



DEFENSE INFORMATION SYSTEMS AGENCY

P. O. BOX 4502
ARLINGTON, VIRGINIA 22204-4502

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

10 Feb 09

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Special Interoperability Test Certification of the Avaya Communication Manager Messaging (CMM) (Intuity) Version 4.0.2-732.1 with Software Patch C900rftb

References: (a) DoD Directive 4630.5, "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) and (d), see Enclosure 1

1. References (a) and (b) establish the Defense Information Systems Agency, JITE, as the responsible organization for interoperability test certification.
2. The Avaya CMM (Intuity) Version 4.0.2-732.1 with Software Patch C900rftb is hereinafter referred to as the System Under Test (SUT). The SUT met all the critical interoperability requirements for a Customer Premise Equipment (CPE) voicemail system and is certified for joint use within the Defense Switched Network (DSN). The SUT meets the critical interoperability requirements set forth in reference (c) and testing was conducted using test procedures derived from reference (d). The SUT was tested and is certified specifically with the Avaya S8710 digital switching systems and is certified with all S8710 versions listed on the Unified Capabilities (UC) Approved Products List (APL). The Avaya S8720 employs the same software and hardware as the Avaya S8710. Analysis by JITE determined that the S8720 is functionally identical to the S8710 for interoperability certification purposes, and the SUT is also certified for joint use within the DSN with all software versions of the Avaya S8720 listed on the UC APL. No other configurations, features, or functions, except those cited within this report, are certified by the JITE, or authorized by the Program Management Office for use within the DSN. This certification expires upon changes that affect interoperability, but no later than four years from the date of this memorandum.
3. This finding is based on interoperability testing conducted by JITE, review of the vendor's Letters of Compliance (LoC), and Defense Information Assurance (IA)/Security Accreditation Working Group (DSAWG) accreditation. Interoperability testing was conducted at JITE's Global Information Grid Network Test Facility, Fort Huachuca, Arizona from 14 through 18 July 2008. Regression testing was conducted from 4 through 8 August 2008. Review of the LoC was completed on 8 August 2008. DSAWG grants accreditation based on the security testing completed by DISA-led Information Assurance test teams and published in a separate report (reference (e)). DSAWG accreditation was granted on 10 February 2009. The

Certification Testing Summary (Enclosure 2) documents the test results and describes the test network.

4. The Functional Requirements 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 appendix 7 of reference (c) verified through JITC testing.

Table 1. SUT Functional Requirements and Interoperability Status

Interface	Critical	Certified	Functional Requirements	Met	UCR Paragraph
IP 100BaseT (IEEE 802.3- 2005)	Yes	Yes	Service Class Tagging (R)	Met	A3.2.9.2
			IEEE 802.3 (C)	Met	A7.5
			DISR compliance as applicable (R)	Met	A7.5
			FCC Part 15/Part 68 (R)	Met	A7.5
			ROUTINE precedence only in accordance with UCR, Section 3.3 (R)	Met	3.3
Security	Yes	Yes	Security (R)	See note.	A7.6

NOTE: Security is tested by DISA-led Information Assurance test teams and published in a separate report (reference (e)).

LEGEND:

100baseT	100 Mbps (Baseband Operation, Twisted Pair) Ethernet	FCC	Federal Communications Commission
802.3-2005	Local Area Network/metropolitan Area Network Carrier Sense Multiple Access/Collision Detection Access Method	IEEE	Institute of Electrical and Electronics Engineers
A	Appendix	IP	Internet Protocol
C	Conditional	Mbps	Megabits per second
DISA	Defense Information Systems Agency	R	Required
DISR	Department of Defense Information Technology Standards Registry	SUT	System Under Test
		UCR	Unified Capabilities Requirements

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>.

JITC Memo, JTE, Special Interoperability Test Certification of the Avaya Communication Manager Messaging (CMM) (Intuity) Version 4.0.2-732.1

6. The JITC point of contact is Mr. Joseph Roby, DSN 879-0507, commercial (520) 538-0507, FAX DSN 879-4347, or e-mail to joseph.robby@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 0809501.

FOR THE COMMANDER:



for RICHARD A. MEADOR
Chief
Battlespace Communications Portfolio

2 Enclosures a/s

Distribution (electronic mail):

Joint Staff J-6

Joint Interoperability Test Command, Liaison, TE3/JT1

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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) 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
- (e) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Avaya Communication Manager Messaging (CMM) (Intuity) Version 4.0.2-732.1 with Software Patch C900rftb (Tracking Number 0809501)," 10 February 2009

CERTIFICATION TESTING SUMMARY

- 1. SYSTEM TITLE.** Avaya Communication Manager Messaging (CMM) (Intuity) Version 4.0.2-732.1; hereinafter referred to as the System Under Test (SUT).
- 2. PROPONENT.** Program Manager Defense Communications and Switched Systems, Technical Management Division (PM DCASS-TMD).
- 3. PROGRAM MANAGER.** Miguel S. Buddle, SFAE-PS-SW-T, 283 Sherril Avenue, Fort Monmouth, New Jersey, 07703, e-mail: Miguel.s.buddle@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 is based on the Intuity AUDIX family of messaging applications. The SUT offers up to 80 voice ports and supports up to 5,000 mailboxes. The CMM Intuity version 4.0 runs on an S8500 server. CMM is an external adjunct messaging application that provides voice mailboxes to one or more Communication Manager systems running on separate S87xx servers. The CMM server integrates with the Communication Manager server using an International Telecommunication Union – Telecommunication Standardization Sector (ITU-T) H.323 Internet Protocol (IP) trunk for voice. The SUT is managed by interfacing with an Apache Web server loaded on the SUT from Internet Explorer loaded on the Access Security Gateway (ASG) administration terminal. The ASG consists of a laptop loaded with windows eXPerience Service Pack 2 and the Avaya ASG software. The ASG software provides the authentication mechanism to the CMM.
- 6. OPERATIONAL ARCHITECTURE.** The Unified Capabilities Requirements (UCR) Defense Switched Network (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 2-1. These requirements are derived from the UCR Interface and Functional Requirements and were verified through JITC testing. The specific SUT applications certified on each interface are depicted in Table 2-1.

Table 2-1. SUT Functional Requirements and Interoperability Status

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<p>NOTE: Security is tested by DISA-led Information Assurance test teams and published in a separate report (reference (e)).</p> <p>LEGEND:</p> <table> <tr> <td>100baseT</td> <td>100 Mbps (Baseband Operation, Twisted Pair) Ethernet</td> <td>DISR</td> <td>Department of Defense Information Technology Standards Registry</td> </tr> <tr> <td>802.3-2005</td> <td>Local Area Network/metropolitan Area Network Carrier Sense Multiple Access/Collision Detection Access Method</td> <td>FCC</td> <td>Federal Communications Commission</td> </tr> <tr> <td></td> <td></td> <td>IEEE</td> <td>Institute of Electrical and Electronics Engineers</td> </tr> <tr> <td></td> <td></td> <td>IP</td> <td>Internet Protocol</td> </tr> <tr> <td></td> <td></td> <td>Mbps</td> <td>Megabits per second</td> </tr> <tr> <td>A</td> <td>Appendix</td> <td>R</td> <td>Required</td> </tr> <tr> <td>C</td> <td>Conditional</td> <td>SUT</td> <td>System Under Test</td> </tr> <tr> <td>DISA</td> <td>Defense Information Systems Agency</td> <td>UCR</td> <td>Unified Capabilities Requirements</td> </tr> </table>						100baseT	100 Mbps (Baseband Operation, Twisted Pair) Ethernet	DISR	Department of Defense Information Technology Standards Registry	802.3-2005	Local Area Network/metropolitan Area Network Carrier Sense Multiple Access/Collision Detection Access Method	FCC	Federal Communications Commission			IEEE	Institute of Electrical and Electronics Engineers			IP	Internet Protocol			Mbps	Megabits per second	A	Appendix	R	Required	C	Conditional	SUT	System Under Test	DISA	Defense Information Systems Agency	UCR	Unified Capabilities Requirements
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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 configurations depicted in Figure 2-2.

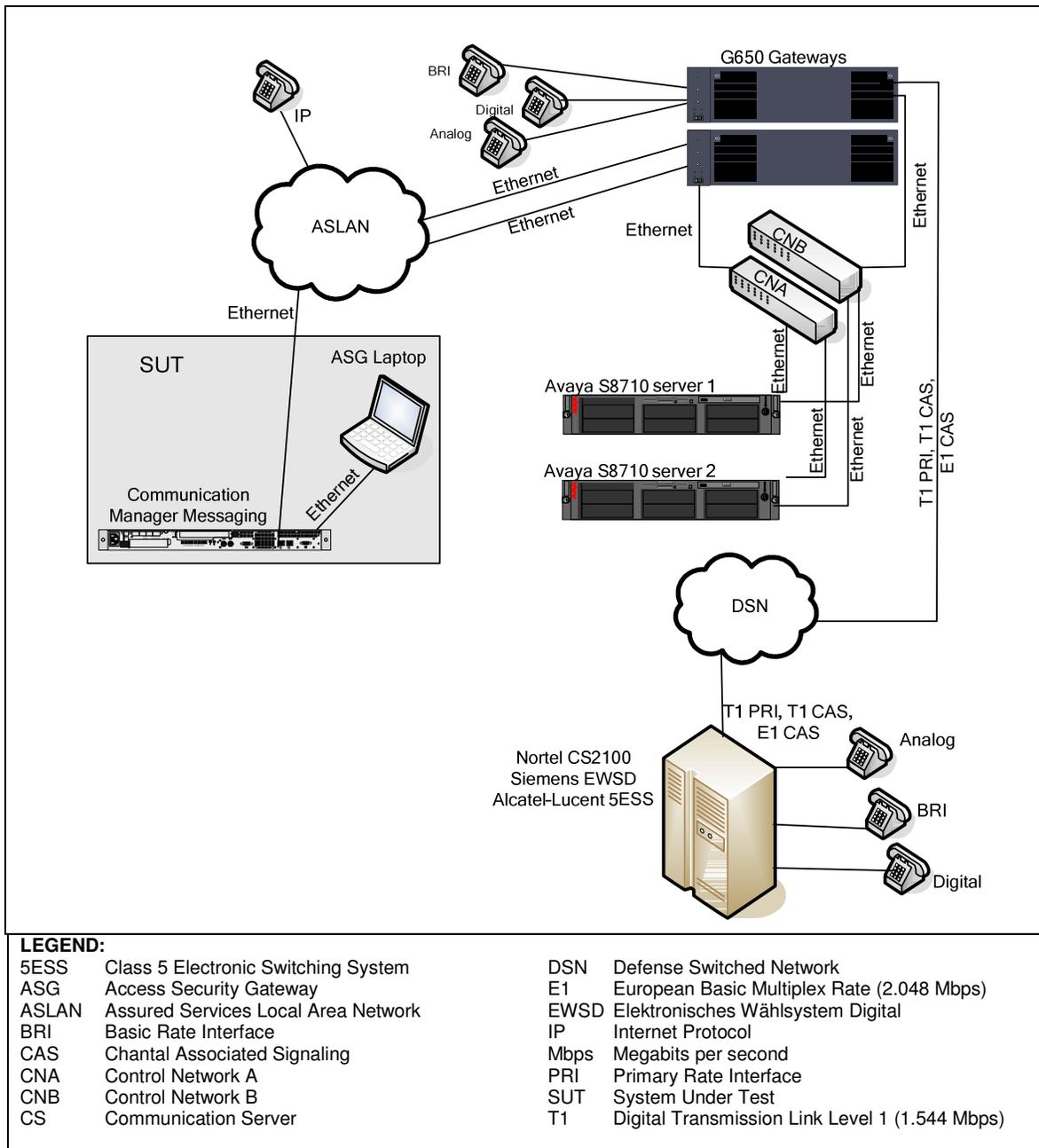


Figure 2-2. SUT Test Configuration

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 DSN switches noted in Table 2-2. The DSN 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 Avaya S8710 and S8720 switching systems listed on the Unified Capabilities (UC) Approved Products List (APL).

Table 2-2. Tested System Configurations

System Name		Equipment		
Avaya S8710		Communication Manager (CM) 4.0 (R014x.00.2.731.7: Super Patch 14419)		
Alcatel-Lucent 5ESS		5E16.2 Broadcast Warning Message (BWM) 07-0003		
Nortel CS2100		Succession Enterprise (SE) 09.1		
Siemens EWSD		19d with Patch Set 46		
SUT	AVAYA Communication Manager Messaging (Intuity) 4.0	Hardware		Software/Firmware
		Avaya S8500 server		Communications Manager Messaging 4.0.2-732.1 Includes the following patches:
				Apache 2.0.52
				Redhat Linux 3.4.3-9.EL4
		ASG (laptop with 50.6 GB hard drive, 1G RAM, 1.83 GHz)		Windows XP SP2
				Putty
				IE 6.0 SP2
ASG v2.2.1				
Peripheral Components	Telephones	Type	Model	Software/Firmware
		Proprietary Digital	6416 D+M	Not Applicable
		IP	4620SW	Firmware: A20d01b2_8.bin, Bootstrap: B20d01a2_8.bin
		Analog	Panasonic KX-TS15-W	Not Applicable
		ISDN BRI	8510T	Not Applicable
LEGEND:				
5ESS	Class 5 Electronic Switching system	G/GB	Gigabyte	
ASG	Access Security Gateway	GHz	GigaHertz	
BRI	Basic Rate Interface	IE	Internet Explorer	
CCM	Communications Manager Messaging	IP	Internet Protocol	
CS	Communication Server	ISDN	Integrated Services Digital Network	
EWSD	Elektronisches Wählsystem Digital	RAM	Random Access Memory	

10. TEST LIMITATIONS. None

11. TEST RESULTS

a. Discussion

(1) Voice mail interaction with Multi-Level Precedence and Preemption (MLPP). The UCR, appendix 7, states that Customer Premise Equipment (CPE) must meet MLPP requirements. The SUT was tested in accordance with the UCR, section 3.3, which states that precedence levels above ROUTINE shall not be forwarded to voice mail. Intra-switch and inter-switch calls were placed over the test configuration to subscribers configured with voice mail. MLPP interaction with voice mail was successfully tested with the following phone types: Digital 6416 D+M, IP 4620SW, Analog, Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) 8510T. Intra-switch and inter-switch calls were placed over the network test configuration 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 the UCR, appendix 7.

(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 diverted to an

alternate directory number if not answered before the precedence call diversion timer expired, as required by UCR, section 3.

(2) Service Class Tagging. According to the UCR, appendix 3, voice signaling must be prioritized at the highest level and voice media streams at a level lower than signaling, but higher than data traffic on the network. The SUT layer 2 (L2) priority bit is not supported. The Differentiated Services Code Point (DSCP) fields for layer 3 (L3) were configured to DSCP value of 48 for signaling, voice media was set for 46. The traffic between the SUT and the Avaya S8710 was tagged at 48. The traffic between from the SUT to the phone was correctly tagged at 46 for voice media to the phone. These tags were verified by capturing the packets at the egress of the Intuity Messaging system.

b. Test Summary. The SUT meets the critical interoperability requirements for a CPE voice mail system in accordance with appendix 7 of the UCR. The SUT was tested and is certified specifically with the Avaya S8710 Digital Switching Systems and is certified with all S8710 versions listed on the UC APL. The Avaya S8720 employs the same software and hardware as the Avaya S8710. Analysis by JITC determined that the S8720 is functionally identical to the S8710 for interoperability certification purposes, and the SUT is also certified for joint use within the DSN with all software versions of the Avaya S8720 listed on the UC APL.

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>.