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

IN REPLY
REFER TO: Joint Interoperability Test Command (JTE) **30 Apr 12**

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Special Interoperability Test Certification of the Avaya Call Management System (CMS) Release 16.3

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 Avaya Call Management System (CMS) Release 16.3 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 System Network (DISN) as a Customer Premise Equipment (CPE). The Avaya CMS is a database, administration, and reporting application that provides an interface to the Automatic Call Distribution (ACD) feature of the Avaya Aura Communication Manager. The SUT was tested and certified with the Avaya Aura S8800 with Communication Manager (CM) Release 6.0.1 (00.1.510.1 Service Pack 19391) Local Session Controller (LSC). Additionally, the SUT is also certified with other Avaya Aura CM LSCs, Avaya Small End Office, and Private Branch Exchange switches that are or were listed on the Unified Capabilities (UC) Approved Products List (APL). The SUT included the Sun Scalable Processor Architecture (SPARC) Enterprise T5120 4-core server. JITC analysis also determined the T5120 8-core and T5220 4- and 8-core servers to be functionally identical to the T5120 4-core server for interoperability certification purposes and therefore, they are also certified for joint use. 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 is certified as interoperable for joint use with any Assured Services Local Area Network (ASLAN) components listed on the UC APL. 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 the DISA Certifying Authority (CA) provided a positive Recommendation.

3. This finding is based on interoperability testing, review of the vendor's Letters of Compliance (LoC), and DISA adjudication of open test discrepancy reports (TDRs), DISA CA Recommendation. Interoperability testing was conducted at JITC's Global Information Grid

Network Test Facility, Fort Huachuca, Arizona from 5 through 9 September 2011. Review of the vendor's LoC was completed on 14 September 2011. DISA adjudication of outstanding TDRs was completed on 18 January 2012. The DISA CA provided a positive recommendation on 26 April 2012 based on the security testing completed by DISA-led Information Assurance (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. Table 1 provides the Capability Requirements (CR) and Functional Requirements (FR) used to evaluate the interoperability of the SUT and the interoperability status. This interoperability test status is based on the SUT's ability to meet CPE requirements specified in section 5 of Reference (c) verified through JITC testing and/or vendor submission of LoC.

Table 1. SUT Interoperability Status

Interface	Critical	Certified	CRs and FRs	Met	UCR Paragraph
IP 10Base-TX (IEEE 802.3i)	Yes	Yes	Compliance with FCC Part 15 and Part 68	Met[1]	5.2.1.2
	No	No[2]	Service Class Tagging (C)	Not Met[2]	5.3.3.3.2
100Base-TX (IEEE 802.3u)	No	Yes	IEEE 802.3i (C)	Met	5.2.1.2
	No	Yes	IEEE 802.3u (C)	Met	5.2.1.2
Security	Yes	Yes	Security (R)	Met[3]	5.4

NOTES:
1. Part 68 of the FCC rules (47 CFR Part 68) governs the connection of Terminal Equipment to the Public Switched Telephone Network. These rules apply to Time Division Multiplexing connections and are therefore, not applicable to the SUT.
2. The OA&M packets had no DSCP values set. The SUT cannot configure DSCP values from 0-63 as required. This discrepancy was adjudicated by DISA as having a minor impact based on vendor's POA&M to resolve the issue by 31 August 2012.
3. Security is tested by DISA-led Information Assurance test teams and published in a separate report, see Reference (e).

LEGEND:

10BaseTX	10 Mbps Ethernet over Category 5 Twisted Pair Copper	DSCP	Differentiated Services Code Point
100BaseTX	100 Mbps Ethernet over Category 5 Twisted Pair Copper	FCC	Federal Communications Commission
802.3i	10BaseT Mbps over twisted pair	FR	Functional Requirement
802.3u	Standard for carrier sense multiple access with collision detection at 100 Mbps	IEEE	Institute of Electrical and Electronics Engineers
C	Conditional	Mbps	Megabits per second
CR	Capability Requirement	OA&M	Operations, Administration, and Management
DISA	Defense Information Systems Agency	POA&M	Plan of Action and Milestones
		R	Required
		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). Information related to DISN 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 Capt Stéphane Arsenault, DSN 879-5269, commercial (520) 538-5269, FAX DSN 879-4347, or e-mail to Stephane.Arsenault@disa.mil. The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The Tracking Number for the SUT is 1104701.

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," 31 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 Avaya Call Management System (CMS) Release (Rel.) 16.3 (Tracking Number 1104701)," Draft

CERTIFICATION TESTING SUMMARY

1. SYSTEM TITLE. Avaya Call Management System (CMS) Release 16.3 is hereinafter referred to as the System Under Test (SUT).

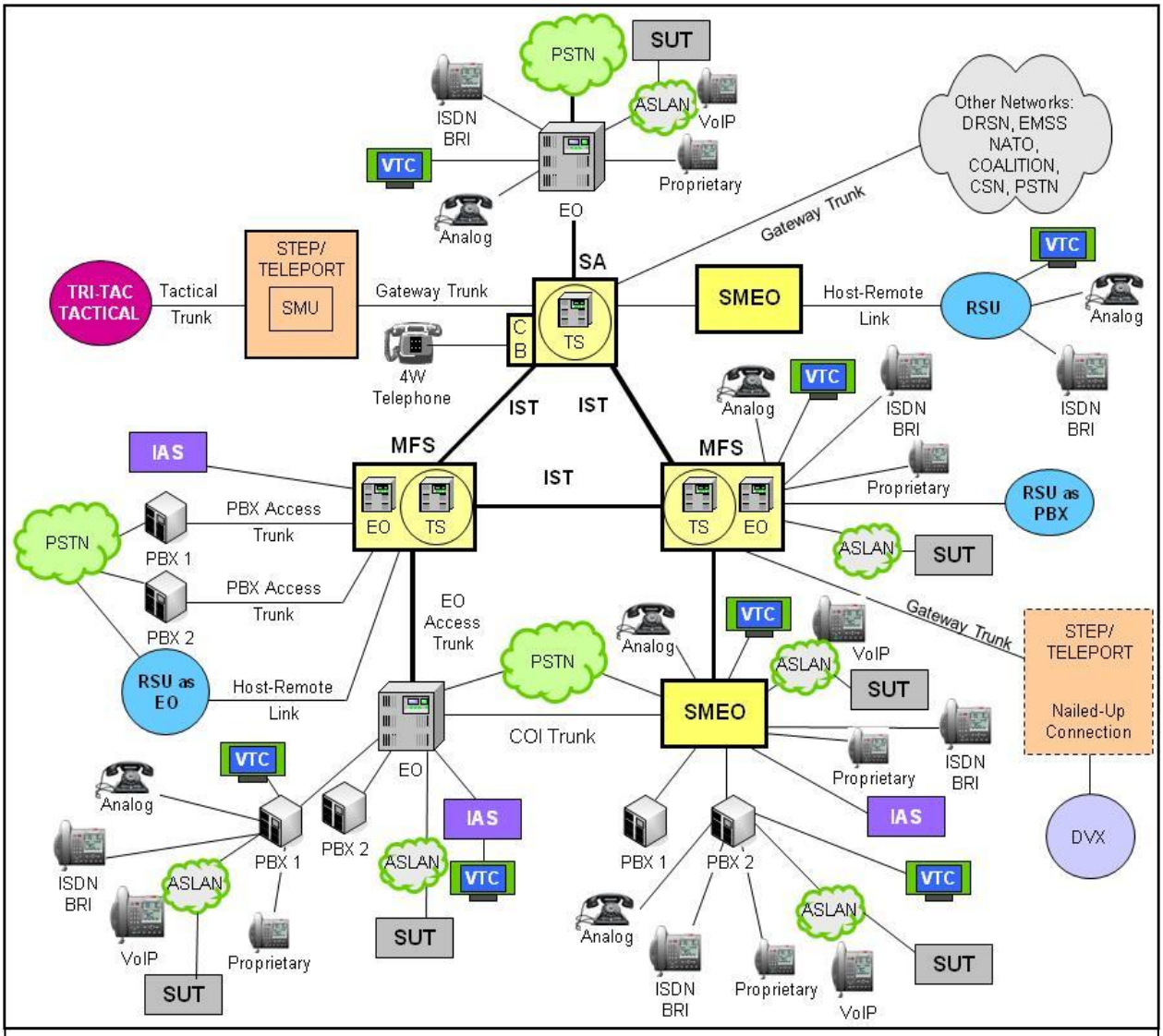
2. SPONSOR. Mr. Peter Haudek, Telecommunications and Infrastructure Branch, Defense Logistics Agency (DLA) Logistics Information Services, 74 North Washington Avenue, Battle Creek, Michigan, 49017, e-mail: peter.haudek@dla.mil.

3. SYSTEM POC. Mr. William Stehling, Avaya Government Solutions, 12730 Fair Lakes Circle, Fairfax, Virginia, 22033, e-mail: William.stehling@avayagov.com.

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

5. SYSTEM UNDER TEST DESCRIPTION. The SUT was designed to support contact-center operations with a high call volume. The SUT is a database, administration, and reporting application developed to identify operational issues, with the ability to take immediate action to solve them. Using a familiar Windows interface, call center managers can view data and receive customized threshold and exception alerts, all in real time. They can also view historical reports to help them analyze trends, and establish performance benchmarks. These reports can be customized to suit the customer's needs. The SUT is a non-intrusive database, administration, and reporting application which runs on a Sun computer hardware platform with Oracle Solaris operating system. The SUT is capable of both triggered and continuous recording via a 10BaseTX or 100BaseTX interface. Management of the SUT is through a customer-provided, Security Technical Implementation Guide (STIG)-compliant Personal Computer (PC) with Microsoft Windows 7. The SUT was tested with the Avaya Aura S8800 with Communication Manager (CM) Release 6.0.1 (00.1.510.1 Service Pack 19391) Local Session Controller (LSC). JITC analysis determined that the SUT is also certified with other Avaya Aura CM LSCs, Small End Office (SMEO) and Private Branch Exchange (PBX) switches that are or were listed on the Unified Capabilities (UC) Approved Products List (APL). The SUT is certified as interoperable for joint use with any Assured Services Local Area Network (ASLAN) components listed on the UC APL.

6. OPERATIONAL ARCHITECTURE. The Unified Capabilities Requirements (UCR) Defense Information System Network (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
DRSN	Defense Red Switch Network
DISN	Defense Information System 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
SUT	System Under Test
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 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 Interoperability Status

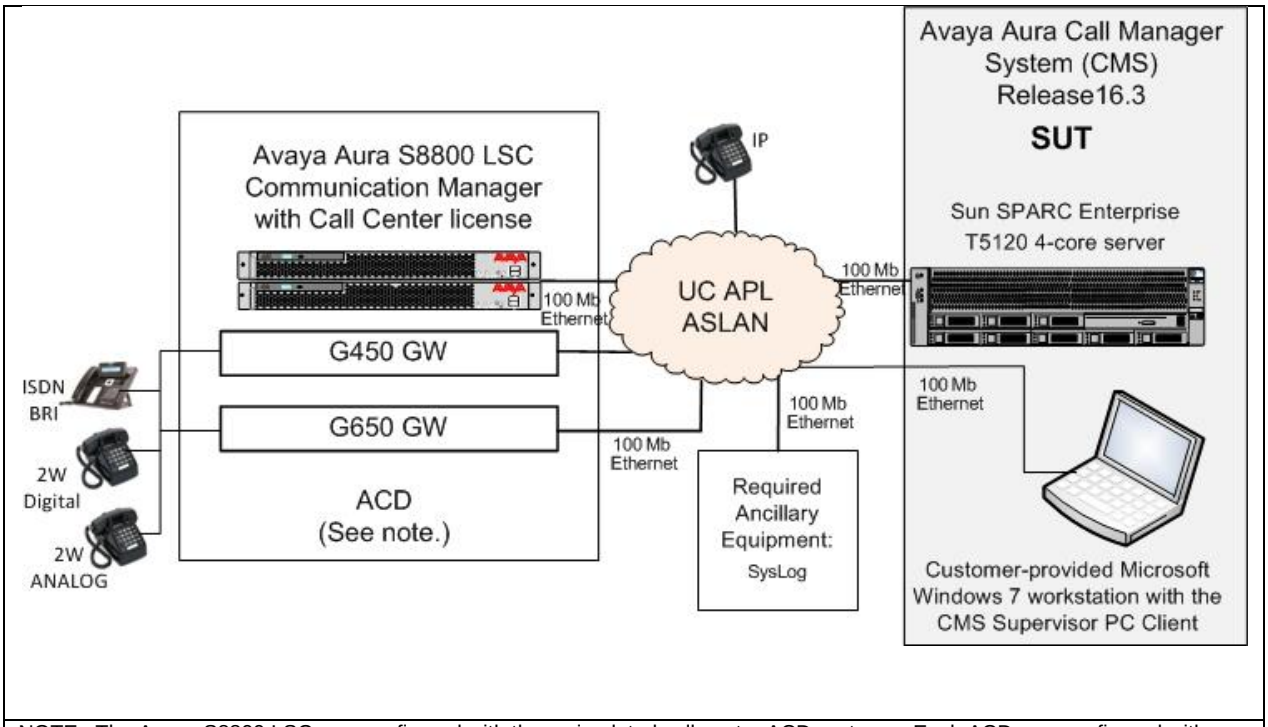
Interface	Critical	Certified	CRs and FRs	Met	UCR Paragraph
IP 10Base-TX (IEEE 802.3i)	Yes	Yes	Compliance with FCC Part 15 and Part 68	Met[1]	5.2.1.2
	No	No[2]	Service Class Tagging (C)	Not Met[2]	5.3.3.3.2
100Base-TX (IEEE 802.3u)	No	Yes	IEEE 802.3i (C)	Met	5.2.1.2
	No	Yes	IEEE 802.3u (C)	Met	5.2.1.2
Security	Yes	Yes	Security (R)	Met[3]	5.4

NOTES:
1. Part 68 of the FCC rules (47 CFR Part 68) governs the connection of Terminal Equipment to the Public Switched Telephone Network. These rules apply to Time Division Multiplexing connections and are therefore, not applicable to the SUT.
2. The OA&M packets had no DSCP values set. The SUT cannot configure DSCP values from 0-63 as required. This discrepancy was adjudicated by DISA as having a minor impact based on vendor's POA&M to resolve the issue by 31 August 2012.
3. Security is tested by DISA-led Information Assurance test teams and published in a separate report, see Reference (e).

LEGEND:

10BaseTX	10 Mbps Ethernet over Category 5 Twisted Pair Copper	DSCP	Differentiated Services Code Point
100BaseTX	100 Mbps Ethernet over Category 5 Twisted Pair Copper	FCC	Federal Communications Commission
802.3i	10BaseT Mbps over twisted pair	FR	Functional Requirement
802.3u	Standard for carrier sense multiple access with collision detection at 100 Mbps	IEEE	Institute of Electrical and Electronics Engineers
C	Conditional	Mbps	Megabits per second
CR	Capability Requirement	OA&M	Operations, Administration, and Management
DISA	Defense Information Systems Agency	POA&M	Plan of Action and Milestones
		R	Required
		SUT	System Under Test
		UCR	Unified Capabilities Requirements

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 Figure 2-2. The SUT utilizes the ASLAN to connect different elements of the system.



NOTE: The Avaya S8800 LSC was configured with three simulated call center ACD systems. Each ACD was configured with a separate pilot number and associated ACD agents.

LEGEND:

ACD	Automatic Call Distribution	LSC	Local Session Controller
APL	Approved Products List	Mb	Megabits per second
ASLAN	Assured Services Local Area Network	SUT	System Under Test
GW	Gateway	UC	Unified Capabilities

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 compliment of DISN ASLAN components. Table 2-2 lists the DISN switches which depict the tested configuration and is not intended to identify the only switches that are certified with the SUT. The SUT is also certified with other Avaya Aura LSC, SMEO, and PBX switches that are or were listed on the UC APL. The SUT is certified as interoperable for joint use with any ASLAN components listed on the UC APL.

Table 2-2. Tested System Configurations

System Name		Software Release	
Avaya Aura S8800 LSC		Communication Manager 6.0.1 (00.1.510.1 Service Pack 19391) with Call Center License	
Brocade NetIron MLX Series ASLAN		Release 5.1.01	
Required Ancillary Equipment (site-provided)		SysLog	
SUT	Avaya Call Management System	**Hardware**	**Software/Firmware**
		Sun SPARC Enterprise T5120 (4-core) (See note.)	16.3
		Client PC (site-provided, STIG-compliant)	Microsoft Windows 7

NOTE: The SUT was tested with the SPARC Enterprise T5120 4-core server. The T5120 8-core and T5220 4- and 8-core servers have the same software and similar hardware as the T5120 4-core server. JITC analysis determined these subcomponents to be functionally identical for interoperability certification purposes and therefore, they are also certified for joint use.

LEGEND:

ASLAN	Assured Services Local Area Network	SPARC	Scalable Processor Architecture
LSC	Local Session Controller	STIG	Security Technical Implementation Guide
JITC	Joint Interoperability Test Command	SUT	System Under Test
PC	Personal Computer		

10. TEST LIMITATIONS. None.

11. TEST RESULTS

a. Discussion. The SUT was connected to an Avaya S8800 LSC. The Avaya S8800 LSC was configured with three simulated call center automatic call distribution (ACD) systems as depicted in Figure 2-2. Each ACD was configured with a separate pilot number and associated ACD agents. Calls were placed into the respective ACDs at different intervals with various call duration to provide data to the SUT for statistical analysis and reporting. Below are the test results and the SUT compliance to the UCR Customer Premise Equipment requirements:

(1) Compliance with Federal Communications Commission (FCC) Part 15 and Part 68. The vendor's Letter of Compliance (LoC) states compliance with FCC Part 15 and non compliance with Part 68. Part 68 of the FCC rules (47 CFR Part 68) governs the connection of Terminal Equipment (TE) to the Public Switched Telephone Network (PSTN). These rules apply to Time Division Multiplexing (TDM) connections and are therefore, not applicable to the SUT.

(2) Service Class Tagging. United Capabilities Requirements (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 deployments that may use a different DSCP plan. Captures were taken between the Avaya CMS Release 16.3 and the Avaya CM with Call Center license. None of the packets were tagged with a DSCP

priority of hexadecimal 10 (decimal value 16). The Portable Computer client does not have the ability to tag any value 0-63 or correctly tag DSCP at 16 for OA&M traffic. This discrepancy was adjudicated by DISA as having a minor impact based on vendor's Plan of Action & Milestones (POA&M) to resolve the issue by 31 August 2012.

(3) IEEE 802.3u compliance. The SUT met the IEEE 802.3u compliance with both testing and vendor's LoC.

(4) IEEE 802.3i compliance. The SUT met the IEEE 802.3i compliance with the vendor's LoC.

b. Test Summary. The SUT met the critical interoperability requirements for a CPE device as set forth in Reference (c). The SUT was tested with the Avaya Aura S8800 with CM Release 6.0.1 (00.1.510.1 Service Pack 19391) LSC. JITC analysis determined that the SUT is also certified with other Avaya Aura LSC, SMEO, and PBX switches that are or were 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). Information related to DISN 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.