



DEFENSE INFORMATION SYSTEMS AGENCY

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IN REPLY REFER TO: Joint Interoperability Test Command (JTE)

9 Oct 08

MEMORANDUM FOR DISTRIBUTION

Subject: Special Interoperability Test Certification of the T-Metrics, Inc. (TM)-2000, Consolidated Answering System Version 5.0

- References: (a) DoD Directive 4630.5, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004
(b) CJCSI 6212.01D, "Interoperability and Supportability of Information Technology and National Security Systems," 8 March 2006
(c) and (d), see Enclosure 1

- 1. References (a) and (b) establish the Defense Information Systems Agency, Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification.
2. The TM-2000 Consolidated Answering System version 5.0 is hereinafter referred to as the System Under Test (SUT). The SUT consists of a consolidated answering center enclave and at least one of the optional remote base enclaves with their respective attendant consoles. The SUT meets all of the critical interoperability requirements and is certified for joint use within the Defense Switched Network (DSN) as a Centralized Attendant System. The SUT is certified specifically with the following switching systems listed in Table 1 that are listed on the Unified Capabilities Approved Product List (APL) with their associated interfaces. The SUT meets the critical interoperability requirements for centralized attendant services set forth in reference (c) and testing was conducted using test procedures derived from reference (d). No other configurations, features, or functions, except those cited within this report, are certified by the JITC, or authorized by the Program Management Office for use within the DSN. This certification expires upon changes that affect interoperability, but no later than three years from the date of this memorandum.

Table 1. SUT Certified Switching System Configurations

Table with 3 columns: Switch Name (See note.), Software Release, and Certified Interfaces. It is divided into two sections: Consolidated Answering Center Enclave and Remote Base Enclaves.

Table 1. SUT Certified Switching System Configurations (continued)

Remote Base Enclaves (continued)																
Switch Name (See note.)	Software Release	Certified Interfaces														
<u>Nortel DSN CS1000M-Single Group</u> , DSN CS1000M-Multi Group, DSN M1 Option 61C, and DSN M1 Option 81C	Any Software Release listed on the UC APL	- 2 Wire Analog - Digital Meridian 2616 Business Line														
Avaya S8700, S8710 , and S8720	Any Software Release listed on the UC APL	- Digital 6416 Business Line														
<u>Alcatel-Lucent 5ESS</u> , CDX and VCDX	Any Software Release listed on the UC APL	- ISDN BRI (5E Custom) - Analog														
<p>NOTE: Those switching systems bolded and underlined were tested specifically with the SUT by JITC. The other switching systems were not tested with the SUT; however, these systems were previously tested and certified by JITC with the same interfaces, and JITC analysis determined them to be functionally identical for interoperability certification purposes and they are also certified with the SUT.</p> <p>LEGEND:</p> <table> <tr> <td>5E - 5ESS</td> <td>ISDN - Integrated Services Digital Network</td> </tr> <tr> <td>5ESS - Class 5 Electronic Switching System</td> <td>JITC - Joint Interoperability Test Command</td> </tr> <tr> <td>APL - Approved Product List</td> <td>M1 - Meridian 1</td> </tr> <tr> <td>BRI - Basic Rate Interface</td> <td>MSL - Meridian Switching Load</td> </tr> <tr> <td>CDX - Compact Digital Exchange</td> <td>SUT - System Under Test</td> </tr> <tr> <td>CS - Communication Server</td> <td>UC - Unified Capabilities</td> </tr> <tr> <td>DSN - Defense Switched Network</td> <td>VCDX - Very Compact Digital Exchange</td> </tr> </table>			5E - 5ESS	ISDN - Integrated Services Digital Network	5ESS - Class 5 Electronic Switching System	JITC - Joint Interoperability Test Command	APL - Approved Product List	M1 - Meridian 1	BRI - Basic Rate Interface	MSL - Meridian Switching Load	CDX - Compact Digital Exchange	SUT - System Under Test	CS - Communication Server	UC - Unified Capabilities	DSN - Defense Switched Network	VCDX - Very Compact Digital Exchange
5E - 5ESS	ISDN - Integrated Services Digital Network															
5ESS - Class 5 Electronic Switching System	JITC - Joint Interoperability Test Command															
APL - Approved Product List	M1 - Meridian 1															
BRI - Basic Rate Interface	MSL - Meridian Switching Load															
CDX - Compact Digital Exchange	SUT - System Under Test															
CS - Communication Server	UC - Unified Capabilities															
DSN - Defense Switched Network	VCDX - Very Compact Digital Exchange															

3. This certification is based on interoperability testing and review of the vendor's Letter of Compliance (LoC). Interoperability testing was conducted by JITC at the Global Information Grid Network Test Facility, Fort Huachuca, Arizona, from 2 through 12 September 2008. Review of vendor's LoC was completed on 25 September 2008. The Certification Testing Summary (Enclosure 2) documents the test results and describes the test configuration.

4. The Functional Requirements used to evaluate the interoperability of the SUT and the interoperability statuses are indicated in Table 2.

Table 2. SUT Functional Requirements and Interoperability Status

Interface(s)	Critical	Certified	Functional Requirements	Met	UCR Paragraph
Consolidated Answering Center Enclave: Nortel Meridian Services Attendant Console Analog Interface with Meridian 5316 Proprietary Digital Line (CS2100)	No ¹	Yes	Precedence and Preemption (R)	Yes	2.2.1
			Call Display (R)	Yes	2.2.2
			Class of Service Override (R)	Yes	2.2.3
Remote Base Enclave: Nortel Meridian 2616 Proprietary Digital Line with 2-Wire Analog Line (CS1000M) ²	No ¹	Yes	Busy Override and Busy Verification (R)	Yes	2.2.4
Remote Base Enclave: Alcatel-Lucent ISDN BRI 5ECustom Line (5ESS) with 2-Wire Analog Line ³	No ¹	Yes	Night Service (R)	Yes	2.2.5
			Automatic Recall of Attendant (R)	Yes	2.2.6
Remote Base Enclave: Nortel Meridian 5316 Proprietary Digital Line with 2-Wire Analog Line (CS2100) ⁴	No ¹	Yes	Calls in Queue to the Attendant (R)	Yes	2.2.7
			Release To Pivot for Operator Services (R)	Yes	2.2.8
IEEE 802.3u 100BaseT Ethernet ⁵	No ¹	Yes	Security (R)	See note 6.	A7.6

Table 2. SUT Functional Requirements and Interoperability Status (continued)

NOTES:			
1	The UCR does not specify a minimum required interface for a centralized attendant.		
2	These two SUT interfaces are certified with the SUT when the SUT Remote Base Enclave includes the following switches on the UC APL: Nortel DSN CS1000M-Single Group, DSN CS1000M-Multi Group, DSN M1 Option 61C, and DSN M1 Option 81C. Furthermore, this remote base enclave and associated interfaces are optional.		
3	These two SUT interfaces are certified with the SUT when the SUT Remote Base Enclave includes the following switches on the UC APL: Alcatel-Lucent 5ESS, CDX, and VCDX. Furthermore, this remote base enclave and associated interfaces are optional.		
4	These two SUT interfaces are certified with the SUT when the SUT Remote Base Enclave includes the following switches on the UC APL: Nortel CS2100 and MSL-100. Furthermore, this remote base enclave and associated interfaces are optional.		
5	This interface is certified with both the SUT Remote Base Enclave and Consolidated Answering Center Enclave and is not optional.		
6	Security is tested by DISA-led Information Assurance test teams and published in a separate report.		
LEGEND:			
5E	- 5ESS	IEEE	- Institute of Electrical and Electronics Engineers
5ESS	- Class 5 Electronic Switching System	ISDN	- Integrated Services Digital Network
100BaseT	- 100 Mbps (Baseband Operation, Twisted Pair) Ethernet	M1	- Meridian 1
802.3u	- Standard for carrier sense multiple access with collision detection at 100 Mbps	Mbps	- Megabits per second
A	- Appendix	MSL	- Meridian Switching Load
APL	- Approved Products List	R	- Required
BRI	- Basic Rate Interface	SUT	- System Under Test
CDX	- Compact Digital Exchange	UC	- Unified Capabilities
CS	- Communication Server	UCR	- Unified Capabilities Requirements
DISA	- Defense Information Systems Agency	VCDX	- Very Compact Digital Exchange
DSN	- Defense Switched Network		

5. No detailed test report was developed in accordance with the Program Manager's request. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Unclassified-But-Sensitive Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive interoperability status information is available via the JITC System Tracking Program (STP). The STP is accessible by .mil/.gov users on the NIPRNet at <https://stp.fhu.disa.mil>. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at <http://jit.fhu.disa.mil> (NIPRNet), or <http://199.208.204.125> (SIPRNet). Information related to DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at <http://jitc.fhu.disa.mil/tssi>.

6. The JITC point of contact is Steven Lesneski, DSN 879-5400, commercial (520) 538-5400, FAX DSN 879-4347, or e-mail to steven.lesneski@disa.mil. The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 0726801.

FOR THE COMMANDER:

2 Enclosures a/s


for RICHARD A. MEADOR
Chief
Battlespace Communications Portfolio

JITC Memo, JTE, Special Interoperability Test Certification of the T-Metrics, Inc. (TM)-2000,
Consolidated Answering System Version 5.0

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ADDITIONAL REFERENCES

- (c) Defense Information Systems Agency, "Department of Defense Voice Networks Unified Capabilities Requirements," 21 December 2007
- (d) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006

CERTIFICATION TESTING SUMMARY

- 1. SYSTEM TITLE.** The T-Metrics, Inc (TM)-2000 Consolidated Answering System Version 5.0 is hereinafter referred to as the System Under Test (SUT).
- 2. PROPONENT.** United States Air Force, Headquarters, Air Education and Training Command (HQ AETC).
- 3. PROGRAM MANAGER.** Ricky Rider, GS-13, 61 Main Circle, Suite 2, Randolph Air Force Base, Texas, 78250 e-mail: ricky.rider@randolph.af.mil.
- 4. TESTER.** Joint Interoperability Test Command (JITC), Fort Huachuca, Arizona.
- 5. SYSTEM UNDER TEST DESCRIPTION.** The SUT consists of a consolidated answering center enclave and at least one of the optional remote base enclaves with their respective attendant consoles. The SUT communicates between the consolidated answering center enclave and any one of the optional remote base enclaves via Internet Protocol (IP). The SUT offers a centralized attendant capability for remote bases. These calls are forwarded automatically to one centralized location. The centralized attendant can provide information assistance or transfer a user back to their respective originating switch avoiding an incoming and outgoing toll call. This functionality is called Release to Pivot. The SUT allows calls at remote locations to be serviced by live agents at a consolidated (or central) location. Because calls could be transferred by the agents at the centralized location, this system is designed so that operator assistance calls placed at the remote bases are automatically forwarded to the consolidated location. The system at the remote base separates the elements of the original call into its audio component and its signaling component. The audio path is then connected from the remote base to the consolidated answering center via the Defense Switched Network (DSN), and the signaling component is connected from the remote base to the consolidated base using the Department of Defense (DoD) IP network.

The SUT is certified specifically with the following switching systems listed in Table 2-1 that are also listed on the Unified Capabilities (UC) Approved Product List (APL) with their associated interfaces.

Table 2-1. SUT Certified Switching System Configurations

Consolidated Answering Center Enclave		
Switch Name (See note.)	Software Release	Certified Interfaces
Nortel CS2100 , MSL-100	Any Software Release listed on the UC APL	- Digital Meridian 5316 Business Line
Remote Base Enclaves		
Nortel CS2100 , MSL-100	Any Software Release listed on the UC APL	- Proprietary Analog Meridian Services Attendant Console Interface - Digital Meridian 5316 Business Line

Table 2-1. SUT Certified Switching System Configurations (continued)

Remote Base Enclaves (continued)																
Switch Name (See note.)	Software Release	Certified Interfaces														
<u>Nortel DSN CS1000M-Single Group</u> , DSN CS1000M-Multi Group, DSN M1 Option 61C, and DSN M1 Option 81C	Any Software Release listed on the UC APL	- 2 Wire Analog - Digital Meridian 2616 Business Line														
Avaya S8700, <u>S8710</u> , and S8720	Any Software Release listed on the UC APL	- Digital 6416 Business Line														
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<p>NOTE: Those switching systems bolded and underlined were tested specifically with the SUT by JITC. The other switching systems were not tested with the SUT; however, these systems were previously tested and certified by JITC with the same interfaces, and JITC analysis determined them to be functionally identical for interoperability certification purposes and they are also certified with the SUT.</p> <p>LEGEND:</p> <table> <tr> <td>5E - 5ESS</td> <td>ISDN - Integrated Services Digital Network</td> </tr> <tr> <td>5ESS - Class 5 Electronic Switching System</td> <td>JITC - Joint Interoperability Test Command</td> </tr> <tr> <td>APL - Approved Product List</td> <td>M1 - Meridian 1</td> </tr> <tr> <td>BRI - Basic Rate Interface</td> <td>MSL - Meridian Switching Load</td> </tr> <tr> <td>CDX - Compact Digital Exchange</td> <td>SUT - System Under Test</td> </tr> <tr> <td>CS - Communication Server</td> <td>UC - Unified Capabilities</td> </tr> <tr> <td>DSN - Defense Switched Network</td> <td>VCDX - Very Compact Digital Exchange</td> </tr> </table>			5E - 5ESS	ISDN - Integrated Services Digital Network	5ESS - Class 5 Electronic Switching System	JITC - Joint Interoperability Test Command	APL - Approved Product List	M1 - Meridian 1	BRI - Basic Rate Interface	MSL - Meridian Switching Load	CDX - Compact Digital Exchange	SUT - System Under Test	CS - Communication Server	UC - Unified Capabilities	DSN - Defense Switched Network	VCDX - Very Compact Digital Exchange
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CS - Communication Server	UC - Unified Capabilities															
DSN - Defense Switched Network	VCDX - Very Compact Digital Exchange															

6. OPERATIONAL ARCHITECTURE. The Unified Capabilities Requirements (UCR) DSN architecture in Figure 2-1 depicts the relationship of the SUT to the DSN switches.

7. REQUIRED SYSTEM INTERFACES. Requirements specific to the SUT and interoperability results are listed in Table 2-2. These requirements are derived from the UCR Interface and Functional Requirements and were verified through JITC testing.

Table 2-2. SUT Functional Requirements and Interoperability Status

Interface(s)	Critical	Certified	Functional Requirements	Met	UCR Paragraph
Consolidated Answering Center Enclave: Nortel Meridian Services Attendant Console Analog Interface with Meridian 5316 Proprietary Digital Line (CS2100)	No ¹	Yes	Precedence and Preemption (R)	Yes	2.2.1
			Call Display (R)	Yes	2.2.2
Remote Base Enclave: Nortel Meridian 2616 Proprietary Digital Line with 2-Wire Analog Line (CS1000M) ²	No ¹	Yes	Class of Service Override (R)	Yes	2.2.3
			Busy Override and Busy Verification (R)	Yes	2.2.4
Remote Base Enclave: Alcatel-Lucent ISDN BRI 5E Custom Line (5ESS) with 2-Wire Analog Line ³	No ¹	Yes	Night Service (R)	Yes	2.2.5
			Automatic Recall of Attendant (R)	Yes	2.2.6
Remote Base Enclave: Nortel Meridian 5316 Proprietary Digital Line with 2-Wire Analog Line (CS2100) ⁴	No ¹	Yes	Calls in Queue to the Attendant (R)	Yes	2.2.7
			Release To Pivot for Operator Services (R)	Yes	2.2.8
IEEE 802.3u 100BaseT Ethernet ⁵	No ¹	Yes	Security (R)	See note 6.	A7.6

NOTES:

- The UCR does not specify a minimum required interface for a centralized attendant.
- These two SUT interfaces are certified with the SUT when the SUT Remote Base Enclave includes the following switches on the UC APL: Nortel DSN CS1000M-Single Group, DSN CS1000M-Multi Group, DSN M1 Option 61C, and DSN M1 Option 81C. Furthermore, this remote base enclave and associated interfaces are optional.
- These two SUT interfaces are certified with the SUT when the SUT Remote Base Enclave includes the following switches on the UC APL: Alcatel-Lucent 5ESS, CDX, and VCDX. Furthermore, this remote base enclave and associated interfaces are optional.
- These two SUT interfaces are certified with the SUT when the SUT Remote Base Enclave includes the following switches on the UC APL: Nortel CS2100 and MSL-100. Furthermore, this remote base enclave and associated interfaces are optional.
- This interface is certified with both the SUT Remote Base Enclave and Consolidated Answering Center Enclave and is not optional.
- Security is tested by DISA-led Information Assurance test teams and published in a separate report.

LEGEND:

5E	- 5ESS	DSN	- Defense Switched Network
5ESS	- Class 5 Electronic Switching System	IEEE	- Institute of Electrical and Electronics Engineers
100BaseT	- 100 Mbps (Baseband Operation, Twisted Pair) Ethernet	ISDN	- Integrated Services Digital Network
802.3u	- Standard for carrier sense multiple access with collision detection at 100 Mbps	M1	- Meridian 1
A	- Appendix	Mbps	- Megabits per second
APL	- Approved Products List	MSL	- Meridian Switching Load
BRI	- Basic Rate Interface	R	- Required
CDX	- Compact Digital Exchange	SUT	- System Under Test
CS	- Communication Server	UC	- Unified Capabilities
DISA	- Defense Information Systems Agency	UCR	- Unified Capabilities Requirements
		VCDX	- Very Compact Digital Exchange

8. TEST NETWORK DESCRIPTION. The SUT was tested at JITC's Global Information Grid Network Test Facility in a manner and configuration similar to that of the DSN operational environment. Testing the system's required functions and features was conducted using the test configuration depicted in Figures 2-2 through Figures 2-7. Figure 2-2 depicts a high-level diagram for the SUT consolidated answering system. Figure 2-3 depicts the Nortel CS2100 consolidated answering center enclave. Figure 2-4 depicts the Nortel CS2100 remote base enclave. Figure 2-5 depicts the Nortel

CS1000M remote base enclave. Figure 2-6 depicts the Alcatel-Lucent 5ESS remote base enclave. Figure 2-7 depicts the Avaya S8710 remote base enclave.

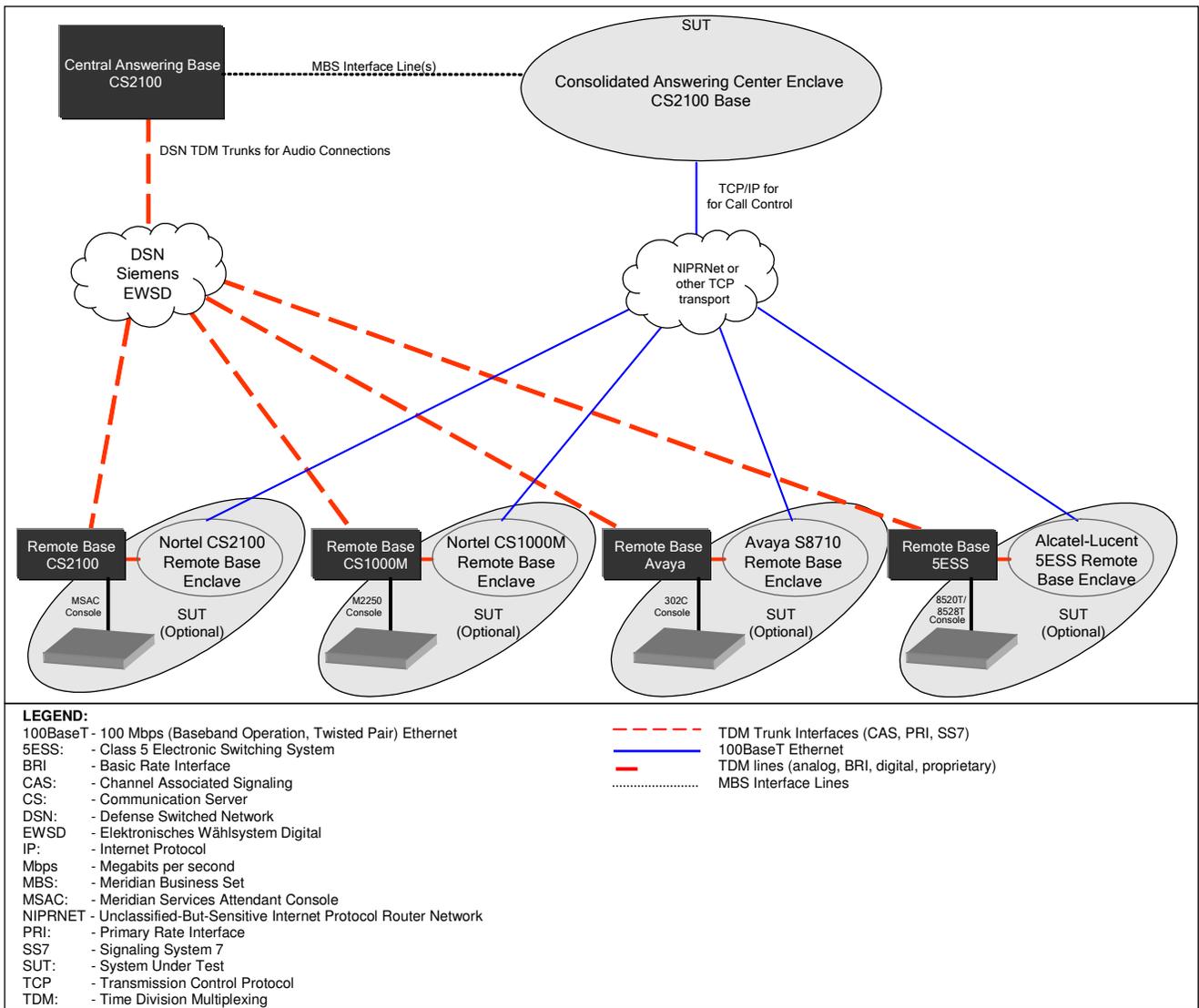
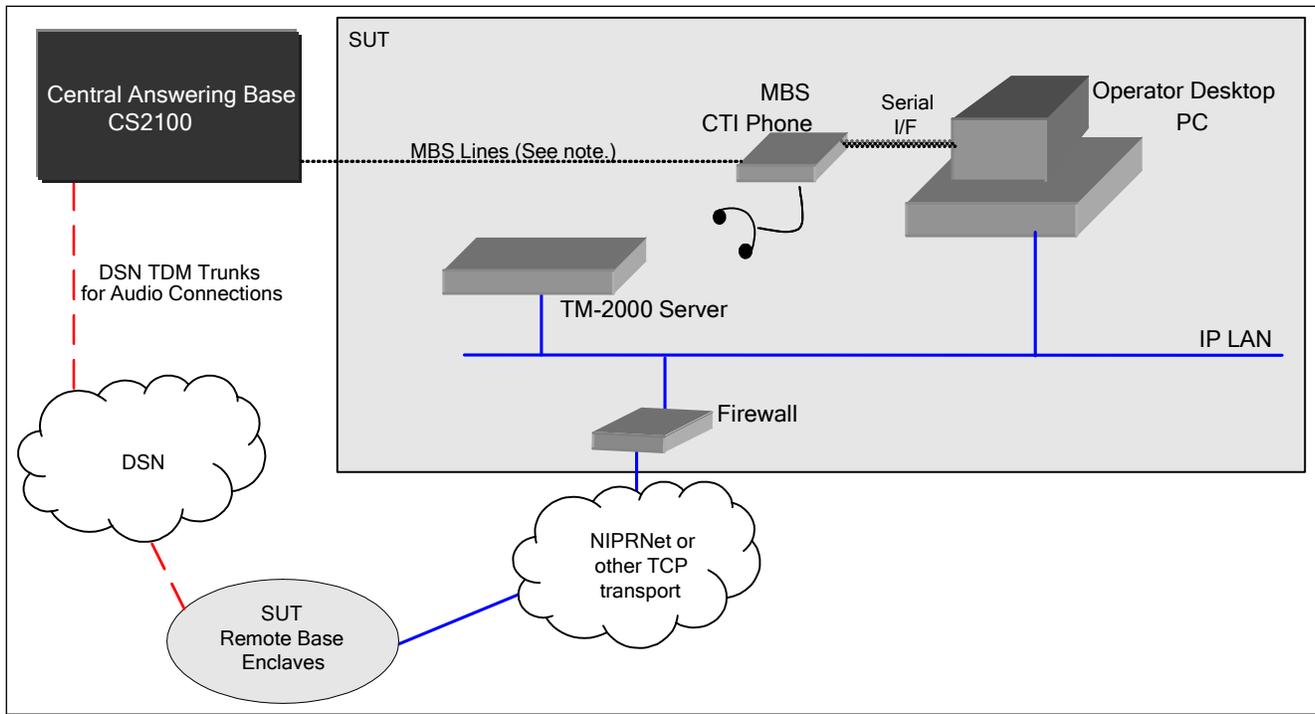


Figure 2-2. High-Level Diagram for the Consolidated Answering System



NOTE: The SUT is certified with any number of MBS lines and operator desktop PCs.

LEGEND:

- 100BaseT - 100 Mbps (Baseband Operation, Twisted Pair) Ethernet
- CAS: - Channel Associated Signaling
- CS: - Communication Server
- CTI: - Computer Telephone Interface
- DSN: - Defense Switched Network
- I/F: - Intermediate Frequency
- IP: - Internet Protocol
- LAN: - Local Area Network
- MBS: - Meridian Business Set
- Mbps - Megabits per second
- NIPRNET - Unclassified-But-Sensitive Internet Protocol Router Network
- PC: - Personal Computer
- PRI: - Primary Rate Interface
- SS7 - Signaling System 7
- SUT: - System Under Test
- TCP - Transmission Control Protocol
- TDM: - Time Division Multiplexing
- TM: - T-Metrics

- TDM Trunk Interfaces (CAS, PRI, SS7)
- 100BaseT Ethernet
- MBS Interface Lines

Figure 2-3. Nortel CS2100 Consolidated Answering Center Enclave

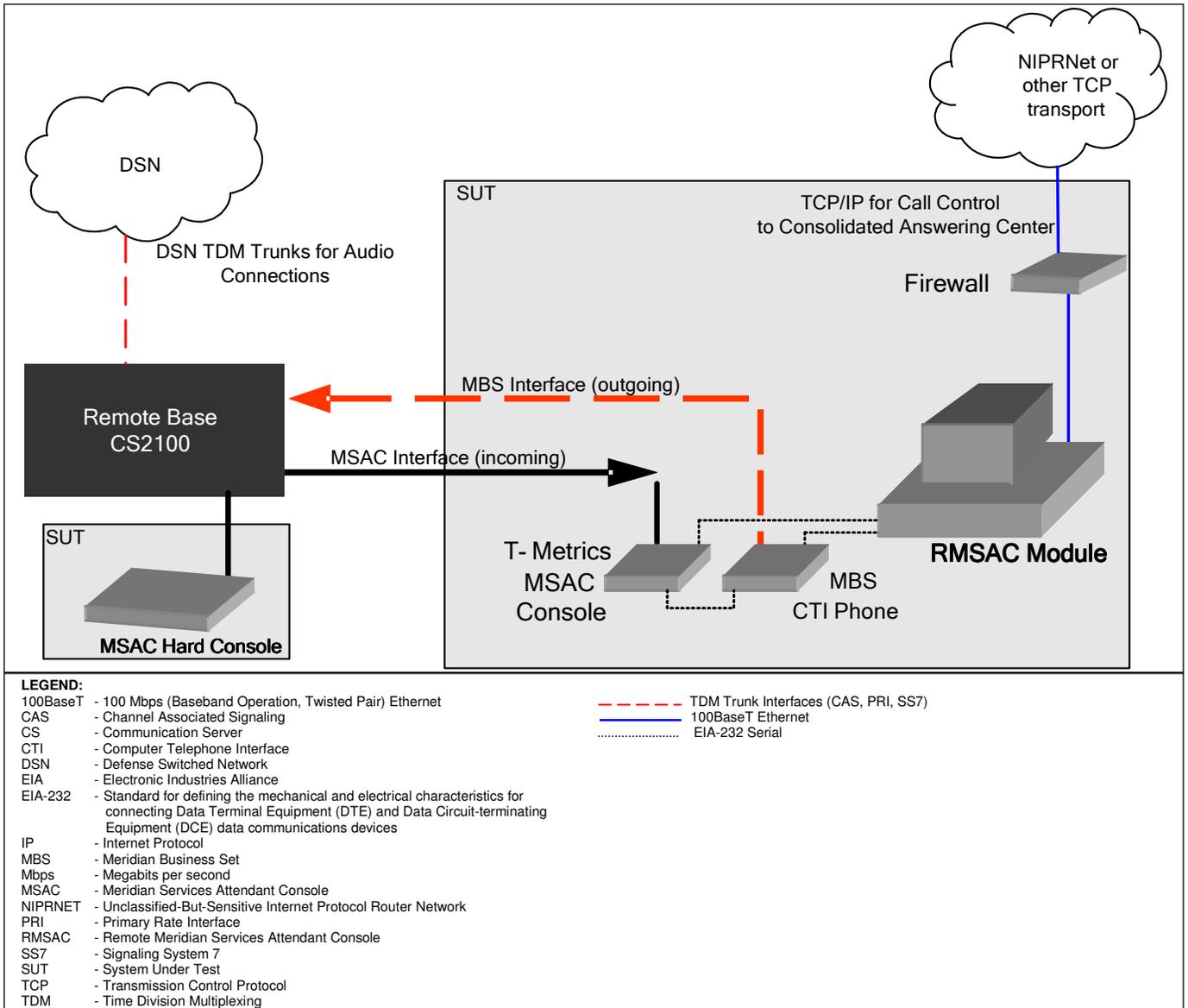


Figure 2-4. Nortel CS2100 Remote Base Enclave

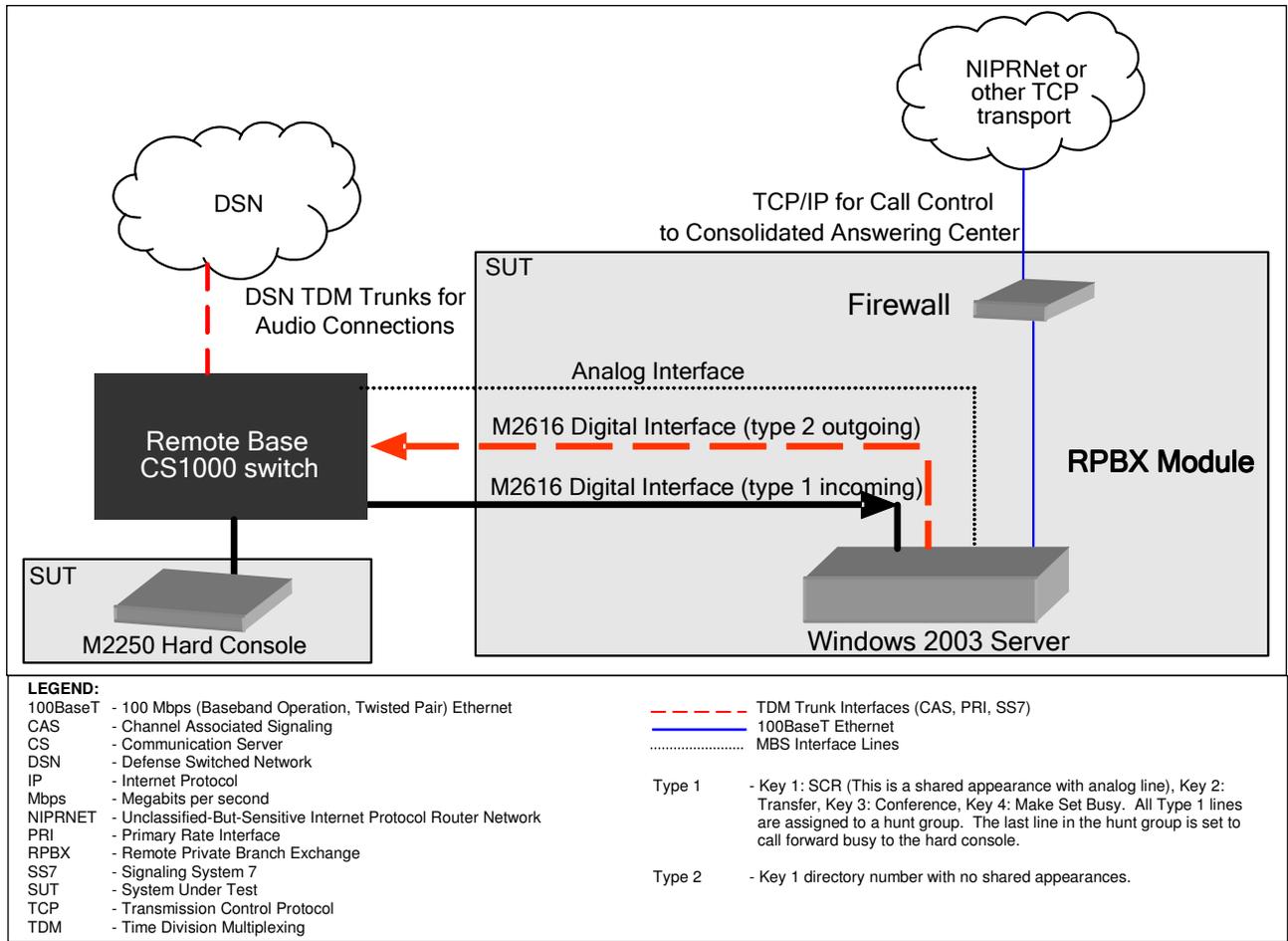


Figure 2-5. Nortel CS1000M Remote Base Enclave

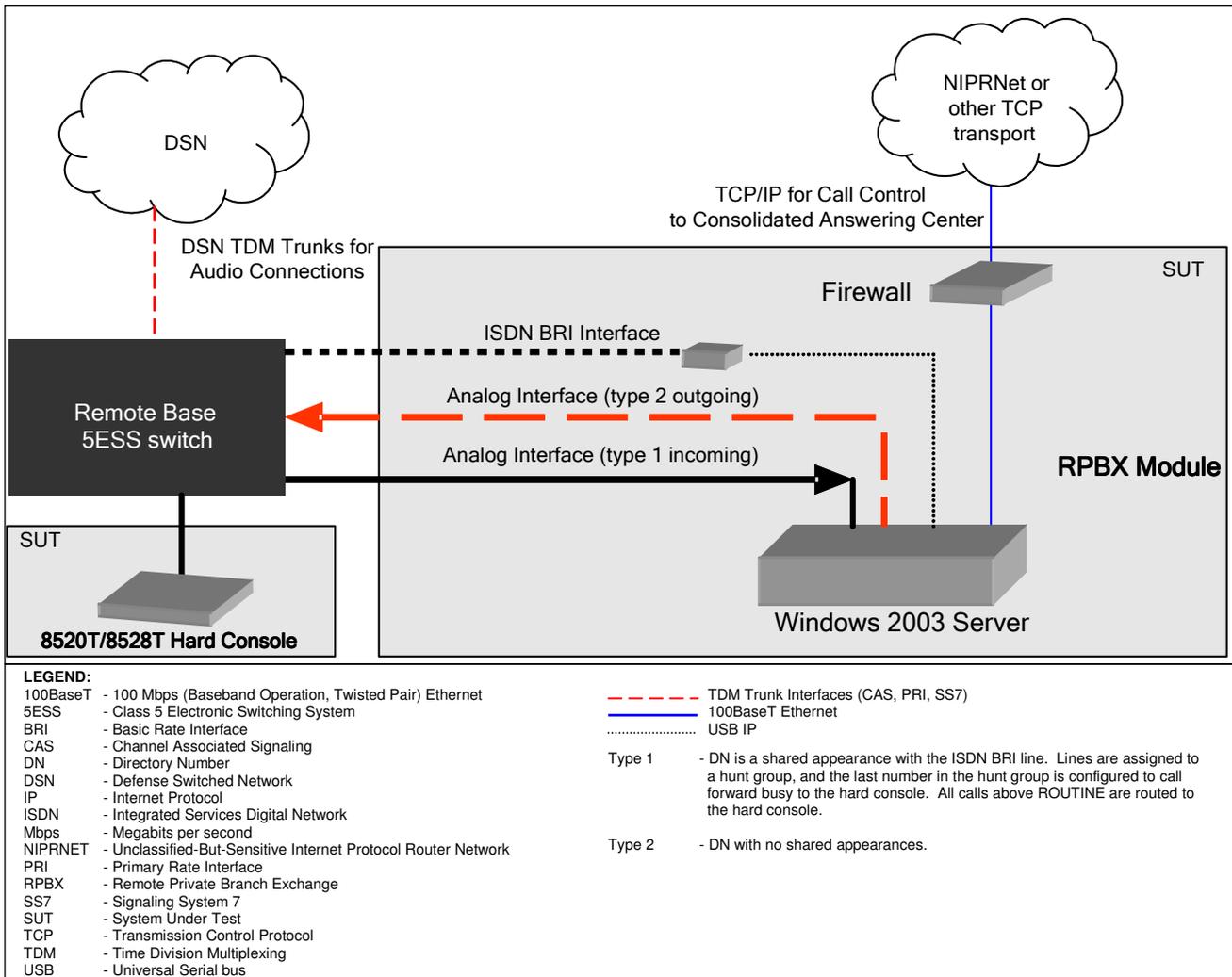


Figure 2-6. Alcatel-Lucent 5ESS Remote Base Enclave

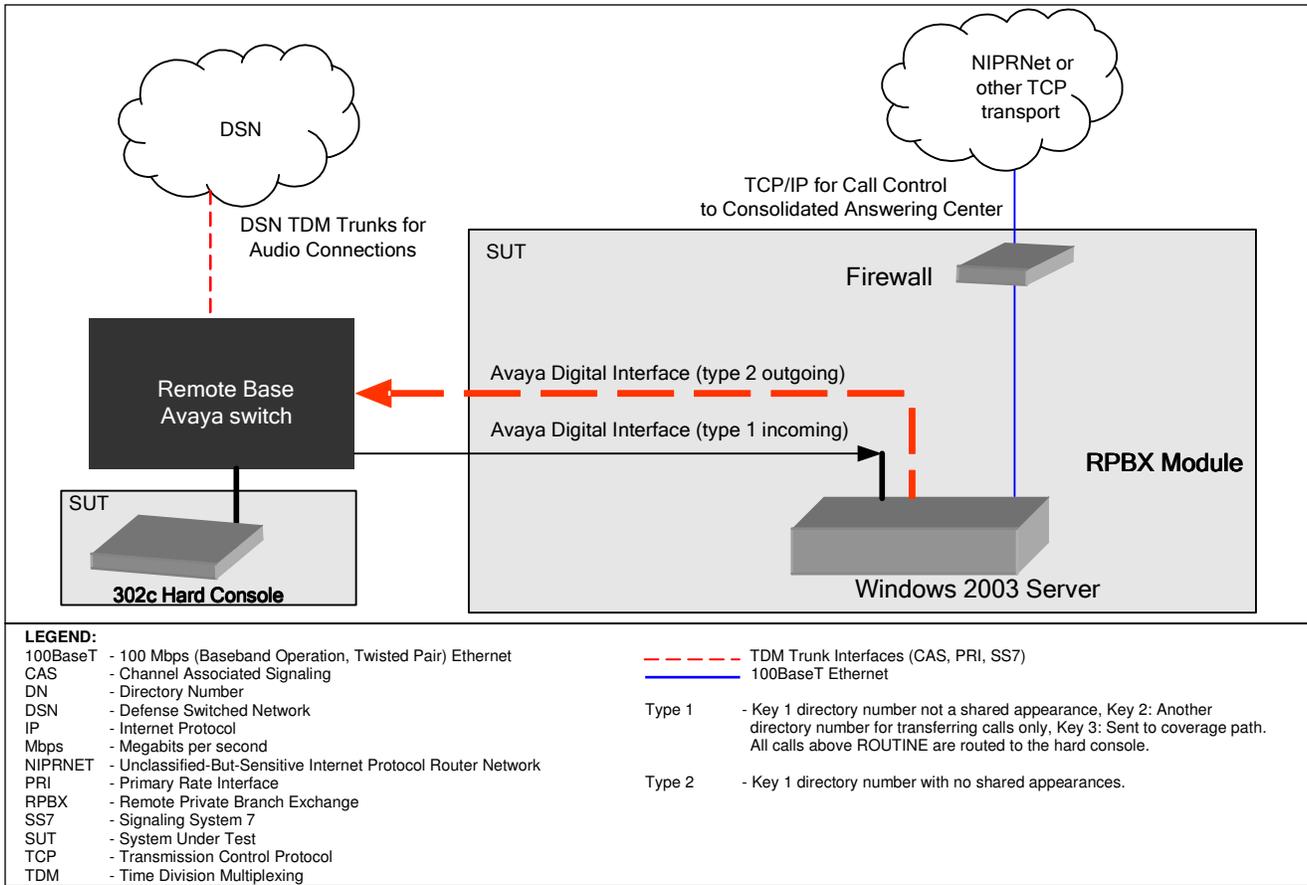


Figure 2-7. Avaya S8710 Remote Base Enclave

9. SYSTEM CONFIGURATIONS. Table 2-3 provides the system configurations, hardware, and software components tested with the SUT. The SUT was tested in an operationally realistic environment to determine interoperability with a complement of DSN switches noted in Table 2-3. Table 2-3 lists the DSN switches which depict the tested configuration and is not intended to identify the only switches that are certified with the SUT. The SUT is certified with switching systems listed on the UC APL that offer the same certified interfaces.

Table 2-3. Tested System Configurations

System Name	Hardware/Software Release
Nortel CS2100	Succession Enterprise (SE) 09.1
Nortel CS1000M	DSN 4.5w
Avaya S8710	4.02 Release 731.7 Patch 14419
Alcatel-Lucent 5ESS	5E16.2 Broadcast Warning Message (BWM) 08-0002
Siemens EWSD	Release 19d with Patch Group 46

Table 2-3. Tested System Configurations (continued)

SUT	Hardware	Card Name		Software/ Firmware		
		Part Number/	Name			
T-Metrics Consolidated Answering System Version 5.0	TM-2000 ACD SuperMicro TM PC Server			Windows 2003 Release 2 Service Pack 2		
				ACD Controller v5.0		
				Event Server v2.0		
				Attachmate Reflection WRQ v6.1.3		
				Symantec AV v10		
				IIS 6.0		
				IE 7.0		
			TotalHost v2.12			
			SuperMicro TM PC Server			
	RPBX Server	Dialogic D/82		Windows 2003 Release 2 Service Pack 2		
		Dialogic D/120				
		XISDN (via USB)				
		XMBS			Attachmate Reflection WRQ v6.1.3	
					Dialogic System R6.0	
					TMI DigiModule R4.0	
					Symantec AV v10	
			IE 7.0			
			TotalHost v2.12			
	Consolidated Answering Center Agent PC	XMBS			Windows XP Service Pack 3	
					IE 7.0	
					Symantec AV v10	
					TMI DigiModule R4.0	
					Agent Module v2.0	
			CMSAC v6.0			
			TotalHost v2.12			
RMSAC Server	XMSAC			Attachmate Reflection WRQ v6.1.3		
				Windows XP Service Pack 3		
				IE 7.0		
				Symantec AV v10		
				TMI DigiModule R4.0		
				MSAC v6.0		
				TotalHost v2.12		
		Attachmate Reflection WRQ v6.1.3				
ISDN BRI U-Interface Converter		N/A				
Nortel CS2100 MSAC Hard Console						
Nortel CS1000M M2250 Hard Console						
Avaya S8710 302C Hard Console						
Alcatel-Lucent ISDN 8520T, 8528T		8520T with software FP3.2-05/02/94				
		8528T with software FP3.6-08/13/96				
LEGEND:						
5ESS - Class 5 Electronic Switching System		PC - Personal Computer				
ACD - Automated Call Distributor		RMSAC - Remote Meridian Services Attendant Console				
AV - Anti Virus		RPBX - Remote Public Branch Exchange				
CMSAC - Centralized Meridian Services Attendant Console		TM - T-Metrics				
CS - Communication Server		TMI - T-Metrics Interface				
EWS - Elektronisches Wählsystem Digital		USB - Universal Serial Bus				
IE - Internet Explorer		v - Version				
IIS - Internet Information Server		XMBS - External Meridian Business Set				
ISDN - Integrated Services Digital Network		XMSAC - External Meridian Services Attendant Console				
MSAC - Meridian Services Attendant Console		XISDN - External ISDN Line Monitor				
N/A - Not Applicable						

10. TEST LIMITATIONS. None.

11. TEST RESULTS

a. Discussion

(1) The UCR, paragraph 2.2.1, states the attendant console shall interoperate with Multi-Level Precedence and Preemption (MLPP) as described in UCR, section 3. The console shall be able to initiate all levels of precedence calls (i.e., ROUTINE through FLASH-OVERRIDE). The SUT successfully met the requirements for MLPP as described in section 3 of reference (c), for the Centralized Attendant. The SUT met this requirement with the remote base enclave hard consoles.

(2) The UCR, paragraph 2.2.2, states the attendant console shall provide a visual display of the calling number, class of service, and precedence level for incoming direct dialed calls and diverted calls to the attendant. The SUT provided a visual display of the calling number, Class of Service (CoS) and precedence level for incoming direct-dialed calls and diverted calls to the attendant. The SUT met this requirement with the remote base enclave hard consoles.

(3) The UCR, paragraph 2.2.3, states the attendant shall provide the capability to override any class of service (calling area or precedence) of the calling party on a call-by-call basis. The SUT provided the capability to override any CoS (calling area or precedence) of the calling party on a call-by-call basis. This function is reliant upon the hard console that is already certified with the switches that the SUT was tested against. The SUT met this requirement with the remote base enclave hard consoles.

(4) The UCR, paragraph 2.2.4, states the attendant shall have the capability to override a busy line condition. If the called line being verified is busy, off-hook supervision shall be given to the attendant performing the busy verification. When a verification code is used, all digits of the code must be dialed before cut-through to the line can be accomplished. Connections to commercial Central Office access lines shall be restricted from busy verification access. The attendant shall have the capability to enter an existing busy line to inform the user of an incoming call. An override tone shall be provided to the busy line prior to the attendant entering the conversation, and the tone shall be repeated periodically as long as the attendant is connected. Selected stations may be classmarked to deny attendant break-in. In particular, it shall be possible to classmark the lines of selected stations (e.g., all data and secure voice) to preclude the busy verification or busy override being applied to the selected station lines. The SUT met this requirement with the remote base enclave hard consoles.

(5) The UCR, paragraph 2.2.5, states the attendant console shall have the ability to route all calls normally directed to the console to a night service deflection. The night service deflection shall be a fixed or manually selected directory number. The SUT successfully demonstrated the ability to route all calls normally directed to the console to a night service deflection. The night service deflection was a fixed or manually selected directory number. The SUT met this requirement with the remote base enclave hard consoles.

(6) The UCR, paragraph 2.2.6, states when an attendant extends a call to a station that is busy or does not answer within a preset time, the extended party shall be recalled automatically to the console. Recalls shall be transferred to the console that

originally processed the call. If that console is busy, the recall shall be placed into the console queue; but if the console is out of service, the recall shall be routed to another console. When an attendant extended a call to a station that was busy or did not answer within a preset time, the extended party was automatically recalled to the console. If that console was busy, the recall was placed into the console queue; if the console was out of service, the recall was routed to another console. The SUT met this requirement with the remote base enclave hard consoles.

(7) The UCR, paragraph 2.2.7, states the attendant console shall have the capability to place calls in a waiting queue. Calls placed in queue to the attendant console shall be retrieved by the attendant in order of precedence level (FLASH-OVERRIDE first, ROUTINE last) and longest holding time. Calls in queue shall not be lost when a console is placed out of service or forwarded to night service deflection. When the console is placed out of service or forwarded to night service while calls are in queue the console shall be capable of one of the following solutions: The SUT successfully demonstrated the capability to place calls in a waiting queue. Calls placed in queue to the attendant console were retrieved by the attendant in order of precedence level (FLASH-OVERRIDE first, ROUTINE last) and longest holding time. Calls in queue were not lost when a console was placed out of service or forwarded to night service deflection. When the console was placed out of service or forwarded to night service while calls were in queue, the console was capable of both of the following solutions:

(a) All calls in queue were forwarded first to the centralized attendant, then to night service.

(b) All subsequent calls placed to the attendant console were forwarded first to the centralized attendant and then to night service. The attendant console was able to answer all remaining calls in queue, preventing any calls from being lost.

The SUT met this requirement with the remote base enclave hard consoles.

(8) The UCR, paragraph 2.2.8, states that a centralized attendant shall have the capability, when a new destination is determined, to have the connection established from the originating switch. The result is that the release switch at the consolidation answering center saves and incoming and outgoing trunk relative to case where the call is forwarded to the new destination. The SUT met this requirement with call control via IP between the consolidated answering enclave and the remote base enclaves.

b. Test Summary. The SUT meets all of the critical interoperability requirements and is certified for joint use within the DSN as a Centralized Attendant System. The SUT is certified specifically with the following switching systems listed in Table 2-1 that are listed on the UC APL with their associated interfaces.

12. TEST AND ANALYSIS REPORT. No detailed test report was developed in accordance with the Program Manager's request. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Unclassified-But-Sensitive Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive interoperability status information is available via the JITC System Tracking Program (STP). The STP is accessible by .mil/gov users on the NIPRNet at <https://stp.fhu.disa.mil>. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at <http://jit.fhu.disa.mil> (NIPRNet), or <http://199.208.204.125> (SIPRNet). Information related to DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at <http://jitc.fhu.disa.mil/tssi>.