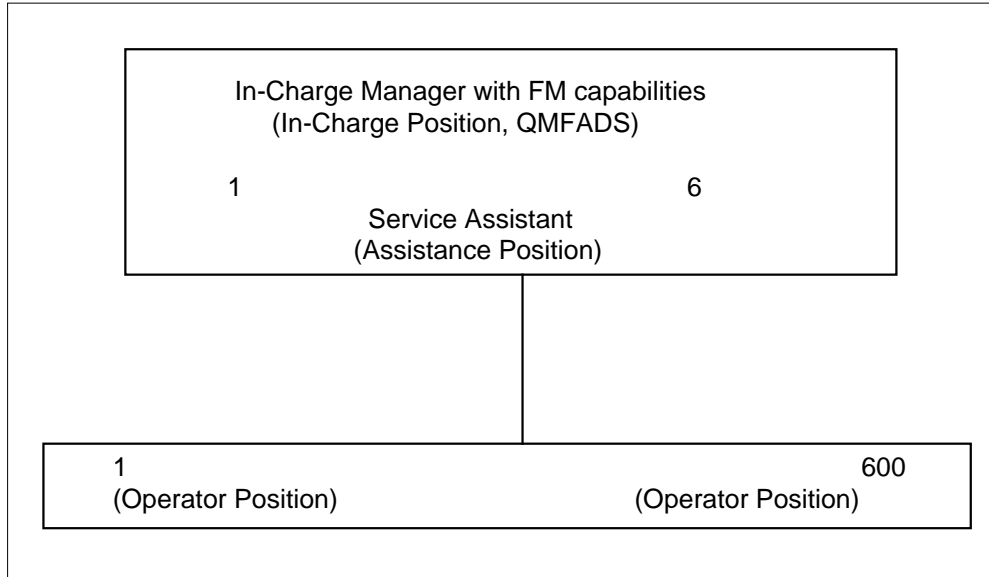
Field sizes for MFADS tuple entry

Single-Traffic	Multitrafic
QMFADS TTY	QMFADS TTY
	QFADS TTY
	FM CRT
	QTADS TTY
In-Charge Position	In-Charge Position
Assistance Position(s)	Assistance Position(s)
Operator Positions	Operator Positions

The following figure shows the administrative structures in a Single-Traffic Office.

TOPS ACD Features (continued)

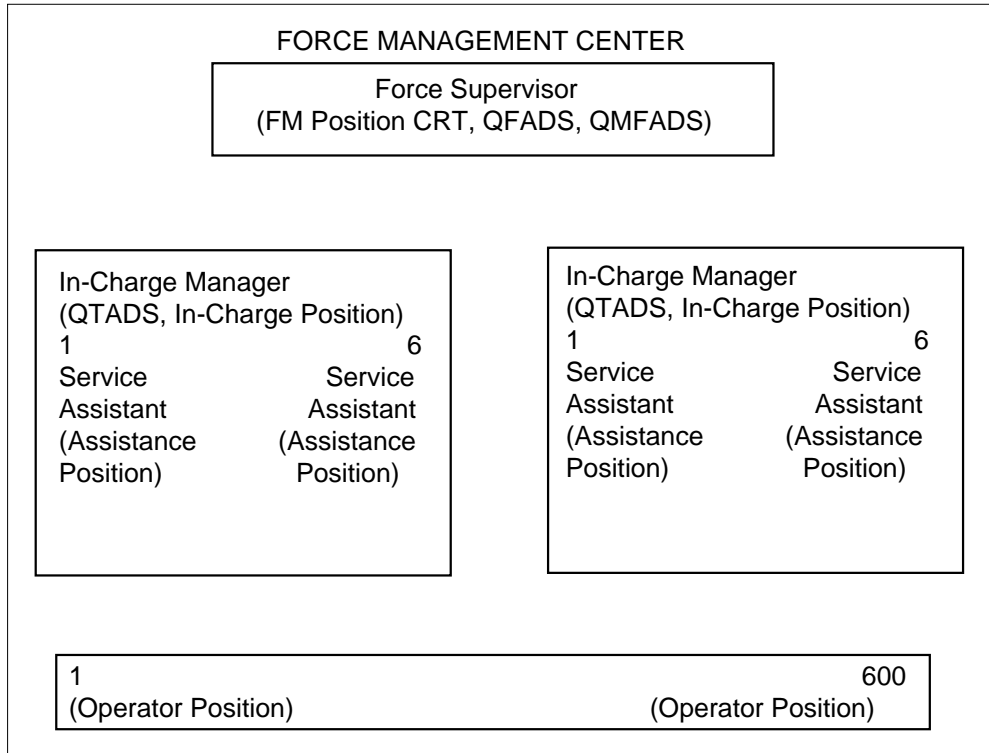
Sample Single-Traffic Office Configuration



The following figure shows the administrative structures in a Multitrafic Office.

TOPS ACD Features (continued)

Sample Multitraffic Office Configuration



Each box symbolizes a managerial entity, such as a Force Management Center. Within each box are the titles of those who work in that entity. Any equipment that may be used is placed in parentheses below the relevant title.

BV0382 - Basic Operator Feedback

BV0382 provides the operator and In-Charge Manager with information about individual operator efficiency and productivity. On demand, TOPS provides the following feedback data:

- the total number of calls handled (Initial Position Seizures)
- AWT for each operator
- the overall system (SYS) AWT accumulated from the start of the day

Data is automatically accumulated for all operators, but is only output when the operator or In-Charge Manager requests the feedback data. The feedback data can be output to the Operator Position CRT or to the Traffic Office Teletypewriter (QTADS TTY).

TOPS ACD Features (continued)

Operation

A pair of software registers is provided in DMS memory for each operator assigned. These registers are assigned for the maximum number of operators in the force. Each operator is identified to the DMS by an operator login number. To be valid, this number must be in table OPRDAT datafill and be within the range of the number specified in table OFCENG, parameter TOPS_MAX_OPERATOR_NUM.

Operator Request

Operators can request a printed copy of their own feedback data (to be output at the QTADS TTY) or can have the feedback data displayed at the Operator Position CRT. This request resets the operator's feedback registers to zero if the In-Charge Manager has not entered the FIxxx input command at the QFADS TTY.

The DMS automatically zeros feedback registers at the start of each day (datafilled in table OFCVAR parameter TOPS_START_OF_DAY).

BV0185 - Extended Operator Feedback Data (by call type)

BV0185 is an enhancement to BV0382 - Basic Operator Feedback. BV0185 provides operators and managers with detailed information about individual operator efficiency and productivity, broken down by call type, for operators assigned to study data registers. Operator feedback registers accumulate and provide a report of the number of calls (IPS) handled and the AWT for all calls. BV0185 also provides summaries of system IPS and AWT automatically every 6 and 24 hours. These summaries are in the TO and FM periodic reports.

Operation

The DMS accumulates data by associating the operator number (obtained when an operator logs in) with the registers assigned to an operator. The DMS categorizes each IPS into call type groups by noting the trunk group and/or the subscriber dialing pattern (0+, 0-, 1+). A peg count is incremented and work volume measurements are accumulated in the appropriate call type group. These counts are added to the total. The DMS automatically initializes all study data registers at the start of each day.

User Perspective

The In-Charge Manager can extract a printed copy of a specific operator's feedback data by typing commands at the QTADS TTY.

The following figure shows the contents of the study data when printed.

TOPS ACD Features (continued)

Study Data by Call Type

To Study OPR 219 87/03/02 23:02			
Call Type	IPS	AWT	SYS
Total	543	34	27
Delay	0	0	0
Recalls	14	29	35
CAMA-1PLUS	55	9	6
Overseas	3	43	45
NCN-0MINUS	188	43	33
CN-0MINUS	30	48	29
NCN-0PLUS	193	31	28
NCN-0-1PLUS	38	48	31
Hotel	23	24	24
Combined	2	3	41

The DMS automatically zeros all study data registers at the start of the day. The DMS does not, however, initialize operator assignments to study registers. Traffic Offices should release study registers when they are not needed.

Operator Perspective

Operators can only request operator feedback information from the Operator Position at which they are logged in.

Hardware

The following hardware is needed to provision a Single-Traffic Office with FM capabilities:

- QMFADS TTY - The QMFADS TTY is used by the In-Charge Manager in a Single-Traffic Office TOPS and is located in or immediately adjacent to the Traffic Office
- In-Charge Position - A CRT and keyboard in the Traffic Office, usually near the QFADS TTY.

A Keyboard-Send-Receive (KSR) TTY is equipped with a standard QWERTY keyboard. It enters commands or queries into the DMS, which then uses the TTY to confirm these inputs or to provide the requested information. The DMS also outputs measurement statistics to the TTY.

Each KSR TTY has an impact printer that sends and receives messages at a speed of 300 Baud.

TOPS ACD Features (continued)

The following table provides the provisioning requirements for the equipment in a TOPS Single-Traffic Office operation.

TOPS equipment provisioning - Single-Traffic Office

Equipment	Requirements
Operator Positions	Maximum of 350-400 per TOPS host (limited by real time)
Assistance Positions	Maximum of 6
In-Charge Position	1
SADS TTY	1

BV0322 - Request Hotlist

An operator-handled call can be billed to a third number, a special billing number, or to a credit card number. To assist the TOPS operator in verifying the validity of the bill to the number specified by the subscriber, table HOTLIST is datafilled with invalid numbers. This data table is searched when the operator enters a credit card number, a special billing number, or a third party billing number.

Operation

The Hotlist check involves comparing each domestic credit card number, special billing number, or bill-to-third party number given by the subscriber with the numbers classified as invalid or known to be fraudulent. These numbers are datafilled in table HOTLIST. When a match between the bill to number entered and a number datafilled in table HOTLIST is found, HOT is displayed in the flashing mode on the Operator Position CRT to alert the operator.

Single-Traffic Office Operation

A Single-Traffic Office TOPS consists of one traffic office. There is one In-Charge position that includes a CRT and keyboard, and one QMFADS TTY that provides the data.

The following paragraphs provide definitions of the measurements that are accumulated in the software registers and are affected by translations.

- **Initial Position Seizures (IPS)**

A peg count of all subscriber- or outside operator-originated calls successfully reaching an Operator Position. Position reseizures (recalls, such as notify, coin overtime) and operator-originated calls (delay calls, such as subsequent attempts) are not included in the IPS count. The values

TOPS ACD Features (continued)

for system-generated recall and operator-generated delay call IPS are incremented and shown in the call type and study register summaries. However, these recall and delay call IPS values are not included in any system totals.

- **Work Volume:**

A usage measurement of all occupied Operator Positions that are handling a call or are otherwise unavailable to handle a new call.

- **Call-Busy Work Volume (CBWV):**

CBWV is the total amount of time an operator spends actively handling a call.

- **Non-call Work Volume (NCWV):**

NCWV is the total amount of time an operator is not actively handling a call but is unavailable to accept a new call (e.g., is in the made-busy mode).

Note: Work Volume for delay calls and recalls is pegged against CBWV. Delay call and recall WV is generated and calculates AWT in the call type and study register summaries.

BV0242 - Multitrafic Office Operation

A Multitrafic Office TOPS consists of two or more traffic offices and a Force Management Center (FMC). One Force Management (FM) CRT and one QFADS TTY provide data for the work force. One In-Charge Position and one QTADS TTY in each Traffic Office (TO) provide data for that TO.

QFADS refers to the software and hardware configurations that collect, store, manipulate and display force data. The FM Position CRT displays status data for the total force and for each TO. The system provides traffic data every one-half, 6, and 24 hours automatically and every 15 minutes on request, and prints the data at the QTADS and QFADS TTY.

Hardware

The following table provides information on TOPS equipment provisioning requirements for a Multitrafic Office.

TOPS equipment provisioning requirements - Multitrafic Office

Equipment	Requirements
Operator Positions	350-400 per TOPS (limited by real time requirements)
Assistance Positions	Maximum of 6 per Traffic Office (maximum of 30 offices)

TOPS ACD Features (continued)**TOPS equipment provisioning requirements - Multitrafic Office**

Equipment	Requirements
In-Charge Position	1 per Traffic Office (maximum of 30 offices)
QTADS TTY	1 per Traffic Office (maximum of 30 offices)
QFADS TTY	1 per TOPS
FM CRT	1 per TOPS

BR0328 - Position Occupancy Measurement

BR0328 provides the position occupancy measurement as a percentage. The position occupancy measures the actual operator work time in proportion to the total time logged in to the position. This statistic appears in the FM periodic reports after the AOP or BDH data.

BR0328 is an enhancement to the original Single-Traffic Office and Multitrafic Office features.

BV0290 - Traffic Sampling

The Traffic Sampling feature provides information on the flow of calls through TOPS. One of N billable calls is flagged and recorded on Automatic Message Accounting (AMA) tape. The calls flagged on the tape provide downstream statistics for analyzing and providing:

- Operator services work volume measurement plans
- Division of revenue procedures
- Subscriber dialing acceptance
- Engineering studies

Operating Company Traffic Staff selects the N factor used for sampling.

The following are not included as sampled calls:

- Calls that do not reach an Operator Position
- Position reseizures
- Operator-originated calls.

Three registers provide a 1 of N fraction for weekdays, Saturday and Sunday. Every 1 of N calls is flagged on AMA tape.

TOPS ACD Features (continued)

Operation

In table TRAFSAMP, a 1 of N fraction is datafilled for weekdays, Saturday or Sunday, where 1 of N calls are flagged and recorded on AMA tape. These records contain indicators that the call has been studied. In an office using Bellcore Format (BCFMT) AMA recording, the Service Analyzed/Traffic Sampled field in the AMA record is set to 2 or 3. For offices using Northern Telecom Format (NTFMT) AMA recording, the INFO DIGS field in the AMA record generated is set to 4, 5, 6 or 7 indicating a traffic sampled call.

BV0190 - Remote TOPS Maintenance

BV0190 provides the capability to perform maintenance and position diagnostic tests on one or more remote TOPS locations. The Remote Test (RTEST) System only supports a single user, but allows up to four test processes to run simultaneously.

AJ0388 - TOPS Administration 1200 Baud Printers

AJ0388 allows the DMS to send data to TOPS administration devices at 1200 baud (bits/second). However, the receive rate is still 300 baud.

Operation Device transmit and receive rates are determined in table TOPSDEV, field PROTOCOL, as follows:

Protocol Transmit/Receive Rates

Protocol	Transmit Rate (baud)	Receive Rate (baud)
BELL108	300	300
BELL202	300	1200
BELL212L	1200	300
BELL212H	1200	1200

Prior to this feature, the only allowable value was BELL108. Now, BELL202 can be datafilled for all devices except FMCRT. This is because FMCRT is a TOPS position, not a TTY. Therefore, device FMCRT can only have the following protocol values:

- BELL108 - TOPS IV position
- BELL202 - TOPS MP position

Table HOBICDEV lists information concerning DUAQs available to the DMS. And, field BAUD indicates the receive rate. However, this field is not changed by this feature.

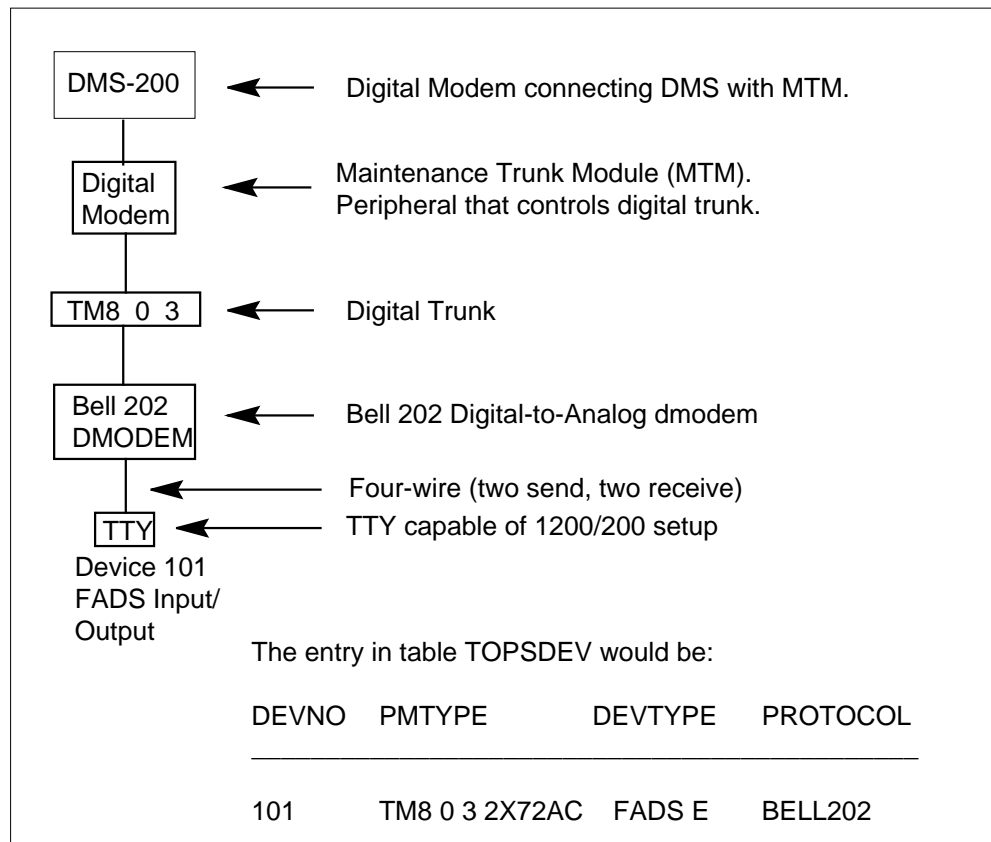
TOPS ACD Features (continued)

If the Operating Company has TTYs that can be set at 1200/300, then the setup shown in the following figure should be used. If the Operating Company does not have TTYs that can be set at 1200/300, it is possible to simulate such a TTY, using two TTYs, as shown in the following figure.

Setup for a Single 1200/300 TTY

Using the setup procedure for the TTY's baud rate, the Operating Company should set the TTY at 1200 baud receive and 300 baud transmit. The TTY should be attached to a Bell 202 dmodem, and the protocol field for the device in table TOPSDEV should be set BELL202. Suggested uses include the FADS device and the STATSPAC device (new in BCS29). The following figure demonstrates the single TTY setup.

Setup for a Single 1200/300 TTY



Setup for a Simulated 1200/300 TTY

If 1200/300 TTYs are not readily available to the Operating Company, it is possible to simulate a 1200/300 TTY using two standard TTY's and a 4-wire Bell 202 dmodem. Hook the two send wires to one TTY, and the two receive wires to the other. Next, use the setup procedures for each TTY to set the send

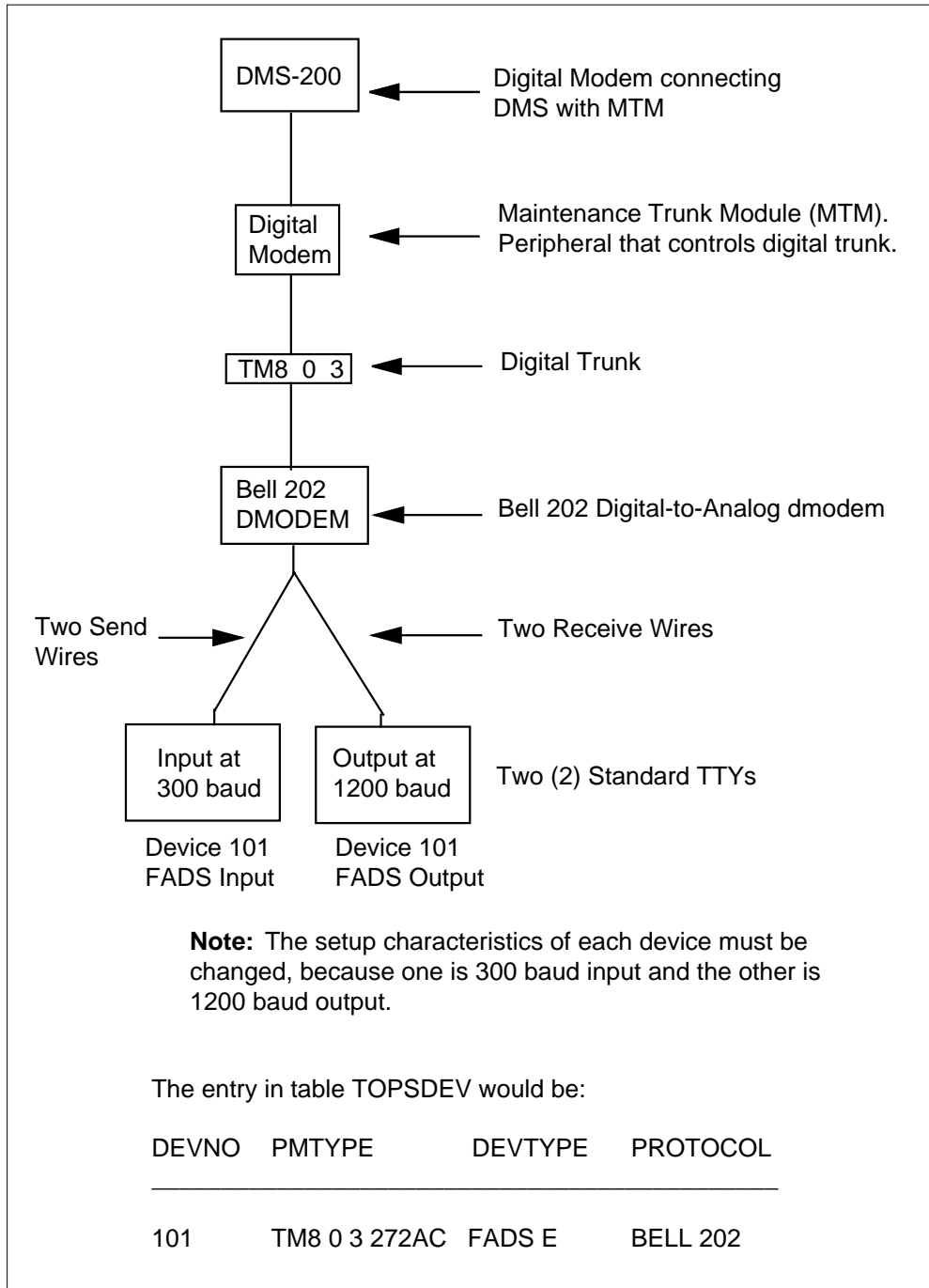
TOPS ACD Features (continued)

TTY at 300 baud transmit, and the receive TTY at 1200 baud receive. The two TTYs are known as a single device in table TOPSDEV, and they share the same peripheral information. Also in table TOPSDEV, the protocol field for the 1200/300 device being simulated should be set to BELL202.

The two TTYs can now act together as a single 1200/300 device. Use the send TTY to input keystrokes and the receive TTY to output data. Suggested uses include the FADS device and the STATSPAC device (new in BCS 29), but this setup can speed up the output rate of any input/output device. This double TTY setup is shown in the following figure.

TOPS ACD Features (continued)

Setup for a simulated 1200/300 TTY



TOPS ACD Features (continued)

BK00323 - Display Calling Number on Trunk Basis

This PRSDOC adds field DISPCLG to table TOPSTOPT to display the calling number at the Operator Position. This is done on a trunk group basis for TOPS or TOPS supported trunk to TOPS calls.

If the trunk that a call comes into TOPS on is datafilled in table TOPSTOPT and the calling number has been received, the calling number will be displayed at the Operator Position upon call arrival. Note, this does not apply to line to TOPS calls or to intercept calls.

This PRSDOC only adds the optionality of having the calling number displayed. It does not prevent the calling number from being displayed if it is turned off (field DISPCLG set to N). In other words, if the calling number was displayed before, no matter what the DISPCLG option is set to, it will still be displayed.

BK00911 - TOPS Force Management Guide's FMCRT Note Incorrect

If the TOPS_NUM_TRAFFIC_OFFICES parameter is set to 16 or greater, data for teams 1, 2, etc., is overwritten on a TOPS 04 FMCRT. As of BCS29, this limitation is removed. Data for up to 15 teams (teams 1 to 15) are displayed on a TOPS 04 FMCRT. If the parameter is set to 16 or higher, data for teams 16 and up are not displayed. This limitation does not apply to TOPS MP FMCRTs. They can display data for up to the system maximum of 30 operator teams.

BR45555 - Datafill affects use of XA and XD commands

A transfer queue cannot be deactivated with the XD command if a reference exists to that queue in table TOPS or VSNOPT.

Activation and verification

Activation of BV0382 is immediate. The following procedure can verify that BV0382 functions properly.

BV0382 - Basic Operator Feedback

Verify functionality of BV0382:

- 1 Make several 0+ and 0- calls.
- 2 Complete the calls at the Operator Position.
- 3 Press the MAKE BUSY key at the Operator Position keyboard. The operator must be in the MAKE BUSY mode with no calls attached to receive feedback information.
- 4 Press FB + 1 + START on the Operator Position keyboard and verify the information.
- 5 Press FB + START on the Operator Position keyboard to erase the CRT.

TOPS ACD Features (continued)

- 6 Press FB + 2 + START to send a printout of operator feedback data to the SADS/TADS TTY.
- 7 At the SADS/TADS TTY, type FD<operator number>(CR) to receive a printout of a specific operator's feedback data.

Activation of F0454 is immediate. The following procedure can verify that F0454 is functioning properly.

F0454 - Extended Operator Feedback Data (by call type)
Verify functionality of F0454:

- 1 Ensure that table OFCENG parameter TOPS_NUM_STUDY_REG has been set to an appropriate number of study registers.
- 2 Assign study registers to an operator by typing the following at the QTADS TTY: RA<operator number>(CR).
- 3 From the Operator Position, log in with the operator number assigned in Step 4 and process calls.
- 4 Verify that ST is displayed on the Operator Position.
- 5 Press the MAKE BUSY key at the Operator Position keyboard. The operator must be in the MAKE BUSY mode with no calls attached to receive feedback information.
- 6 Press FB + 1 + START on the Operator Position keyboard and ensure the extended feedback information appears.
- 7 Press FB + START on the Operator Position keyboard to erase the CRT.
- 8 Press FB + 2 START to send a printout of operator feedback data to the QTADS TTY.
- 9 Type the following from the QTADS TTY to receive a printout of feedback information and to release study registers assigned to an operator: RR<operator number>(CR).
- 10 Verify that the printout has the operator's IPS and AWT broken down by call type.
- 11 Ensure that all commands described in "User Perspective" work as described.

Activation of BV0322 is immediate. The following procedure can verify that BV0322 is functioning properly.

BV0322 - Request Hotlist
Verify functionality of BV0322:

- 1 Datafill table HOTLIST with an invalid number (e.g., 9197821234).
- 2 Make a call to an Operator Position.
- 3 At the Operator Position keyboard, enter the 10-digit number (bill to number) by keying the following at the Operator Position Keyboard: KP SPL CLD <invalid number> START.
- 4 Verify that HOT displays on the Operator Position CRT.

TOPS ACD Features (continued)

Single-Traffic and Multitrafic (BV0242) Office operations are activated after the data tables (excluding table TRAFSAMP) and office parameters are properly datafilled. Use the following procedure to verify that the Single-Traffic and Multitrafic Office operations function properly.

Single-Traffic and Multitrafic Office Operations

Verify functionality of Single-Traffic and Multitrafic Office operations:

- 1 For Single-Traffic Office operation, refer to "Administering the Traffic Office" and use the commands explained in that section to perform the following procedures. For Multitrafic Office operation, refer to "Administering the Operator Force."
- 2 Generate FM periodic reports.
- 3 Place operators in controlled traffic and remove operators from controlled traffic.
- 4 Monitor operators from the In-Charge and Assistance Positions.
- 5 Enter query commands at the QTADS and QFADS TTYs.
- 6 Generate SONALERTS and use the STOP BELL keys and commands to stop the bell.
- 7 Assign operators to study registers and generate calls to determine whether the statistics generated are accurate.
- 8 Broadcast messages from the QTADS and QFADS TTYs.
- 9 Manually select the queue threshold tables for various transfer queues then return them to dynamic selection.
- 10 Check the In-Charge and Assistance CRTs to ensure the proper messages are displayed when performing the functions in Steps 1 through 9.

Activation of BV0290 - Traffic Sampling is immediate when table TRAFSAMP is properly datafilled. Use the following procedure to verify that BV0290 is functioning properly.

BV0290 - Traffic Sampling

Verify functionality of BV0290:

- 1 Load a tape for AMA recording.
- 2 Datafill table TRAFSAMP with field TRAFDAY set to WEEK and field FRACTION set to 1.
- 3 If using NT format AMA recording, ensure that the TOLLENTC table has an entry for CAMA calls.
- 4 Place the following types of calls from a combined trunk group:
 - **0- ANI call:**
complete and release it (sampled)
 - **CAMA call:**
complete and release it (sampled)

TOPS ACD Features (continued)

- **0+ ANI call:**
complete and release it (sampled)

- **Delay call:**
complete and release it (sampled)

- 5 Perform an AMADUMP and ensure all calls made generated an AMA record marked traffic sampled.

BV0190 - Remote TOPS Maintenance

Refer to 297-2271-516 for testing and verification procedures to implement BV0190.

AJ0388 - TOPS Administration 1200 Baud Printers

This feature is implemented upon datafill of table TOPSDEV with a protocol value of BELL202.

BK00323 - Display Calling Number on Trunk Basis

This PRSDOC adds field DISPCLG to table TOPSTOPT. Field DISPCLG allows display of the calling number at the Operator Position upon call arrival. This is done on a trunk group basis.

The following is an example of table TOPSTOPT with the DISPCLG field turned on (set to Y):

Example of table TOPSTOPT with the DISPCLG field set to Y

GRPKEY	ACDDATA	DISPCLG
TBELLIC1	TOPSACD	Y

Translations table flow

The TOPS ACD Features does not affect translations table flow.

Limitations and restrictions

The following limitations and restrictions apply to TOPS ACD Features:

AJ0388 - TOPS Administration 1200 Baud Printers

In order to dump the most data at one time, the dump should occur one minute before the 24-hour report is printed at the FADS device. At the same time, a 30-minute report and a 6-hour report are printed.

TOPS ACD Features (continued)

If the Operating Company does not have a TTY that operates at 1200 baud receive and 300 baud transmit, it will be necessary to use a setup similar to the double-TTY configuration.

In table TOPSDEV, an attempt to change the protocol of a TOPS IV FMCRT to something other than BELL108 produces the error message PROTOCOL TYPE INCOMPATIBLE FOR FMCRT. This datafill restriction existed prior to this feature and is not changed.

BK00323 - Display Calling Number on Trunk Basis

This enhancement does not apply to line to TOPS calls, or to intercept call.

Interactions

The following paragraphs describe the interactions between TOPS ACD Features and other functionalities.

BK00323 - Display Calling Number on Trunk Basis

This PRSDOC only adds the optionality of having the calling number displayed. It does not prevent the calling number from being displayed if it is turned off (field DISPCLG set to N). In other words, if the calling number was displayed before, no matter what the DISPCLG option is set to, it will still be displayed.

Activation/deactivation by the end user

TOPS ACD Features requires no activation or deactivation by the end user.

Billing

TOPS ACD Features affects Billing in the following way.

BV0290 - Traffic Sampling

The AMA records generated when BV0290 - Traffic Sampling is active indicate traffic sampled.

Station Message Detail Recording

TOPS ACD Features does not affect Station Message Detail Recording.

TOPS ACD Features (continued)

Datafilling office parameters

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

Office parameters used by TOPS ACD Features

Table name	Parameter name	Explanation and action
OFCVAR	TOPS_DISPLAY_MON	<p>The TOPS_DISPLAY_MON parameter value specifies whether MON should be displayed on the Operator Position CRT when that position is monitored.</p> <p>If the parameter is set to Y, MON is displayed on the Operator Position CRT.</p> <p>Sample Datafill</p> <pre>TABLE: OFCVAR PARMNAME PARMVAL ----- TOPS_DISPLAY_MON Y</pre>
OFCVAR	TOPS_START_OF_DAY	<p>The DMS uses the TOPS_START_OF_DAY parameter value to determine when FM Periodic Reports should be printed at the SADS, FADS, and TADS TTYs.</p> <p>This parameter also determines when study registers and other FM measurements are zeroed.</p> <p>Any value from 0 (midnight) to 2359 (11:59 p.m.) can be entered. Values 0 and 600 (6:00 a.m.) are most commonly used.</p> <p>Note: Activation of this office parameter requires a warm restart. However, to avoid inconsistent data output when changing the parameter value, perform a cold restart to zero FM registers. FM data is lost when a cold restart is performed.</p> <p>Sample Datafill</p> <pre>TABLE: OFCVAR PARMNAME PARMVAL ----- TOPS_START_OF_DAY 600</pre>

TOPS ACD Features (continued)

Office parameters used by TOPS ACD Features

Table name	Parameter name	Explanation and action
OFCENG	TOPS_ASST_POS	<p>The TOPS_ASST_POS parameter value is equal to the number of TOPS Assistance and In-Charge Positions.</p> <p>To change this value, first delete assignments in table TOPSPOS and change the parameter, then refill table TOPSPOS.</p> <p>The maximum number of Assistance positions is 6 per Traffic Office, and the maximum number of In-Charge positions is 1 per Traffic Office.</p> <p>Sample Datafill</p> <pre>TABLE: OFCENG PARMNAME PARMVAL ----- TOPS_ASST_POS 5</pre>
OFCENG	TOPS_MAX_OPERATOR_NUM	<p>The TOPS_MAX_OPERATOR_NUM parameter should be equal to the highest operator number assigned in table OPRDAT.</p> <p>If no operator numbers are available, an operator cannot log in to a position.</p> <p>The maximum number can range from 0001 to 3099.</p> <p>Note: To change the value of this office parameter, all data in table OPRDAT must be deleted, the parameter value must be changed, then the data must be re-added to table OPRDAT.</p> <p>Sample Datafill</p> <pre>TABLE: OFCENG PARMNAME PARMVAL ----- TOPS_MAX_OPERATOR_NUM 899</pre>
OFCENG	TOPS_MFADS_PERIOD	This parameter is no longer operational.

TOPS ACD Features (continued)

Office parameters used by TOPS ACD Features

Table name	Parameter name	Explanation and action
OFCENG	TOPS_NUM_STUDY_REG	<p>The TOPS_NUM_STUDY_REG parameter must be datafilled to activate BV0185 - Extended Operator Feedback (Breakdown by Call Type).</p> <p>When there are no study registers available, the In-Charge Manager cannot assign study registers.</p> <p>A maximum of 900 study registers can be assigned.</p> <p>Note: A cold restart is necessary to change the value of this parameter.</p> <p>Sample Datafill</p> <pre>TABLE: OFCENG PARMNAME PARMVAL ----- TOPS_NUM_STUDY_REG 600</pre>
OFCENG (cont'd)	TOPS_NUM_TRAFFIC_OFFICES	<p>All operators on duty constitute one work force for call distribution. TOPS aids the management of a large work force by grouping the operators into smaller administrative Traffic Offices.</p> <p>This parameter specifies the number of Traffic Offices required.</p> <p>Each TADS TTY is assigned a team number (field TRAF OFC in table TOPSDEV) that must be less than or equal to the value of TOPS_NUM_TRAFFIC_OFFICES.</p> <p>The minimum number of Traffic Offices is 1, the maximum is 30, and the default is 0.</p> <p>If TOPS_NUM_TRAFFIC_OFFICES is set to 0, table TOPSPOS cannot be datafilled.</p> <p>TOPS_NUM_TRAFFIC_OFFICES must first be set to a number between 1 and 30. Then a cold restart must be performed before table TOPSPOS can be datafilled to activate TOPS positions.</p> <p>The value of this parameter increases if the number of Traffic Offices increases.</p> <p>Note: The FM Position CRT only displays 15 Traffic Offices, regardless of the number of Traffic Offices assigned.</p>

TOPS ACD Features (continued)

Office parameters used by TOPS ACD Features

Table name	Parameter name	Explanation and action
OFCENG (cont'd)	TOPS_NUM_TRAFFIC _OFFICES (cont'd)	<p><i>BK00911 - TOPS Force Management Guides FMCRT note incorrect</i></p> <p>If the TOPS_NUM_TRAFFIC_OFFICES parameter is set to 16 or greater, data for teams 1, 2, etc., is overwritten on a TOPS 04 FMCRT. As of BCS29, this limitation is removed. Data for up to 15 teams (teams 1 to 15) are displayed on a TOPS 04 FMCRT.</p> <p>If the parameter is set to 16 or higher, data for teams 16 and up are not displayed. This limitation does not apply to TOPS MP FMCRTs. They can display data for up to the system maximum of 30 operator teams.</p> <p>To change the value of TOPS_NUM_TRAFFIC_OFFICES at the TTY level of the MAP:</p> <ul style="list-style-type: none"> • Remove all positions and devices from service (BSY; BSY INB). • Delete all entries from tables TOPSDEV and/or TOPSPOS. • Perform a cold restart. • Add the entries to tables TOPSDEV and/or TOPSPOS. • Perform a second cold restart. • Return all positions and/or devices to service (BSY; RTS).

TOPS ACD Features (continued)

Office parameters used by TOPS ACD Features

Table name	Parameter name	Explanation and action
OFCENG (cont'd)	TOPS_NUM_TRAFFIC _OFFICES (cont'd)	<p>If 15-minute reports have been requested in a Multittraffic Office TOPS, four FADS reports print at the FADS TTY at the system start of day. These are the 15- and 30-minute reports and 6- and 24-hour summaries. Under the following conditions, the four FADS reports take more than 15 minutes to print:</p> <ul style="list-style-type: none"> • all transfer types (XFR1 and XFR2) are active • more than ten Traffic Offices are datafilled • printer speed is 300 baud. <p>If these operating conditions exist, it is recommended that the optional 15-minute reports not be requested at TOPS start of day.</p> <p>Table SAQSIZE must be datafilled after this parameter. This table associates a maximum queue depth with each team in an office. This table only allows valid team numbers to be datafilled.</p> <p>Sample Datafill</p> <pre>TABLE: OFCENG PARMNAME PARMVAL ----- TOPS_NUM_TRAFFIC_OFFICES 15</pre>

Datafill sequence

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

Datafill tables required for TOPS ACD Features

Table	Purpose of table
TOPSPOS	TOPS Position. This table defines TOPS positions to the switch. This table specifies the services that a position can provide.
TOPSDEV	TOPS Device. This table lists the devices that require one trunk circuit (for data) and identifies the trunk circuit locations.
TOPS	Traffic Operator Position System. This table is used during translations to determine the type of service required by a call based on the call origination type.

TOPS ACD Features (continued)

Datafill tables required for TOPS ACD Features

Table	Purpose of table
OPRDAT	TOPS Operator Data. This table lists all the operator numbers that have been assigned. Only operators with a number listed in this table are allowed to log in to a TOPS position.
TRAFSAMP	TOPS Traffic Sampling. This table must be datafilled to activate BV0290 - Traffic Sampling.
TOLLENTC	Entry Code. This table is datafilled only if Northern Telecom AMA Format (NTFMT) is used.
HOTLIST	Hot List. This table verifies credit card numbers, calls charged to a third number, and special billing numbers.
SAQSIZE	Service Assistant/In-Charge Queuing Size. This table associates a maximum queue depth with each team in an office.

Datafilling table TOPSPOS

Table TOPS Position (TOPSPOS) lists the positions that require two trunk circuits (one voice, one data), and identifies the trunk circuit locations. The In-Charge, Assistant, and Operator Positions are assigned in this table. When assigning the Operator Positions, specify the types of calls the position can handle (general, transfer one or transfer two), and the type of service the position can handle (TASERV). This table also lists the Traffic Office number to which the position belongs.

Datafill example for table TOPSPOS

The following example shows sample datafill for table TOPSPOS.

MAP example for table TOPSPOS

POSNO	VCCKT	VCPDGRP	CARDCODE	DATA PATH	POSAREA
170	TM8 0 24	NPDGRP	2X72AA		
	DMODEM SP ASCII	TM8 8 19	NPDGRP	BELL108	OPR 6 80
505	TMS 0 3 5	NPDGRP	DS1SIG		
		TMS MP	OPP 116 2		OPR 6 50
540	TMS 0 0 3	NPDGRP	DS1SIG		
		TMS MP	ASCII 0 0		OPR 6 80

TOPS ACD Features (continued)

Changing values in table TOPSPOS

To change values in table TOPSPOS, perform the following steps:

- 1 From the Trunk Test Position (TTP) level of the Maintenance and Administration Position (MAP) Command Interpreter (CI), place the positions to be changed in the installation busy (INB) mode.
- 2 Edit table TOPSPOS.
- 3 Delete the tuples to be changed in table TOPSPOS.
- 4 Re-add changed tuples to table TOPSPOS and QUIT from the Table Editor.
- 5 From the TTP level of the MAP CI, Busy (BSY) and return to service (RTS) each position added in table TOPSPOS.

The following figure shows the commands used at the MAP to change existing values in table TOPSPOS.

Sample procedure to change values in table TOPSPOS

```

CI
MAPCI;MTC;TRKS;TTP
POST G TOPSPOS 100
BSY;BSY INB;HOLD
POST G TOPSPOS 101
BSY;BSY INB;HOLD
TABLE TOPSPOS
POS 100;DEL
POS 101;DEL
ADD 100 TM8 0 24 NPDGP TM8 0 25 NPDGP 2X72AA OPR 1 TASERV $ +
GEN $ NT4X71 BELL108
ADD 101 TM8 0 26 NPDGP TM8 0 27 NPDGP 2X72AA OPR 1 TASERV $ +
GEN $ NT4X71 BELL108
QUIT
POST G TOPSPOS 100;BSY;RTS
HOLD
POST G TOPSPOS 101;BSY;RTS
HOLD
QUIT ALL

```

Note 1: DA (directory assistance) appears in the range of values for field POSAREA (subfield XFRSET). However, DA is reserved for future use.

Note 2: DASERV (directory assistance service) appears in the range of values for field SVCSET. However, DASERV is reserved for future use.

TOPS ACD Features (continued)

Datafilling table TOPSDEV

Table TOPS Device (TOPSDEV) lists the devices that require one trunk circuit (data), and identifies trunk circuit locations. The devices include the TTY (QFADS, HADS, QMFADS) and the FM CRT.

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

Datafilling table TOPSDEV

Field	Subfield or refinement	Entry	Explanation and action
PROTOCOL		BELL202	Starting with BCS29, value BELL202 can be datafilled in field PROTOCOL for all devices except FMCRT. The FMCRT for a TOPS IV position is still restricted to BELL108. And, FMCRT for a TOPS MP position is only allowed BELL202.

Datafill example for table TOPSDEV

The following example shows sample datafill for table TOPSDEV.

MAP display example for table TOPSDEV

POSNO	MEMVAR	CARDCODE	DEVTYPE	PROTOCOL
1	TM8 0 0	2X72AA FMCRT	TPC	BELL202
2	TM8 0 1	2X72AA QFADS	E	BELL108
2	TM8 2 0	2X72AA QTADS	E 1	BELL108
2	TM8 2 1	2X72AA QTADS	E 2	BELL108
3	TM8 0 2	2X72AA RECORD	E LF17	BELL108
5	TM8 0 4	2X72AA VQ	E LF17	BELL108
6	DCM 2 1 1	DS1SIG AQ	E LF17 ROY	BELL108
7	DTC 4 3 1	DS1SIG NOTIS		BELL108
8	DCM 2 1 3	DS1SIG RECORD	E LF17	BELL202
9	DCM 2 2 12	DS1SIG QFADS E		BELL202

Changing values in table TOPSDEV

To change values in this table, perform the following steps:

- 1 From the TTP level of the MAP CI, place the devices to be changed in the installation busy mode (INB).
- 2 Edit table TOPSDEV.
- 3 Delete the tuples to be changed in table TOPSDEV.

TOPS ACD Features (continued)

- 4 Re-add changed tuples to table TOPSDEV and QUIT from the Table Editor.
- 5 From the TTP level of MAP CI, busy (BSY) and return to service (RTS) each device added in table TOPSDEV.

The following figure shows the commands used at the MAP to change existing values in table TOPSDEV.

Sample procedure to change values in table TOPSDEV

```

CI :
MAPCI ; MTC ; TRKS ; TTP
POST G TOPSDEV 4
BSY ; BSY INB ; HOLD
POST G TOPSDEV 5
BSY ; BSY INB ; HOLD
POST G TOPSDEV 21
BSY ; BSY INB ; HOLD
POST G TOPSDEV 22
BSY ; BSY INB ; HOLD
TABLE TOPSDEV
POS 4 ; DEL
POS 5 ; DEL
POS 21 ; DEL
POS 22 ; DEL
ADD 4 TM8 0 1 2X72AC QMFADS BELL108 (see note)
ADD 5 TM8 2 0 2X72AC QFADS E BELL108
ADD 22 TM8 8 4 2X72AC QTADS E 1 BELL108
QUIT
POST G TOPSDEV 4 ; BSY ; RTS
HOLDPOST G TOPSDEV 5 ; BSY ; RTS
HOLD
POST G TOPSDEV 22 ; BSY ; RTS
HOLD
QUIT ALL

```

Note: MFADS is a pollable port.

Datafilling table TOPS

Table Digit Translation Routing to TOPS (TOPS) determines the screen displays for each call type and determines to which position each type of call routes. All TOPS calls are routed to Operator Positions using the TOPS table. The originating type of call indexes into the TOPS table. Most calls route to the general positions. To index the TOPS table, the trunk group over which the

TOPS ACD Features (continued)

call is routed must specify a pretranslator name to index the STDPRTCT tables.

Datafill example for table TOPS

The following example shows sample datafill for table TOPS.

TOPS ACD Features (continued)**MAP display example for table TOPS**

CO	DISPLAY	HOLDREQ
UNSPEC	S	N
OH	S	N
OA	S	N
DD	S	N
CAMA	S	N
RCAMA	S	N
DELAY	S	N
121	S	N
131	S	N
141	S	N
151	S	N
161	S	N
171	S	N
181	S	N
191	S	N
555	C DA	Y
1150	S	N
1151	S	N
1152	S	N
1153	S	N
1154	S	N
1155	S	N
1156	S	N
1157	S	N
1158	S	N
TS	S	N
TSUB	S	N
APS	S	N
ALM	S	N
INTC	S	N
211	S	N
311	S	N
411	C DA	N
511	S	N
611	S	N
711	S	N
811	S	N
911	S	N
MOBILE	S	N
999	S	N
SPARE1	S	N
2345	S	N
HOM555	S	N
FOR555	S	N

TOPS ACD Features (continued)

Note: CAMA calls cannot be datafilled for transfer 1 or transfer 2.

Datafilling table OPRDAT

Table TOPS Operator Data (OPRDAT) lists all the operator numbers that have been assigned. Only operators with a number listed in this table are allowed to log in to a TOPS position. The maximum value for operator numbers depends on the value of table OFCENG parameter TOPS_MAX_OPERATOR_NUM. The information in table OPRDAT performs the following tasks:

- associate the software registers used to accumulate feedback information with a specific operator

Datafill example for table OPRDAT

The following example shows sample datafill for table OPRDAT.

MAP display example for table OPRDAT

OPRNUM	OPRVAR
100	OPR

Datafilling table TRAFSAMP

Table TOPS Traffic Sampling (TRAFSAMP) must be datafilled to activate BV0290 - Traffic Sampling. BV0290 allows an Operating Company to sample traffic that reaches an operator position. Every 1 of N calls are sampled and recorded on AMA tape. All sampled calls indicate traffic sampled in the AMA record generated.

The following table shows the datafill specific to TOPS ACD Features for table TRAFSAMP. Only those fields that apply directly to TOPS ACD Features are

TOPS ACD Features (continued)

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

Datafilling table TRAFSAMP

Field	Subfield or refinement	Entry	Explanation and action
TRAFDAY		SAT, SUN or WEEK	When datafilling the TRAFSAMP table, specify whether the sampling is to take place for the week, Saturday or Sunday.
FRACTION		0-32767	Number N of 'one of N' fraction. Enter the number N to indicate that every Nth TOPS call (see Functional description of table TRAFSAMP) is to be entered on the AMA tape with the traffic sample flag.

Datafill example for table TRAFSAMP

The following example shows sample datafill for table TRAFSAMP. This sample specifies that every call (1 of 1) should be sampled.

MAP display example for table TRAFSAMP

TRAFDAY	FRACTION

WEEK	1

Datafilling table TOLLENTC

The Entry Code (TOLLENTC) table is datafilled only if Northern Telecom AMA Format (NTFMT) is used. The TOLLENTC table lists the charge class and the entry code associated with the charge class assigned by the Operating Company, and indicates whether the charge applies for each of the charge classes.

Datafill example for table TOLLENTC

The following example shows sample datafill for table TOLLENTC.

TOPS ACD Features (continued)

MAP display example for table TOLLENTC

CHGCLASS	ECANDCHG
CAMO	00 N
TWX0	0 Y
WAT0	80 Y
DAT0	09 Y
LCDR	16 Y
SPCL	96 0

Datafilling table HOTLIST

Table HOTLIST verifies credit card numbers, calls charged to a third number, and special billing numbers. The invalid numbers are entered in table HOTLIST. When a special number is entered by an operator, table HOTLIST is searched. If the number entered by the operator matches an entry in table HOTLIST, HOT is displayed on the Operator Position CRT to warn the operator of the invalid or fraudulent number.

Datafill example for table HOTLIST

The following example shows sample datafill for table HOTLIST.

MAP display example for table HOTLIST

HOTNUM
12345678901234
9197821234

Datafilling table SAQSIZE

The Service Assistant/In-Charge Queuing Size table associates a maximum queue depth with each team in an office. This table is datafilled after office parameter TOPS_NUM_TRAFFIC_OFFICES (table OFCENG).

Datafill example for table SAQSIZE

The following example shows sample datafill for table SAQSIZE.

TOPS ACD Features (end)

MAP display example for table SAQSIZE

TEAMNO	SAQSIZE	SONALERT
1	8	ASSTCW
2	4	ASSTCD
3	16	NONE
4	1	ASSTCW
5	0	NONE

Translation verification tools

TOPS ACD Features does not use translation verification tools.

SERVORD

TOPS ACD Features does not use SERVORD.

TOPS Alternate Announcement

Ordering codes

Functional group ordering code: OSB00101

Functionality ordering code: not applicable

Release applicability

BCS29 and later versions

Requirements

The TOPS Alternate Announcement has the following requirements:

- the BAS Generic, BAS00003
- Table TOPSFTR parameter TOPS_ON_OFF_SWITCH = Y
- Equal Access for ACT, EQA00002
- the TOPS Bellcore AMA, OSB00101
- the MCCS Call Processing, absorbed
- Automatic Coin Toll Service (ACTS), ENSV0102

The operating company can provide InterLATA service for an Interexchange Carrier (IC). If this service is available, the TOPS Alternate Announcement requires the following feature packages:

- Base TOPS Equal Access, OSEA0101
- TOPS InterLATA Carrier, OSEA0101

Description

The following features provide this functionality:

Feature number	Feature name
the AL0417	the TOPS Alternate MCCS Announcement

The TOPS Alternate Announcement allows you to record different customized versions of a call state announcement. This process does not affect other call states. This package contains the TOPS Alternate Announcement feature (AL0417). This feature is for calls that use the Mechanized Calling Card Service (MCCS) and/or the Automated Coin Toll Service (ACTS).

The feature package provides a specified identifier for each DRAM announcement. This identifier allows the Operating Company to change each announcement. The change of one announcement does not affect another

TOPS Alternate Announcement (continued)

announcement. For example, the Operating Company can include the Operating Company name in a "Thank you" announcement. This announcement does not affect "Thank you" announcements that follow.

TOPS Alternate Announcement can be used to customize announcements for different states of a call. You can use a customized "Thank you" announcement that includes the name of the Operating Company the first time the announcement plays. You can use a "Thank you" announcement that is not customized for later announcements.

The Operating Company can customize a MCCS or ACTS announcement. You can customize announcements each InterLATA Carrier (IC). You can customize announcements for each IC in the offices that use feature package TOPS InterLATA Carrier Service (TICS), OSEA0101.

In BCS29, the feature allows Operating Companies that do not provide operator services or interLATA carriers to customize announcements. These other companies are Non-Bell Exchange Carriers (NBECs).

Operation

User Perspective

This feature package allows the Operating Company to customize announcements for different stages of a call. Before this feature, customization did not occur. The Operating Company used the same announcement at different stages of a call. A change in the announcement for one stage caused a change in the announcement for all other stages.

On an MCCS call, the "Thank You" announcement plays when a caller enters a correct calling card number. When the caller enters a correct called number on a sequence call, the "Thank You" announcement plays again. The Operating Company can customize the "Thank You" announcement to say "Thank you for choosing X Company" at the first stage of the call. The announcement says "Thank you" at the second stage of the call because the name of the Operating Company is not necessary at this stage.

This feature does not change the actions that the caller must perform.

This feature package is used with the Mechanized Calling-Card Service (MCCS) in feature package EABS (MCCS), ABS00101, and/or the Automatic Coin Toll Service (ACTS), ENSV0102.

Digital Recorded Announcement Machines

Digital Recorded Announcement Machines (DRAM) record and play announcements. The NTI normally prepares and loads the DRAMs. The NTI

TOPS Alternate Announcement (continued)

does not prepare and load customized announcements. Install a minimum of two DRAMs with each switch.

The number of installed NT1X79AA EEPROM cards determines the number of customized announcements. Each card can record 31.74 s. You must run diagnostics on each card before use.

Recording Announcements

To record announcements, perform the following steps at the MAP.

1. Install the NT1X79AA card and run diagnostics.
2. To record announcement phrases, determine the text of the announcement. Divide the text in phrases. Attempt to use phrases previously recorded in the system. Use the same voice. One phrase can be a maximum of 18 s in length. The total announcement of phrase combinations can be a maximum of 31.74 s in length.
3. Name each phrase for identification in table DRMUSERS. Each name must be different because all DRAMs in an office have access to the name. Use correct table control commands to check for phrase-name conflicts.
4. Determine the DRAM on which to locate the announcement. Determine the length of the announcement.
5. Make sure table CLLI contains the CLLI for the announcement trunk.

Example:

```
>MCCSTOPS<<#> <Tab>'For MCCS'
```

```
>ACTSTOPS<<#><Tab><Tab>'For ACTS'
```

6. Make sure table ANNS contains the announcement trunk.

Example:

```
>MCCSTOPS MCCS <trafsno> 1 0
```

and/or

```
>ACTSTOPSACTS<trafsno> 1 0 1
```

7. Add the announcement index to table ANNMEMS.

TOPS Alternate Announcement (continued)

Example:

```
>ACTSTOPS 28 DRAM DRA 0 MTM 7 7 $
```

8. Use the DRAM recording facility to make the phrase data available.
 - a. Connect the headset to the communications module and to the HSET trunk.
 - b. At the MAP, enter the DRAM command:

```
> DRAMREC
```

- c. In DRAMREC, enter the CONNECT command:

```
> CONNECT <DRAM #> <trunkCLLI> <member>.
```

- d. In DRAMREC, proceed to record the announcement:

```
> RECORD <phrase name> <length> PAD/NOPAD
```

Example:

```
> RECORD MCCSENG28 10 NOPAD
```

- e. Three prompt tones sound. Speak clearly in the mouthpiece to make the announcement. Three additional prompt tones indicate the assigned time limit.
 - f. To replay the announcement through the headset, enter the following command:

```
> PLAYBACK <DRAM #> <phrase name>
```

Example:

```
> PLAYBACK 0 MCCSENG28
```

- g. Use the DISPLAY command to print a display of the announcements. Exit DRAMREC:

```
>DISPLAY <DRAM #> <card>
```

Example:

```
>DISPLAY 0 2
```

This command displays the speech memory contents of a specified card (2) of a specified DRAM (0).

- h. File printouts for future use after dump and restore.

TOPS Alternate Announcement (continued)

Dump and Restore Procedures

Perform the dump and restore procedures on the Maintenance and Administration Position (MAP) in the following four steps:

1. Make sure table DRAMS contains data for the 1X79AA DRAM card.
2. Enter the DRAMREC command. Display the DRAM card. This card contains the customized announcements.
3. Use the PLAYBACK command to check customized announcements.
4. If announcements do not appear, perform the following actions:
 - a. Use the data saved from the display list to enter the ASSIGN command. This display list is the first record of the announcement.
 - b. Connect a HSET. Use the PLAYBACK command to play back the announcement.
 - c. If the announcements are not present, record the announcements again.

Software Operation

Three tables provide for MCCS and ACTS customized alternate announcements. These tables are DRMUSERS, EAMMCSAN, and EAACTSAN. Tables EAMCCSAN and EAACTSAN only apply to InterLATA Carriers (ICs) that have TOPS InterLATA Carrier Service (TICS). The operating company provides this service to the ICs.

The TICS software allows operating companies to provide InterLATA call handling services for each contract. In offices that have TICS, operating company personnel enter tables EAMCCSAN and EAACTSAN to provide customized Thank you announcements to ICs.

This feature package expands table DRMUSERS to provide a different index for each announcement in an MCCS or ACTS office.

Mechanized Calling Card Service

The Mechanized Calling Card Service (MCCS) processes long-distance calls billed to correct calling-card numbers.

Table DRMUSERS provides a different index for each state of an MCCS call where the operating company can play an announcement. This provision makes sure the customization of an announcement for one state of the call does not affect the announcement for another call state.

TOPS Alternate Announcement (continued)

This feature package does not change the default datafill for each index in table DRMUSERS. See the following table for additional information.

MCCS Call State with Related DRMUSERS Indexes

State	DRMUSERS Index	Phrase Name
Prompt to enter a calling card. Enter the calling card where you enter Operating Station Treatment (OST) as TONE in Table MCCSOST.	MCCSTOPS 17	MCCSENG17
Prompt to enter a calling card. Enter calling card where you enter OST as TONEANN in Table MCCSOST.	MCCSTOPS 18	MCCSENG17
Prompt to enter a calling card is timed out. This prompt follows.	MCCSTOPS 1	MCCSENG1
Prompt after user enters an error when user enters a card number.	MCCSTOPS 2	MCCSENG2
Tone after a prompt causes a timeout to occur.	MCCSTOPS 19	MCCSENG17
Prompt if a timeout of the preceding prompt occurs.	MCCSTOPS 3	MCCSENG3
Timeout after preceding prompt occurs.	the MCCSTOPS 9	the MCCSENG9
You entered a second card number that is not correct.	the MCCSTOPS 4	the MCCSENG4
This state is a thank you for the first call.	the MCCSTOPS 16	theMCCSENG16
Prompt appears when you enter #.	the MCCSTOPS 5	the MCCSENG5
Prompt if timeout occurs when you enter #.	the MCCSTOPS 23	the MCCSENG5
Second timeout on a sequence call. Another called number is not entered.	the MCCSTOPS 20	the MCCSENG9

TOPS Alternate Announcement (continued)

MCCS Call State with Related DRMUSERS Indexes

State	DRMUSERS Index	Phrase Name
A called number is not correct on a sequence call.	the MCCSTOPS 6	the MCCSENG6
The preceding prompt occurs on a sequence call. This timeout follows.	the MCCSTOPS 7	the MCCSENG7
You enter a wrong number on a sequence call. A second timeout follows.	the MCCSTOPS 21	the MCCSENG9
A second called wrong number occurs on a sequence call.	the MCCSTOPS 8	the MCCSENG8
The forward number is limited on a sequence call.	the MCCSTOPS 15	the MCCSENG15
This state is a thank you announcement for a sequence call.	the MCCSTOPS 22	the MCCSENG16
Future development	the MCCSTOPS 10	the MCCSENG10
Future development	the MCCSTOPS 11	the MCCSENG11
Future development	the MCCSTOPS 12	the MCCSENG12
Future development	the MCCSTOPS 13	the MCCSENG13
Future development	the MCCSTOPS 14	the MCCSENG14
Future development	the MCCSTOPS 24	the MCCSENG17
Future development	the MCCSTOPS 25	the MCCSENG17

Customizing MCCS Announcements

An example of the use of different indexes for an announcement follows. The subscriber enters the calling card number correctly for the first call. The subscriber enters a correct called number for a sequence call. The "Thank You" announcement plays. For the first call, the Operating Company can personalize the response. For example, "Thank you for choosing Sunshine Telephone Company." For sequence calls a simple "Thank you" can be more appropriate. A sequence call refers to the second or subsequent calls from a single entry of a calling card number.

TOPS Alternate Announcement (continued)

The MCCSTOPS 16 index in table DRMUSERS matches the first "Thank you." The MCCSTOPS 22 index matches a sequence call "Thank you." The default external phrase name for both MCCSTOPS 16 and MCCSTOPS 22 is MCCSENG16. The MCCSENG16 is "Thank you." To customize both "Thank you" announcements, perform the following steps.

- Create an external phrase name.
- Record a customized "Thank you" announcement against the external phrase name.
- Change the phrase name MCCSENG16 entered against the desired index in Table DRMUSERS to the newly created phrase name.

In offices that provide operator services for ICs, only "Thank you" announcements for the first call can be customized by carrier. Table EAMCCSAN determines which index in Table DRMUSERS matches an IC for an MCCS "Thank you" announcement. Table EAMCCSAN contains the carrier number. Table EAMCCSAN contains the index in table DRMUSERS that matches the "Thank you" announcement of the carrier. The index only applies to "Thank you" announcements for the first call.

The sequence "Thank you" entered in table DRMUSERS for the Operating Company is MCCSTOPS 22. The system uses this "Thank you" if the entry of the carrier is not in table EAMCCSAN.

To customize other announcements, create an external phrase name. Enter the external phrase name in table DRMUSERS against the index that matches the desired call state.

For example, create an external phrase name to customize the announcement that matches the MCCS state. The MCCS state is "Prompt if timeout after #." An example of an external phrase name is MCCSENG19. Change the datafill against index MCCSTOPS 23 in table DRMUSERS to MCCSENG19. Proceed to record the announcement.

In another example, you need to change table DRMUSERS and table EAMCCSAN to customize Operating Company announcements. These announcements include the "Thank you" for the first call attempt, a carrier "Thank you" and a "Prompt if timeout after #" announcement. Examples in table RMUSERS and table EAMCCSAN describe these changes.

Customizing the MCCS "Thank You" Announcement for ICs

To customize a "Thank you" announcement for an IC, create an external phrase name. Enter the external phrase name against a new index in table DRMUSERS.

TOPS Alternate Announcement (continued)

To enter the carrier number and the index from table DRMUSERS in table EAMCCSAN, the following conditions must apply:

- Table ANNS must contain the CLLI.
- Entry of the index must occur in table DRMUSERS to enter table EAMCCSAN. Deletion of an index in table DRMUSERS cannot occur if entered in table EAMSSCAN.

Customizing MCCS Announcements in Table DRMUSERS

USERANN	PHSLIST
Before customizing	
the MCCSTOPS 16	the MCCSENG16
the MCCSTOPS 23	the MCCSENG5
After customizing	
the MCCSTOPS 16	the MCCSENG18
the MCCSTOPS 23	the MCCSENG19
the MCCSTOPS 26	the MCCSENG20

Customizing MCCS Announcements in Table EAMCCSAN

EACARNUM	INITINDX
Before customizing	
empty	empty
After customizing	
222	the MCCSTOPS 26

Customizing the MCCS "Thank You" Announcement for NBECs

In BCS29, two new tables, MCCSNBEC and ACTSNBEC, are introduced to provide for branding "Thank you" announcements for NBECs. You can enter these tables to provide announcement indexes for NBECs.

To customize the "Thank you" announcement for NBECs, create a new external phrase name. Enter the external phrase name against a new index in table DRMUSERS. Enter the NBEC code and the new index in table MCCSNBEC. Enter the calling number and the NBEC code in table NBECODE. Entry of the announcement CLLI must first occur in table

TOPS Alternate Announcement (continued)

ANNS and the index in table DRMUSERS. This allows you to enter table MCCSNBEC. Deletion of an index in table DRMUSERS cannot occur if the index is in table MCCSNBEC.

If table NBECODE does not contain the calling number, the system removes the NBEC code from table TRKGRP for TOPS trunks. If table MCCSNBEC does not contain the NBEC code, the system uses the "Thank you" announcement for the first call. This announcement is MCCSTOPS 16.

Customizing MCCS Announcements in Table MCCSNBEC

NBECODE	DRMINDX
Before customizing	
empty	empty
After customizing	
1386	the MCCSTOPS 27

Customizing MCCS Announcements in Table NBECODE

CLGDIGS	NBEC
214776	1386

Automated Coin Toll Service

Table DRMUSERS provides a different index for each state of an ACTS call where an announcement can play. This provision allows the customization of announcements for one state of the call without an affect on announcements for another call state.

The default datafill for each index in Table DRMUSERS is the phrase list for that condition. This phrase list precedes BCS25. This phrase list develops from specified call states in ACTS and the indexes that match in Table DRMUSERS.

ACTS Call States and Their DRMUSERS Indexes

Call State	DRMUSERS Index	Phrase List
Initial deposit request	the ACTSTOPS 1	(ACTS_VAR_CHARGE) (ACTS_PLEASE) (ACTS_PAUSE)

TOPS Alternate Announcement (continued)**ACTS Call States and Their DRMUSERS Indexes**

Call State	DRMUSERS Index	Phrase List
		(ACTS_PLS_DEPOSIT)
		(ACTS_VAR_CHARGE)
		(ACTS_FOR_FIRST)
		(ACTS_VAR_PERIOD)
Initial coin prompt	the ACTSTOPS 2	(ACTS_PLS_DEPOSIT)
		(ACTS_VAR_CHARGE)
Intercoin prompt	the ACTSTOPS 3	(ACTS_PLS_DEPOSIT)
		(ACTS_VAR_CHARGE)
		(ACTS_MORE)
Acknowledgment of a correct deposit	the ACTSTOPS 4	(ACTS_THANK_YOU)
Acknowledgment of an overdeposit	the ACTSTOPS 5	(ACTS_THANK_HAVE)
		(ACTS_VAR_CREDIT)
		(ACTS_CR_OVERTIME)
Coin notification	the ACTSTOPS 6	(ACTS_ALERT)
		(ACTS_VAR_PERIOD)
		(ACTS_END_SIGNAL)
Charge due deposit request	the ACTSTOPS 7	(ACTS_ALERT)
		(ACTS_VAR_CHARGE)
		(ACTS_PLEASE)
		(ACTS_PAUSE)
		(ACTS_PLS_DEPOSIT)
		(ACTS_VAR_CHARGE)
		(ACTS_FOR_PAST)

TOPS Alternate Announcement (continued)**ACTS Call States and Their DRMUSERS Indexes**

Call State	DRMUSERS Index	Phrase List
Charge due deposit request with previous overdeposit	the ACTSTOPS 8	(ACTS_VAR_PERIOD)
		(ACTS_ALERT)
		(ACTS_VAR_CHARGE)
		(ACTS_PLEASE)
		(ACTS_PAUSE)
		(ACTS_YOU_HAVE)
		(ACTS_VAR_CREDIT)
		(ACTS_CREDIT)
		(ACTS_PLS_DEPOSIT)
		(ACTS_VAR_CHARGE)
		(ACTS_MORE)
		(ACTS_FOR_PAST)
		(ACTS_VAR_PERIOD)
Time and charge quotations	the ACTSTOPS 9	(ACTS_ALERT)
		(ACTS_CHARGES_ARE)
		(ACTS_VAR_CHARGE)
		(ACTS_PLUS_TAX)
		(ACTS_VAR_PERIOD)
Non-coin notification	the ACTSTOPS 10	(ACTS_ALERT)
		(ACTS_VAR_PERIOD)
		(ACTS_HAS_ENDED)
Future development	the ACTSTOPS 11	(ACTS_TST_DEPOSIT)
		(ACTS_VAR_COIN)
Future development	the ACTSTOPS 12	(ACTS_VAR_COIN)

TOPS Alternate Announcement (continued)

ACTS Call States and Their DRMUSERS Indexes

Call State	DRMUSERS Index	Phrase List
Future development	the ACTSTOPS 13	(ACTS_TST_ENDED)
Overtime repeat prompt	the ACTSTOPS 14	(ACTS_PLS_DEPOSIT) (ACTS_VAR_CHARGE)
Second overtime repeat prompt	the ACTSTOPS 15	(ACTS_PLS_DEPOSIT) (ACTS_VAR_CHARGE)
Overtime intercoin prompt	the ACTSTOPS 16	(ACTS_PLS_DEPOSIT) (ACTS_VAR_CHARGE) (ACTS_MORE)
Overtime acknowledgment of a correct deposit	the ACTSTOPS 17	(ACTS_THANK_YOU)
Overtime acknowledgment of an overdeposit	the ACTSTOPS 18	(ACTS_THANK_HAVE) (ACTS_VAR_CREDIT) (ACTS_CR_OVERTIME)
Repeat time and charges quotation	the ACTSTOPS 19	(ACTS_ALERT) (ACTS_CHARGES_ARE) (ACTS_VAR_CHARGE) (ACTS_PLUS_TAX) (ACTS_VAR_PERIOD)

Customizing ACTS Announcements

An example of different indexes used for an announcement follows. A subscriber enters a correct coin amount. The "Thank you" announcement follows this action. For the first coin deposit, the Operating Company can customize the response. For example, "Thank you for choosing Cleartalk Telephone Company." Another example is, "Thank you for choosing Cleartalk Telephone Company. You have W cents credit towards overtime." For overtime a simple announcement can be more appropriate. For example, "Thank you" or "Thank you. You have W cents credit towards overtime."

TOPS Alternate Announcement (continued)

The ACTSTOPS 4 index in table DRMUSERS matches the first coin request "Thank you for a correct deposit." The ACTSTOPS 5 index matches the first coin request "Thank you for an overdeposit." The default external phrase list for ACTSTOPS 4 is ACTS_THANK_YOU. The default external phrase list for ACTSTOPS 5 ACTS_THANK_HAVE, ACTS_VAR_CREDIT, ACTS_CR_OVERTIME. To customize one of these "Thank you" announcements, create an external phrase list. Record a customized "Thank you" announcement against the external phrase list. Change the correct datafill in Table DRMUSERS.

In offices that provide operator services for ICs, only "Thank you" announcements can be customized by carrier. Table EAACTSAN determines which index in table DRMUSERS matches an IC for an ACTS "Thank you" announcement. This table contains the carrier number. Table EAACTSAN contains two indexes. One index is for the acknowledgment of a correct deposit and one index is for the acknowledgment of an overdeposit.

The indexes apply to "Thank you" and "Thank you, you have..." announcements only after the first coin request. If the carrier is not entered in Table EAACTSAN, the system uses the overtime "Thank you" announcements for the Operating Company. These overtime announcements are ACTSTOPS 17 and 18.

To customize other announcements, create an external phrase list. Enter the external phrase list in table DRMUSERS against the index equal to the desired call state.

For example, to customize the announcement equal to the ACTS state time and charge quotations, perform the following steps.

- Create an external phrase list. This list is ACTS_ALERT, ACTS_CUSTOM_CHARGES_ARE, ACTS_VAR_CHARGE, ACTS_PLUS_TAX, ACTS_VAR_PERIOD.
- Change the datafill against index ACTSTOPS 9 in table DRMUSERS to this list.
- Record the announcement.

In another example, you can customize the following announcements.

- The first Operating Company "Thank you" announcements.
- The first "Thank you" announcements for an IC.
- The time and charges quotation announcement.

TOPS Alternate Announcement (continued)

You must change table DRMUSERS and table EAACTSAN. Refer to the following examples for these tables. These examples contain datafill before and after customization.

When the Operating Company customizes the announcements, the four "Thank you" announcements reflect the changes the Operating Company made earlier. These four "Thank you" announcements are the ACTSTOPS 4, 5, 30 and 31. These announcements appear in the following examples.

Note: Table DRMUSERS locations ACTSTOPS 20-23 are only for the TOPS Pre-Paid Coin Overtime functionality (OSB00101).

Customizing the ACTS "Thank You" Announcement for ICs

To customize a "Thank you" announcement for an IC, perform the following steps:

- Create an external phrase list.
- Enter the external phrase list against an index in table DRMUSERS.
- Enter the CLLI in table ANNS.
- Enter the indexes in table DRMUSERS.
- Enter the carrier number and indexes in table EAACTSAN. You can perform this step when the two preceding steps are complete.

When table EAACTSAN contains an index, you cannot delete the index from table DRMUSERS.

Customizing DRMUSERS Table for ACTS Announcements

EACARNUM	INITINDX
Before customizing	
the ACTSTOPS 4	the ACTS_THANK_YOU \$
the ACTSTOPS 5	the ACTS_THANK_HAVE
	the ACTS_VAR_CREDIT
	the ACTS_CR_OVERTIME \$
the ACTSTOPS 9	the ACTS_ALERT
	the ACTS_CHARGES_ARE
	the ACTS_VAR_CHARGE

TOPS Alternate Announcement (continued)**Customizing DRMUSERS Table for ACTS Announcements**

EACARNUM	INITINDX
	the ACTS_PLUS_TAX
	the ACTS_VAR_PERIOD \$
After customizing	
the ACTSTOPS 4	the ACTS_Operating Company_THANK_YOU \$
the ACTSTOPS 5	the ACTS_Operating Company_THANK_HAVE
	the ACTS_VAR_CREDIT
	the ACTS_CR_OVERTIME \$
the ACTSTOPS 9	the ACTS_ALERT
	the ACTS_CHARGES_ARE
	the ACTS_VAR_CHARGE
	the ACTS_PLUS_TAX
	the ACTS_VAR_PERIOD \$
the ACTSTOPS 30	the ACTS_CARRIER1_THANK_YOU \$
the ACTSTOPS 31	the ACTS_CARRIER1_THANK_HAVE
	the ACTS_VAR_CREDIT
	the ACTS_CR_OVERTIME \$
the ACTSTOPS 32	the ACTS_NBEC1_THANK_YOU \$
the ACTSTOPS 33	the ACTS_NBEC1_THANK_HAVE
	the ACTS_VAR_CREDIT
	the ACTS_CR_OVERTIME \$

TOPS Alternate Announcement (continued)

Customizing ACTS in Table EAACTSAN

EACARNUM	CORRCTDP	OVERDP
	Before customizing	
empty	empty	empty
	After customizing	
222	the ACTSTOPS 30	the ACTSTOPS 31

Customizing the ACTS "Thank You" Announcement for NBECs

The first "Thank you" announcement can be customized for NBECs. This feature introduces a new table. This table allows for the determination of the index in table DRMUSERS that equals an NBEC for an ACTS "Thank you" announcement. Table ACTSNBEC contains the carrier number and two indexes. One index is for the acknowledgement of a correct deposit. Another index is for the acknowledgement of an overdeposit. The first coin request occurs. After this occurrence, these indexes apply to "Thank you" and "Thank you, you have..." announcements. When table ACTSNBEC does not contain the NBEC, the system uses the first "Thank you" announcements for the Operating Company. These announcements are ACTSTOPS 4 and ACTSTOPS 5.

To customize a "Thank you" announcement for an NBEC, perform the following steps.

- Create a new external phrase list.
- Enter the external phrase list against a new index in table DRMUSERS.
- Enter the CLLI in table ANNS.
- Enter the indexes in table DRMUSERS.
- Enter the NBEC code and the new indexes in table ACTSNBEC. You can perform this step when the two preceding steps are complete.

When table ACTSNBEC contains an index, you cannot delete the index from table DRMUSERS.

Customizing ACTS in Table ACTSNBEC

NBECCODE	CORRCTDP	OVERDP
	Before customizing	
empty	empty	empty

TOPS Alternate Announcement (continued)

Customizing ACTS in Table ACTSNBEC

NBECCODE	CORRCTDP	OVERDP
	After customizing	
1386	the ACTSTOPS 32	the ACTSTOPS 33

This section describes the data tables for which data entry must occur. Entry must occur for the system to activate this feature package in a switch. In the following table, the data tables appear in the correct entry order. This order applies for feature package NT850AA, the NTP number associated with each table, the section numbers and the required forms.

This feature package introduces two tables for offices that provide operator services for InterLATA Carriers. Offices are equipped with TICS. These tables are EAMCCSAN and EAACTSAN. These tables contain the carrier number and indexes in table DRMUSERS for the customized carrier "Thank you" announcements.

Table DRMUSERS can provide different indexes for each tone or announcement that can occur in an MCCS or ACTS call.

Translations table flow

Translations table flow is not present.

Limits

A description of the limits that apply to TOPS Alternate Announcement appears in the following paragraphs.

A maximum of 20 InterLATA Carriers (ICs) can have customized "Thank you" announcements for MCCS. A maximum of 20 ICs can have customized "Thank you" announcements for ACTS. Table EAMCCSAN or table EAACTSAN can contain a carrier. The carrier entry must also be in table TOPEACAR for the system to use the customized announcements.

A maximum of 40 NBECs entries can occur in table MCCSNBEC. A maximum of 40 NBECs entries can occur in table ACTSNBEC. Make sure the number does not exceed the maximum number of indexes in DRMUSERS. Coordinate the datafill between the interLATA carrier tables and NBEC tables. This coordination makes sure the datafill does not exceed the overall maximum of 63 indexes in table DRMUSERS. The interLATA carrier tables are EAMCCSAN and EAACTSAN. The NBEC tables are MCCSNBEC and ACTSNBEC.

TOPS Alternate Announcement (continued)

More than one announcement normally plays during the duration of a call. Phrases link together to form an ACTS announcement. This condition indicates that the Operating Company must use the same voice to record all announcements for each switch.

Interactions

The TOPS Alternate Announcement does not have actions between functions.

Activation/deactivation by the end user

The TOPS Alternate Announcement does not require activation or deactivation by the end user.

Billing

The TOPS Alternate Announcement does not affect billing.

Station Message Detail Recording

The TOPS Alternate Announcement does not affect Station Message Detail Recording.

Datafilling office parameters

The TOPS Alternate Announcement does not affect office parameters.

Datafill sequence

The tables that require datafill to implement TOPS Alternate Announcement appear in the following table. The tables appear in the correct entry order.

Datafill requirements for TOPS Alternate Announcement

Table	Purpose of table
DRMUSERS	Digital Recorded Announcement Machine Users. Lists all the announcements a user of MCCS and ACTS in TOPS requires.
EAMCCSAN	Customizes a "Thank you" announcement for an MCCS call that uses an IC.
EAACTSAN	Used to enter entries required to customize an announcement for an ACTS call that uses an IC.

Datafilling table DRMUSERS

This section describes the Digital Recorded Announcement Machine Users (DRMUSERS) table. This table is Form 2381A and B. Table DRMUSERS lists all the announcements a user of MCCS and ACTS in TOPS requires.

TOPS Alternate Announcement (continued)

The datafill for Table DRMUSERS can expand to provide different indexes for each tone or announcement. These tones and announcements can occur in an MCCS or ACTS call.

Note: Table DRMUSERS locations ACTSTOPS 20-23 are only for the TOPS Pre-Paid Coin Overtime functionality (OSB00101).

The MCCS announcements and the ACTS phrases that can link together to form ACTS announcements appear in the following tables.

MCCS Announcements

PHRASE NAME	ANNOUNCEMENT
the MCCSENG1	"Please dial your card number or zero for an operator now."
the MCCSENG2	"Please dial your card number again now." (Pause) "The card number you have dialed is not valid."
the MCCSENG3	"Please dial your card number."
the MCCSENG4	"Please hang up and dial zero plus the number you are calling." (Pause) "The card number you have dialed is not valid."
the MCCSENG5	"You may dial another call now."
the MCCSENG6	"Please dial the number you are calling again now." (Pause) "The number you have dialed is not correct."
the MCCSENG7	"Please dial the number you are calling."
the MCCSENG8	"Please hang up and dial zero plus the number you are calling." (Pause) "The number you have dialed is not correct."
the MCCSENG9	"Please hang up and dial zero plus the number you are calling."
the MCCSENG10	Reserved for future development.
the MCCSENG11	Reserved for future development.
the MCCSENG12	Reserved for future development.
the MCCSENG13	Reserved for future development.
the MCCSENG14	Reserved for future development.

TOPS Alternate Announcement (continued)

MCCS Announcements

PHRASE NAME	ANNOUNCEMENT
the MCCSENG15	"Please hang up and dial direct." (Pause) "This number cannot be dialed as a sequence call."
the MCCSENG16	"Thank you."
the MCCSALERT	(Alert tone followed by an announcement)

ACTS Phrases

PHRASE NAME	ANNOUNCEMENT
the ACTS_VAR_CHARGE	"{X} dollars," or "{X} dollars and {Y} cents," or "{Y} cents"
the ACTS_PLEASE	"Please"
the ACTS_PAUSE	(2 s pause)
the ACTS_PLS_DEPOSIT	"Please deposit"
the ACTS_FOR_FIRST	"for the first"
the ACTS_VAR_PERIOD	"{Z} min"
the ACTS_MORE	"more"
the ACTS_THANK_YOU	"Thank you"
the ACTS_THANK_HAVE	"Thank you. You have"
the ACTS_VAR_CREDIT	"{Y} cents"
the ACTS_CR_OVERTIME	"credit towards overtime"
the ACTS_ALERT	(alert tone)
the ACTS_END_SIGNAL	"Please signal when through"
the ACTS_FOR_PAST	"for the past"
the ACTS_YOU_HAVE	"you have"
the ACTS_CREDIT	"credit"
the ACTS_CHARGES_ARE	"The charges are"

TOPS Alternate Announcement (continued)

ACTS Phrases

PHRASE NAME	ANNOUNCEMENT
the ACTS_PLUS_TAX	"plus tax"
the ACTS_HAS_ENDED	"has ended"
the ACTS_TST_DEPOSIT	Reserved for future development
the ACTS_VAR_COIN	Reserved for future development
the ACT_TST_ENDED	Reserved for future development

You can add the TOPS Alternate Announcement feature package to offices with MCCS, EABS or ACTS inservice. This addition requires new entries in table DRMUSERS. These entries make sure service continuity Activation is immediate when you load the software. When Activation is immediate, you do not need to turn an office parameter on/off.

The MCCSTOPS and MCCSACTS are RECOMMENDED CLLIs. Table ANNS field ANTYPE defines the CLLI used for the MCCS and ACTS announcements. Some offices travel to BCS25 and add this feature package. The Dump and Restore process adds data to these packages. A description of the Dump and Restore process follows. Some offices travel to the BCS26 and later versions and add TOPS Alernate Announcement. These office receive this data through the Datatools process.

TABLE DRMUSERS

USERANN	PHSLIST
-----	-----
<CLLI>18	copy data from <CLLI>17
<CLLI>19	copy data from <CLLI>17
<CLLI>20	copy data from <CLLI>9
<CLLI>21	copy data from <CLLI>9
<CLLI>22	copy data from <CLLI>16
<CLLI>23	copy data from <CLLI>5
for ACTS:	

TABLE DRMUSERS

USERANN	PHSLIST
-----	-----
<CLLI>14	copy data from <CLLI>2
<CLLI>15	copy data from <CLLI>2
<CLLI>16	copy data from <CLLI>3
<CLLI>17	copy data from <CLLI>4

TOPS Alternate Announcement (continued)

<CLLI>18 copy data from <CLLI>5
<CLLI>19 copy data from <CLLI>9

If you add this feature package without the default announcement data, results that are not predictable can occur. The results include when the system drops calls that reach a state where datafill is not present in table DRMUSERS. Make a copy of the present announcements when you add the package. This process makes sure that the system does not lose calls in the change.

The default datafill for table DRMUSERS appears in the following figure.

TOPS Alternate Announcement (continued)**Table DRMUSERS Default Datafill (Part 1 of 2)**

USERANN		PHSLIST	
MCCSTOPS	1	MCCSENG1	\$
MCCSTOPS	2	MCCSENG2	\$
MCCSTOPS	3	MCCSENG3	\$
MCCSTOPS	4	MCCSENG4	\$
MCCSTOPS	5	MCCSENG5	\$
MCCSTOPS	6	MCCSENG6	\$
MCCSTOPS	7	MCCSENG7	\$
MCCSTOPS	8	MCCSENG8	\$
MCCSTOPS	9	MCCSENG9	\$
MCCSTOPS	10	MCCSENG10	\$
MCCSTOPS	11	MCCSENG11	\$
MCCSTOPS	12	MCCSENG12	\$
MCCSTOPS	13	MCCSENG13	\$
MCCSTOPS	14	MCCSENG14	\$
MCCSTOPS	15	MCCSENG15	\$
MCCSTOPS	16	MCCSENG16	\$
MCCSTOPS	17	MCCSENG17	\$
MCCSTOPS	18	MCCSENG17	\$
MCCSTOPS	19	MCCSENG17	\$
MCCSTOPS	20	MCCSENG9	\$
MCCSTOPS	21	MCCSENG9	\$
MCCSTOPS	22	MCCSENG16	\$
MCCSTOPS	23	MCCSENG5	\$
ACTSTOPS	1	(ACTS_VAR_CHARGE)(ACTS_PLEASE)(ACTS_PAUSE) (ACTS_PLS_DEPOSIT)(ACTS_VAR_CHARGE)+ (ACTS_FOR_FIRST_)(ACTS_VAR_PERIOD) \$	
ACTSTOPS	2	(ACTS_PLS_DEPOSIT)(ACTS_VAR_CHARGE) \$	
ACTSTOPS	3	(ACTS_PLS_DEPOSIT)(ACTS_VAR_CHARGE) (ACTS_MORE)\$	
ACTSTOPS	4	(ACTS_THANK_YOU) \$	
ACTSTOPS	5	(ACTS_THANK_HAVE)(ACTS_VAR_CREDIT) + (ACTS_CR_OVERTIME) \$	
ACTSTOPS	6	(ACTS_ALERT)(ACTS_VAR_PERIOD) (ACTS_END_SIGNAL)\$	
(continued)			

TOPS Alternate Announcement (continued)

Table DRMUSERS Default Datafill (Part 2 of 2)

ACTSTOPS	7	(ACTS_ALERT) (ACTS_VAR_CHARGE) (ACTS_PLEASE) + (ACTS_PAUSE) (ACTS_PLS_DEPOSIT) (ACTS_VAR_CHARGE) (ACTS_FOR_PAST) (ACTS_VAR_PERIOD) \$
ACTSTOPS	8	(ACTS_ALERT) (ACTS_VAR_CHARGE) (ACTS_PLEASE) (ACTS_PAUSE) (ACTS_YOU_HAVE) (ACTS_VAR_CREDIT) (ACTS_CREDIT) (ACTS_PLS_DEPOSIT) (ACTS_VAR_CHARGE) (ACTS_MORE) (ACTS_FOR_PAST) (ACTS_VAR_PERIOD) \$
ACTSTOPS	9	(ACTS_ALERT) (ACTS_CHARGES_ARE) (ACTS_VAR_CHARGE) (ACTS_PLUS_TAX) (ACTS_VAR_PERIOD) \$ACTSTOPS
	10	(ACTS_ALERT) (ACTS_VAR_PERIOD) (ACTS_HAS_ENDED) \$
ACTSTOPS	11	(ACTS_TST_DEPOSIT) (ACTS_VAR_COIN) \$
ACTSTOPS	12	(ACTS_VAR_COIN) \$
ACTSTOPS	13	(ACTS_TST_ENDED) \$
ACTSTOPS	14	(ACTS_PLS_DEPOSIT) (ACTS_VAR_CHARGE) \$
ACTSTOPS	15	(ACTS_PLS_DEPOSIT) (ACTS_VAR_CHARGE) \$
ACTSTOPS	16	(ACTS_PLS_DEPOSIT) (ACTS_VAR_CHARGE) (ACTS_MORE) \$
ACTSTOPS	17	(ACTS_THANK_YOU) \$
ACTSTOPS	18	(ACTS_THANK_HAVE) (ACTS_VAR_CREDIT) (ACTS_CR_OVERTIME) \$
ACTSTOPS	19	(ACTS_ALERT) (ACTS_CHARGES_ARE) (ACTS_VAR_CHARGE) (ACTS_PLUS_TAX) (ACTS_VAR_PERIOD) \$

(end)

Customized announcements can have any phrase names. The Operating Company determines the selection of phrase names.

TOPS Alternate Announcement (continued)

Call Progression

Two examples describe the states in a call and the associated entries in table DRMUSERS. One of these examples is for ACTS and the other example is for MCCS.

For an MCCS call, table DRMUSERS contains an associated response and an associated index for each of the four steps the caller takes. The associated index is the MCCSTOPS number.

1. The caller dials 0 + digits. The caller hears a tone and the announcement "Please dial your card number or zero for an operator now" (MCCSTOPS 17 & 1).
2. The caller enters a card number. The caller hears the "Thank you" (MCCSTOPS 16) announcement.
3. The caller dials #. The caller hear the announcement "You may dial another call now" (MCCSTOPS 5).
4. The caller dials a called number. The caller hears the "Thank you" announcement (MCCSTOPS 22).

For an ACTS call, each of the four steps the caller takes contains an associated announcement and DRMUSERS index. The DRMUSERS index is the ACTSTOPS number.

1. The Caller dials 1 + digits. The caller hears the announcements, "<amount> dollars/cents please" (2-s pause) "Please deposit <amount> dollars/cents for the first <number> minutes" (ACTSTOPS 1).
2. The caller overdeposits. The caller hears the announcement, "Thank you. You have W cents credit towards overtime" (ACTSTOPS 5).
3. The first time interval expires. The caller hears the announcement, "<number> minutes has ended. Please signal when through."
4. The next time interval passes. The caller hears the announcement, "<amount> dollars/cents, please."(2 s pause.) "You have W cents credit. Please deposit <amount> dollars/cents more for the past <number> minutes" (ACTSTOPS 4).
5. The caller deposits the correct amount. The caller hears the "Thank you announcement" (ACTSTOPS 17).

Datafill for TOPS Alternate Announcement for table DRMUSERS appears in the following table. The fields that apply to TOPS Alternate Announcement

TOPS Alternate Announcement (continued)

appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table DRMUSERS

Field	Subfield or refinement	Entry	Explanation and action
the USERANN		Refer to subfields	Consists of subfields CLLI and ANNUM.
	the CLLI	alphanumeric	Enter CLLI name for MCCS or ACTS from table ANNS.
	the ANNUM	1-63	Locations ACTSTOPS 20-23 are only for the TOPS Pre-Paid Coin Overtime functionality (OSB00101).
the PHSLIST0			Consists of subfields PHRASES and CONTMARK.
	the PHRASES	alphanumeric	Enter a maximum of 32 announcement phrases.
	the CONTMARK	+ or \$	Continue (+) or end (\$).

Datafill example for table DRMUSERS

Sample datafill for table DRMUSERS appears in the following example.

MAP example for table DRMUSERS

USERANN		PHSLIST	
CLLI	ANNUM	PHRASES	CONTMARK
MCCSTOPS	16	MCCSENG24	\$

TOPS Alternate Announcement (continued)

Error messages for table DRMUSERS

The error messages that apply to table DRMUSERS appear in the following table.

Error messages for table DRMUSERS

Error message	Explanation and action
CARRIER MUST FIRST BE DELETED FROM TABLE EAMCCSAN or CARRIER MUST FIRST BE DELETED FROM TABLE EAACTSAN	You cannot delete a tuple in table DRMUSERS if the following fields contain the index. One of these fields is INITINDX of table EAMCCSAN. This field can be field CORRCTDP or Field OVERDEP in table EAACTSAN. If you attempt a deletion, the system displays one of the two error messages:

Datafilling table EAMCCSAN

This table customizes a "Thank you" announcement for an MCCS call that uses an IC.

Datafill for TOPS Alternate Announcement for table EAMCCSAN appears in the following table. The fields that apply to TOPS Alternate Announcement appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table EAMCCSAN

Field	Subfield or refinement	Entry	Explanation and action
the EACARNUM		0-999	Carrier number
the INITINDX		Refer to subfields	User announcement. This field contains subfields CLLI and ANNUM.
	the CLLI	alphanumeric	Announcement group
	the ANNUM	1-63	Announcement number

Datafill example for table EAMCCSAN

Sample datafill for table EAMCCSAN appears in the following example.

TOPS Alternate Announcement (continued)

MAP example for table EAMCCSAN

EACARNUM	INITINDX
222	MCCSTOPS 26
488	MCCSTOPS 28
777	MCCSTOPS 32

Datafilling table EAACTSAN

This table customizes an announcement for an ACTS call that uses an IC.

Datafill for TOPS Alternate Announcement for table EAACTSAN appears in the following table. The fields that apply to TOPS Alternate Announcement appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table EAACTSAN

Field	Subfield or refinement	Entry	Explanation and action
the EACARNUM		0-999	Carrier number.
the CORRCTDP		Refer to subfields	User announcement. This field contains subfields CLLI and ANNUM.
	the CLLI	alphanumeric	User announcement group.
	the ANNUM	1-63	User announcement number.
the OVERDEP		Refer to subfields	User announcement. This field contains subfields CLLI and ANNUM.
	the CLLI	alphanumeric	User announcement group.
	the ANNUM	1-63	User announcement number.

Datafill example for table EAACTSAN

Sample datafill for table EAACTSAN appears in the following example.

TOPS Alternate Announcement (continued)

MAP example for table EAACTSAN

EACARNUM	CORRCTDP	OVERDEP
222	ACTSTOPS 30	ACTSTOPS 31
488	ACTSTOPS 28	ACTSTOPS 29
777	ACTSTOPS 35	ACTSTOPS 36

Datafilling table MCCSNBEC

Table MCCSNBEC identifies the MCCS “Thank you” announcement that associates with an NBEC.

Datafill for TOPS Alternate Announcement for table MCCSNBEC appears in the following table. The fields that apply to TOPS Alternate Announcement appear in this table. See the data schema section of this document for a description of the other fields .

Datafilling table MCCSNBEC

Field	Subfield or refinement	Entry	Explanation and action
the NBECODE		1000-9999	The field is the company code that represents an NBEC. In some occurrences, the NBEC code entry is not in table MCCSNBEC. When this event occurs, use of the default first “Thank you” entered in table DRMUSER for the Operating Company occurs. This default in table DRMUSER is MCCSTOPS 16.
the INITINDX		Refer to subfields	User announcement. This field contains subfields CLLI and ANNUM.
	the CLLI	alphanumeric	Common Language Local Identifier
	the ANNUM	1-63	Announcement number. This field is the index in table DRMUSERS that equals the customized announcement. The index only applies to the “Thank you” announcement after the initial call.

Datafill example for table MCCSNBEC

Sample datafill for table MCCSNBEC appears in the following example.

TOPS Alternate Announcement (continued)

MAP example for table MCCSNBEC

NBECCODE	DRMINDX
1386	MCCSTOPS 27
5274	MCCSTOPS 60

Datafilling table ACTSNBEC

Table ACTSNBEC identifies the ACTS “Thank you” announcement that associates with an NBEC. The table contains the NBEC code and two indexes in table DRMUSERS.

Datafill for TOPS Alternate Announcement for table ACTSNBEC appears in the following table. The fields that apply to TOPS Alternate Announcement appear in this table. See the data schema section of this document for a description of the other fields.

Datafilling table ACTSNBEC

Field	Subfield or refinement	Entry	Explanation and action
the ACTSNBEC		1000-9999	Non-Bell Exchange Carrier code. In some occurrences, the NBEC code entry is not in table ACTSNBEC. When this event occurs, use of the default first “Thank you” announcements entered in table DRMUSER for the Operating Company occurs. These default announcements in table DRMUSER are ACTSTOPS 4 and ACTSTOPS 5.
the CORRCTDP		Refer to subfields	User announcement. This field contains subfields CLLI and ANNUM.
	the CLLI	alphanumeric	Common Language Location Identifier.
	the ANNUM	1-63	Announcement number. Enter the number assigned to the CTS announcement in table DRMUSERS. The first index is for the acknowledgement of a correct deposit. The indexes only apply to the “Thank you, you have...” announcement after the first coin request.
the OVERDEP		Refer to subfields	

TOPS Alternate Announcement (end)

Datafilling table ACTSNBEC

Field	Subfield or refinement	Entry	Explanation and action
	the CLLI	alphanumeric	Common Language Location Identifier.
	the ANNUM	1-63	Announcement number. Enter the number assigned to the CTS announcement in table DRMUSERS. The second index is for the acknowledgement of an over deposit that equals the customized announcement. The indexes only apply to the "Thank you, you have..." announcement after the first coin request.

Datafill example for table ACTSNBEC

Sample datafill for table ACTSNBEC appears in the following example.

MAP example for table ACTSNBEC

NBECODE	CORRCTDP	OVERDEP
1386	ACTSTOPS 32	ACTSTOPS 33
5274	ACTSTOPS 30	ACTSTOPS 31

Tools for verifying translations

The TOPS Alternate Announcement does not use tools for verifying translations.

SERVORD

The TOPS Alternate Announcement does not use SERVORD.

DMS-100 Family

North American DMS-100

TOPS Translations Guide Volume 1 of 5

Group OSB

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Publication number: 297-8403-910
Product release: TOPS15 and up
Document release: Standard 01.01
Date: May 2001
Printed in the United States of America