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Meridian SL-100/Nortel Networks Communication Server 2100

Simplified Message Desk Interface

Description and Implementation

SE07 Standard 03.02 January 2005



NORTEL

Meridian SL-100/Nortel Networks Communication Server 2100

Simplified Message Desk

Description and Implementation

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About this document

Purpose

Use this document to obtain a description of the Simplified Message Desk Interface (SMDI) feature on the Meridian SL-100/Communication Server 2100 system. The SMDI feature provides an interface between the Meridian SL-100/Communication Server 2100 system and a message desk where calls can be forwarded. SMDI routes two types of calls to the message desk: direct and indirect. Direct calls can be requests for messages currently stored in the message desk or forwarded messages to other parties. Indirect calls can be incoming calls to the message desk that are forwarded.

This publication uses the following special terms:

- Requestee – The station that forwards calls to the Message Desk Uniform Call Distribution (UCD) Directory Number (DN) and against which the Message Desk queues the message from the Requestor
- Requestor – The station that leaves a message at the Message Desk for a called DN.

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).

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FOR MORE INFORMATION

To determine whether you have the latest version of this document and how documentation for your product is organized, check the release information in the *Meridian SL-100 Master Index of Publications*.

References in this document

The following list shows related publications to which this document refers in appropriate places in the text.

- *Automatic Message Accounting–Northern Telecom Format*
- *DSN Service Order Reference Manual*
- *DSN Operational Measurements Reference Manual*
- *DSN Log Report Manual*
- *DSN Customer Data Schema*
- *Commercial Systems Service Order Reference Manual*
- *Commercial Systems Operational Measurements Reference Manual*
- *Commercial Systems Log Report Manual*
- *Commercial Systems Customer Data Schema*

Note: More than one version of these documents may exist. To determine which version of a document applies to the Batch Change Supplement (BCS) or Communications System Platform (CSP) in your office, check the release information in the *Commercial Systems Master Index of Publications*, or the *DSN Master Index of Publications*.



SMDI description

Purpose

This document describes two versions of the Simplified Desk Interface (SMDI) application offered by Nortel Networks:

- SDMI for the TDM Meridian SL-100 switch (see [“SMDI for Meridian SL-100 \(TDM\)” on page 12](#))
- SMDI over Internet Protocol for Communication Server 2100 Compact (see [“SMDI over IP for Communication Server 2100 Compact” on page 20](#))

The Simplified Message Desk Interface (SMDI), described in this document, is implemented as described in Bell Communications Research Technical Reference TSR-TSY-000283, Interface Description-Interface Between Customer Premises Equipment; Simplified Message Desk and Switching System: 1AESS.

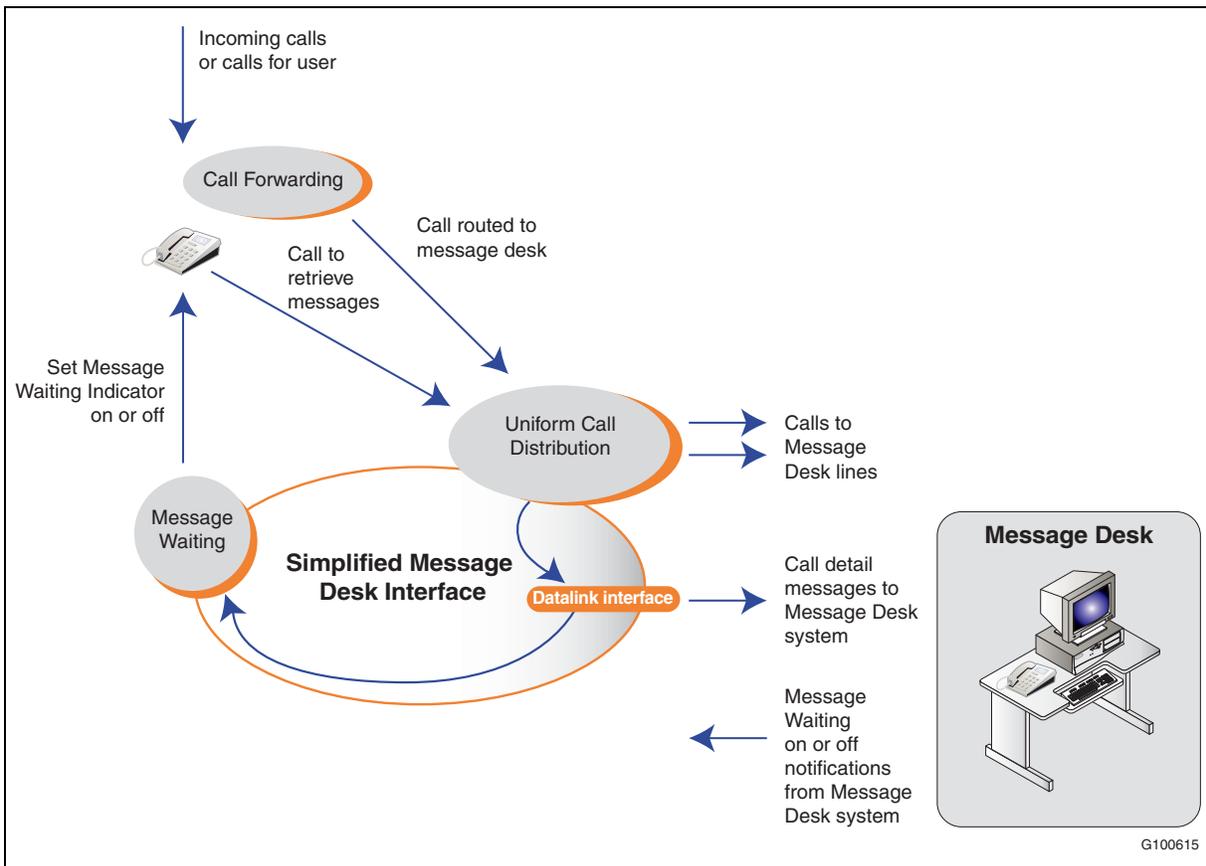
Note: Any function not described in TSR-TSY-000283 is not provided.

Description

Simplified Message Desk Interface (SMDI) is a set of features for Enterprise customers that provides an interface to a Voice Mail System (VMS), Automated Attendant, or Text Messaging System (TMS). SMDI integrates Call Forwarding, Message Waiting, and Universal Call Distribution (UCD) with a datalink interface to a message desk system as shown in the following diagram.

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Figure 1
SMDI Message flow overview



A message desk is a central answering service which takes calls for users not available to answer their phones. The message system provides capabilities for answering the calls that users forward to a message desk directory number. For more details on SMDI, refer to *NTP Meridian Digital Centrex Simplified Message Desk Interface Setup and Operation*, 297-2051-104.

SMDI for Meridian SL-100 (TDM)

Message desk

The message desk is identified with a Uniform Call Distribution (UCD) Directory Number (DN). The message desk can be a Text Messaging System (TMS) or a Voice Messaging System (VMS). Either system answers forwarded calls and records messages. The agents within a UCD group must have the UCD line option on their lines and the SMDI option to indicate that their UCD lines have the SMDI feature.

Note: Nortel Networks recommends that the agents within a UCD group have the Cutoff On Disconnect option on their lines.

To receive UCD calls, the agent must enter the feature activation code, followed by the UCD DN of the group, if the AUTOLOG option in table IBNFEAT is datafilled as N (no autolog). See [“Configuration” on page 47](#) for more information on table IBNFEAT and information on other Data Schema tables. The agent must enter the feature deactivation code to remove the position from UCD operation.

One datalink can serve a maximum of 63 desk numbers in a message desk. When there are multiple desk numbers on one datalink, one desk number (desk 63) must be dedicated to handling call retrievals. This allows the message desk to store and deliver messages more effectively.

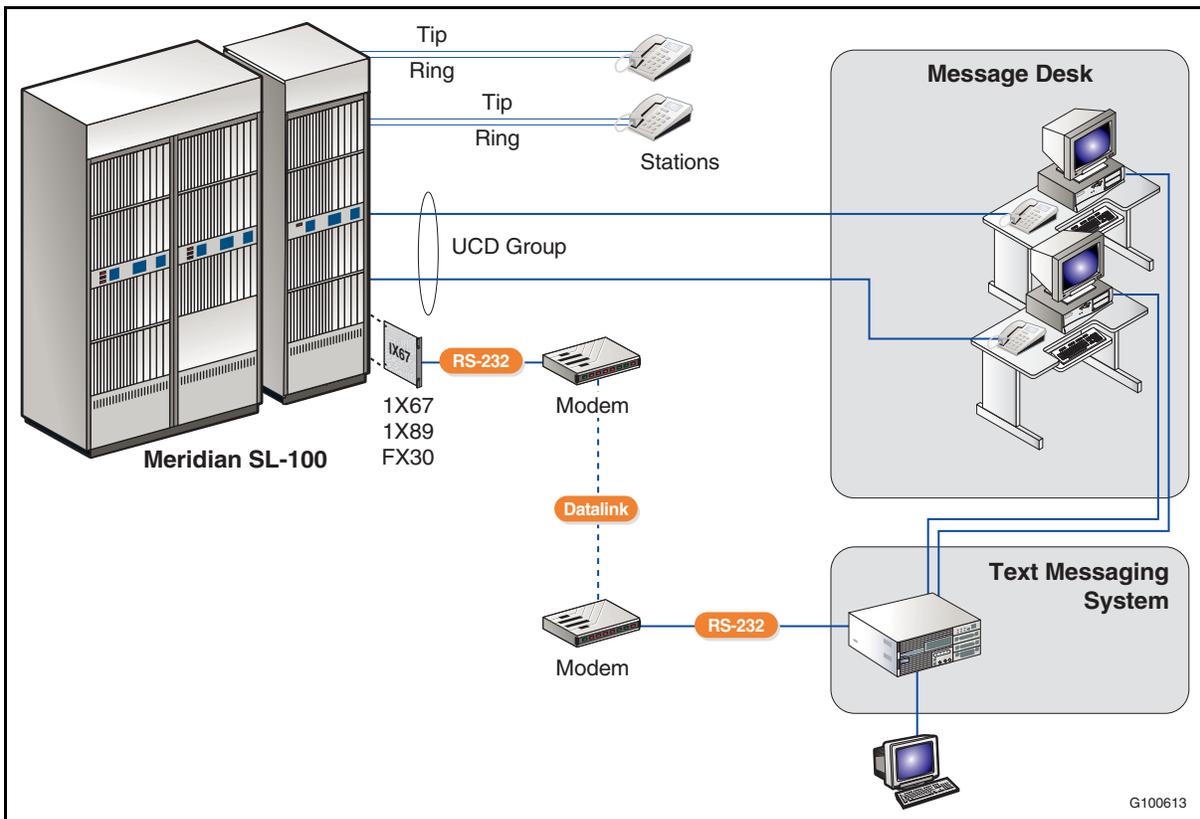
SMDI supports a maximum of 59 datalinks for transferring messages between the Meridian SL-100 system and the message desk.

Text messaging system

The Text Messaging System (TMS) electronically automates the recording, filing, and retrieval of messages. The requestee is the station that forwards calls to the message desk UCD directory number. The requestor is the station that leaves a message at the message desk for a called DN. If the requestee has forwarded calls to the message desk, and the requestor calls the requestee, the requestor’s call goes to the message desk. The Meridian SL-100 system sends the call information to the TMS by way of the datalink. [“Text messaging system” on page 14](#) illustrates the configuration of a TMS.

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Figure 2
Text messaging system



The call information consists of the following items:

- requestee's Directory Number (DN)
- requestor's DN (if available)
- call forward type (Busy, No Answer, All)
- message desk number and line termination

The TMS displays the pertinent call information on the message desk attendant's terminal. The TMS can also display the requestee's whereabouts, or schedule, or both, if known.

The requestor can leave a message for the requestee. The attendant enters the message through the terminal keyboard. The TMS then signals the Meridian SL-100 system to activate message waiting indication for the requestee.

When the TMS notifies the requestee of a message at the message desk by an active message waiting indication, the requestee can

retrieve messages from the message desk either by calling the message desk or by using a TMS terminal.

Calling the message desk

The requestee dials the message desk DN or uses the Call Request Retrieval (CRR) code. The Meridian SL-100 system notifies the TMS of the incoming call and transmits the call information. The call information is the same as given above except that the call type is message–retrieval or direct. An attendant whose terminal displays the messages for the requestee answers the call. The attendant delivers the messages and the TMS notifies the Meridian SL-100 system to deactivate the message waiting indication for the requestee.

Using a TMS terminal

The requestee enters the DN and any other information required by TMS on a TMS terminal. The messages display and the TMS notifies the Meridian SL-100 system to deactivate the message waiting indication.

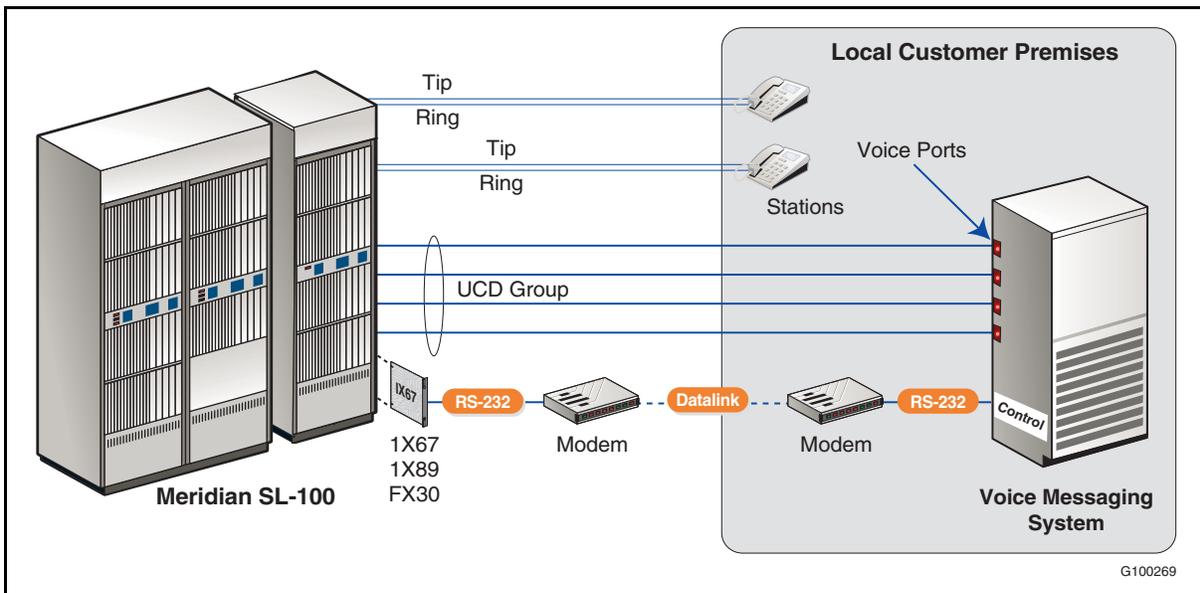
Voice messaging system

The High Speed SMDI functionality allows the SMDI application to use MPC hardware and software for data communications with voice messaging systems.

The Voice Messaging System (VMS) automatically stores and plays back the requestor’s actual voice message. The message transmits as it is delivered, thus eliminating the need for an attendant message desk. [Figure 3 on page 16](#) shows the configuration of a VMS.

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Figure 3
Voice messaging system



The message desk UCD group consists of voice lines that function to carry voice transmissions to and from the requestee's mailbox within the VMS. The mailbox is a unique address within the VMS for each requestee.

If the requestee forwards calls to the message desk, and the requestor calls the requestee, the requestor's call goes to the message desk. The Meridian SL-100 system sends the call information to the VMS over the datalink. The call information consists of the same information as for the TMS. The VMS uses the call information to ensure the requestor's call terminates in the correct mailbox and that the appropriate answering message plays.

The requestor leaves a voice message recorded by the VMS and releases the call. The VMS notifies the Meridian SL-100 over the datalink to activate the message waiting indication for the requestee.

When an active message waiting indication notifies the requestee of messages at the message desk, the requestee can retrieve messages by dialing the message desk DN or the CRR code. The Meridian SL-100 system notifies the VMS of the incoming call and call information. The call information is the same as for the TMS, except that the call type is message-retrieval or direct. The VMS terminates the call on the correct mailbox so the requestee can retrieve the messages. The VMS then notifies the Meridian SL-100 system to deactivate the message waiting indication for the requestee.

SMDI datalink

The SMDI functionality provides a datalink between message desk terminal equipment and the Meridian SL-100 switch to integrate the following features.

- Call Forwarding (CF)
- Message Waiting (MWT)
- Uniform Call Distribution (UCD)

When a call goes to the message desk, the call information goes to the outgoing message queue for the SMDI data link interface to process. The multilink ASCII device driver dequeues the message and directs it to the message desk over the datalink.

If the call is a message for the requestee, the message desk takes the message and instructs the Meridian SL-100 by way of the datalink to queue a message against the requestee's station and activate message waiting indication if the requestee has the Message Waiting feature. The multilink ASCII device driver to be dequeued places this instruction on the incoming queue.

Note: Another means of message waiting indication can be defined, in addition to the lamp or stuttered dial tone. In this case, it is not necessary for the station to have the MWT option. However, an error results if the message desk attempts to activate or deactivate message waiting through the datalink for a station without the MWT option. As a result, log SMDI100 generates.

If the call is the requestee retrieving messages, the message desk delivers the messages and instructs the Meridian SL-100 by way of datalink to deactivate message waiting indications for the requestee's station. The multilink ASCII device driver to be dequeued places this instruction.

An active message waiting indication notifies the station with messages at the SMDI message desk. The station can retrieve the message by dialing the message desk UCD DN or the CRR feature access code, if the station has the Call Request feature assigned. The Call Request Retrieve method of retrieval is recommended to maximize the effectiveness of the SMDI capability.

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Differences between message waiting and SMDI message waiting

With Message Waiting (MWT), the Meridian SL-100 system activates the Call Request. With SMDI message waiting, the datalink activates the Call Request by the datalink instruction. With SMDI, the message desk is a UCD DN. If the Meridian SL-100 system does not forward the requestee's calls to the message desk UCD DN, then the requestor activates or deactivates the call requests against the requestee using the Call Request feature.

The requestee can not differentiate whether the MWT feature (another station) or the SMDI MWT feature (message desk) activates or deactivates the message waiting indication. The message waiting indication method remains the same for the requestee; it is either stuttered dial tone or Message Waiting Lamp, depending on this station's option. In addition, the requestor or requestee activates or deactivates message waiting through SMDI.

The following procedures compare and contrast the differences between Message Waiting and SMDI. In these procedures, Station B is the requestee, and Station A is the requestor.

Procedure 1 Message waiting activation by the requestor

- 1 Station A calls Station B and receives busy signal or the call is unanswered.
- 2 Station A flashes or presses the 3WC (Three-way calling) key to get special dial tone.
- 3 Station A dials the CRR activation access code and gets confirmation tone.
- 4 Station A goes on-hook.
- 5 Station A's message queues against Station B, and the message waiting indication activates for Station B.

This procedure is now complete

Procedure 2 SMDI activation by the message desk

- 1 Station B forwards calls to the message desk UCD DN.
- 2 Station A calls Station B.
- 3 An output message transmits across the datalink to provide the message desk with information about the call.
- 4 The Meridian SL-100 system routes Station A to an appropriate member of the message desk, which answers and records the message for Station B.
- 5 Station A goes on-hook.
- 6 The message desk causes an input message to transmit across the datalink to the Meridian SL-100 system with instructions to activate the message waiting indication for Station B.

-
- 7 The Meridian SL-100 system queues the message against Station B and activates message waiting indication for Station B.

This procedure is now complete

Procedure 3 Message waiting deactivation by the requestee

- 1 An active message waiting indication notifies Station B that a message is queued against the station.
- 2 Station B dials the CRR access code. If Station B is an Electronic Telephone Set with display, then Station A's directory number displays on the top line of Station B's set.
- 3 Station A rings. Station A answers and talks to Station B.
- 4 When the call completes, Station B goes on-hook.
- 5 Station A's message dequeues from Station B, and the message waiting indication deactivates for Station B.

This procedure is now complete

Procedure 4 SMDI deactivation by the message desk

- 1 An active message waiting indication notifies Station B that a message is queued against the station.
- 2 Station B dials the CRR access code. If Station B is an electronic telephone set with display, then the message desk UCD group name (up to 16 characters) displays on the top line of Station B's set.
- 3 An output message transmits across the datalink to provide the message desk with information about the call.
- 4 The Meridian SL-100 system routes Station B to an appropriate member of the message desk, which answers and delivers the message to Station B.
- 5 Station B goes on-hook.
- 6 The message desk message transmits an input message across the datalink to the Meridian SL-100 system with instructions to deactivate the message waiting indication for Station B.

Note: Message waiting indication can remain ON momentarily until the Meridian SL-100 system receives and acts upon the above message.

- 7 The message desk request dequeues and message waiting indication deactivates for Station B.

This procedure is now complete

SMDI interaction with other features

The SMDI interacts with other features as follows:

- A station can have both MWT and SMDI Message Waiting activated against it.
- A call forward validation termination call is a direct call to the message desk.

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- For an attendant console-extended call to the message desk, the source of the call is the calling party presented to the message desk.
- If the requestor is a trunk or attendant console, the calling DN presented to the SMDI message desk is blank.
- In the event of call forward chaining to a message desk, the called station information presented to the message desk is the first call forward base station in the chain.
- In 3WC circuit with Call Forward Don't Answer (CFD), if the controller goes on-hook before the CFD time-out, then the other station on the first leg is the calling station. Otherwise, the controller is the calling station.
- A three-way call can not go to a UCD line. When two parties are talking and the call extends to a third party using three-way calling, the controller receives busy treatment if the third party's calls forward to the message desk.

Effect of restarts

After a restart, the message desk agents within an active UCD group automatically log in that group again. Active datalinks in the transferring state automatically come up ready for use. The system preserves both MWT messages and the state of the message waiting indication on the requestee's station through warm restarts only.

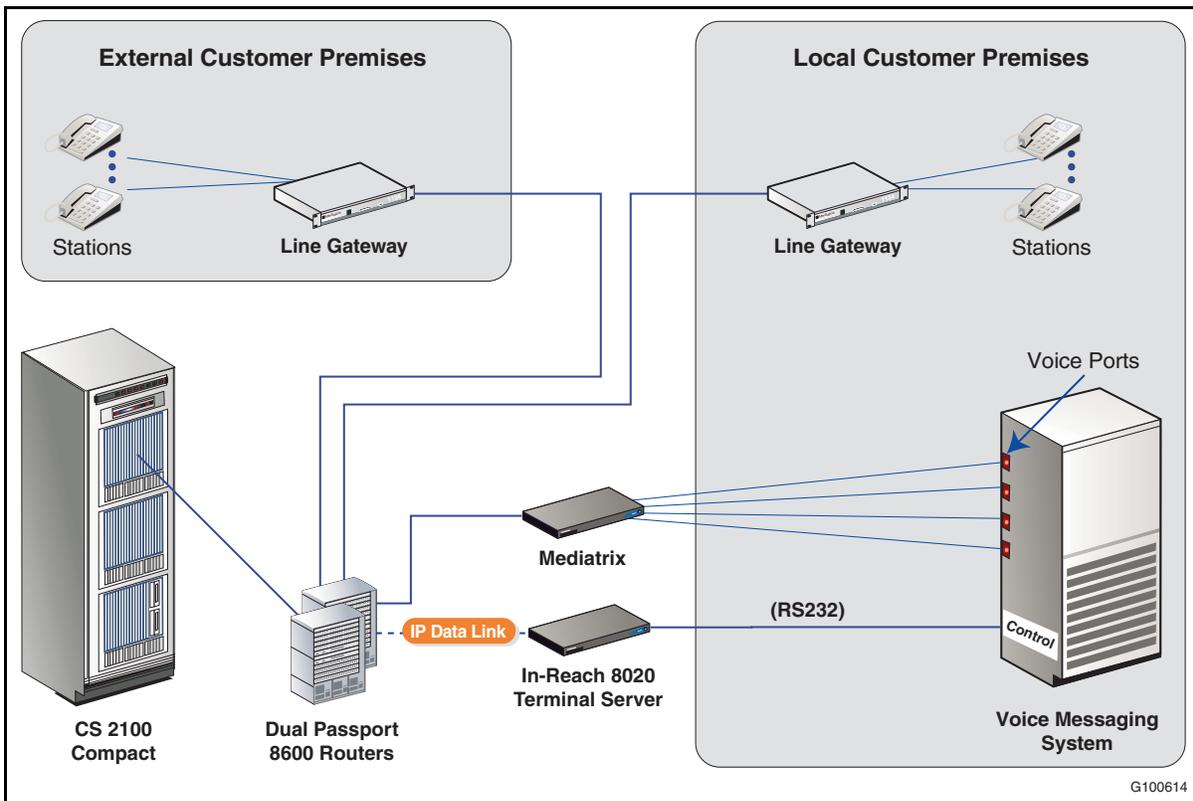
The system also preserves the message waiting indication state on the requestee's station during cold restarts, even though the MWT messages queued against the requestee are lost. The state resets during a directory number audit.

SMDI over IP for Communication Server 2100 Compact

Description

In the Meridian SL-100 architecture the SMDI link is connected to an Input/Output Controller/Input/Output Module (IOC/IOM) from the Meridian SL-100. In the Communication Server 2100 Compact, there is no IOC/IOM, therefore the use of a TCP link provides the SMDI functionality for the Compact Communication Server 2100. Although The SMDI configuration is illustrated in [Figure 4 on page 21](#).

Figure 4
SMDI configuration for Compact Communication Server 2100.



The SMDI data is sent over Ethernet links using TCP/IP. SMDI over IP does not require a different format of the SMDI data from the TDM version of SMDI. SMDI over IP on the Communication Server 2100 Compact supports SMDI over TCP/IP to a server in ASCII format. This is achieved by configuring the TCP_DEV prompt, the device type for SLLNK which will send the SMDI data over TCP/IP. To enable this existing functionality for the Communication Server 2100 Compact, the following must be done:

- Provisioning – the TCP/IP device is configured in Table SLLNKDEV. Here a new entry, TCP, prompts the user for an IP address and port number of the server.
- Software Optionality Control (SOC) – a SLLNK SOC allows customers to activate SMDI over IP for the Communication Server 2100 Compact.

Hardware requirements

SMDI over IP on the Communication Server 2100 requires a Voice Messaging Service (VMS) or a billing server, a terminal server, a gateway, and a Compact Communication Server 2100.

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Limitations and restrictions

The following limitations and restrictions apply to Simplified Message Desk Interface over Internet Protocol Support for the Communication Server 2100 Compact.

- Software load requirement – SE06 for Communication Server 2100 Compact.
- Only SMDI over TCIP/IP is supported for Compact Communication Server 2100 loads.
- The SMDI link is partially carrier grade. When the far end device goes down (VMS or billing server) and comes back up, the server's IP address may be set dynamically. This means that the IP address may change and must be updated in table SLLNKDEV, before a connection can be successful. For the Compact Communication Server 2100, dynamic allocation of the IP addresses by the far-end server is not supported.
- There is no concept of Offline (OFFL) for the Compact Communication Server 2100. The TCP/IP is established through the use of two ports.
- The following SMDI features are supported by this feature:
 - Message Service - Network Message Waiting Indicator – AG1638
 - RES SMDI CLID suppression – AG1980
 - Flexible Line Delivery on SMDI – AF6300
 - Remote Call Forwarding Enhancements – AQ1245
- The following SMDI features are not supported by this feature:
 - SMDI Called DN Option and KSH Support – NC0009
 - Message Waiting Indicator - PRI – AJ1538
 - RES High Speed SMDI – AF5725
- The SLLNK SOC are only present in Compact Communication Server 2100 loads. Any other load will not have access to this feature.

SOC for SMDI over IP on Compact Server 2100 Compact

SMDI over IP for the Communication Server 2100 Compact requires Software Optionality Control (SOC). The following table provides the required SOC information.

Table 1
SOC information for SMDI over IP for Communication Server 2100 Compact

Item	Description
SOC option name:	SMDI over IP
SOC option title	SLLNK SOC for SMDI over IP for Compact CS2K
SOC option control type:	state
New SOC option?	yes
SOC option order code	SMDI0001
Option defined in DRU:	SHR

Configuring SMDI over IP for Communication Server 2100 Compact

Information about how to configure the Communication Server 2100 Compact and on relevant information Commands for SMDI over IP for the Communication Server 2100 is included in [“Configuration” on page 47](#). Relevant information on Logs can be found in [“Log reports” on page 69](#).

No other customer facing fault management differences occur from the Meridian SL-100 TDM version of SMDI.

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Datalink characteristics

Purpose

Use this document to obtain a description of the Datalink characteristics of the Simplified Message Desk Interface (SMDI) feature on the Meridian SL-100 system. The SMDI feature provides an interface between the Meridian SL-100 system and a message desk where calls can be forwarded. SMDI routes two types of calls to the message desk: direct and indirect. Direct calls can be requests for messages currently stored in the message desk or forwarded messages to other parties. Indirect calls can be incoming calls to the message desk that are forwarded

Note: SMDI over IP on the Communication Server 2100 sets up to interface to an In-Reach 8020 Terminal Server. This removes the dependency on Table TERMDEV., MPC, and MPCLINK. Table SLLNKDEV points to a TCP/IP address and port instead of a TERMDEV or MPC device. For information on the basic set-up of the In-Reach Terminal Server, refer to [“Communication Server 2100” on page 29](#).

Multilink ASCII device driver

The datalink used for the communication between the Meridian SL-100 and the message desk is provided by a multilink ASCII device driver. It consists of a 1200-baud or up to 9600 baud, dedicated, full duplex line that transmits ASCII characters. It is an RS-232-C datalink, that uses an NT1X67, 1X89, or FX30 terminal controller card. This datalink does not provide end-to-end protocol or integrity. It also does not provide retransmission of data that the datalink receives incorrectly.

The datalink is in full duplex, full echo mode, meaning each printable character that it receives echoes to the screen to enable validation of transmitted messages. This feature cannot be disabled.

A maximum of 59 datalinks can handle SMDI messages. Each datalink supports up to 63 desk numbers.

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For TDM SMDI devices, a datalink device must have datafill in table MPC, MPCLINK or TERMDEV before the Management Reports Command Interpreter (CI) interface references it. A datalink device must also have datafill in table SLLNKDEV before it can connect in the CI increment LNKUTIL. This device must have datafill in table TERMDEV before it can be datafilled in table SLLNKDEV.

However, an entry in table MPC, MPCLINK or TERMDEV can be manipulated independently of any corresponding entry in table SLLNKDEV. The only restriction is that the TDM SMDI datalink device must have datafill in table MPC, MPCLINK, or TERMDEV, before it can have datafill in table SLLNKDEV; and the device must have datafill in table SLLNKDEV before LNKUTIL can access it.

No device can transfer SMDI communication and any other existing report type. Therefore, SMDI must have exclusive use of any datalink it uses in the multilink ASCII device driver.

A set of Command Interpreter (CI) commands allows basic maintenance and manipulation of the datalinks. The user can start, stop, and query SMDI communication. See the chapter describing “User-machine Interface”, for a detailed description.

Logs

Logs provide a printed-copy history of activities on each datalink including database initialization of the downstream processor (DSP).

The logs also record the information on the start, stop, or start and stop of the following events:

- data transfer
- call event message generation
- call event error conditions

Note: See “Log reports” on page 69 for more information.

If the SMDI Call Retrieval Billing option is active in the Meridian SL-100 system, the AMAB150 log report titled SMDR_CALL_DATA generates for each SMDI call retrieval. This information can also be recorded on the Station Message Detail Recording (SMDR) tape. The SMDI Call Retrieval Billing option also provides additional information within the AMAB150 report to distinguish a call retrieval using the Call Request Retrieve (CRR) feature from a direct call.

If the SMDR option is not working, then SMDR reports do not generate.

Datalink failure

The Meridian SL-100 system performs activation or deactivation of SMDI MWT as instructed only by the input datalink message. If the datalink is down during activation, then the requestor's message does not transmit and MWT does not activate. If the datalink is down during deactivation, then the message does not transmit and the Meridian SL-100 system does not deactivate MWT, even if the message is already retrieved. In this case, the Meridian SL-100 system depends on the message desk to inform the requestee when the system retrieves all messages and should deactivate the message waiting indication on the station. In both cases, appropriate logs generate that relate to the datalink status for hardware, software, or failure of both.

If the Meridian SL-100 system is momentarily unable to execute the message desk request, or the input datalink message contains invalid data, then the message does not transmit and the Meridian SL-100 system sends a message denoting negative acknowledgment to the message desk. In either case, it is a function of the message desk to recheck the data and try the transmission again.

Message protocol

The system checks messages that it receives from the message desk for adherence to the following message protocols.

Incoming messages

There are two kinds of incoming messages the Meridian SL-100 system can accept from the message desk:

- OP:MWI (SP) nnnnnnnn! (D)
- RMV:MWI (SP) nnnnnnnn! (D) where: nnnnnnnnnn = station number (can be 7 or 10 digits) (D) = control-D (End Of Transmission), nnnnnnnnnn = station number (can be 7 or 10 digits), and (SP) = space

The first message activates the message waiting indication. The second deactivates the message waiting indication.

For example, if Station B (DN 787-2000) forwards calls to the message desk and receives a message, the message desk activates message waiting indication for Station B with the following message:

```
OP:MWI 7872000!(D)
```

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After Station B retrieves the messages from the message desk, the message desk deactivates message waiting indication for Station B with the following message:

```
RMV:MWI 7872000!(D)
```

Outgoing messages

There are two groups of messages from the Meridian SL-100 system to the message desk:

- Call details – These message types give items of information concerning calls which the message desk received:
 - (CR) (LF) MDgggmmmmannnnnnn (SP) yyyyyyy (SP) (CR) (LF) (Y)
 - (CR) (LF) MDgggmmmmannnnnnn (SP) (SP) (CR) (LF) (Y)
 - (CR) (LF) MDgggmmmma (SP) yyyyyyy (SP) (CR) (LF) (Y)
- MWI change failure – The request to change Message Waiting Indication failed because it was either invalid (INV) or unable to perform the change when requested (BLK).
 - (CR) (LF) MWInnnnnnn (SP) INV (CR) (LF) (DL) (DL) (Y)
 - (CR) (LF) MWInnnnnnn (SP) BLK (CR) (LF) (DL) (DL) (Y)

where:

- (SP) = space
- (CR) = carriage return
- (LF) = line feed
- (DL) = delete character (ASCII value FF)
- (Y) = control-Y
- ggg = message desk number (001-063)
- mmmm = message desk terminal (0001-2047)
- nnnnnnnnn = forwarding from station number (can be 7 or 10 digits)
- yyyyyyyyy = calling station number (can be 7 or 10 digits)
- a = type of call where D = Direct Calls, A = Forward All Calls, B = Forward Busy Calls, N = Forward No Answer Calls

For example, Station B (DN 787-2000) forwards all calls to the message desk. Station A (DN 361-1234) calls Station B and forwards to message desk number 002, terminal 009. The Meridian SL-100 system sends the following message to the message desk:

```
(CR) (LF) MD0020009A7872000 3611234 (CR) (LF) (Y)
```

Communication Server 2100

Figure 5 is an example of an In-reach terminal server port (port 3) used for SMDI over IP on the Communication Server 2100.

Figure 5
In-reach terminal server port view example

```
Port 3:                                09 Feb 2005 20:32:10
Character size:                          7          Speed:                          9600
Flow Control :                           None
Parity:                                   Even         Modem Control:                     Disabled
Access:                                   Remote      Local Switch:                       None
Backwards Switch:                         None        Name:                               SMDI
Break:                                     Remote      Session Limit:                       1
Break Length:                             250ms      Type:                               Soft
Forwards Switch:                           None
Dialout Action:                           Logout
APD Authentication
Interactive only: Disabled

Authorized Groups: 0
Current Groups: 0

Enabled Characteristics:
Autoconnect, Autoprompt, Console Port, Input Flow Control,
Internet Connections, Line Editor, Loss Notification, OutboundSecurity,
Output Flow Control, Pause, Telnet, ULI, Verification
In-Reach_Priv>
```

Datafill Table SLLNKDEV as in the following figure (port 3 is used in this example).

Figure 6
Datafilling Table SLLNKDEV

DEVNAME	DEVTYPE	XLATION	PROTOCOL	DIRECTION
				XFERS
VMAILIP	TCP 47 104 52 47 2300	NONE	NONE	INOUTLK
(SMDIDATA (NUMOFDIGS 7) (CGNADDRDN) (NMSPVT Y) \$) \$				



User-machine interface

Purpose

This document describes the user-machine interface for the Meridian SL-100 Simplified Desk Interface product.

CI commands

The Management Reports Application layer provides a generic datalink interface. A small set of Command Interpreter (CI) commands can manipulate the datalinks.

Using these CI commands, the user can start, stop, or query information on all data transfers on a specific datalink. Switch personnel must datafill all datalinks in table SLLNKDEV before they can connect in the CI increment.

These commands are on two levels of CI: LNKUTIL and SMDILNK.



The LNKUTIL and SMDILNK Commands can not be used with Communication Server 2100.

To access LNKUTIL, log on to a MAP workstation and enter the CI level. Type the following at the CI prompt:

LNKUTIL

A set of commands provided over a CI increment called SMDILNK allows the user to perform simple maintenance on the datalinks.

To access SMDILNK, the switch personnel types the following on a MAP workstation at the CI level:

SMDILNK

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LNKUTIL commands

In LNKUTIL, the following commands are available to the user:

- QUIT
- DEVCON
- DEVDISC
- DEVSTART
- DEVSTOP
- POOLSTART
- POOLSTOP
- LNKSTAT

QUIT

The QUIT command causes the system to respond by leaving the LNKUTIL CI increment. The switch personnel no longer have access to LNKUTIL commands. There are no parameters, range, or defaults associated with the QUIT command.

DEVCON

The DEVCON command enables a transfer session on a specific datalink. The format of the DEVCON command is as follows:

```
DEVCON [devnme] plnme
```

where:

- **devnme** is the device name
- **plnme** is the pool name. If not specified, it defaults to the device name.

Examples of the DEVCON command:

- **DEVCON SMDI5 FIRST**
- **DEVCON SMDI6**

System Responses

A message displays to indicate the success or failure of the request. If the request fails, the reason for failure displays:

- If no problems are encountered, the response is:

Device SMDI5 has been started.

- If the datalink is not datafilled in table SLLNKDEV, the response is:

Specified datalink is not datafilled in table SLLNKDEV. No action taken.

- If the maximum number of links has been assigned to the specified pool, the response is:

The number of datalinks assigned to the pool FIRST is 4. No more datalinks may be assigned.

No action taken.

- If the maximum number of datalinks has been reached, the response is:

Unable to allocate device SMDI5.

- If the maximum number of pools has been reached, the response is:

Unable to allocate pool FIRST.

- If the system is unable to send a Meridian SL-100 system (MSL) connect Remote Operation to the DSP, the response is:

Unable to start device SMDI5. No action taken.

DEVDISC

The DEVDISC command disables a transfer session on the specified datalink or delete information about the datalink from the system. If the switch personnel specifies the KILL parameter, the system performs the same two actions: the system deletes the device information and it removes the device from its assigned pool. If the device is the only device that the system assigns to the pool and it references no other applications, it deletes the pool information.

The format of the DEVDISC command is as follows:

DEVDISC [devnme] KILL

where:

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devnme is the device name

Example of the DEVDISC command:

DEVDISC SMDI5

DEVDISC SMDI5 KILL

System Responses

A message displays to indicate the success or failure of the request. If the request failed, the reason for failure displays.

- If no problems are encountered, the response is:

```
Device SMDI5 has been stopped.
```

- If the KILL parameter is entered, the response is:

```
Device SMDI5 has been stopped. Device SMDI5 has  
been deleted from pool FIRST.
```

- If the current device status is disconnected or dead, the response is:

```
Device SMDI5 is not in a connected state. No action  
taken.
```

- If the system is unable to send an MSL–disconnect Remote Operation to the Down Stream Processor, the response is:

```
Unable to stop device SMDI5.
```

DEVSTART

The DEVSTART command starts data transfers on the specified datalink. The device must start before the transfer begins. As long as the link status is CONNECTED, the FORCE option can overrule any system objections to the start of data transfer.

The format of the DEVSTART command is as follows:

DEVSTART devnme SMDIDATA [FORCE]

where:

devnme is the device name

Example of the DEVSTART command:

DEVSTART SMDI5 SMDIDATA

System Responses

A message displays to indicate the success or failure of the request. If the request fails, the reason for failure displays.

- If no problems are encountered, the response is:

```
SMDIDATA transfer has been started on device
SMDI5.
```

- If the device is not been datafilled in table SLLNKDEV, the response is:

```
SMDIDATA is not datafilled in table SLLNKDEV for
SMDI5. It can not be used for SMDI I/O
communication.
No action taken.
```

- If the current device status is disconnected or dead, the response is:

```
Device SMDI5 has not been started.
No action taken.
```

- If the system is unable to send an MSL–start–transfer Remote Operation to the Down Stream Processor, the response is:

```
Unable to start SMDIDATA transfer on device SMDI5.
No action taken.
```

DEVSTOP

The DEVSTOP command stops data transfers on the specified datalink. The device must be known to the system. Transfer must start before it can stop.

The format of the DEVSTOP command is as follows:

```
DEVSTOP devnme SMDIDATA
```

where:

devnme is the device name

Example of the DEVSTOP command:

```
DEVSTOP SMDI5 SMDIDATA
```

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System Responses

A message displays to indicate the success or failure of the request. If the request fails, the reason for failure displays.

- If no problems are encountered, the response is

```
SMDIDATA transfer has been stopped on device
SMDI5.
```

- If the current device status is not TRANSFERRING, the response is:

```
SMDIDATA transfer has not been started on device
SMDI5. No action taken.
```

- If the system is unable to send an MSL–stop–transfer Remote Operation to the Down Stream Processor the response is:

```
Unable to stop SMDIDATA transfer on device SMDI5.
```

POOLSTART

The POOLSTART command starts data transfer on all devices in the specified pool for the specified transfer type. It is equivalent to doing a DEVSTART on each device in the pool for the report type specified. If any device is not in a state that allows data transfer, no data transfer occurs.

The format of the POOLSTART command is as follows:

POOLSTART plnme SMDIDATA

where:

plnme is the pool name

Example of the POOLSTART command:

POOLSTART SMDIP1 SMDIDATA

System Responses

A message displays to indicate the success or failure of the request. If the request failed, the reason for failure displays:

- If there is an allowable number of links in pool SMDIP1, the following response is given:

```
SMDIDATA transfer has been started on device
SMDI5.
```

- If one or more links in the pool is currently transferring SMDIDATA, the following response is given:

```
Transfer on SMDI5 in pool SMDIP1 has already been
started. Transferring on pool SMDIP1 can not be
started. No action taken.
```

- If device SMDI5 in pool SMDIP1 has not been datafilled in table SLLNKDEV, the response is:

```
SMDIDATA is not datafilled in table SLLKNDEV for
SMDI5.
It can not be used for SMDI I/O communication. No
action taken.
```

- If pool SMDIP1 has more than one datalink, the following response is given:

```
The number of datalinks assigned to pool SMDIP1 is
2.
It can not be used for SMDI I/O communication.
No action taken.
```

- If device SMDI5 in pool SMDIP1 has not been datafilled in table SLLNKDEV, the response is:

```
SMDIDATA is not datafilled in table SLLKNDEV for
SMDI5.
It can not be used for SMDI I/O communication. No
action taken.
```

- If pool SMDIP1 has more than one datalink, the following response is given:

```
The number of datalinks assigned to pool SMDIP1 is
2.
It can not be used for SMDI I/O communication.
No action taken.
```

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POOLSTOP

The POOLSTOP command stops data transfer on all devices in the specified pool for the specified transfer type. It is equivalent to doing a DEVSTOP on each device in the pool for the report type specified. If a device is not transferring, nothing happens.

The format of the POOLSTOP command is as follows:

POOLSTOP plnme SMDIDATA

where:

plnme is the pool name

Example of the POOLSTOP command:

POOLSTOP SMDIPOOL SMDIDATA

System Responses

A message displays to indicate the success or failure of the request. If the request failed, the reason for failure displays.

- If all of the datalinks are currently transferring SMDIDATA, the following response is given:

```
SMDIDATA transfer has been stopped on device  
SMDI5.
```

Note: There is only one datalink per pool for SMDIDATA.

- If one or more links in the pool are not currently transferring SMDIDATA, the following response is given:

```
SMDIDATA transfer has not been started on device  
SMDI5.  
Transferring on pool SMDIPOOL can not be stopped.  
No action taken.
```

LNKSTAT

The LNKSTAT command displays information on all the datalinks in the Operational Measurement (OM) system. The device or pool must be known to the system. The following is the format of the LNKSTAT command:

LNKSTATDEVICE devnme

POOL plnme

ALL

where:

devnme is the pool name

plnme is the pool name

Examples of the LNKSTAT command:

LNKSTAT DEVICE MAP

LNKSTAT POOL FIRST

LNKSTAT ALL

System Responses

The following is a sample response for the LNKSTAT DEVICE MAP command

POOL	DEVICE	STATUS	DATA STREAM
SMDIP	SMDI5 communication	Transferring	SMDI I/O

The following is a sample response for the LNKSTAT POOL FIRST command:

POOL	DEVICE	STATUS	DATA STREAM
SMDIP	SMDI5	Disconnected	-----

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The following is a sample response for the LNKSTAT ALL command:

POOL	DEVICE	STATUS	DATA STREAM
FIRST	MAPA	Dead	-----
SECOND	SMDI5	Transferring	SMDI I/O communication
THIRD	MAPC	Connected	-----

SMDILNK commands

With SMDILNK, the following commands are available to the user:

- QUIT
- SMDICON
- SMDIDISC
- SMDISTAT

QUIT

The QUIT command enables the system to leave the SMDILNK increment.

SMDICON

The SMDICON command connects SMDI I/O communication from the Meridian SL-100 system to the datalink.

The format of the SMDICON command is as follows:

SMDICON plnme

where:

devnme is the pool name

plnme is the pool name

Example of the SMDICON command:

SMDICON FIRST

System Responses

A message displays to indicate the success or failure of the request. If the request failed, the reason for failure displays.

- If the SMDICON FIRST command is entered and the device is known to the system, the response is:

```
SMDI I/O communication has been routed on pool  
FIRST.
```

- If the device is unknown to the system, then the response is:

```
pool FIRST does not exist. No action taken.
```

SMDIDISC

The SMDIDISC command disables the transmission of SMDI data that was previously assigned to a certain pool. Therefore, it requires a pool parameter to identify which pool to stop. The format of the SMDIDISC command:

SMDIDISC plnme

where:

plnme is the pool name

Example of the SMDIDISC command:

SMDIDISC FIRST

System Responses

A message displays to indicate the success or failure of the request. If the request failed, the reason for failure displays.

- If no problems are encountered and SMDI I/O communication is successfully stopped on pool FIRST, the response is:

```
SMDI I/O communication for pool FIRST has been  
stopped.
```

- If no SMDI I/O communication has been previously routed on any pool, the response is:

```
SMDI I/O communication has not been routed on any  
pool.
```

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No action taken.

- If SMDI I/O communication is not routed on the specified pool, the response is:

```
SMDI I/O communication has not been routed on pool
FIRST.
```

No action taken.

SMDISTAT

The SMDISTAT command obtains information about SMDI I/O communication.

The format of the SMDISTAT command is as follows:

```
SMDISTAT POOL plnme
```

```
ALL
```

where:

plnme = Pool name

Examples of the SMDISTAT command:

```
SMDISTAT POOL SECOND
```

```
SMDISTAT ALL
```

System Responses

A message displays to indicate the success or failure of the request. If the request failed, the reason for failure displays:

- If SMDISTAT POOL SECOND is entered and a previous SMDICON command was entered successfully, then the response is

```
SMDI I/O communication is routed on a pool SECOND
on device SMDI5.
```

- If no SMDI I/O communication has been routed on pool SECOND, the response is:

```
No SMDI I/O communication has been routed on pool
SECOND.
```

- If SMDISTAT ALL is entered and several previous SMDICON commands were entered successfully, then the response is:

SMDI I/O communication is routed on the following pools and their associated devices:

POOL	DEVICE
BOTTOM	SMDI3
TOP	SMDI6
SECOND	SMDI5

- If SMDISTAT ALL is entered and no previous SMDICON command was entered, then the response is:

SMDI I/O communication has been routed.

The new state of the datalink depends on the previous state and the CI command used. The following three tables describe the results of CI commands when the datalink was previously in the disconnected, connected, or transferring states.

All commands belonging to the SMDILNK CI level have no effect while the datalink state is disconnected, since neither the pool nor the device is yet assigned.

Table 2 describes the results of CI commands when the datalink was previously in the disconnected state.

Table 2
Datalink state is disconnected (Sheet 1 of 2)

Command	New state	Description
DEVCON	Connected	Defines a device as member of a pool, generates log SLNK100, creates related OM tuple.
DEVDISC	Disconnected	Disconnects the device link from a pool. The system still knows of the device (by way of LNKSTAT). No action is taken because the device has not been started (by way of DEVCON).
DEVDISC KILL		Deletes the device from a pool. To reuse, the device needs to be redefined to system (by way of DEVCON). Deletes the OM tuples from OM groups SLLNK and SLLNKINC.
DEVSTART	Disconnected	Prepares a device to handle SMDI I/O. No action is taken because the device has not been started (using DEVCON).
DEVSTOP	Disconnected	Stops a device from taking SMDI I/O. No action is taken because the device has not been started or is transferring (by way of DEVCON, DEVSTART).

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Table 2
Datalink state is disconnected (Sheet 2 of 2)

Command	New state	Description
POOLSTART	Disconnected	Prepares all devices in a pool to handle SMDI I/O. No action is taken because a datalink in the pool has not been connected.
POOLSTOP	Disconnected	Stops a device from taking SMDI I/O. No action is taken because a device in the pool is not started or is not transferring.

Table 3 describes the results of CI commands when the datalink was previously in the connected state.

Table 3
Datalink state is connected (Sheet 1 of 2)

Command	New state	Description
DEVCON	Connected	Defines a device as member of a pool. Log SLNK100 generates. No action is taken because the device is already started.
DEVDISC	Disconnected	Disconnects the device link from a pool. The system still knows of the device (by way of LNKSTAT). Log SLNK101 generates.
DEVDISC KILL		Deletes the device from a pool. To reuse, the device needs to be redefined to system (by way of DEVCON). Deletes the OM tuples from OM groups SLLNK and SLLNKINC.
DEVSTART	Disconnected	Prepares a device to handle SMDI I/O. No action is taken because the device has not been started (using DEVCON).
DEVSTOP	Disconnected	Stops a device from taking SMDI I/O. No action is taken because the device has not been started or is transferring (by way of DEVCON, DEVSTART).
POOLSTART	Disconnected	Prepares all devices in a pool to handle SMDI I/O. No action is taken because a datalink in the pool has not been connected.
POOLSTOP	Disconnected	Stops a device from taking SMDI I/O. No action is taken because a device in the pool is not started or is not transferring.
SMDICON	Connected	Assigns SMDI I/O into a specified pool. No physical data transfers take place. The related display of the OM tuple does not occur until DEVSTART is completed.

Table 3
Datalink state is connected (Sheet 2 of 2)

Command	New state	Description
SMDIDISC	Connected	SMDI reports no longer sent to a specified pool. No action is taken if SMDICON has not been completed.
SMDISTAT	Connected	Queries the status of SMDI I/O and related datalinks. This command does not affect datalink status.

Table 4 describes the results of CI commands when the datalink was previously in the transferring state.

Table 4
Datalink state is transferring (Sheet 1 of 2)

Command	New state	Description
DEVCON	Transferring	Defines a device as member of a pool. No action is taken because the device is already started.
DEVDISC	Transferring	Disconnects the device link to a pool. Cannot do DEVDISC directly while SMDI is communicating. Needs DEVSTOP before this command.
DEVDISC KILL	Transferring	Deletes the device from a pool. Cannot kill link while it is still transferring data. Needs DEVSTOP first.
DEVSTART	Transferring	No action is taken because the device is in a transferring state.
DEVSTOP	Transferring	Stops device from handling SMDI I/O. Log SLNK103 generates. Suppresses the display of related OM tuples.
POOLSTART	Transferring	Nothing is completed if any datalink in the pool is in a TRANSFERRING state.
POOLSTOP	Transferring	Stops all devices in a pool from accepting SMDI I/O. Log SLNK103 generates for each datalink in the pool. No action is taken if any datalink is not in a TRANSFERRING state. Suppresses the display of related OM tuples.
SMDICON	Transferring	Assigns SMDI I/O to a specified pool. Starts physical data transfer until SMDIDISC or DEVSTOP is completed.
SMDIDISC	Transferring	SMDI reports no longer sent to a specified pool. No action is taken if SMDICON has not been completed.
SMDISTAT	Transferring	Queries the status of SMDI I/O communication on the links. This command does not affect SMDI or datalink status.

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Table 4
Datalink state is transferring (Sheet 2 of 2)

Command	New state	Description
LNKSTAT	Transferring	Queries the status of datalinks and related SMDI I/O communication. This command does not affect datalink status.
QUIT	Transferring	Leaves the current CI level. This command does not affect datalink or SMDI status. They remain in the same state upon entering the level again.



Configuration

Datafill requirements

The following chapter provides datafill requirements for the Simplified Message Desk Interface (SMDI) product for:

- Meridian SL-100 (see below)
- Communication Server 2100 Compact (see [“Communication Server 2100 Compact” on page 64](#))

Meridian SL-100

Data Schema tables

Message Desk UCD Group datafill

The Message Desk UCD Group must have the following datafill:

- UCD_SMDI option in table UCDGRP designates this UCD group as the SMDI Message Desk.
- The agents within this UCD group must have the line option UCD in table IBNLINES to become UCD agents, and the SMDI option in table IBNFEAT to indicate that their UCD lines have the SMDI feature.
- It is recommended that the agents within the UCD group have the Cutoff on Disconnect (COD) option in table IBNLINES.
- The SMDI option cannot be added to a UCD group if any agents in the UCD group are active.
- The SMDI option cannot be modified for a UCD group if any agents in the UCD group are active.
- Each datalink may have up to 63 desk numbers assigned to it, with a maximum of 59 datalinks transferring SMDI information. Each UCD group is identified as a desk number. Two UCD groups cannot be on the same datalink without one being desk number 63. The first or second UCD group on each datalink must be datafilled as desk number 63. UCD groups datafilled after the first two can be assigned any unused desk number. The UCD group assigned desk number 63 is the desk number dedicated to handling call retrievals. However, direct dial access to desk number 63 is not restricted. The

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UCD group assigned desk number 63 is the desk number dedicated to handling call retrievals.

- The UCD group with desk number 63 cannot be deleted if there are two or more UCD groups on that datalink.
- The datalink of a UCD group with desk number 63 cannot be changed if there are more than two desk numbers on that datalink.
- The UCD feature must be assigned in table DNROUTE where the primary and secondary directory numbers of the Message Desk are defined.
- The UCD DN in table DNROUTE cannot be deleted if it is referenced by the UCD group with desk number 63, and more than two desk numbers exist on that datalink.
- It is recommended that the assignment of multiple desk numbers per datalink take place during off-hours so that any UCD group handling call retrievals is not abruptly affected by this change. Changing from multiple desk numbers to a single desk number should take place in off-hours as well.

Requestee station datafill

The Requestee station must have the following datafill:

- Call Forward Busy, Call Forward Don't Answer, or Call Forward All to forward calls to the Message Desk
- MWT option to enable the message waiting indication on the station to be activated or deactivated. If the station does not have MWT datafilled, then other means of message waiting indication can be used. However, if the Message Desk requests MWT activation or deactivation through the datalink and the requestee's station does not have the MWT option datafilled, this causes an error and an appropriate log generates.

Datafill errors

If the datafill is not correct, SMDI does not function properly. The following situations demonstrate some errors that result from incorrect datafill.

No SMDI option in table UCD and table DNROUTE has no datafill

If the UCD_SMDI option does not contain an assignment to the UCD group in table UCD, and table DNROUTE has no datafill, then a direct call to the Message Desk receives the defined treatment and a Call Request Retrieval (CRR) call goes to the Night Service Route.

No SMDI option in table UCD but table DNROUTE contains datafill If the UCD_SMDI option does not contain assignment to the UCD group in table UCD, but table DNROUTE contains datafill with the UCD group DN, then a direct call to the Message Desk goes to the Night Service route and a CRR call terminates on an active UCD group member.

However, no SMDI messages transmit across the datalink. If there are no active UCD group members, a CRR call goes to the Night Service route.

No SMDI option in table UCD, tables DNROUTE and UCDGRP have no datafill If there is no UCD group in table UCDGRP, a direct call and a CRR call route to the defined treatment. The requestee should activate Call Request Delete Specific (CRDS) or Call Request Delete All (CRDA) to reset the message waiting indication.

Table SLLNKDEV

Table SLLNKDEV specifies characteristics of datalinks.

Table SLLNKDEV must contain datafill for all devices before they connect.

There is no linkage between the table control software and the SLLNK software. An entry in table TERMDEV, MPC, or MPCLINK, can be manipulated independently of any corresponding entry in table SLLNKDEV for TDM SMDI devices.

For Communication Server 2100, only table SLLNKDEV will be defined when using the TCP interface. Table 5 is an example of the datafill for table SLLNKDEV.

Table 5
Example of datafill for table SLLNKDEV (Sheet 1 of 2)

Prompt	Response
>>	TABLE SLLNKDEV
TABLE SLLNKDEV	
>>	add
DEVNAME	
>>	smdi5

Table 5
Example of datafill for table SLLNKDEV (Sheet 2 of 2)

Prompt	Response
DEVICE	
>>	TCP
REM_SMDR_IP_ADDR	
>>	47.104.52.47
PORT_NO	
>>	2300
XLATION	
>>	NONE
PROTOCOL	
>>	NONE
DIRECTION	
	INOUTLK
XFER	
	SMDIDATA
OPTION	
NUM OF DIGS	7
NMSPVT	

For more information on table SLLNKDEV, refer to *Commercial Systems Customer Data Schema*, or *Defense Switched Network Customer Data Schema*.

Table 6 describes the fields to be entered for table SLLNKDEV.

Table 6
Field descriptions for table SLLNKDEV (Sheet 1 of 3)

Field	Subfield or refinement	Entry	Explanation and action
DEVNAME		1-16 characters	Device name. Device name used in LNKUTIL
DEVTYPE	DEVICE	1X67, 1X89, TCP HS1X6, FX30	Device type. Enter the device type. This field consists of subfield DEVICE, MPCNO and LINKNO. Device. If the entry in field DEVICE is 1X89, datafill subfield MPCNO and LINKNO.
REM_SMDR_IP_ADDRESS			Remote IP address. Enter IP address.
PORT_NO		-32768 to 32767	Port number. Enter the port number.
XLATION	NONE or BCDTOASCII		Translation. Enter the Meridian SL-100 system link translation used for outgoing and incoming datalinks.
PROTOCOL		NONE or X400	Protocol. Enter the protocol that is expected by the datalink and the Meridian SL-100 system concerning the connection and starting messages, as well as any leading byte information required.
DIRECTION		INLK, OUTLK, or INOUTLK	Direction. Enter the direction in which data travels through the datalink. The Direction for Simplified Message Desk Interface (SMDI) must be INOUTLK.
CONTMARK		+ or \$	Continuation mark. Enter + to indicate that additional information for this tuple is contained in the next record. Otherwise, enter \$ to indicate the end of the tuple

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Table 6
Field descriptions for table SLLNKDEV (Sheet 2 of 3)

Field	Subfield or refinement	Entry	Explanation and action
XFERS		ACDRTD, MGTRPT, SMDIDATA, SMDRRPT, or XSMDATA	Transfers. Enter the report types currently allowed on the datalink. If ACDRTD or SMDIDATA reports are entered, no other types are allowed on the datalink. MGTRPT and SMDRRPT reports can be on the same datalink. This field accepts a vector with up to five entries. Enter \$to terminate the vector. Note: If the entry in field XFERS is SMDIDATA, datafill subfield OPTION.
	OPTION	NUMOFDIGS, DNSUPPR, LASTFWDN, or NONMS	Option. Enter NUMOFDIGS for number of digits, DNSUPPR for DN suppression, LASTFWDN for last forwarding Directory Number (DN), or NONMS for no network message service. Note: If the entry in field OPTION is DNSUPPR, datafill subfield prompts CALLING and FWDING appear. If the entry is NUMOFDIGS, datafill subfield prompt NUMDIGS appears.
	NUMDIGS	7 or 10	Number of digits. Enter the number of digits in the DN that goes to the Voice Message System (VMS). Note: Before changing the number of digits in the SMDI stream, the link must be taken down.
	CALLING	CONDITNL, INDIRECT, NEVER	Calling DN suppression. This group of subfields indicates whether the calling DN is suppressed when presented to the SMDI. Entering CONDITNL in both the CALLING and FWDING fields results in neither number being shown and the calling DN being supplied for all trunk types. Enter INDIRECT if all indirect calls are suppressed. The value INDIRECT also means that all direct calls are unsuppressed, as no suppression checking is performed.

Table 6
Field descriptions for table SLLNKDEV (Sheet 3 of 3)

Field	Subfield or refinement	Entry	Explanation and action
	FWDING	NEVER, CONDITNL	Forwarding DN suppression. This refinement indicates whether the forwarding DN is suppressed when presented to the SMDI. Enter CONDITNL if the forwarding DN is conditionally suppressed, that is, if the forwarding DN is restricted. Note: Entering CONDITNL in both the CALLING and FWDING fields results in neither number being shown and the calling DN being supplied for all trunk types.
	CONTMARK	\$	Continuation mark. Enter a \$to terminate the entry.

Table UCDGRP

Table UCDGRP defines the directory numbers in a Uniform Call Distribution (UCD) Group. Each member of the Message Desk must be defined in this table. When adding the second UCD group to a datalink, the desk number must be 63.

Table 7 is an example of datafill for table UCDGROUP.

Table 7
Datafill example for table UCDGROUP (Sheet 1 of 3)

Prompt	Response
>	table ucdgrp
TABLE:UCDGRP	
>	add
UCDNAME:	
>	ucdgrp1
ACD:	
>	n
CUSTGRP:	
>	cust1

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Table 7
Datafill example for table UCDGROUP (Sheet 2 of 3)

Prompt	Response
UCDDRNGTH:	
>	5
TABID:	
>	ofrt
INDEX:	
>	4
TABID:	
>	ibnrte
INDEX:	
>	7
PRIOPRO:	
>	99
MAXPOS:	
>	10
DBG:	
>	Y
DEFPRIO:	
>	1
RLSCNT:	
>	0
MAXCQSIZ:	
>	90
OPTIONS:	
>	ucd_smdi
TERMDES:	

Table 7
Datafill example for table UCDGROUP (Sheet 3 of 3)

Prompt	Response
>	smdi5
DSKNO:	
>	63
>	\$

For more information on table UCDGRP, refer to *Commercial Systems Customer Data Schema*, or *Defense Switched Network Customer Data Schema*.

Table 8 gives the field descriptions for table UCDGRP.

Table 8
Field descriptions for table UCDGRP (Sheet 1 of 6)

Field	Subfield or refinement	Entry	Explanation and action
UCDNAME		1-16 characters	Uniform call distribution name. Enter the name assigned to UCD group.
ACD		N	Automatic call distribution. Enter N because Automatic Call Distribution is not supported.
CUSTGRP		1 -16 characters	Customer group name. Enter the name of the customer group to which the UCD group belongs.
UCDRNGTH		0 - 63	UCD ringing threshold. Enter the ringing threshold, in 1–second intervals, after which an unanswered call to a UCD agent forwards to the route specified in field THROUTE. An entry of 0 (zero) means infinite time.
THROUTE	TABNAME	See subfields. IBNRTE or OFRT	Threshold route. Consists of subfields TABNAME and INDEX. Specifies the route in table IBNRTE or OFRT to which the translation system routes any overflows, timeouts, or both. Table name. Enter IBNRTE or OFRT as the table name to which the translations system routes.

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Table 8
Field descriptions for table UCDGRP (Sheet 2 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	INDEX	1-1023	Index. Enter the number assigned to the route list in table IBNRTE or OFRT to which the translation system routes.
	CONTMARK	+ or \$	Continuation mark. Enter + to indicate that additional information for this tuple is contained in the next record. Otherwise, enter \$ to indicate the end of the tuple.
NSROUTE		Alphanumeric See subfields	Night service route. Consists of subfields TABNAME and INDEX. Specifies the Night Service route in table IBNRTE or OFRT to which all incoming calls route if there are no active agents in the UCD group.
	TABNAME	IBNRTE or OFRT	Table name. Enter IBNRTE or OFRT to specify the table to which the translations system routes.
	INDEX	1 -1023	Index. Enter the number assigned to the route list in table IBNRTE or OFRT to which the translations system routes.
PRIOPRO		0 - 255	Priority promotion time-out. Enter the maximum time, in seconds, a call can wait in a queue.
MAXPOS		0 -1023	Maximum number of positions. Enter the maximum number of UCD agent positions in this group that can be active at one time. A value of 0 (zero) disallows agents from activating into the UCD group.
DBG		Y or N	Delayed billing. Enter Y if billing starts when the call is answered by a UCD agent. Enter N if billing starts when the caller receives a recorded announcement.
DEFPRIO		0- 3	Default priority. Enter the default priority number applicable to local calls terminating on the primary UCD number.
RLSCNT		0 -31	Release count. Enter the maximum number of calls that terminate on a UCD station, but are not answered. An entry of 0 (zero) means infinite time.

Table 8
Field descriptions for table UCDGRP (Sheet 3 of 6)

Field	Subfield or refinement	Entry	Explanation and action
MAXWAIT		0 -1800	Maximum wait time. Enter the maximum time, in seconds, that a call waits in the incoming call queue before being answered. A value of 0 (zero) means that all calls that cannot immediately terminate on an available agent position reroute to the overflow route specified in field THROUTE. Until the wait time of the call at the head of the incoming call queue for the UCD group is less than the value datafilled in this field, subsequent calls continue to reroute to the route specified in field THROUTE
MAXCQSIZ		0 - 511	Maximum call queue size. Enter the maximum number of calls that can be in the incoming call queue at one time. A value of 0 (zero) means that all calls that cannot immediately terminate on an available agent position reroute to the overflow route specified in field THROUTE.
OPTIONS		UCD_SMDI	Options. Enter the list of options and associated subfields assigned to the UDC group. Each option entry and its subfields must be separated by a blank space.
CONTMARK		+ or \$	Continuation mark. Enter + to indicate that additional information for this tuple is contained in the next record. Otherwise, enter \$to indicate the end of the tuple.
OPTION		AUDIO	Option. Enter AUDIO. Note: If a recorded announcement or music is present, datafill field OPTION and subfields RANTH, ANNMUSIC, and AUDIOGRP.
RANTH		0 or 6 - 60	Recorded announcement threshold. Enter the time, in seconds, that an incoming call waits before a recorded announcement plays.
ANNMUSIC		Y or N	Announcement/music. Enter Y if announcement or music plays for calls that cannot be answered immediately. Otherwise, enter N.

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Table 8
Field descriptions for table UCDGRP (Sheet 4 of 6)

Field	Subfield or refinement	Entry	Explanation and action
AUDIOGRP		AUDIO1 to AUDIO15	Audio group. If field ANNMUSIC is Y, enter the audio group datafilled in table AUDIO whose option UCDQ specifies the announcement or music that the system applies to calls that cannot be answered immediately.
OPTION		QSL	Option. Enter QSL. Note: If the Queue–Status Lamps (QSL) option is a virtual indication of waiting times for calls in the incoming call queue, datafill field OPTION and subfields SDGRPN01, SDPOINT1, SDGRPN02, SDPOINT2, SDGRPN03 and SDPOINT3.
SDGRPN01		0 to 511	Signal distribution group no. 1. Enter the number of the Signal Distribution (SD) group identifying the tuple in table SDGRP that defines the hardware location of the SD card.
SDPOINT1		0-6	Signal distribution point 1. Enter the SD point number on the SD card. This point is assigned to the currently named UCD group for the QSL option.
SDGRPN02		0-511	Signal distribution group no. 2. Enter the number of the SD group identifying the tuple in table SDGRP that defines the hardware location of the SD card.
SDPOINT2		0-6	Signal distribution point 2. Enter the SD point number on the SD card. This point is assigned to the currently named UCD group for the QSL option.
SDGRPN03		0-511	Signal distribution group no. 3. Enter the number of the SD group identifying the tuple in table SDGRP that defines the hardware location of the SD card.

Table 8
Field descriptions for table UCDGRP (Sheet 5 of 6)

Field	Subfield or refinement	Entry	Explanation and action
SDPOINT3		0-6	Signal distribution point 3. Enter the SD point number on the SD card. This point is assigned to the currently named UCD group for the QSL option. Note: To enable the SMDI option, datafill subfields SMDILINK, SMDIDESK, and MCOSLIST. If the SMDI option exists, each member of the UCD group acting as the message desk must have the SMDI option.
OPTION		UCD_SMDI	Option. Enter UCD_SMDI.
SMDILINK		Alphanumeric	Terminal designation. Enter the terminal designation defined in field TERMDES in table TERMDEV.
SMDIDESKNO		1-63	SMDI desk number. Enter the message desk number. If no agents are assigned to the UCD group, enter a number between 1 and 63.
MCOSLIST		CLASSA to CLASSP (vector of up to 4 entries or \$)	Message class of service list. Enter up to four Message Class Of Service (MCOS) entries from which the UCD group SMDI can receive messages. If you enter less than four MCOS entries, enter \$to terminate the vector. Note: If the UCD group has the Bulk Calling Line Identification (BCLID) option, datafill field OPTION and subfield BCGRPNUM, option BCLID enables information on calls terminating at the UCD group to go to the Customer Premises Equipment (CPE) along a dedicated BCLID data link. The UCD group belongs to the BCLID group associated with the data link.
OPTION		BCLID	Option. Enter AUDIO.

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Table 8
Field descriptions for table UCDGRP (Sheet 6 of 6)

Field	Subfield or refinement	Entry	Explanation and action
BCGRPNUM		0 -2047	Bulk calling group number. Enter the group number of the BCLID group to which the UCD group belongs, as defined in table BCLIDGRP. Note: The Terminating Billing Option (TBO) allows the switch to generate Automatic Message Accounting (AMA) records from calls terminating at a line. If a call terminates at a line assigned to the TBO, an AMA record with a call code between 800 and 900 generates for each call terminating at that line. If the customer uses TBO, datafill field OPTION and subfields CALLCODE, SFORSBTM, and SPVAL (if required).
OPTION		TBO	Option. Enter TBO.
CALLCODE		800-999	Call code. This field identifies the call code for the AMA record.

Table DNROUTE

The primary and secondary directory numbers are assigned to a UCD group in table DNROUTE.

Note: Table DNROUTE exists as table WRDN prior to BCS33.

Table 9 is an example of the datafill for table DNROUTE:

Table 9
Datafill example for table DNROUTE (Sheet 1 of 2)

Prompt	Response
>	table dnroute
TABLE:DNROUTE	
>	add
AREACODE	
>	201
OFCCODE	
>	786

Table 9
Datafill example for table DNROUTE (Sheet 2 of 2)

Prompt	Response
STNCODE	
>	1112
DN_SEL	
	FEAT
FEATURE	
>	ucd
UCDGRP	
	UCDGRP1
DNTYPE	
	PRIM
MEMNO	
	0
DNPRIO	
	0
Note: The AREACODE and OFCCODE fields must be datafilled in table TOFCNAME before being datafilled in table DNROUTE.	

Table 10 describes the table DNROUTE fields to be entered for a DNSEL of FEAT.

Table 10
Field descriptions for table DNROUTE (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
AREACODE		0-9999999 (1 to 7 digits)	Area code. Enter the NPA (area code) of the DN.
OFCCODE		0-999999 (0 to 7 digits)	Office code. Enter the NXX code (office code) of the DN.

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Table 10
Field descriptions for table DNROUTE (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
STNCODE		0-99999999 (up to 8 digits)	Station code. Enter one or more digits of the DEFG digits (station code) of the DN.
DNSEL		FEAT	Directory number selector. Enter the directory number selector FEAT. Note: The fields and subsequent prompts after DNSEL vary based on the value in the DNSEL field.
FEAT		UCD	Feature. Enter the feature UCD.
UCDGRP		1-16 characters	UCD group. Enter the 1- to 16- character name as entered in table UCDGRP, field UCDNAME, for this UCD directory number.
DNTYPE		PRIM or SUPP	Directory number type. Enter PRIM, where the DN is the primary UCD DN for this UCD group, and complete field TOLLPRIO. Enter SUPP, where the DN is one of the supplementary DN for this UCD group, and complete fields MEMNO and DNPRIOR.
TOLLPRIO		0-3	Toll priority. Enter the priority of toll calls terminating on the primary UCD DN. The highest priority is zero.
MEMNO		1-4	Member number. Enter the UCD member number of this DN in this UCD group.
DNPRIOR		0-3	Priority. Enter the priority of calls terminating on this UCD DN.

Table IBNFEAT

Features are assigned to lines in table IBNFEAT

Table UCDGRP must be datafilled before table IBNFEAT for SMDI. This is because the field UCDGRP must be the same name assigned in table UCDGRP to the field UCDNAME.

Table 11 is an example of datafill for table IBNFEAT:

Table 11
Datafill example for table IBNFEAT

Prompt	Response
>	table ibnfeat
TABLE IBNFEAT	
>	add
LEN:	
>	host 02 1 00 06
DF	
>	smdi
LINENO	
>	2
UCDGRP	
>	messdesk
Note: Must be same name as assigned in UCDGRP.	
AUTOLOG	
>	Y
>	\$

For more information on table IBNFEAT, refer to the *Commercial Systems Customer Data Schema*, or *Defense Switched Network Customer Data Schema*.

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Table 12 shows the field values for table IBNFEAT.

Table 12
Field descriptions for table IBNFEAT

Field	Subfield or refinement	Entry	Explanation and action
LEN		Alphanumeric	Line equipment number. This field is comprised of subfields SITE, FRAME, UNIT, DRAWER, and CIRCUIT.
SITE		Alphabetic	Site. The site name of the remote location. If left blank, the default value is "host".
FRAME		0-99	Frame number. The line module frame number.
UNIT		0-1	Unit number of the module. The unit number of the line module to which the line is assigned.
DRAWER		0-19	Line drawer or line subgroup number. The number of the line drawer or line subgroup to which the line is assigned.
CIRCUIT		0-31	Line circuit number. The line card circuit number.
DATA		Alphanumeric	Uniform call distribution line information. This field is comprised of subfields DF, LINENO, UCDGRP, and AUTOLOG.
	DF	SMDI	Simplified Message Desk Interface data. Enter the data feature SMDI.
	LINENO	1 -1024	Line number. The line number in the SMDI UCD group.
	UCDGRP	1 -16 characters	UCD group name. The UCD group name assigned in table UCDGRP.
	AUTOLOG	Y or N	Automatic Uniform Call Distribution. Enter Y if the line is to automatically log into the UCD group. Enter N if the line is to manually log into the UCD group.

Communication Server 2100 Compact

Data Schema

Table SLLNKDEV is used to datafill the TCP devices for transferring SMDI data to and from the switch.

Table SLLNKDEV is modified from the Meridian SL-100 SMDI format to incorporate the TCP device to transfer the SMDI data. An IP address and port number are also required to datafill this device.

Datafill examples for Table SLLNKDEV

The following figures show datafill examples for Table SLLNKDEV:

Figure 7
Adding the tuple with SMDI data to Table SLLNKDEV

```
TABLE SLLNKDEV:
>ADD LINK1 TCP 47 104 52 47 2300 NONE NONE INOUTLK
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE NOT AVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>Y
TUPLE ADDED
```

Figure 8
Deleting the tuple with SMDI data to Table SLLNKDEV

```
TABLE SLLNKDEV:
>DEL LINK1
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE NOT AVAILABLE - DMOS NOT ALLOWED
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>Y
TUPLE DELETED
```

Configuration Walkthrough

The VMS and the Communication Server 2100 Compact should be up and running.

The following is an example of the datafill required to run the SMDI over IP with the Communication Server 2100 Compact.

Procedure 1
Datafill on the Communication Server 2100 Compact

Complete the following Communication Server 2100 Compact configuration example.

```
1      TABLE SLLNKDEV:
      -----
      DEVNAME DEVTYPE SLATION PROTOCOL DIRECTION XFERS
      -----
```

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```
NEW1 TCP 47 104 52 47 2300 NONE NONE INOUTLK
      (SMDIDATA (NUMFOFDIGS 10 $)$)
2    TABLE UCDGRP:
      -----
      UCDNAME ACD CUSTGRP UCDRNGTH THROUTE NSROUTE
      PRIOPRO MAXPOS DBG DEFPRIO
      RLSCNT MAXWAIT MAXQSIZ OPTIONS
      -----
      SMDI0 N BNR 15 OFRT 6 0 5 N 0 0 15 5
      (UCD_SMDI NEW1 63 $)$
3    DNROUTE:
      AREACODE OFCCODE STNCODE DNRESULT
      -----
      919 481 1111 FEAT UCD SMDI0 PRIM 0 0
4    In SERVORD add the UCD, SMDI, and COD options 2465102:
      ADO NOW 1 9 6 PM 2465102 UCD SMDI 1 SMDI0 Y COD $ $
```



Service Orders

Purpose

This document provides Service Order information for the Meridian SL-100 Simplified Message Desk Interface product.

Service Orders

Switch personnel use Service Orders (SO) to add, change, or delete features. Service Orders use Table Editor to fill the customer tables as if entries were made directly into the tables.

To open a Service Order, log on to the MAP workstation and enter the SERVORD system. For instructions on how to log on to the MAP workstation and begin a Service Order, and for an explanation of Service Order commands, refer to the *Commercial Systems Service Order Reference Manual*, or *DSN Service Order Reference Manual*.

Switch personnel can add SMDI to a UCD line using the ADO (Add Option) command. This action includes the line in a SMDI UCD group and enables that UCD line to be a part of the Message Desk.

Table 13 is an example of the datafill in a service order entry.

Table 13
Datafill example of a SERVORD entry (Sheet 1 of 2)

Prompt	Response
>	servord
SO:	
>	ado
SO_NUMBER:12 69 69>	
>	Press Return
LEN_DN:	

Table 13
Datafill example of a SERVORD entry (Sheet 2 of 2)

Prompt	Response
>	7224111
SMDI_LINE_NO:	
>	25
UCDGRP:	
>	messdesk
AUTOLOG:	
>	Y

Switch personnel can remove the SMDI option from a UCD line through the DEO command.

Note: When using SMDI over IP on the Communication Server 2100 Compact, Service Orders are not affected.



Log reports

Purpose

The purpose of this document is to discuss logs that contain information that pertain specifically to SMDI Input/Output (I/O) communication.

Log reports

The following logs contain information pertaining specifically to SMDI Input/Output (I/O) communication:

- SLNK102 (see
- SLNK103
- SLNK106
- SLNK107
- AMAB150
- SMDI100

Note: Some of these logs and some existing additional logs, may be generated when using SMDI over IP on the Communication Server 2100 Compact. For information about how these logs are generated, please see [“Logs for Simplified Message Desk Interface over Internet Protocol Support for Compact CS2K”](#) on page 72.

For more information about these logs, refer to the *Commercial Systems Log Report Manual*, or *Defense Switched Network Log Report Manual*.

Log report SLNK102 occurs when the DEVSTART command in the SMDILNK CI starts a session on a datalink. This log also occurs for each datalink in the pool on which the POOLSTART command starts data transfer.

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Example report format:

```
SLNK102 APR22 06:45:22 1999 INFO SESSION  
  
SMDI I/O communication transfer started on device  
SMDI5.
```

SLNK103

Log report SLNK103 occurs when the DEVSTOP command in the SMDILNK CI stops data transfer. This log also occurs for each datalink in the pool on which the POOLSTOP command stops data transfer.

If a user at the MAP workstation stops the transfer, the user takes no action. If the user takes no manual action, software terminates the transfer. Accompanying SWERR, TRAP, or LOG provides further information.

Example report format:

```
SLNK103 APR22 06:45:22 1999 INFO SESSIONSMDI I/O  
communication transfer stopped on device SMDI5.
```

SLNK106

Log report SLNK106 occurs when an operation fails to queue for a datalink device in the previous 2 minutes because of a full queue. The system discards new messages or overwrites previous messages reducing the message volume.

This message reduction occurs due to the switch personnel assigning additional devices to the pool to provide load-sharing or rerouting some of the message traffic assigned to the overburdened pool.

Example report format:

```
SLNK106 APR22 06:45:22 1999 INFO SESSION  
  
Last occurrence = 1986/01/02 02:19:20.940 SAT  
  
Total number of overflow msgs = 46
```

SLNK107

Log report SLNK107 occurs when the Meridian SL-100 system Link Wakeup (SLLNKWKP) fails to restart the datalink for any reason after a restart or link failure.

The following manual intervention repairs the indicated problem. If the datalink is in not service, maintenance personnel must return it to service. If the link is not in a connected state, maintenance personnel must return it to a connected state.

Example report format:

```
SLNK107 JUN12 01:45:56 1181 INFO SESSION
```

```
Device SMDI5 has failed to restart.
```

```
It will require manual intervention.
```

AMAB150

Log report AMAB150 monitors the generation of Station Message Detail Records (SMDR). The information in the log is the same as the information that the system writes to the file (on tape or disk). Refer to the *Automatic Message Accounting-Northern Telecom Format*, 297-2071-119, for more information on SMDR.

The number 10 in the TERM_FC field of AMAB10 indicates the type of call as a Call Request Retrieval. To demonstrate the position of the TERM_FC field, quotes enclose the example.

Example report format:

```
AMAB150 JUL03 15:25:29 6707 INFO SMDR_CALL_DATA
```

```
CUSTGRP =          CUSGRP1
```

```
0 0 0 6137227111 ** 00 0 6137227112 ** +
```

```
'10' 0 25112***** 002 12 30 02 000006
```

```
ORIG = LEN HOST 00 1 02 13 DN 7227111 +
```

```
TERM = LEN HOST 00 1 05 13 DN 7227112 +
```

```
ANS=Y 0
```

```
TO = ***** AUTH = *****
```

```
ACC = *****
```

Note 1: The plus sign (+) indicates the next line is a continuation of the text. In the actual log report, all the information appears on the

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same line. However, because of space limitation, the text lines are split.

Note 2: Asterisks indicate the field did not apply to this particular log. Refer to the Commercial Systems Log Report Manual, DSN Log Report Manual, for detailed information on each field.

SMDI100

SMDI100 occurs when the Meridian SL-100 system encounters an error in the Simplified Message Desk Interface (SMDI) Message Waiting Indication (MWI). The error report text denotes the reason for the error.

Example report format:

```
SMDI100 NOV08 15:26:53 3122 INFO SMDI_ERR_REPORT
REQUESTEE STATION MISSING MWT OPTION

UCD GROUP INFO = IBNUCDGRP1    DATALINK = SMDILK0

REQUESTEE INFO = $ LEN HOST 2 0 0 13    DN 7227640
```

Logs for Simplified Message Desk Interface over Internet Protocol Support for Compact CS2K

There are no new logs added by the feature, “*Simplified Message Desk Interface over Internet Protocol Support for Compact CS2K*”, however, the following logs are generated for various events on this device:

- SLNK100 – this is generated every time the TCP device is connected (that is, on every successful execution of the DEVCON or SMDICON command)
- SLNK101 – this is generated every time the TCP device is disconnected (that is, on every successful execution of the DEVDISC or SMDIDISC command)
- SLNK102 – this is generated every time the TCP device starts transferring the data
- SLNK102 – this is generated every time the TCP device stops transferring the data
- SLNK106 – this log is generated every time remote operation (RO) failed to be enqueued for a data link device in the last two minutes due to a full queue
- SLNK107 – this log is generated during restarts, when the link wake-up code fails to restart a datalink for any reason after a restart or link failure

- SLNK108 – this log is generated when the a SMDI incoming or outgoing process stops
- SMDI100 – this log is generated when the switch finds an error in the SMDI Message Waiting Indicator (MWI)
- SMDI101 – this report generates for each datalink the first time a call to a Voice Messaging System (VMS) voice link and the SMDI cannot send the SMDI message
- SMDI102 – this report generates for each datalink the first time an SMDI message could successfully be enqueued after an SMDI101 log was previously generated
- SMDI103 – this log is generated when the SMDINMPC process stops
- SMDI104 – this report indicates that the switch does not locate a primary desk for a host requesters line
- SMDI105 – this report indicates that the switch does not locate a common message desk for a network Message Waiting Indicator (MWI) request (setting or removal)
- SMDI106 – this report indicates that the switch does not locate the message desk number that relates to the option COMMON of Table SLLNKDEV



Operational measurements

Purpose

This document contains information about Operational Measurements that pertain specifically to Simplified Message Desk Interface (SMDI) Input/Output (I/O) communication.

Operational Measurements (OM) control the collection and display of operating data associated with the Meridian SL-100. Refer to the *Commercial Systems Operational Measurements Reference Manual*, or the *DSN Operational Measurements Reference Manual*, for more detailed information.

SMDI uses two OM groups:

- SLLNK
- SLLNKINC

Note: These same OMs are pegged for the TCP device when using SMDI over IP on the Communication Server 2100 Compact.

SLLNK

SLLNK provides the following measurements for the outgoing datalink utilities pertaining to SMDI Data Communication:

- SLLNKOVF: The number of messages the system overwrites or throws away because of a full outgoing queue.
- SLLNKOK: The number of messages successfully queued for transfer across the outgoing datalinks.
- SLLNKQU: The number of messages in the outgoing queue waiting for processing. This value increments every 100 seconds.

SLLNKOVF

SLLNKOVF displays the number of messages that the system overwrites or throws away in an attempt to enter a full queue. A full queue is one that has no more available queue item buffers for queuing messages. It increments every time a valid message fails to enter

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because of a full queue and, as a result, is thrown away or overwrites a previous message.

SLLNKOVF is expected to be very low, if not 0. The chance of message overflow increases as register SLLNKQU increases. It should not exceed the maximum value of the OM register. Log SLNK106 also generates when a queue overflow occurs.

SLLNKOK

SLLNKOK provides the following measurements for the successfully queued messages for transfer to the down stream processor. It increments every time a valid message successfully queues for transfer to the down stream processor.

SLLNKQU

SLLNKQU records the number of messages in the queue waiting to be processed (Queue Usage). Switch personnel perform averaging by dividing this number by the number of times switch personnel take slow samples.

SLLNKINC

SLLNKINC provides the following measurements for the incoming datalink utilities pertaining to SMDI Data Communication:

- SLLNKIOV: the number of messages that the system overwrites or throws away due to encountering a full incoming queue
- SLLNKIOK: the number of messages successfully queued for transfer across the incoming datalinks
- SLLNKIQU: the number of messages in the incoming queue waiting for processing. This value increments every 100 seconds.
- SLLNKBAD: the number of messages that are invalid for the data type input on the datalink. This can serve as a means of identifying datalinks that have input problems such as extraneous, garbled, or deleted characters.
- SLLNKIOF: the number of overflow messages from the datalink that are successfully enqueued.

SLLNKIOV

SLLNKIOV records the number of messages that the system overwrites or throws away in an attempt to queue on a full incoming queue. A full queue is one that has no available free queue item buffers with which to queue a message. It increments every time a valid message fails to queue because of a full queue and, as a result, the system discards or overwrites a previous message.

SLLNKIOV is expected to be very low, if not 0. The chance of message overflow increases as register SLLNKIQU increases. It should not exceed the maximum value of the OM register.

Log SLNK106 also generates when a queue overflow occurs. The log alerts the user to this failure so that a reference to the OM can be made for details.

SLLNKIOK

SLLNKIOK logs the number of messages queued successfully for reception from the datalink. This OM increments every time a valid message queues successfully from the datalink.

SLLNKIQU

SLLNKOQU records the number of messages in the queue waiting for processing (Queue Usage). Switch personnel perform averaging by dividing this number by the number of times they take slow samples. This OM usage register increments every 100 seconds.

SLLNKBAD

SLLNKBAD records the number of messages in an invalid format that the system receives from the datalink. It increments every time an invalid message does not queue due to the incoming processing task.

SLLNKIOF

SLLNKIOF counts the number of messages from the datalink that are successfully enqueued when register SLLNKIOK overflow.



List of terms

3WC	See Three-way Calling (3WC).
AMA	See Automatic Message Accounting (AMA).
Automatic Message Accounting (AMA)	An automatic recording system that documents all the necessary billing data of subscriber-dialed long distance calls.
Call Forwarding Don't Answer	A Meridian Digital Centrex (MDC) service that allows a subscriber to have incoming calls to a station's directory number (DN) forwarded to a predetermined DN. Call Forwarding Don't Answer (CFD) permits an incoming call not answered within a specified length of time to be forwarded to another designated station.
Call Forwarding Busy	A Meridian Digital Centrex (MDC) service that permits all calls to a busy station to be forwarded to a designated station within the customer group.
Call Request Retrieval (CRR)	A system request that goes to the Night Service route generates when there is a direct call to the Message Desk that receives a treatment.
CFB	See Call Forwarding Busy.
CFD	See Call Forwarding Don't Answer.
CI	Command Interpreter.
COD	See Cutoff on disconnect.
CRDA	Call Request Delete All.
CRDS	Call Request Delete Specific.
CRR	See Call Request Retrieval.
Cutoff on disconnect	A line option that allows a line cutoff by overriding originating software call setup commands on disconnect by the receiving party.
datalink	A collection of terminal installations and the interconnecting network operating in a mode that permits information to be exchanged between terminal installations.
DN	Directory Number.
downstream processor (DSP)	A standalone computer that receives event messages generated by a DMS-100 Centrex switch. These messages relate to Automatic Call Distribution (ACD), individual calls, and agent positions. The DSP stores and processes the information to generate real-time operation displays and historical reports.

80 List of terms

DPS	See Diagnostic and Permanent Signal (DPS) alarms.
DRAM	See Digital Recorded Announcement Machine.
DSN	See Defense Switched Network.
DSP	See downstream processor (DSP).
full duplex	Simultaneous communication in both directions between two points.
IOC	Input/Output Controller
IOM	Input/Output Module
Maintenance and Administration Position (MAP)	A group of components, such as a terminal, that provides an interface between the SL-100 switch and the user.
message desk	A combination of Uniform Call Distribution (UCD) groups, a primary UCD direction number (DN), and a duplex data link. A message desk serves as an answering service for stations that have their calls forwarded to it.
Message Waiting	A feature that allows the subscriber to receive notification of waiting messages. When MWT activates, the subscriber's directory number (DN) forwards to a message desk. When a message queues against the line, the MWT notification occurs.
Message Waiting Indication (MWI)	A change of state of an indicator (such as stuttered dial tone, a steadily lit or flashing message-waiting lamp) that informs the user that a message is queued against the station.
multilink ASCII device driver	A 1200-baud, dedicated, full duplex line that transmits ASCII characters. It is an RS-232-C datalink, that does not provide end-to-end protocol, integrity or retransmission of data that the datalink receives incorrectly.
MWT	See Message Waiting.
OM	See Operational Measurement.
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.
requestee	The station that forwards calls to the Message Desk Uniform Call Distribution (UCD) Directory Number (DN) and against which the message desk queues the message from the requestor.
requestor	The station that leaves a message at the message desk for a called DN.
service order (SO)	A facility consisting of commands that can be used to change subscriber line service tables.
Service Order System (SERVORD)	A user interface consisting of commands used to change, add, or delete subscriber lines. The format used for commands in the SERVORD comply with the standard telephone industry command format (for example, 3WC is three-way calling, ADO is add option, DEL is delete, and CWT is call waiting).

Simplified Message Desk Interface (SMDI)	A CLASS feature that allows a DMS-100 switch to communicate with a message desk. SMDI provides the Directory Number (DN) of the called station, the calling station number (if available), and the reason the call was forwarded to a message desk. In addition, SMDI allows the message desk to activate or deactivate the Message Waiting Indication (MWI) for any station able to forward calls to the desk.
SMDI	See Simplified Message Desk Interface.
SMDR	See Station Message Detail Recording.
SO	See service order.
Station Message Detail Recording (SMDR)	In Meridian Digital Centrex, a system that provides recording facilities for the details of billable and non billable calls for each MDC customer group.
TCP/IP	Transmission Control Protocol/Internet Protocol
TBO	Terminate Billing Option.
Text Messaging System	A Message Desk dedicated to handling text messages.
Three-way Calling (3WC)	A feature that permits a subscriber to add a third party to an active call without operator assistance.
TMS	See Text Messaging System.
UCD	See Uniform Call Distribution.
UMI	See User Machine Interface.
Uniform Call Distribution (UCD)	A service that allows for even distribution of calls to a number of predesignated stations known as UCD stations or UCD positions. This service queues incoming calls to the message desk.
user machine interface (HMI)	User interface with the switch through a program of commands.
VMS	See Voice Messaging System.
Voice Messaging System	A Message Desk dedicated to handling Voice Messages.

Meridian SL-100/Nortel Networks Communication Server 2100

Simplified Message Desk Interface

Description and Implementation

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