DEFENSE INFORMATION SYSTEMS AGENCY
P. O. BOX 549
FORT MEADE, MARYLAND 20755-0549

IN REPLY
REFER TO: Joint Interoperability Test Command (JTE) **1 Jun 12**

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Special Interoperability Test Certification of the Cisco Unity Connection Software Release 8.6(1) with T1 Internet Protocol Media Gateway (TIMG) Interface

References: (a) DoD Directive 4630.05, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004
(b) CJCSI 6212.01E, "Interoperability and Supportability of Information Technology and National Security Systems," 15 December 2008
(c) through (e), see Enclosure 1

1. References (a) and (b) establish the Defense Information Systems Agency (DISA), Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification.

2. The Cisco Unity Connection Software Release 8.6(1) with TIMG interface is hereinafter referred to as the System Under Test (SUT). The SUT meets all of its critical interoperability requirements and is certified as interoperable for joint use within the Defense Information Systems Network (DISN) as a Customer Premise Equipment voicemail system with the Siemens Elektronisches Wählsystem Digital, Avaya Communication Server (CS)2100, and Alcatel-Lucent Class 5 Electronic Switching System switching systems specifically with the Digital Transmission Link Level 1 (T1) and serial Simple Message Desk Interface (SMDI) interfaces and respective signaling, identified in Table 1. The SUT met the critical interoperability requirements set forth in Reference (c) using test procedures derived from Reference (d). Additionally, JITC analysis determined that the SUT is also certified for joint use with any version of the Alcatel-Lucent Compact Digital Exchange, Alcatel-Lucent Very Compact Digital Exchange, and Avaya Meridian Switching Load-100 switching systems listed on the Unified Capabilities (UC) Approved Products list (APL) that conform with the interface and signaling limitations described in Table 1. No other configurations, features, or functions, except those cited within this report, are certified by the JITC. This certification expires upon changes that could affect interoperability, but no later than three years from the date of the UC APL memorandum.

3. This finding is based on interoperability testing, review of the vendor's Letters of Compliance (LoC), and DISA Certifying Authority (CA) Recommendation. Interoperability testing was conducted at JITC's Global Information Grid Network Test Facility, Fort Huachuca, Arizona from 5 through 15 July 2011. Review of the vendor's LoC was completed on 13 February 2012. The DISA CA provided a positive Recommendation on 30 May 2012 based on the security testing completed by DISA-led IA test teams and published in a separate report, Reference (e). Enclosure 2 documents the test results and describes the tested network and system configurations.

4. The Functional Requirements (FR) used to evaluate the interoperability of the SUT and the interoperability statuses are indicated in Table 1. This interoperability test status is based on the SUT's ability to meet CPE voicemail system requirements specified in section 5 of Reference (c) verified through JITC testing and/or vendor submission of LoC.

Table 1. SUT FRs and Interoperability Status

Interface	Critical	Certified	FRs	Met	UCR Paragraph
EIA-232 Serial[1] (SMDI)	No[2]	Yes	ANSI/TIA/EIA-232-F (C)	Met	5.2.1.2
T1 ISDN PRI [3]	No[2]	Yes	PCM-24 (R)	Met	5.2.1.2.5
			FCC Part15/Part 68 (R)	Met	5.2.3.2
			DISR compliance as applicable (C)	Met	5.2.3.2
			CPE devices that support MLPP shall meet the requirements of UCR, Section 5 and shall not affect DISN interface features and functions associated with line supervision and control (C)	Met	5.2.1.2.5
			ROUTINE precedence only in accordance with UCR, Section 5.2 (R)	Met	5.2.1.2
T1 CAS (DTMF) E&M (Wink Start) [4]	No[2]	Yes	PCM-24 (R)	Met	5.2.1.2.5
			FCC Part15/Part 68 (R)	Met	5.2.3.2
			DISR compliance as applicable (C)	Met	5.2.3.2
			CPE devices that support MLPP shall meet the requirements of UCR, Section 5 and shall not affect DISN interface features and functions associated with line supervision and control (C)	Met	5.2.1.2.5
			ROUTINE precedence only in accordance with UCR, Section 5.2 (R)	Met	5.2.1.2
T1 CAS (DTMF) (Ground Start) [5]	No[2]	Yes	PCM-24 (R)	Met	5.2.1.2.5
			FCC Part15/Part 68 (R)	Met	5.2.3.2
			DISR compliance as applicable (R)	Met	5.2.3.2
			CPE devices that support MLPP shall meet the requirements of UCR, Section 5 and shall not affect DISN interface features and functions associated with line supervision and control (C)	Met	5.2.1.2.5
			ROUTINE precedence only in accordance with UCR, Section 3.3 (R)	Met	5.2.1.2
IP 1000BaseT (IEEE 802.3-2005)	No[2]	Yes	Differentiated Service Code Point (R)	Met	5.2.12.8.2
			IEEE 802.3u (C)	Met	5.3.3.12.4.2
			DISR compliance as applicable (C)	Met	5.2.3.2
Security	Yes		Security (R)	Met[6]	3.2.3, 3.2.5

NOTES:
1. The SUT serial EIA-232 SMDI interface provides messaging interaction between the digital switching systems and the SUT (e.g. turn on and off the message waiting lamps and stutter dial tone etc.) and is required with the T1 interfaces.
2. The UCR requirements for a CPE voicemail device do not stipulate a minimum interface requirement.
3. The SUT T1 ISDN PRI interface is certified specifically with the following switching systems listed on the UC APL: Siemens EWSD, Alcatel-Lucent 5ESS, Alcatel-Lucent CDX, and Alcatel-Lucent VCDX.
4. The SUT T1 CAS (DTMF) interface with E&M signaling is certified specifically with the following switching systems listed on the UC APL: Alcatel-Lucent 5ESS, Alcatel-Lucent CDX, and Alcatel-Lucent VCDX.
5. The SUT T1 CAS (DTMF) interface with ground-start signaling is certified specifically with the following switching systems listed on the UC APL: Siemens EWSD, and Avaya CS2100, and Avaya MSL-100.
6. Security is tested by DISA-led Information Assurance test teams and published in a separate report, Reference (e).

Table 1. SUT FRs and Interoperability Status (continued)

LEGEND:

5ESS	Class 5 Electronic Switching System
1000baseT	1000 Mbps (Baseband Operation, Twisted Pair) Ethernet
802.3-2005	Local Area Network/metropolitan Area Network Carrier Sense Multiple Access/Collision Detection Access Method
802.3u	Standard for carrier sense multiple access with collision detection at 100 Mbps
A	Appendix
ANSI	American National Standards Institute
APL	Approved Products List
C	Conditional
CAS	Channel Associated Signaling
CDX	Compact Digital Exchange
CPE	Customer Premise Equipment
CS	Communication Server
DISA	Defense Information Systems Agency
DISN	Defense Information Systems Network
DISR	Department of Defense Information Technology Standards Registry
DSCP	Differentiated Service Code Point
DTMF	Dual Tone Multi-Frequency
E&M	Ear and Mouth
EIA	Electronic Industries Alliance
EIA-232-F	Standard for defining the mechanical and electrical characteristics for connecting Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) data communications devices
EWSD	Elektronisches Wählsystem Digital
FCC	Federal Communications Commission
UCR	Unified Capabilities Requirements
IEEE	Institute of Electrical and Electronics Engineers, Inc.
IP	Internet Protocol
ISDN	Integrated Services Digital Network
Mbps	Megabits per second
MSL	Meridian Switching Load
PCM-24	Pulse Code Modulation - 24 Channels
PCM-30	Pulse Code Modulation - 30 Channels
PRI	Primary Rate Interface
R	Required
SMDI	Simple Message Desk Interface
SUT	System Under Test
T1	Digital Transmission Link Level 1 (1.544 Mbps)
TIA	Telecommunications Industry Association
UC	Unified Capabillities
VCDX	Very Compact Digital Exchange

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). Information related to DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at http://jitc.fhu.disa.mil/tssi. Due to the sensitivity of the information, the Information Assurance Accreditation Package (IAAP) that contains the approved configuration and deployment guide must be requested directly through government civilian or uniformed military personnel from the Unified Capabilities Certification Office (UCCO), e-mail: ucco@disa.mil.

6. The JITC point of contact is Mr. Edward Mellon, DSN 879-5159, commercial (520) 538-5159, FAX DSN 879-4347, or e-mail to edward.mellon@disa.mil. The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The Unified Capabilities Connection Office tracking number is 1109804.

FOR THE COMMANDER:

2 Enclosures a/s

for RICHARD A. MEADOR
Chief
Battlespace Communications Portfolio

Distribution (electronic mail):
Joint Staff J-6
Joint Interoperability Test Command, Liaison, TE3/JT1
Office of Chief of Naval Operations, CNO N6F2
Headquarters U.S. Air Force, Office of Warfighting Integration & CIO, AF/XCIN (A6N)
Department of the Army, Office of the Secretary of the Army, DA-OSA CIO/G-6 ASA (ALT), SAIS-IOQ
U.S. Marine Corps MARCORSYSCOM, SIAT, MJI Division I
DOT&E, Net-Centric Systems and Naval Warfare
U.S. Coast Guard, CG-64
Defense Intelligence Agency
National Security Agency, DT
Defense Information Systems Agency, TEMC
Office of Assistant Secretary of Defense (NII)/DOD CIO
U.S. Joint Forces Command, Net-Centric Integration, Communication, and Capabilities Division, J68
Defense Information Systems Agency, GS23

ADDITIONAL REFERENCES

(c) Office of the Assistant Secretary of Defense, "Department of Defense Unified Capabilities Requirements 2008 Change 2," December 2010.
(d) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006
(e) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Cisco Unity Connection Release (Rel.) 8.6 with (w)/ Transmission Carrier 1 Internet Protocol Media Gateway (TIMG) 6.0 Service Update (SU) 8 (Tracking Number 1109804)," Draft

CERTIFICATION TESTING SUMMARY

1. SYSTEM TITLE. Cisco Unity Connection Software Release 8.6(1) with T1 Internet Protocol Media Gateway (TIMG) interface is hereinafter referred to as the System Under Test (SUT).

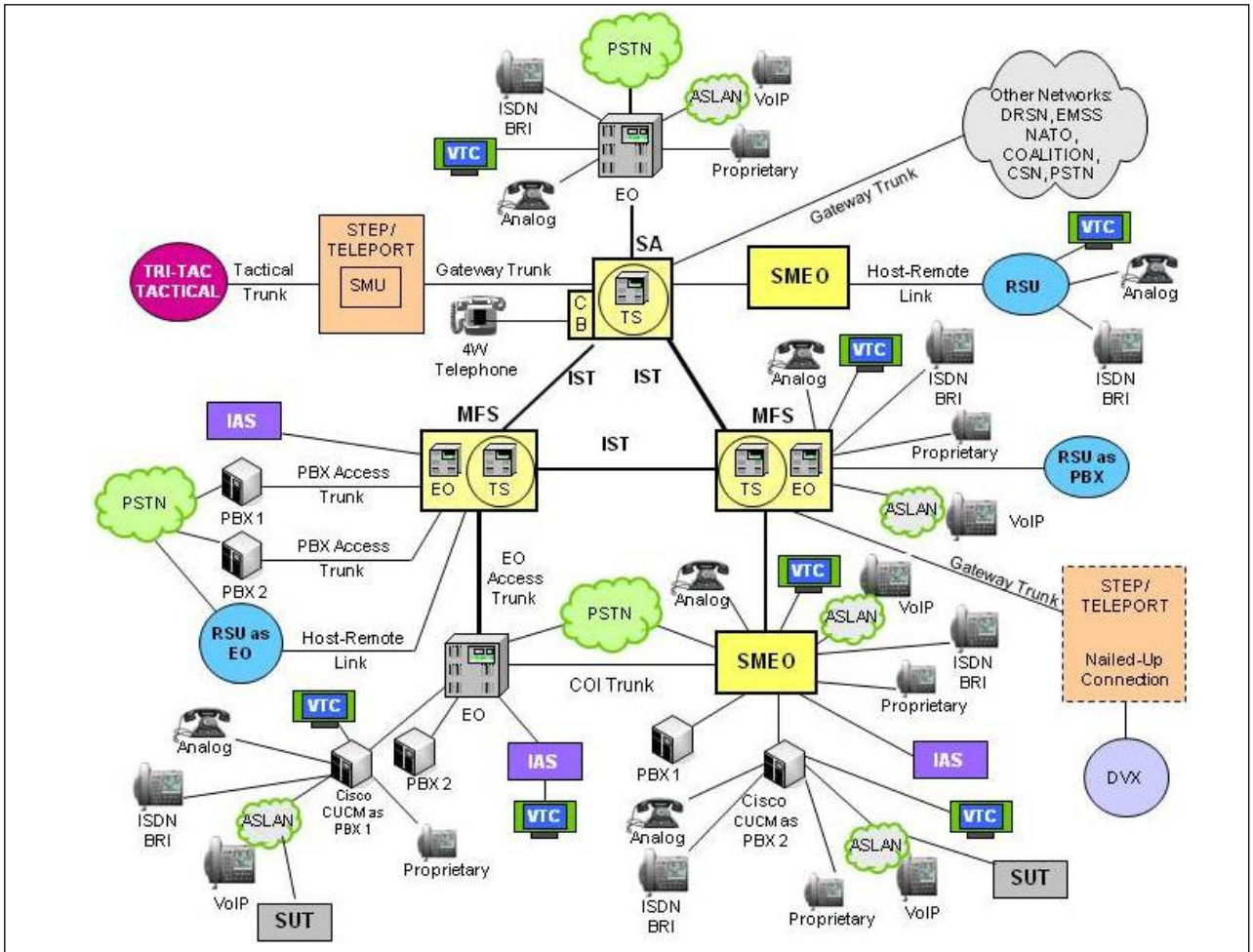
2. PROPONENT. Missile Defense Agency (MDA)

3. PROGRAM MANAGER. Mr. Steve Pursell, USAISEC Technology Integration Center (TIC) US Army, Bldg 53302 e-mail: steve.pursell@us.army.mil.

4. TESTER. Joint Interoperability Test Command (JITC), Fort Huachuca, Arizona.

5. SYSTEM UNDER TEST DESCRIPTION. The SUT is a Voice Messaging System that offers unified messaging capabilities through integration with Microsoft Exchange, integrated messaging using Cisco ViewMail for Microsoft Outlook running on Windows XP, Windows Vista, and Windows 7, and Voice Message services to Certified Defense Information Systems Network (DISN) equipment. The SUT is for use with the switching systems within this certification over the tested interfaces using the Cisco Unity Connection Software Version 8.6(1). The SUT is capable of using a Digital Transmission Link Level 1 (T1) Channel Associated Signaling (CAS), Primary Rate Interface (PRI), ground start/loop start, or wink start interface using the TIMG when providing these services. With the Cisco Unified Computing System, applications run in a virtualized environment comprised of VMware software and Cisco Unified Computing System servers. JITC analysis determined that multiple hardware configurations should functional identically to the SUT and they are also certified for joint use. These hardware configurations can be found by selecting the "Cisco Unified Communications on the Cisco Unified Computing System" link at the following URL: www.cisco.com/go/swonly. The SUT utilizes a web-based interface to maintain the necessary information needed to provide messaging services to authorized mailbox owners as well as system maintenance which includes mailbox associations, system and messaging service settings, maintenance and diagnostics. Management of the SUT is though a site-provided, Secure Technical Implementation Guide-compliant workstation. Although redundancy is not tested or required for Customer Premise Equipment (CPE), the SUT supports a two-server active/active cluster within a site Local Area Network (LAN) to provide high availability and redundancy.

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



LEGEND:

ASLAN	Assured Services Local Area Network
4W	4-Wire
BRI	Basic Rate Interface
CB	Channel Bank
COI	Community of Interest
CSN	Canadian Switch Network
CUCM	Cisco Unified Communications Manager
DISN	Defense Information Systems Network
DRSN	Defense Red Switch Network
DVX	Deployable Voice Exchange
EMSS	Enhanced Mobile Satellite System
EO	End Office
IAS	Integrated Access Switch
ISDN	Integrated Services Digital Network
IST	Interswitch Trunk
MFS	Multifunction Switch
NATO	North Atlantic Treaty Organization
PBX	Private Branch Exchange
PBX 1	Private Branch Exchange 1
PBX 2	Private Branch Exchange 2
PSTN	Public Switched Telephone Network
RSU	Remote Switching Unit
SMEO	Small End Office
SMU	Switched Multiplex Unit
STEP	Standardized Tactical Entry Point
TDM/P	Time Division Multiplex/Packetized
Tri-Tac	Tri-Service Tactical Communications Program
TS	Tandem Switch
VoIP	Voice over Internet Protocol
VTC	Video Teleconferencing

Figure 2-1. DISN Architecture

7. REQUIRED SYSTEM INTERFACES. Requirements specific to the SUT and interoperability results are listed in Table 2-1. These requirements are derived from the UCR Interface, Capability Requirements (CR), and Functional Requirements (FR) and were verified through JITC testing. The specific SUT applications certified on each interface are depicted in Table 2-1.

Table 2-1. SUT CRs and FRs and Interoperability Status

Interface	Critical	Certified	CRs and FRs	Met	UCR Paragraph
EIA-232 Serial[1] (SMDI)	No[2]	Yes	ANSI/TIA/EIA-232-F (C)	Met	5.2.1.2
T1 ISDN PRI [3]	No[2]	Yes	PCM-24 (R)	Met	5.2.1.2.5
			FCC Part15/Part 68 (R)	Met	5.2.3.2
			DISR compliance as applicable (C)	Met	5.2.3.2
			CPE devices that support MLPP shall meet the requirements of UCR, Section 5 and shall not affect DISN interface features and functions associated with line supervision and control (C)	Met	5.2.1.2.5
			ROUTINE precedence only in accordance with UCR, Section 5.2 (R)	Met	5.2.1.2
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			DISR compliance as applicable (C)	Met	5.2.3.2
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			ROUTINE precedence only in accordance with UCR, Section 5.2 (R)	Met	5.2.1.2
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IP 1000BaseT (IEEE 802.3-2005)	No[2]	Yes	Differentiated Service Code Point (R)	Met	5.2.12.8.2
			IEEE 802.3u (C)	Met	5.3.3.12.4.2
			DISR compliance as applicable (C)	Met	5.2.3.2
Security[6]	Yes		Security (R)	Met[6]	3.2.3, 3.2.5

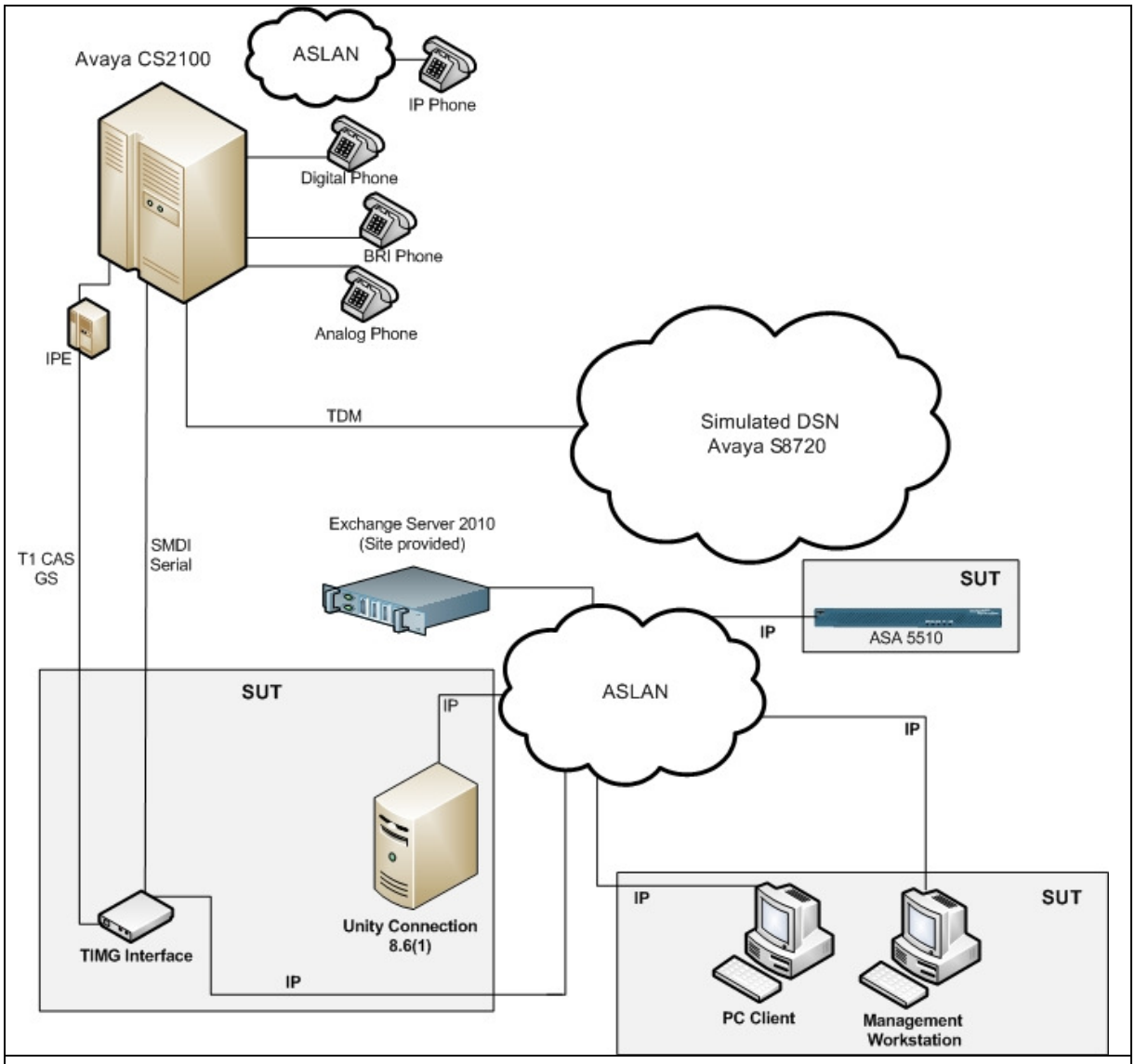
NOTES:
1. The SUT serial EIA-232 SMDI interface provides messaging interaction between the digital switching systems and the SUT (e.g. turn on and off the message waiting lamps and stutter dial tone etc.) and is required with the T1 interfaces.
2. The UCR requirements for a CPE voicemail device do not stipulate a minimum interface requirement.
3. The SUT T1 ISDN PRI interface is certified specifically with the following switching systems listed on the UC APL: Siemens EWSD, Alcatel-Lucent 5ESS, Alcatel-Lucent CDX, and Alcatel-Lucent VCDX.
4. The SUT T1 CAS (DTMF) interface with E&M signaling is certified specifically with the following switching systems listed on the UC APL: Alcatel-Lucent 5ESS, Alcatel-Lucent CDX, and Alcatel-Lucent VCDX.
5. The SUT T1 CAS (DTMF) interface with ground-start signaling is certified specifically with the following switching systems listed on the UC APL: Siemens EWSD, and Avaya CS2100, and Avaya MSL-100.
6. Security is tested by DISA-led Information Assurance test teams and published in a separate report, Reference (e).

Table 2-1. SUT FRs and Interoperability Status (continued)

LEGEND:

5ESS	Class 5 Electronic Switching System	EIA	Electronic Industries Alliance
1000baseT	1000 Mbps (Baseband Operation, Twisted Pair) Ethernet	EIA-232-F	Standard for defining the mechanical and electrical characteristics for connecting Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) data communications devices
802.3-2005	Local Area Network/metropolitan Area Network Carrier Sense Multiple Access/Collision Detection Access Method	EWSD	Elektronisches Wählsystem Digital
802.3u	Standard for carrier sense multiple access with collision detection at 100 Mbps	FCC	Federal Communications Commission
A	Appendix	UCR	Unified Capabilities Requirements
ANSI	American National Standards Institute	IEEE	Institute of Electrical and Electronics Engineers, Inc.
APL	Approved Products List	IP	Internet Protocol
C	Conditional	ISDN	Integrated Services Digital Network
CAS	Channel Associated Signaling	Mbps	Megabits per second
CDX	Compact Digital Exchange	MSL	Meridian Switching Load
CPE	Customer Premise Equipment	PCM-24	Pulse Code Modulation - 24 Channels
CS	Communication Server	PCM-30	Pulse Code Modulation - 30 Channels
DISA	Defense Information Systems Agency	PRI	Primary Rate Interface
DISN	Defense Information Systems Network	R	Required
DISR	Department of Defense Information Technology Standards Registry	SMDI	Simple Message Desk Interface
		SUT	System Under Test
		T1	Digital Transmission Link Level 1 (1.544 Mbps)
DSCP	Differentiated Service Code Point	TIA	Telecommunications Industry Association
DTMF	Dual Tone Multi-Frequency	VCDX	Very Compact Digital Exchange
E&M	Ear and Mouth		

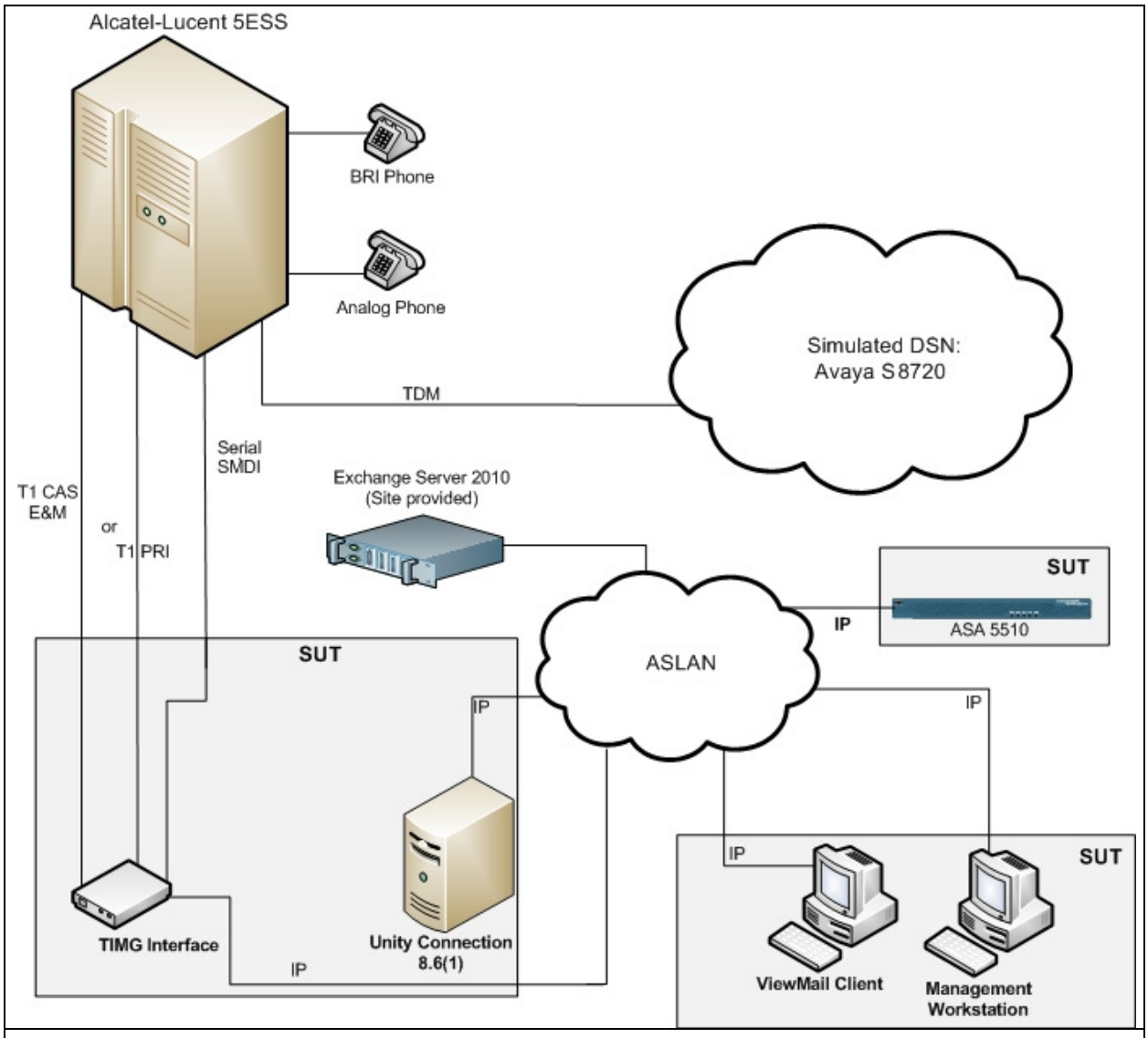
8. TEST NETWORK DESCRIPTION. The SUT was tested at JITC's Global Information Grid Network Test Facility Fort Huachuca, Arizona in a manner and configuration similar to that of the DISN operational environment. Testing the system's required functions and features was conducted using the test configurations depicted in Figures 2-2 through 2-4.



LEGEND:

ASLAN	Assured Services Local Area Network
BRI	Basic Rate Interface
CAS	Channel Associated Signaling
CS	Communication Server
DISN	Defense Information Systems Network
GS	Ground Start
IP	Internet Protocol
IPE	Intelligent Peripheral Equipment
MSL	Meridian Switching Load
PC	Personal Computer
SMDI	Simple Message Desk Interface
SUT	System Under Test
T1	Digital Transmission Link Level 1 (1.544 Mbps)
TDM	Time Division Multiplexing
TIMG	T1 Internet Protocol Media Gateway

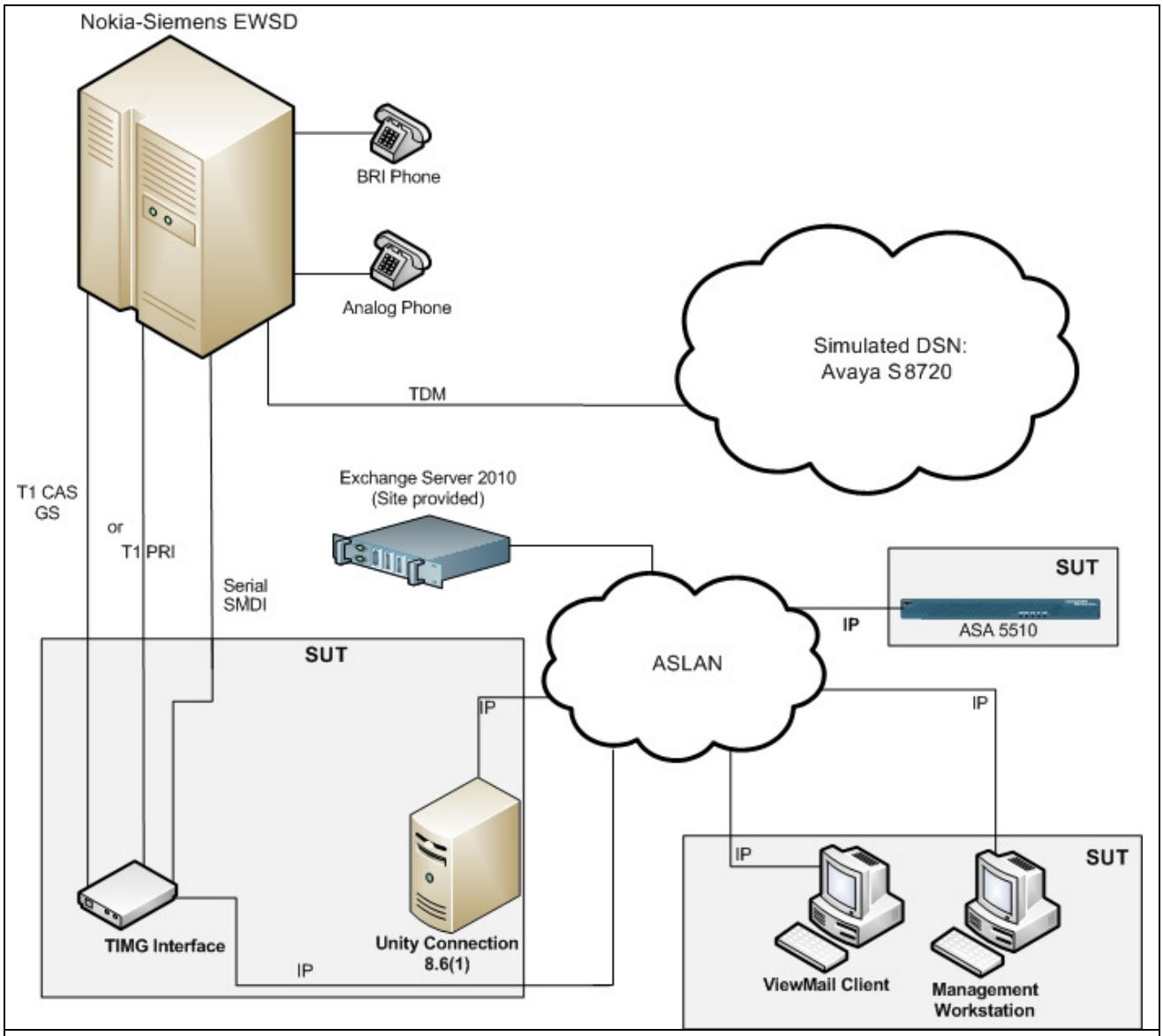
Figure 2-2. SUT to Avaya CS2100/MSL-100 Test Configuration



LEGEND:

5ESS	Class 5 Electronic Switching System
ASLAN	Assured Services Local Area Network
BRI	Basic Rate Interface
CAS	Channel Associated Signaling
DISN	Defense Information Systems Network
E&M	Ear and Mouth
EWSD	Elektronisches Wählsystem Digital
IP	Internet Protocol
Mbps	Megabits per second
PC	Personal Computer
PRI	Primary Rate Interface
SMDI	Simple Message Desk Interface
SUT	System Under Test
T1	Digital Transmission Link Level 1 (1.544 Mbps)
TDM	Time Division Multiplexing
TIMG	T1 Internet Protocol Media Gateway

Figure 2-3. SUT to Alcatel-Lucent Test Configuration



LEGEND:

ASLAN	Assured Services Local Area Network
BRI	Basic Rate Interface
CAS	Channel Associated Signaling
DISN	Defense Information Systems Network
EWSD	Elektronisches Wählsystem Digital
GS	Ground Start
IP	Internet Protocol
Mbps	Megabits per second
PC	Personal Computer
PRI	Primary Rate Interface
SUT	System Under Test
T1	Digital Transmission Link Level 1 (1.544 Mbps)
TDM	Time Division Multiplex
TIMG	T1 Internet Protocol Media Gateway

Figure 2-4. SUT to Siemens Elektronisches Wählsystem Digital (EWSD) Test Configuration

9. SYSTEM CONFIGURATIONS. Table 2-2 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 DISN switches noted in Table 2-2. The DISN switches listed in Table 2-2 only depict the tested configuration. Table 2-2 is not intended to identify the only switch software releases that are certified with the SUT. The SUT is certified specifically with the following switching systems and respective interfaces that are on the UC Approved Products List (APL): the Siemens EWSD, Avaya Communication Server 2100, Avaya Meridian Switching Load (MSL)-100, Alcatel-Lucent Class 5 Electronic Switching System (5ESS), Alcatel-Lucent Compact Digital Exchange (CDX), and Alcatel-Lucent Very Compact Digital Exchange (VCDX) switching systems specifically with the T1 interfaces and respective signaling identified in Table 2-1.

Table 2-2. Tested System Configurations

System Name	Software Release
Avaya S8720	CM 4.0 (R014x.00.2.731.7: Super Patch 14419)
Siemens EWSD	19d with Patch Set 46
Avaya CS2100	SE 09.1
Alcatel-Lucent 5ESS	5E16.2 BWM 09-0002
Required Ancillary Equipment - Exchange Server (Site-provided)	Active Directory
	Public Key Infrastructure
	SysLog
	Exchange Server 2010 version 14.01.0289.001

SUT	Hardware	Software/Firmware
Cisco Unity Connection Software Release 8.6(1) with T1 Internet Protocol Media Gateway (TIMG) Interface	Unified Computing System C210-M2[1]	Cisco Unity Connection 8.6.1.20004-1
	TIMG	6.0.SU7.004
	ASA 5510[2]	ASA 8.4.3
	Management Workstation (Site-provided)	Windows XP SP3, Vista SP2, or 7 SP1
	Client Workstation (Site-provided)	Windows XP SP3, Vista SP2, or 7 SP1
		MS Outlook 2010
		Cisco View Mail 8.5
Telephones Types Tested with the SUT	**Hardware**	**Software/Firmware**
Analog	Panasonic KX-TS15-W	Not Applicable
	Panasonic KX-T2355	Not Applicable
ISDN BRI	Siemens Optiset ISDN BRI	Not Applicable
	Avaya M5317T	5.0 1999

NOTES:
1. Supported hardware configurations can be found by selecting the Cisco Unified Communications on the Cisco Unified Computing System link at the following URL: www.cisco.com/go/swonly.
2. The ASA 5510 was tested; however, the following ASA products employ the same software and similar hardware as the ASA 5510. JITC analysis determined these systems to be functionally identical to the ASA 5510for interoperability certification purposes and therefore, they are also certified for joint use with the SUT: 5505, 5520, 5540, 5550, 5585-SSP10, 5585-SSP20, 5585-SSP30, and 5585-SSP40.
3. The SUT is certified with all Cisco IP instruments included in their respective CUCM switching systems listed on the UC APL.

Table 2-2. Tested System Configurations (continued)

LEGEND:

5ESS	Class 5 Electronic Switching System	IOS	Internetworking Operating System
APL	Approved Products List	IP	Internet Protocol
App	Application	ISDN	Integrated Services Digital Network
APS	Asynchronous Packet Switching	JITC	Joint Interoperability Test Command
ASA	Adaptive Security Appliance	SCCP	Skinny Call Control Protocol
BRI	Basic Rate Interface	SE	Succession Engineering
BWM	Broadcast Warning Message	SG	Single Group
CAC	Common Access Card	SP	Service Pack
CM	Communication Manager	SR	Service Release
CP	Cisco Phone	SUT	System Under Test
CS	Communication Server	TIMG	T1 Internet Protocol Media Gateway
CUCM	Cisco Unified Communications Manager	UC	Unified Capabilities
DISN	Defense Information Systems Network	ver	Version
EWSD	Elektronisches Wählsystem Digital		

10. TEST LIMITATIONS. None.

11. TEST RESULTS

a. Discussion

(1) Voice mail interaction with Multi-Level Precedence and Preemption (MLPP). The SUT was tested to insure that it properly interacted with MLPP as required in the UCR 2008, Change 2, Section 5. Intra-switch and inter-switch calls at different precedence levels were placed over the network test configuration to subscribers configured on the Cisco Unity Connection and assigned voice mail at with the following results:

(a) All ROUTINE calls placed to a voice mail subscriber that was busy or did not answer, were properly routed to voice mail as required by UCR 2008, Change 2, Section 5.

(b) All calls above ROUTINE placed to a voice mail subscriber that was busy or did not answer were not routed to voice mail, but instead were properly diverted to the global default diversion as required by the UCR 2008, Change 2, Section 5.

(c) It was discovered the COM 1 port settings for the Dialogic TIMG Interface must be set to the following: Baud 9600, Parity None, Data Bits 8 and Stop Bits 1. This will ensure all caller IDs and voice mailbox signaling information is correctly interpreted by the 5ESS via the SMDI link of a T1 interface.

(2) Differentiated Services Code Point (DSCP). UCR 2008, Change 2 paragraph 5.3.3.3.2, states that the product shall support the plain text DSCP plan, as shown in Table 5.3.3-1, DSCP Assignments, and the DSCP assignment shall be software configurable for the full range (0-63) to support Deployable deployments that may use a different DSCP plan.

(a) DSCP Tagging. Captures were taken between the SUT TIMG and the Unity Connection server. Voice media was sent as International Telecommunication Union - Telecommunication Standardization Sector (ITU-T) G.711 packets to and from the TIMG. All ITU-T G.711 packets were 20 milliseconds in duration and were correctly tagged with a DSCP value of 46. Voice signaling packets from the TIMG device were properly tagged with a DSCP value of 40. The TIMG device can assign any value 0-63 for both signaling and media. The SUT provides the ability to deliver voicemail messages via a .wav attachment using the Internet Message Access Protocol (IMAP) protocol to a user running Microsoft Outlook. The user can then play, delete, and otherwise manipulate the voicemail directly using the Cisco ViewMail Outlook Plugin. The SUT is also capable of synchronizing messages with a user's Microsoft Exchange mailbox so that messages stored on Unity Connection will appear in the user's inbox. This functionality was tested and the IMAP packets transmitted by the SUT to the PC client were correctly tagged with a DSCP value of 0. The Management Workstation has the ability to assign any value 0-63 and correctly tagged DSCP at 16 for operational network management traffic.

b. Test Summary. The SUT met all the critical interoperability requirements for a Customer Premise Equipment voicemail device and is certified for joint use within the DISN. The SUT was tested with the Siemens EWSD, Avaya CS2100, and Alcatel-Lucent 5ESS switching systems specifically with the T1 interfaces and respective signaling identified in Table 2-1. Additionally, JITC analysis determined that the SUT is also certified for joint use with any version of the Alcatel-Lucent CDX, Alcatel-Lucent VCDX, and Avaya MSL-100 switching systems listed on the Unified Capabilities (UC) that are certified with the same interfaces depicted in Table 2-1. The SUT meets the critical interoperability requirements set forth in Reference (c).

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). Information related to DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at http://jitc.fhu.disa.mil/tssi. Due to the sensitivity of the information, the Information Assurance Accreditation Package (IAAP) that contains the approved configuration and deployment guide must be requested directly through government civilian or uniformed military personnel from the Unified Capabilities Certification Office (UCCO), e-mail: ucco@disa.mil.