TAM-1001-016

DMS-100 Family

# Super Nonresident Tool Listing

Technical Assistance Manual

BCS36 and up Standard 02.03 July 1995

northern telecom

DMS-100 Family

# Super Nonresident Tool Listing

Technical Assistance Manual

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# Publication history

**July 1995**

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| BCS36 | 02.03 | Standard | Add description of files on Super nonresident tape for BCS36 and up |

**December 1993**

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| BCS36 | 02.02 | Standard | Update for standard release for BCS36 |

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| BCS36 | 02.01 | Preliminary | Update tool and module contents for BCS36 |

**March 1993**

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|---|---|---|---|
| BCS35 | 01.01 | Standard | Initial release of this document |

# Contents

# About this document

This document contains a list and brief description of the software tools residing on the super nonresident tape. Module and subsystems implementing each tool are also included.

## When to use this document

Northern Telecom (NT) software releases are referred to as batch change supplements (BCS) and are identified by a number, for example, BCS29. This document is written for DMS-100 Family offices that have BCS36 and up.

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

To determine which version of this document applies to the BCS in your office, check the release information in *DMS-100 Family Guide to Northern Telecom Publications*, 297-1001-001.

### How to identify the software in your office

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

**>PATCHER;INFORM LIST identifier**

and pressing the Enter key.

*where*

identifier is the number of the feature package or patch ID

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

**>SEND printer_id**

and pressing the Enter key.

*where*

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

Then, print the desired information by typing

**>PATCHER;INFORM LIST;LEAVE**

and pressing the Enter key.

Finally, redirect the display back to the terminal by typing

**>SEND PREVIOUS**

and pressing the Enter key.

## Where to find information

The chart below lists the documents that you require to understand the content of this document, or to perform the tasks it describes.

More than one version of these documents may exist. To determine which version of a document applies to the BCS in your office, check the release information in *DMS-100 Family Guide to Northern Telecom Publications*, 297-1001-001.

| Number | Title |
|---|---|
| TAM-1001-000 | *Index of Technical Assistance Manuals* |
| TAM-1001-001 | *TAS Nonresident Tool Listing* |
| TAM-1001-004 | *PMDEBUG User Guide* |
| TAM-1001-005 | *BCS Maintenance Synopsis* |
| TAM-1001-006 | *BCS Traffic Synopsis* |
| TAM-1001-007 | *Peripheral Module Intercept System Test User Guide* |
| TAM-1001-008 | *DEBUG User Guide* |
| TAM-1001-010 | *SERVORD Digest* |
| TAM-1001-011 | *Data Layout Manual* |
| TAM-1001-013 | *MPCDebug CC Data Analyzer User Guide* |
| TAM-1001-014 | *SCANLOG User Guide* |
| TAM-1001-015 | *C7TU User Guide* |

# Introduction to tool listing

The super nonresident tool listing defines the tools and modules that reside on the super nonresident tape. A brief description is given for each tool or module, including the tool use, purpose, and any necessary cautions or warnings.

## Organization

The tools and modules are organized in alphabetical order. When a tool has a specific name, the specific tool name is listed as the alphabetized header. Where module names are the same as the utility name, the module name is listed as the alphabetized header. Modules implementing each tool are included with the tool description, along with the subsystem containing the module.

## Intended audience

Some tools are labeled as being intended for the Tier I, Tier II, or Tier III user. Those tools intended for the Tier I user are not potentially dangerous or service affecting. Those tools intended for the Tier II user require more extensive knowledge of the DMS switch operating system, including software knowledge and analytical skills to isolate the cause of complex problems not solvable by the Tier I user. Tools intended for the Tier III user are potentially dangerous and service affecting if not used in the proper context. These tools should be used only by Northern Telecom (NT) personnel in installation and troubleshooting.

## Cautions and warnings

When necessary, warnings and cautions are provided so the user will understand the possible consequences of tool use and what skills are needed to use the tool properly.

# Super nonresident tool listing

This chapter identifies the file types with a method for listing the files, and describes the software tools on the super nonresident tape.

## Super nonresident tape file types

There are eight file types on the super nonresident tape, they are

- TAPE$DIR
- $FC  (File controller)
- $LD  (Load content)
- $BDATA
- $BEFORE
- $ADATA
- $AFTER
- SEQLISTFILE

The files on a manufactured tape are listed in the first file on the tape, (TAPE$DIR). To list the entire tape and put all the files in your user directory could take hours. By using the TLIST command, this action is reduced to seconds. The TLIST command with the parameter of the tape drive number puts all the files on the tape into your user directory. List the files of the tape by typing

**>TLIST T<tape_drive_number >**

And pressing the Enter key

*Where*

| | |
|---|---|
| tape_drive_number | is the number of the tape drive where the super nonresident tape is mounted. |

By using the PRINT command to print your user directory, the file names and software addresses of each file on the tape is seen, as in the following example.

**>PRINT<logged_in_user_name >**

and pressing the Enter key

*Example of MAP display*

```
>PRINT OPERATOR
INPUT           Device    Copy    1808
OUTPUT          Device    Copy    1808
WRKNDIR         File      Copy    NIL
SORTCOM$FC      File     Copy    0EB4 0002 8401 0202
RWDIRSUB$FC     File     Copy    0EB5 0003 8401 0202
SPLITSUB$FC     File     Copy    0EB6 0004 8401 0202
WHATSSUB$FC     File     Copy    0EB7 0005 8401 0202
OMTDMPSU$FC     File     Copy    0EB8 0006 8401 0202
DBAUDSUB$FC     File     Copy    0EB9 0007 8401 0202
JFPRTSUB$FC     File     Copy    0EBA 0008 8401 0202
JFPRINT$LD      File     Copy    0EBB 0009 8401 0202
TRCOMSUB$FC     File     Copy    0EBC 000A 8401 0202
TRANCOM$LD      File     Copy    0EBD 000B 8401 0202
DLXSUB$FC       File     Copy    0EBE 000C 8401 0202
DLXFS$LD        File     Copy    0EBF 000D 8401 0202
DLXHDEFS$LD     File     Copy    0EC0 000E 8401 0202
HDLX$LD         File     Copy    0EC1 000F 8401 0202
DLXCOM$LD       File     Copy    0EC2 0010 8401 0202
NCMSCOM$LD      File     Copy    0EC3 0011 8401 0202
DLXSUB$BDATA    File     Copy    0EC4 0012 8401 0202
DLXSUB$BEFORE   File     Copy    0EC5 0013 8401 0202
```

Each file type is identified by the suffix of its name, for example TRKISUB$FC, and performs a specific function. The file controller ($FC) contains all the modules needed by the load files to execute the program. When executed, it also loads the load files in their sequential order. The load files must be unloaded in the reverse order in which they were loaded. To view the loading sequence, with the super nonresident tape listed, print the file controller by typing:

**>PRINT <super nonresident subsystem name$FC>**

And pressing the Enter key

*Where*

| | |
|---|---|
| super nonresident subsystem name | is the name of the nonresident tool subsystem to be printed, such as TRKISUB. |

**Example of PRINT command**

```
>PRINT TRKISUB$FC
```

This command prints the instruction set of the file controller and lists the load files to be loaded in their sequential order. As seen in the following figure, the load file INVENTRK is loaded first and TRKQUERY is loaded last. TRKQUERY uses load file INVENTRK and must be unloaded before INVENTRK can be unloaded.

**Printing a super nonresident tape control file**

```
>PRINT TRKISUB$FC
%%%%%%%% FC TRKISUB %%%%%%%%
PRINT ' %%%%%%%% TRKISUB MODLIST
%%%%%%%% '
%PKG MISC NONRES
%PKG NAME TRKISUB
%PKG NEEDS SOSBILGE
%PKG NEEDS MTAUTLSB
%PKG NEEDS MTCTRKSB
%PKG NEEDS DS1LMSB
%PKG NEEDS CARRUTSB
%PKG NEEDS NPMBMSB
%PKG NEEDS CLLIBPSB
%PKG NEEDS PMBPSB
LOAD INVENTRK AUTO ANY
LOAD TRKQUERY AUTO ANY
```

To load the files of a particular subsystem, use the READ or EXECUTE command with the parameter of the file controller file name. The file controller will load the files in the proper order for the subsystem. All the load files required for a particular super nonresident tool are in direct sequence following the file controller.

**>EXECUTE <super nonresident subsystem name$FC>**

And pressing the Enter key

*Where*

| | |
|---|---|
| super nonresident subsystem name | is the name of the nonresident tool subsystem to be read, such as TRKISUB. |

*Example of MAP display*

```
>EXECUTE TRKISUB$FC
 %%%%%%%%% TRKISUB MODLIST %%%%%%%%%
Loading module "INVENTRK".
Loading module "TRKQUERY".
```

*Nonresident modules LOADED in this order*

Use the QUERY command to determine if the load files are loaded in the computing module (CM), by typing

**>QUERY <super nonresident tool name>**

And pressing the Enter key

*Where*

super nonresident tool name — is the name of the nonresident tool to be queried, such as TRKQUERY.

The following example shows the software addresses of the load files, loaded in the computing module (CM), by use of the READ or EXECUTE commands.

*Example of MAP display*

```
>QUERY TRKQUERY
TRKQUERY ec=AQ02  ModRef=209D  PERPROCESS  NOPACKGE
ORIGINAL
         protected:  address=203B5720  size=0288
         shared:     not allocated
         private:    not allocated
         entry: QUERY  offset=0000  increment of CIPROC

>QUERY INVENTRK
INVENTRK ec=AE01  ModRef=209C  SWAPPABLE  NOPACKGE
ORIGINAL
         protected:  address=2038BDA8  size=0004
         shared:     not allocated
```

The load files loaded by the file controller are nonresident tools and are not intended for permanent application. When the use of the tool is complete the tools are unloaded in reverse order, as presented in the following figure "Unloading a super nonresident tape load file". Unload the tool by typing

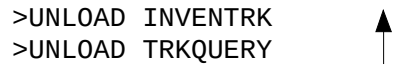
**>UNLOAD <super nonresident tool load name>**

And pressing the Enter key

*Where*

super nonresident tool load name — is the name of the nonresident tool to be unloaded, such as TRKQUERY.

**Unloading a super nonresident tape load file for the program TRKQUERY**



The load file ($LD) contains the programs that make up the various nonresident tools. A load file may be loaded by reading the file controller ($FC), as seen previously or individually, in the proper sequence with the LOAD command, as seen in this example.

Load the tool by using the LOAD command and typing the tool name without the suffix $LD.

**>LOAD <super nonresident tool load name>**

And pressing the Enter key

*Where*

| | |
|---|---|
| super nonresident tool load name | is the name of the nonresident tool to be loaded, such as TRKQUERY. |

*Example of MAP display*

```
>Loading module "TRKQUERY".
```

There are also on the super nonresident tape four files which hold base datafill, they are as follows

- $BDATA
- $BEFORE
- $ADATA
- $AFTER

This data is specific to table definition, tuple size, and number. The BEFORE files ($BDATA, $BEFORE) perform initial datafill and type declaration. The AFTER files ($ADATA, $AFTER) are then read to do any additional datafill.

The last file on the super nonresident tape is the SEQLISTFILE. This file is used during the dump and restore process for data dump functions.

## Super nonresident tools

The following paragraphs describe briefly the software tools residing on the super nonresident tape. The subsystem and module where the tools reside are also described.

The tools are arranged in alphabetical order.

### ABBT (automatic board-to-board testing)

The automatic board-to-board testing (ABBT) tool is used for commissioning new line cards, reconfiguring an office, or both. ABBT ensures wiring accuracy.

This tool is part of the BBTDLSUB, BBTOPTSU, and BBTZSUB, subsystems.

### BBTDLSUB subsystem

The BBTDLSUB system is the board-to-board test data link for the remote carrier urban (RCU). The subsystem includes types, procedures, and data structures used to support the BBT data link. The data link uses the 1X67BD terminal controller to interface to the DMS-1U DCI processor, which gives information about the line being tested when BBT is performed in both the Subscriber Carrier Module-100 Urban (SMU) and RCU lines.

### BBTOPTSU subsystem

The BBTOPTSU subsystem is a multiple board-to-board testing (BBT) optional subsystem. The subsystem allows multi boards to be optional. If this subsystem is not loaded, only one board-to-board set is allowed for testing.

### BBTZSUB subsystem

The BBTZSUB subsystem implements the automatic board-to-board testing feature and contains the following modules applicable to ABBT:

- BBTZCI
- BBTZCP
- BBTZD
- BBTZIH
- BBTZPI
- BBTZSC

## COPYLAST

COPYLAST is a command interpreter (CI) increment allowing a block-by-block copy of one tape to another, resulting in two identical tapes. The copy stops when an error occurs on one of the tapes or when the tape reaches the logical end.

This tool is part of the COPYTSUB subsystem.

## COPYTAPE

COPYTAPE is a CI increment allowing a block-by-block copy of one tape to another, resulting in two identical tapes. The copy stops when an error occurs on one of the tapes or when the tape reaches the logical end.

This tool is part of the COPYTSUB subsystem.

## CSCSHOW

The CSCSHOW tool is used to query and display the operational measurements (OM) stored for the cell site controllers (CSC) on the DMS

mobile telephone exchange (MTX). By using this tool, the user does not have to wait for the periodic 15-minute update in the control module.

### DBAUDIT

The DBAUDIT tool provides an optional facility to dump information concerning the tables defined on the switch. The following reports are made in alphabetical order:

- domains list
- domains xref
- tables list
- tables report

This tool is part of the DBAUDSUB subsystem, which allows the manual audit of tables, and is implemented in the DBAUDIT module.

### DSDELTA

DSDELTA compares two DBAUDIT reports for two different loads stored on disk. It prints the names of any new or deleted tables. If there are any changes in the table fields or the field type, it will print the field names and the changed type along with the name of the table where the changes were found.

This tool is part of the DBAUDSUB subsystem, which allows the manual audit of tables. It is implemented in the DSDELTA module.

### Enhanced trunk inventory

The enhanced trunk inventory tool is implemented in modules INVENTRK and TRKQUERY.

This tool is part of the TRKISUB subsystem.

### EXMEMCI

The EXMEMCI feature allows NT40 central control (CC) data store or program store to be extended without having to perform a LDMATE or CC restart.

The EXTENDMEM CI command applies to memory extensions where the mixed memory arrangement on a single shelf is being altered. In these situations, this new command eliminates the previous procedure. It allows installation to synchronize the central processing units (CPU) and switch activity to the upgraded CPU, thereby activating the new memory without having to reload or restart the switch.

This tool is part of the EXMEMSUB subsystem.

***Note:*** EXMEMCI is used only for NT40 memory extensions.

### HDLCSHOW

The HDLCSHOW tool is used to query and display the OMs stored for the high level data link control (HDLC) links associated with CSCs on the DMS-MTX. By using this tool, the user does not have to wait for the periodic 15-minute update in the CC.

### JFPRINT

***Note:*** This tool is intended to be used by installation.

The JFPRINT tool reads a closed journal file and dumps its contents into a text format.

This tool is part of the JFPRTSUB subsystem, which contains the journal file print and is implemented in the JFPRINT module.

### JNET to ENET retrofit software package

This package contains tools that support the junctored network (JNET) to enhanced network (ENET) retrofit. This retrofit changes the switching network in a DMS switch from a JNET to an ENET. It involves the installation of hardware as well as the execution of other steps in software.

The following subsystem modules comprise this package:

- ENRCMDUI, part of ENRETSUB
- ENRDCMTG, part of ENRDCMSB
- ENRELOAD, part of ENRETSUB
- ENRETCI, part of ENRETSUB
- ENRLMTG, part of ENRMSBSB
- ENRLTCTG, part of ENRLTCSB
- ENRSWCTP, part of ENRETSUB
- ENRTMTG, part of ENRTMSB
- ENRTRKUI, part of ENRETSUB
- ENRUTILI, part of ENRETSUB

### LMCUT (line module cut)

The LMCUT tool is used in the following ways:

- opening contacts of cutoff relays on the line circuit (LC)
- controlling operation of HOLD and CO relays
- testing voltages present at the T and R leads of the LC.

This tool is part of the LMCUTSUB subsystem, which contains the LMCUT utilities. The LMCUT module contains types, variables, and procedures used by the existing LMCUT commissioning module LCMUTZD. This module provides the following:

- maintenance of the cutover (CO) mode schema
- line concentrating module (LCM) physical drawer CO relay counts
- LCM CO relay counts
- LCM hold relay counts
- progress file recording

The LMCUTUTL module is for commissioning only. It should be unloaded from the switch after commissioning has been completed. It is used in conjunction with the commissioning module LMCUTZD and must be unloaded after LMCUTZD.

### OMTDUMP

The OMTDUMP tool provides a straightforward visual dump of the contents of the OM tape. OMTDUMP performs the necessary conversions to make all of the data displayable.

This tool is part of the OMTDMPSU subsystem, with contains the OM tape dump facility. It is implemented in the OMTDUMP module.

### PACBASE

The process PACBASE allows pretesting of a carrier before it is cut into service. It then is possible to put a new carrier in place within an existing DS1 path. Individual channels can be busied, tested, and returned to service without disrupting the remaining channels.

The subsystem PACSUB describes the carrier pretesting and cutover feature. PACBASE is contained within this subsystem and is divided into five modules necessary for the implementation of this feature.

#### PACCI

This module of code is the process associated with a MAP level that is an increment of a carrier level. From this MAP level, one can establish a data connection between two DS1s and a physical connection between two DS1 selective channel connections. PACCI allows the user to take down these same connections for trunk test position (TTP) testing.

#### PACIPL

This module places the entry command CARPAC on the CARRIER menu.

#### PACPROSS

The PACPROSS module implements a permanent monitoring process. The process attempts to reconnect a maximum of three connection failures on a

DS1. If more than three failures are detected, or if the process detects a local carrier group alarm or a remote carrier group alarm, on any of the DS1s, the DS1s will be returned to their original states and all connections will be dropped.

PACPROSS process updates the screen every five seconds.

### PACSUP

The PACSUP module is responsible for the creation of the monitoring process. In the event of a monitoring process trap, this module will recreate the process.

### PACUTIL

This module contains the data and the procedures to facilitate all PACBASE associations and connections. PACUTIL is accessible by both the CI process and the permanent monitoring process.

## READDIR

READDIR is part of the subsystem which contains the save and restore tape information over restarts. It provides the user with the ability to do the following:

- restore a directory saved by WRITEDIR
- save a CI directory in a file
- remount a tape after a restart

This tool is part of the RWDIRSUB subsystem.

## SCANLOG

The SCANLOG tool scans log files for information the user supplies, in order to get a collection of related logs.

This tool is part of the SCANSUB subsystem, which contains the SCANLOG utility.

## SORT

The SORT tool sorts a text file.

This tool is part of the SORTCOM subsystem, which contains the SORT utility.

## SPLITEX

The SPLITEX tool, or command, allows selective command execution. The tool goes into a loop that reads lines from INTTY. Some of the lines read are executed as commands. The rest are written to the file FN on device DEV. A list of command names is given to this program, either by placing the list of command names in a file (one in each line - the file FN option) or by giving command names directly as parameters.

This tool is part of the SPLITSUB subsystem, which contains the selective command execution. It is implemented in the SPLITEX module.

### TKREC

The nonresident CI TKREC manually recovers all remote busy or lockout trunks in an office. It is to be used in Turkey to alleviate the problem of having to post, busy, and return to service all remote busy and lockout trunks in an office after a major carrier outage.

This tool is part of the INTOLSUB subsystem containing the ITKRECCI module. This subsystem contains the international tools, including international manual trunk recovery.

### WHATS

The WHATS tool command displays all information about the input parameter. The parameter can be of any type, such as a command, string, file device, directory, integer, hexadecimal number, or alias name.

This tool is part of the WHATSSUB subsystem and is implemented in the WHATS module.

### WRITEDIR

WRITEDIR allows the user to copy the contents of a user specified directory into a file. The user must provide the name of the directory whose content is to be written into a file. The user has the option to specify the device and file names.

> ***Note:*** The output copied into a file may contain special symbols. Depending on how the directory is set up, this output file may not appear the same as it would if the contents were printed directly on the screen.

This tool is part of the RWDIRSUB subsystem, which contains the save and restore tape information over restarts. This subsystem provides the user with the ability to do the following:

- restore a directory saved by WRITEDIR
- save a CI directory in a file
- remount a tape after a restart

# List of terms

**ABBT**

automatic board-to-board testing

**advanced intelligent network (AIN)**

A set of Bellcore standards for software and hardware that enhance switch call processing capabilities to use centralized databases. These databases determine how AIN calls should proceed for further call processing. AIN also allows operating companies to design and deploy their own features and make these features available across private and public networks.

**AIN**

advanced intelligent network

**automatic board-to-board testing (ABBT)**

A procedure used before a new DMS switch is cut into service to verify that each subscriber terminal is identified with the same line equipment number (LEN) in the new DMS office as in the old office.

**BBT**

See automatic board-to-board testing

**board-to-board testing (BBT)**

See automatic board-to-board testing

**CC**

central control

**cell site controller (CSC)**

A peripheral module that acts as an interface between a mobile telephone exchange and radio equipment at the cell site.

**central control (CC)**

A part of the NT40 processor that consists of the data processing functions with the associated data store (DS) and program store (PS). *Syn:* control module.

### central message controller (CMC)

A hardware device, located in the central control complex frame, that provides an interface between the CPU, network module controllers, and I/O controllers.

### CI

command interpreter (CI)

### CM

computing module

### CMC

central message controller (CMC)

### computing module (CM)

The processor and memory of the dual-plane combined core (DPCC) used by DMS SuperNode. Each CM consists of a pair of CPUs with associated memory that operate in a synchronous matched mode on two separate planes. Only one plane is active: it maintains overall control of the system while the other plane is on standby.

### CO

cutover

### command interpreter (CI)

A component in the support operating system that functions as the main interface between machine and user. Its principal roles include the following:

- reading lines entered by a terminal user
- breaking each line into recognizable units
- analyzing the units
- recognizing command-item numbers on the input lines
- activating these commands

### CSC

cell site controller (CSC)

### DPCC

dual-plane combined core cabinet.

### DS-1 interface circuit card

A Subscriber Carrier Module-100S (SMS) or Subscriber Carrier Module-100 Urban (SMU) card that links the remote concentrator SLC-96 (RCS) and SMS or the remote carrier urban (RCU) and SMU.

**dual-plane combined core cabinet (DPCC)**

One of three cabinet models for the DMS SuperNode processor. The DPCC contains two message switches (MS) and a system load module (SLM).

**ENET**

Enhanced Network

**Enhanced Network (ENET)**

A channel-matrixed time switch that provides pulse code modulated voice and data connections between peripheral modules. ENET also provides message paths to the DMS-Bus components.

**HDLC**

high level data link control

**JNET**

Junctored Network

**Junctored Network (JNET)**

A time-division multiplexed system that allows for switching of 1920 channels per network pair (fully duplicated). Additional channels are established through the use of external junctors, internal junctors, and a digital network interconnecting (DNI) frame. Channels then can be routed directly, or use alternate routing, through the use of junctors, a DNI frame, and software control. Capacity for a DMS-100 switch is 32 network pairs or 61,440 channels (1920 channels $\times$ 32 network pairs).

**LC**

line circuit

**LCM**

line concentrating module

**line circuit (LC)**

A hardware device that provides an interface between subscriber lines and the digital switch. Each subscriber line has a dedicated line circuit.

**magnetic tape center (MTC)**

An equipment frame containing one or more magnetic tape drives.

**mobile telephone exchange (MTX)**

A DMS-100 Family switch configured as a cellular mobile radio switch.

**message switch (MS)**

A high-capacity communications facility that functions as the messaging hub of the dual-plane combined core (DPCC) of a DMS SuperNode

processor. The MS controls messaging between the DMS-bus components by concentrating and distributing messages and by allowing other DMS-STP components to communicate directly with each other.

**MS**

message switch

**MTX**

mobile telephone exchange

**OM**

operational measurements

**operational measurements (OM)**

The hardware and software resources of the DMS-100 Family switches that control the collection and display of measurements taken on an operating system. The OM subsystem organizes the measurement data and manages its transfer to displays and records. The OM data is used for maintenance, traffic, accounting, and provisioning decisions.

**RCU**

remote carrier urban

**remote carrier urban (RCU)**

A peripheral module that provides remote subscriber loop concentration for a DMS-1 urban carrier system. The RCU uses high-level message protocol to communicate over one or two message channels and, in configuration with a digital switch, supports up to 528 subscriber lines over a maximum of eight DS-1 links.

**SLM**

system load module (SLM)

**SMU**

Subscriber Carrier Module-100 Urban

**Subscriber Carrier Module-100 Urban (SMU)**

A subscriber carrier module that provides an interface between the remote carrier urban of a DMS-1 switch and the central office of a DMS-100 Family switch.

**system load module (SLM)**

A mass storage system in a DMS SuperNode processor that stores office images. From the SLM, new loads or stored images can be booted into the computing module (CM).

**TAS**

Technical Assistance Service

**Technical Assistance Service (TAS)**

Northern Telecom's technical services organization for operating companies in the United States. TAS handles all emergency and nonemergency support, technical queries not related to pricing and product availability, cutovers, and software updates including patches.

**TTP**

trunk test position

DMS-100 Family

# Super Nonresident Tool Listing

Technical Assistance Manual



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