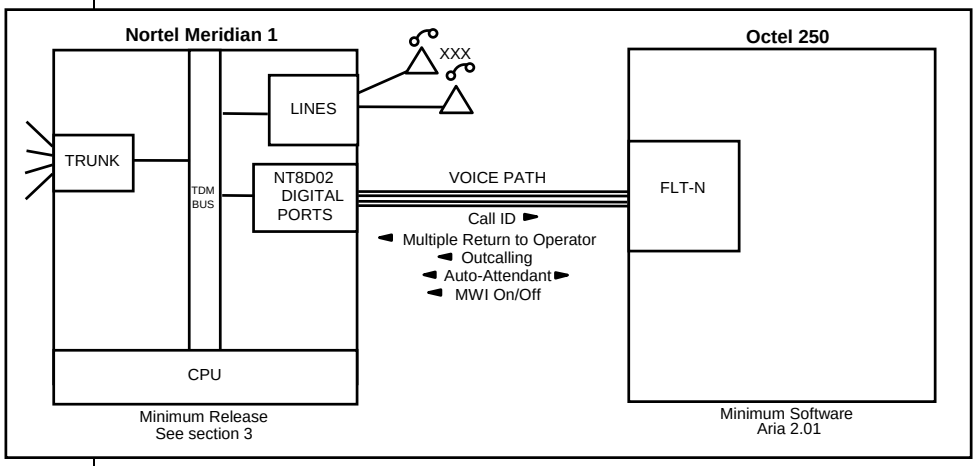
Octel 250

Message Server

Configuration Note 5401 - Ver. O (04/23/04)

Northern Telecom Meridian 1*(FLT-N) ACD



The FLT-N emulates M2616 digital telephone sets

1.0 METHOD OF INTEGRATION

The digital set emulation integration on the Nortel Meridian One, the FLT-N within the Octel system appears as one or more digital 2616 type telephones to the PBX. When a call is presented to a 2616 ACD agent consisting of FLT-N ports, the display information is read and the call is then answered with the appropriate greeting. Message-Waiting is set using the message- indication and message-cancellation keys on the 2616 and cleared over FLT-N Ports.

Octel 250 requirements

2.0 OCTEL ORDERING INFORMATION

- FLT-N(s) - Each FLT-N supports 8 Ports
- Set Emulation Software feature (Feature Bit 33)
- RS232 Integration feature (Feature bit 34), This is required on the Sales Order only, see note in section 6.0
- In-band Integration feature (Feature bit 35)

3.0 PBX HARDWARE REQUIREMENTS

- NT8D02 Integrated Services Digital Line (ISDL) ports:
  - Revision AB or higher
- 25-pair Amphenol cables (male end), one per FLT-N

3.1 PBX SOFTWARE REQUIREMENTS

PBX software requirements

- Nortel Succession software Release 3.0 or higher

--- or ---

- A minimum of Generic X.11, Release 15.00 with the following:
- BACD, Basic Automatic Call Distribution, Option 40 *see section 8.2*
- MSB, Make Set Busy, Option 17
- ACDA, Automatic Call Distribution, Option 45

  Customers may need to purchase additional ACD agents, ("Right to use") ACD Agents
- MWC, Message Waiting Center, Option 46
- EES, Enhanced End-to-End Signaling, Option 10
- DDSP, Digit Display, Option 19

4.0 SUPPORTED FEATURES

Supported integration features

- Station forward to personal greeting
  - all calls
  - RNA
  - Busy
- System forward to personal greeting
  - busy
  - RNA
- Message-waiting Indicator
  - lights
  - audible message waiting (stutter dial tone)
- Automated attendant
  - Supervised
  - Unsupervised
- Outcalling
- Multiple return-to-operator
- Direct call
- Personal greeting of original-called party on double-call forward
- Reply to message left by subscriber in internal telephone-answering mode

- Call sender
- Multiple Personal Greetings
  - RNA
  - Busy

5.0 CONFIGURING THE M-1 PBX

Configuring the M-1 PBX

SPECIAL NOTE: The following represents changes to the M-1 PBX that will affect the Octel integration. Items not addressed here do not require modification for integration with the Octel 250 and should remain as-is on the PBX.

☐ It is recommended that a hard copy of the Customer Data Block be printed in overlay 21 to verify the existing programming. If necessary, change the following parameters in overlay 15 to the underlined values. Default values are listed in parentheses.

REQ	CHG	
TYPE	CDB	Customer Data Block
CUST	0-31	Customer Number
OPT	MCI, (MCX)	Message Center is Included (excluded)
MDID	YES, (NO)	No-answer DID calls are (are not) routed to the Message Center
NDID	YES, (NO)	No-answer non-DID calls are (are not) routed to the Message Center
MWFB	YES, (NO)	DID calls encountering busy are (are not) routed to Message Center
EEST	NO	Enhanced end-to-end signaling (OFF)

5.1 CONFIGURING THE ACD DATA BLOCK

☐ The first step is to define the ACD-DN for the Octel pilot number. This is done using Overlay 23. **Refer to section 5.1.1 to configure the ACD data block in an environment where Customer Control Routing (CCR) is utilized.**

REQ	NEW	To add an ACD data block TYPE

TYPE	ACD	Automatic Call Distribution data block ***(See Note below)***
CUST	0-31	Customer Number
ACDN	xxxx	ACD directory number (ACD-DN)
MWC	YES	The ACD-DN is the message center DN (MC-DN)
MAXP	XX	Max number of ACD positions
FORC	NO	Call Forcing Option - Set to NO
CWTH	0-(1)-2047	Number of calls in queue before calls waiting indication - Enter 0 to disable
NCWL	NO (YES)	New call waiting lamp. Set to NO
		NOTE: The following two prompts will only appear once the schedule block has been built. These parameters must be set to NO, and not the default of YES.
HOML	NO (YES)	Set to NO, (the Make Set Busy key initiates log out) This is only prompted if the ADS or SCB has been programmed.
RDNA	(NO)	Restricted DN Access. Set to NO.

5.1.1 CONFIGURING THE ACD DATA BLOCK WHEN USING CUSTOM CONTROL ROUTING (CCR) APPLICATIONS

☐ The first step is to define the ACD-DN for the Octel pilot number. This environment is only supported with Aria 2.03 or higher.

This is done using Overlay 23.

REQ	NEW	To add an ACD data block TYPE
TYPE	ACD	Automatic Call Distribution data block ***(See Note below)***
CUST	0-99	Customer Number
ACDN	xxxx	ACD directory number (ACD-DN)

MWC	YES	The ACD-DN is the message center DN (MC-DN)
MAXP	XX	Max number of ACD positions
FORC	NO	Call Forcing Option - Set to NO
CWTH	0-(1)-2047	Number of calls in queue before calls waiting indication - Enter "0" to disable
NCWL	NO (YES)	New call waiting lamp. Set to NO
		NOTE: The following two prompts will only appear once the schedule block has been built. These parameters must be set to NO, and not the default of YES.
HOML	NO (YES)	Set to NO, (the Make Set Busy key initiates log out) This is only prompted if the ADS or SCB has been programmed.
RDNA	(NO)	Enhanced end-to-end signaling (OFF). Set to NO
IVR	**YES**	**Define this queue as an IVR queue**
TRDN	**leave blank**	**Treatment DN for IVR queue**

- The second step is to define the Control Directory Number (CDN). This control directory number will be programmed to forward calls to the CCR queue.

  This is done using Overlay 23.

REQ	NEW	To add an ACD data block TYPE
TYPE	CDN	Control directory number
CUST	0-99	Customer Number
CDN	xxxx	Control directory number
DFDN	xxxx	ACD DN, where calls queue

  Customers can now create their CCR script to GIVE IVR (Uninterruptable or Interruptable IVR) with NO treatment.

In addition, customers will need to create a type 1 mailbox in order to disconnect the call and return to the hold in queue for IVR. Refer to section 6.1for further details.

5.2 OPTIONAL PROGRAMMING WITH MAX

☐ The next step is to define the ACD data and schedules for management reports to be created, modified or printed. For this integration, ADS or SCB may appear or be programmed in the prompt field. Verify or modify these fields as appropriate to the specific customer application.

REQ	PRT	Print the ADS
TYPE	ADS	
AID (see note)	(NO)	Customer will operate in the position ID mode
	YES	Customer will operate in the agent ID mode
LOG	(0)-999	Determines the maximum number of agents that can be logged at any one time. Verify that the PBX has the ability to support the number of ACD agents as there are Octel ports. The customer may need to purchase the right to use additional ACD agents. Lucent OMD recommends that the number of ACD agents allowed in Overlay 23 of the M1 switch exceed the number of Octel ports in order to increase future port capacity.
IDLB	(0001-9999)	Agent ID lower bound
IDUB	<IDLB> -9999	Agent ID upper bound

If the mnemonic entered at the prompt TYPE is SCB, verify the following based on the application:

Prompts	Possible Responses
TYPE	SCB

PRIO	123...15	Device numbers of devices use for output of reports
AID	YES (NO)	Customer will operate in the agent ID mode Customer will operate in the position ID mode

NOTE: Agent ID mode requires Menu 4 changes. The AID prompt is approximately nine prompts down from the SCB prompt.

IDLB	1-9999	Agent ID lower bound
IDUB	<IDLB>-9999	Agent ID upper bound
LOG	(0)-999	Determines the maximum number of agents that can be logged at any one time. Verify that the PBX has the ability to support the number of ACD agents as there are Octel ports. The customer may need to purchase the right to use additional ACD agents. Lucent OMD recommends that the number of ACD agents allowed in Overlay 23 of the M1 switch exceed the number of Octel ports in order to increase future port capacity.

5.3 CONFIGURING THE 2616 TN(S) WITH ACD

One 2616 TN is configured for each FLT-N port with ***ACD Configuration.***

Programming the digital port for ACD Configuration

2616 Set

REQ	NEW	
TYPE	2616	Digital set data block
TN	lll S CC U	Terminal number: loop (0-159) shelf (0-1) card (1-10) unit (0-7)
CDEN	SD, (DD), 4D	Density of this card is single, (double), quad and is dependent on the type of PBX card is being used
CUST	0-31	Customer number
DES	OCTEL1	Designation for telephone

CLS	CNDA	Calling Name Display Allowed
	DNDA	Dialed Number Display Allowed
KEY	00 ACD XXXX XXXX	PDN (Primary
	AGN	Directory Number Port 1)
	*****KEY 0 ACD XXXX zzzz YYYY	* **With Release 22 or higher Key 0 is programmed with a CLID number (zzzz) between the ACD DN XXXX and the Agent /Position ID YYYY. If the customer does not use the CLID feature, then the digit 0 must be defined in place of zzzz. This only applies when the customer has ISDN enabled.**
	01 SCN XXXX	This number MUST be unique for each 2616 station (This is not a part of the ACD ports, however is required for Outcalling)
	06 MSB	Make Set Busy
	15 TRN	Transfer Key

Program one ACD station for each FLT-N port.

NOTE:

- Keys not mentioned should be configured as blank keys.

5.4 CONFIGURING THE 2616 TN(S) FOR MESSAGE WAITING

A separate 2616 TN must be configured for Message Waiting**.**

2616 Set

REQ	NEW	
TYPE	2616	Digital set data block
TN	lll S CC U	Terminal number: loop (0-159) shelf (0-1) card (1-10) unit (0-7)
CDEN	SD, (DD), 4D	Density of this card is single, (double), quad and is dependent on the type of PBX card is being used
CUST	0-31	Customer number
DES	OCTELMW	Designation for telephone

CLS	CNDA	Calling Name Display Allowed
	DNDA	Dialed Name Display Allowed

***KEY 0 ACD XXXX zzzz YYYY		* **With Release 22 or higher Key 0 is programmed with a CLID number (zzzz) between the ACD DN XXXX and the Agent /Position ID YYYY. If the customer does not use the CLID feature, then the digit 0 must be defined in place of zzzz. This only applies when the customer has ISDN enabled.**
	01 SCN XXXX	This number MUST be unique for each 2616 station (This is not a part of the ACD ports, however is required for Outcalling)
	06 MSB	Make Set Busy
	13 MIK	Message Indication Key
	14 MCK	Message Cancellation Key
	15 TRN	Transfer Key

NOTE: The ports dedicated for message waiting must have the Incoming column set to No in menu 4, otherwise these ports will log in . These ports should NOT log in.

5.5 CONFIGURING THE SUBSCRIBERS TELEPHONE

2616 Set

REQ	CHG	
TYPE	2616	Digital set data block
TN	lll S CC U	Terminal number: loop (0-159) shelf (0-1) card (1-10) unit (0-7)
CDEN	SD, (DD), 4D D8	Density of this card is single, (double), quad
CUST	0-31	Customer number
DES	XXXXX	Designation for telephone
FDN Pilot	XXXX	Forward Directory Number (Enter the number of the Octel server)
CLS	FBA	Forward Busy Allowed
	FNA	Forward Ring-No-Answer Allowed
	HTA	Hunting Allowed
	MWA	Message Waiting Allowed

	CNDA	Calling Name Display Allowed
	DNDA	Dialed Number Display Allowed
HUNT	XXXX	Extension to forward on a busy (Enter the Pilot number of the Octel server)
KEY	00 SCR XXXX	PDN (Primary Directory Number)
	01 SCN XXXX	Secondary Number
	xx MWK XXXX	Message Waiting Key can be programmed on any other available key.

5.6 PBX PROGRAMMING FOR MULTIPLE PERSONAL GREETINGS

The following programming is required on the PBX to support the multiple personal greetings feature

The following programming is required on the PBX to support the multiple personal greetings feature. The programming necessary on the Octel 250 Server is specified under Menu 7 in section 6.0.

☐ In Overlay 95, Calling Party Name Display, set RESN to YES. Then assign the following values to the specified parameters:

REQ	CHG
TYPE	CPND
CUST	
CNFG	
MXLN	
STAL	
DFLN	
DES	
RESN	YES
CFWD	CFWD
CFNA	RNA
HUNT	BUSY
PKUP	PKUP
XFER	leave at default
AAA	leave at default

5.7 VERIFYING THAT M-1 TNS ARE ACTIVE

Verifying that M-1 TNS are active

☐ To ensure the M-1 TNs are active, go to overlay 32.

- (Indicates ready to accept command)

STAT	XXXX	Where XXXX is the TN (loop-shelf-card-unit) of the M-1 programmed as an Octel port

The status displayed will IDLE or DSBL

IDLE status is required. If DSBL is displayed, enable them with the following using overlay 32:

ENLU	XXXX	Where XXXX is the TN of the disabled TN

6.0 CONFIGURING THE OCTEL 250

Configuring the Octel 250

☐ Menu 1.1 - System Parameters

- Type of Switch connected to: : I - PBX DMID NT Meridian 1
- Number of Digits in Extension used for Outcalling and ECP:
- Number of Digits in Extension used for Message Waiting:
- Sender ID Used for Telephone Answering Messages: Calling party if known

Menu 4.1 - Port Configuration for ***ACD Configuration***

- Extension/Phone No.: XXXX (For ACD Position ID or Basic ACD this field must be blank), see example on Table 1 below.

Table 1. Menu 4.1 Example Entries

Port	Extension/Phone No.
1A	
1B	
1C	
1D	
1E	
1F	
1G	
1H	
2A	
2B	
2C	
2D	

- With ACD Agent ID this number needs to be within the upper and lower bound of Agent login numbers as defined in Overlay 23 of the Northern switch. (Refer to section 5.2), see example on Table 2 below.

Table 2 Menu 4.1 Example

Port	Extension/Phone No.
1A	1000
1B	1001
1C	1002
1D	1003
1E	1004
1F	1005
1G	1006
1H	1007
2A	1008
2B	1009
2C	1010
2D	1011

NOTE: It is critical that the block of agent ID numbers used for the Octel 250 ports be included in the range of numbers assigned for agent IDs in the IDLB and IDUB prompts found in Overlay 23, under either ADS or SCB. Also note that the agent ID numbers must be unique throughout the Northern PBX; duplication is not tolerated.

- Incoming: Y (See note below)
- Line Type: 150 (Integrated ports/ACD ports)
- Telephone Answering: Y
- Message Waiting: Y - Only those ports dedicated for message waiting must be set to Y. (The incoming column must be set to N for these ports, otherwise the ports dedicated to message waiting will log in. These ports should NOT log in)
- O, N, P, F columns: (Outcalling, Networking, Paging, and Fax ports are customer site-dependent. Set to Y for those ports that will be performing those tasks; otherwise, set to N. Note that ports performing outgoing calls must also have Incoming set to Y)

  NOTE: The "I" (incoming) column can toggle between login and logout. When the "I" column = NO the ports are in a Make Set Busy mode, when the "I" column = YES the ports are in a IDLE login mode.

☐ Menu 4.3 - RS-232 Message Waiting

- Special RS-232 Message Waiting?: N

NOTE: When moving from AMID/DMID method to the FLT-N the Special RS-232 Message Waiting must be set to No, otherwise message waiting will not function.

The FLT-N integration DOES NOT require the RS232 links to be configured in menu 6.

- ☐ Menu 8/9.1 - Subscriber Mailbox Profile
  - Subscribers Extension:
  - Message Waiting Allowed: Y
  - Int. Link Number: N/A
- ☐ Menu 7 - Class of Service Profile:

For subscribers allowed multiple personal greetings, set their class of service parameter ***Personal Greeting*** to ***2 - Multiple Greetings***. Be sure to remind them to record both greetings within their mailbox.

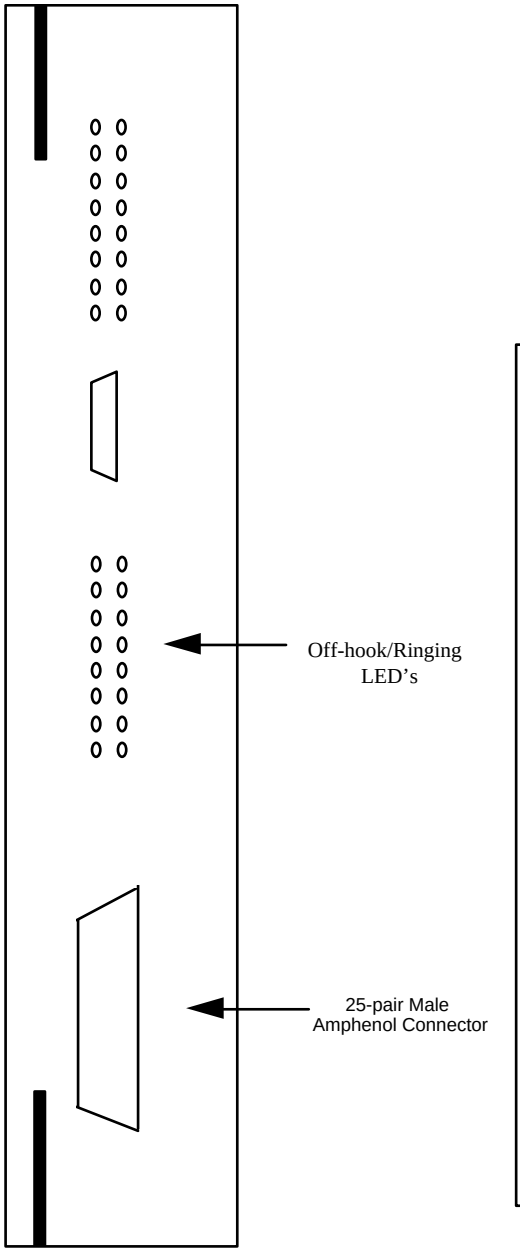
6.1 TYPE 1 MAILBOX FOR CCR APPLICATIONS

- ☐ In order to provide a quick disconnect and return the caller back to the hold in queue for IVR, a type 1 mailbox must be created.
- Define an after hours mailbox as the number defined for the queue

Connecting the FLTs

7.0 CONNECTING THE FLT-N

- ☐ Each FLT-N supports eight digital voice ports. Each FLT-N connects to the switch via a single 25 pair male amphenol connector cable. The first port uses the first pair of the cable, every other pair is used by the remaining ports.



26	TA
1	RA
27	-
2	-
28	TB
3	RB
29	-
4	-
30	TC
5	RC
31	-
6	-
32	TD
7	RD
33	-
8	-
34	TE
9	RE
35	-
10	-
36	TF
11	RF
37	-
12	-
38	TG
13	RG
39	-
14	-
40	TH
15	RH
25 and 50	Telecom Grnd

FLT Cable Pin-Out

Figure - 2

7.2 TROUBLESHOOTING - VERIFY M-1 TNS ARE ACTIVE

Verifying the M-1 TNs are active

☐ To ensure the M-1 TNs are active, go to overlay 32.

- : (Indicates ready to accept command)

STAT XXXX Where XXXX is the TN (loop-shelf-card-unit) of the M-1 programmed as an Octel port

The status displayed will be IDLE or DSBL

IDLE status is the status desired. If DSBL is displayed, enable them with the following using overlay 32.

ENLU	XXXX	Where XXXX is the TN (loop-shelf-card-unit) of the disabled TN

7.3 TESTING THE INSTALLATION

Testing the installation

- ☐ Create two mailboxes associated with two test extensions. Record a name and personal greeting for each mailbox.
- ☐ Make sure these extensions have been forwarded under busy and no-answer conditions to the Octel 250 pilot number.
- ☐ Using one test extension, call the other test extension. You should hear the personal greeting.
- ☐ Leave a message. Verify that the message waiting indicator turns on.
- ☐ Verify that return-to-operator works properly.
- ☐ Call the Octel 250 from a test extension. You should immediately hear the recorded name and be asked to enter your password.
- ☐ Review the message in the mailbox. Verify that you can automatically reply to internal telephone-answering messages.

8.0 CONSIDERATIONS

Important notes regarding this integration

8.1 The Meridian Option 11 does not support supervised transfers below Release 18. This is because the option 11 does not currently support reconnecting with a transferred call, Unsupervised transfers must be used.

8.2 Verified versions of PBX software include 15.00 through 25.xx.

8.3 Secretarial filtering allows a set (phone A, for example) to forward calls to a second set (phone B). If a user at phone B transfers such forwarded calls back to phone A, phone A will ring instead of re-forwarding the call.

8.4 ACD agent ID requires the ACDC feature package on the PBX. Earlier software releases do not support this feature and must utilize position mode in the M-1. M-1 customers purchasing ACDC will have BACD, ACDA and ACDB enabled in their system.

With agent ID, agents login by entering a four-digit code. Position ID users simply plug in a headset or press the "Make Set Busy" key to login.

Both position ID and agent ID are supported on one PBX in a multi-customer environment. However, only one of the two can be supported in a multi-tenant environment.

8.5 Nortel supports two types of ACD overflow. The "overflow" option sends calls in queue to a designated back-up after a predetermined time limit. The "Interflow" feature sends calls in queue to a back-up when the queue size reaches a predetermined maximum. With FLT-N integration's, as long as the Octel ports are configured as ACD agents, it is possible to use the Octel 250 as an Overflow target for ACD applications.

8.6 ACD ports can be programmed to support Customer Control Routing (CCR) applications for "Uninterruptable IVR" or "Interruptable IVR", with Aria 2.03 or higher. No 'treatment' can be defined when using the hold in queue for IVR within CCR applications. Refer to section 5.1.1 for further details**.**

8.7 No more than 8 ACD voice mail ports on the NT PBX cards are recommended Octel highly recommends that the Octel ACD voice ports be distributed among different port cards/shelves/loops on the M1 PBX. This reduces the possibility that a single card/shelve failure will affect a large number of Octel ports. Depending on the PBX architecture, performance could also be an issue on some PBXs during high traffic, if a large number of calls are being processed on the same card. In addition, heavy traffic could cause the PBX to reboot and or initialize.

8.8 The 2616 station configured for message waiting should be assigned on an NT card with low traffic. Otherwise, customers can experience excessive 7A (message waiting bad extension) errors, on valid extensions.

8.9 Octel recommends a ratio of one dedicated message waiting port for every 24 integrated ports. However some customer environments may require a higher ratio due to MWI traffic.

8.10 When converting from DMID integration to the FLT-N integration, be sure that Menu 4 has "Special RS-232 Message Waiting" set to NO, before shutting down the system and installing the FLT-N.

8.11 Multiple Queue Assignment is supported on the FLT-N ports.

8.12 Automated Attendant/ECP applications transferring calls between NMS nodes may experience loss of integration. When Trunk Route Optimization is enabled on NMS trunks, calls

transferred to stations on remote switches that forward without first ringing the station do not pass called party ID to the FLT-N port. The workaround is to have customers use Trunk Tromboning which allows call ID to be passed throughout the entire call process.

8.13 OMD recommends the "Background Task 30" be disabled in the configuration data block (LD 17) of the M1. Otherwise, problems with integration and message waiting can occur. This background task 30 can be performed during the midnight routine, however is not recommended as a background routine.

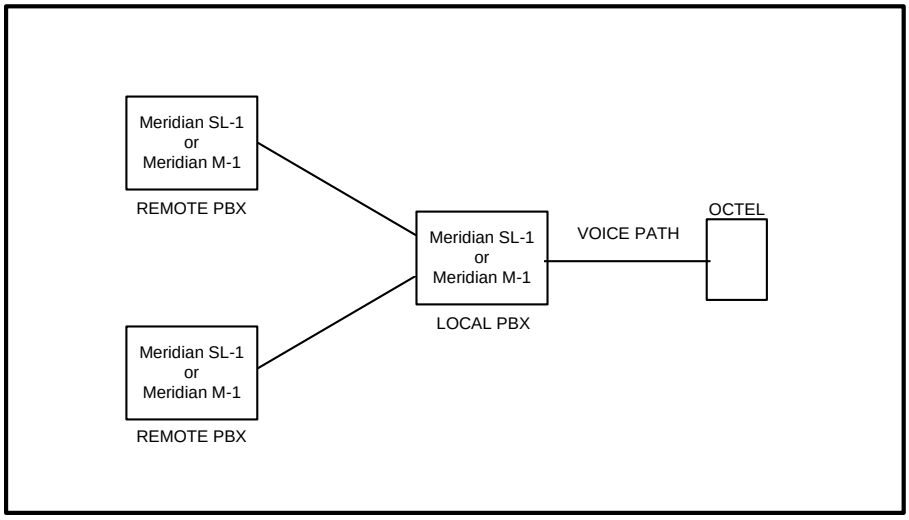
8.14 F9 errors. During the PBX mid nite routine, when Overlay 30 runs, the voice server may log F9 errors (25/28) accompanied by XMI clock errors. These errors are non service affecting and are the result of a problem with the PBX clocking mechanism. **This problem has been resolved with Aria 3.0 software.**

8.15 Checking messages in the general message mailbox from the attendant console causes the ACD ports to lock up when the switch is running Release24.25. OMD recommends that a separate telephone be set up next to the console where messages can be retrieved in order to avoid this port lock up issue.

8.16 Customers may experience a problem with Nortel Release 25.10, where the PBX does not provide the correct display information needed to integrate properly. Customers must request that Nortel install patch MPLR 12969 in order to resolve this problem

9.0 ADDENDUM A - NORTHERN TELECOM'S NETWORK MESSAGE SERVICES

The Northern Telecom Network Message Services - Message Center feature is designed to allow a centralized message center to serve multiple Northern Telecom PBXs. With this feature an Octel system, acting as a message center, can provide integration for multiple Meridian SL-1 or Meridian M-1 PBXs connected with an ISDN or T-1/D-channel network.



The Northern Telecom Network Message Services feature requires one of the following Northern Telecom networking capabilities: ISDN Primary Rate Access (PRA) ***or*** ISDN Signaling Link (ISL). Both require a signaling path, called the D-channel. PRA networks utilize the D channel of the PRA to carry signaling information. ISL networks utilize a dedicated data line as a "D channel", usually requiring modems.

To support an ISL network for integration, the D-channel must operate at 9600 bps or faster. Slower speeds can cause message waiting notification to become unreliable. There is no restriction for PRA networks, which support a D-channel operating at 56 kbps.

Below is a summary list of the PBX requirements. This list is not intended to be all inclusive; it is meant as a guideline only. *Some options listed have hardware and software prerequisites that are not listed.* It remains the responsibility of the customer and PBX vendor to identify all necessary hardware and software components and to correctly configure the Northern Telecom Network Message Services - Message Center.

NORTHERN TELECOM PBX REQUIREMENTS:

- Integration Requirements for Local PBX - refer to appropriate Configuration Note
- X11 Release 16 Software
- Network Message Services (option 175)
- Advanced ISDN Network Features (option 148)
- ISDN Signaling (option 145)
- ISDN Primary Rate Access (PRA) (option 146) or ISDN Signaling Link1 (ISL) (option 147)
- Message Center (option 46)
- End-to-End Signaling (option 10)
- Coordinated Dial Plan (CDP) (option 59) or Network Automatic Route Select (NARS)(option 58)

[1] With ISL networking, the D-channel must operate at a minimum of 9600 bps.

Revision	Issue Date	Reason for Change
Version N	01/2002	Previously released
Version O	04/23/2004	Added support note for Succession software in PBX requirements

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