



DEFENSE INFORMATION SYSTEMS AGENCY

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

14 Jun 13

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Special Interoperability Test Certification of the Avaya Aura[®] Application Server (AS) 5300 with Software Release 3.0 Local Session Controller (LSC) to include Service Pack (SP)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 (g), see Enclosure

1. References (a) and (b) establish Defense Information Systems Agency (DISA) Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification. Reference (c) further establishes JITC as the interoperability Certification Authority (CA) for all Unified Capabilities (UC) products.

2. The Avaya Aura[®] AS 5300 with Software Release 3.0; hereinafter referred to as the System Under Test (SUT), is certified for joint use within the Defense Information System Network (DISN) as an LSC. The SUT is certified in the United States, including the Continental United States (CONUS), Alaska, Hawaii, and U.S. Caribbean and Pacific Territories. Although the SUT supports European Basic Multiplex Rate (E1) interfaces, they were not tested during the original test and were not covered under this certification. Therefore, the SUT was not certified for joint use outside CONUS in European Telecommunications Standards Institute (ETSI)-compliant countries. The fielding of the SUT is limited to IP version 4 (IPv4) across the DISN. Although the SUT supports Internet Protocol version 6 (IPv6), it was not tested inter-enclave because of a limitation of the test network Edge Boundary Controller (EBC) which currently does not support end-to-end IPv6. Therefore, IPv6 is not covered under this certification. JITC will verify inter-enclave IPv6 capabilities of the SUT prior to amending the certification to include the capability. Intra-enclave use of IPv4 and IPv6 is authorized for use. DISA adjudicated all open Test Discrepancy Reports (TDRs) to have a minor operational impact. Any new discrepancy noted in the operational environment will be evaluated for impact on the existing certification. These discrepancies will be adjudicated to the satisfaction of DISA via a vendor's Plan of Action and Milestones (POA&M), which will address all new critical TDRs within 120 days of identification. Testing was conducted using LSC product requirements derived from the Unified Capabilities Requirements (UCR), Reference (d), and LSC test procedures, Reference (e). No other configurations, features, or functions, except those cited within this memorandum, are certified by JITC. This certification expires upon changes that affect interoperability, but no later than three years from the date of the original UC Approved Products List (APL) memorandum (2 October 2012); the expiration date is 2 October 2015.

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3. The extension of this certification is based upon Desktop Review (DTR) 3. The original certification, documented in Reference (f), is based on interoperability testing conducted by JITC, DISA adjudication of open TDRs, review of the vendor's Letters of Compliance (LoC), and DISA CA approval of the Information Assurance (IA) configuration. Interoperability testing was conducted by JITC, Fort Huachuca, Arizona, from 27 February through 20 April 2012. Additional interoperability testing was conducted from 14 May to 8 June 2012 to address test procedures not completed during the initial test window as well as new firmware on the SUT's end instruments. Review of the vendor's LoC was completed on 11 July 2012. DISA adjudication of outstanding TDRs was completed on 2 August 2012. Additional interoperability testing was conducted from 6 through 8 August 2012, which resulted in the successful demonstration of International Telecommunication Union - Telecommunication Standardization Sector T.38 fax functionality. The DISA CA has reviewed the IA Assessment Report for the SUT, Reference (g), and based on the findings in the report provided a positive recommendation on 27 September 2012. This DTR was requested to include SP3, which includes both IA and interoperability fixes. This DTR was also requested to include E1 Primary Rate Interface (PRI) commercial interfaces. Therefore, JITC determined Verification & Validation (V&V) testing was required. JITC conducted interoperability testing from 24 January through 8 February 2013. DISA adjudication of outstanding TDRs was completed on 10 June 2013. The SUT was tested and met all International Telecommunication Union – Telecommunication Standardization Sector (ITU-T) Q. 931 requirements and is certified for joint use outside CONUS in ETSI-compliant countries. There were four new interoperability discrepancies found during this V&V test as discussed in the subparagraphs below.

a. The SUT video soft client does not support the H.263-2000 video codec. The SUT video soft client does support the H.263-1998 video codec. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.

b. The SUT soft client does not display incoming video with Cisco C Series Codecs when using the H.264 codec. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact. The SUT soft client is limited to fielding with the H.263-1998 video codec.

c. The SUT is not capable of supporting IPv6 signaling. The SUT supports IPv4 signaling only, with dual stack IPv4/IPv6 media. The SUT does not allow IPv4 to be set to "None". Due to this, when IPv4 and IPv6 are enabled, the SUT mixes IPv4 and IPv6 addresses in all SIP messages (OPTIONS, INVITES, etc.), which causes TLS failures and call failures with the EBC fronting the SUT. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.

d. ASAC does not function on the SUT's AS5300 3.0 SP3 LSC with IPv6. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.

Additionally, the five discrepancies mentioned in the subparagraphs below, identified during previous testing, were closed as a result of this V&V test.

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a. During the original test, the SUT softphones did not support a distinct Differentiated Service Code Point (DSCP) tag for each of the five precedence levels. Only one DSCP tag was supported for all precedence levels. This is a limitation of the operating system on the softphones (Microsoft Windows 7). This discrepancy was fixed and successfully tested with DTR 3, which included SP3.

b. During the original test, when the SUT was in a call with the Cisco Unified Communications Manager 8.0(2), the SUT Internet Protocol (IP) End Instruments (EIs) did not release a call from hold and the call could not be resumed. This discrepancy was fixed and successfully tested with DTR 3, which included SP3.

c. During the original test, the SUT did not support a reminder ring notification with Call Forwarding Variable. This discrepancy was fixed and successfully tested with DTR 3, which included SP3.

d. During the original test, the AudioCodes M800 and M3K gateways did not allow a mix of PSTN/DSN trunk gateway configurations. Based on the vendor's POA&M from Release 2.0, the vendor stated this discrepancy would be fixed in AudioCodes version 6.02.054 and would be implemented in the AS 5300 Release 3 by 7 June 2012. However, Release 3 included AudioCodes version 6.20A.043.001 and not 6.02A.054. This discrepancy was fixed and successfully tested with DTR 3, which included AudioCodes Release 6.20A.055.001 as part of SP3.

e. During the original test, when the SUT failed over from the primary Subscriber Edge Services Manager (SESM) to the secondary SESM, the SUT IP EI's configured to use IPv6 took approximately 10 to 15 minutes to register to the secondary SESM. After this time, the IP EI's did successfully register to the secondary SESM and gain full functionality. Also, the SUT IP EI's intermittently dropped active calls during the failover. This discrepancy was fixed and successfully tested with DTR 3, which included 1120E/1140E IP telephone Firmware Release 04.02.13.00 as part of SP3.

The DISA CA provided a positive recommendation for this update on 30 April 2013. Therefore, JITC approves this DTR. The results of the IA testing are published in a separate report, Reference (g).

4. Table 1 provides a UC APL product summary including SP3. The interface, Capability Requirements (CR) and Functional Requirements (FR), and component status of the SUT are listed in Tables 2 and 3. The threshold Capability/Functional requirements for LSCs are established by Sections 5.3.2, 5.3.4, and 5.3.5 of Reference (d) and were used to evaluate the interoperability of the SUT.

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Table 1. SUT UC APL Product Summary

Avaya Aura® AS 5300 Rel. 3.0 SP3 (LSC)			
Hardware		Software/Firmware (See note.)	
SIP Core OAM&P/ LSC SESM x2 (HP DL360 or IBM 3550)		<u>Postgresql 9.0.6</u>	
		<u>RedHat 5.4 mcp_core linux ple2 15.0.32</u>	
		<u>MCP 15.1.0.17 2012-12-14-0858</u>	
		rsit-server-7.2.1.83-1	
Avaya Media Server x2 (HP DL360 or IBM 3550)		<u>AMS base 7.5.0.919 2012.11.29 1014</u>	
		<u>AMS apps 7.6.0.5</u>	
		<u>RedHat 5.4 mcp_core linux ple2 15.0.32</u>	
		rsit-server-7.2.1.83-1	
AudioCodes EMS (Sun Netra T5220)		Solaris 10	
		<u>EMS Server 6.2.94</u>	
AudioCodes M3000 GW		<u>6.20A.055.001</u>	
		pSoS 2.5.4	
AudioCodes M800 GW		Embedded Linux Kernel 2.6.21.7	
		<u>6.20A.055.001</u>	
UC Client (site-provided, STIG-compliant)		Windows 7 SP1	
		<u>UC Client Version: 8.1.5126</u>	
AudioCodes M800 IAD		Embedded Linux Kernel 2.6.21.7	
		<u>6.20A.055.001</u>	
AudioCodes MP112 IAD		<u>6.20A.055.001</u>	
		pSoS 2.5.4	
AudioCodes MP124 IAD		<u>6.20A.055.001</u>	
		pSoS 2.5.4	
Management Workstation (site-provided, STIG-compliant)		Windows 7 SP1	
		<u>MCP 15.1.0.17 2012-12-14-0858</u>	
		<u>EMS Client 6.2.94</u>	
Telephones			
Telephone Type	Model	Software/Firmware (See note.)	
Analog	NA	NA	
SIP	1140E	<u>04.02.13.00</u>	
SIP	1120E	<u>04.02.13.00</u>	
NOTE: The bold, underlined software and firmware releases were included in SP3.			
LEGEND:			
APL	Approved Products List	OAM&P	Operations, Administration, Maintenance, and Provisioning
EMS	Element Management System	SESM	Subscriber Edge Services Manager
GW	Gateway	SIP	Session Initiation Protocol
IAD	Integrated Access Device	SP	Service Pack
LSC	Local Session Controller	STIG	Security Technical Implementation Guides
MCP	Media Communications Processor	SUT	System Under Test
NA	Not Applicable	UC	Unified Capabilities

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Table 2. SUT Interface Interoperability Status

Interface	Critical	UCR Reference	Threshold CR/FR (See note 1.)	Status	Remarks
Line Interfaces					
10Base-X	Yes	5.3.2.6.3	2, 4, 10, 13, 16, and 19	Certified	Met threshold CRs/FRs for IEEE 802.3i and 802.3j with the SUT PEIs.
100Base-X	Yes	5.3.2.6.3	2, 4, 10, 13, 16, and 19	Certified	Met threshold CRs/FRs for IEEE 802.3u with the SUT PEIs.
1000Base-X	No	5.3.2.6.3	2, 4, 10, 13, 16, and 19	Certified	Met threshold CRs/FRs for IEEE 802.3z with the SUT PEIs.
2-wire analog	Yes	5.3.2.6.1.6	2, 4, 10, 13, and 19	Certified	Met threshold CRs/FRs for 2-wire analog interfaces with the SUT IAD.
ISDN BRI	No	5.3.2.6.1.8	2, 4, 10, 13, and 19	Not Tested	This interface is not supported by the SUT and is not required for an LSC.
External Interfaces					
10Base-X	No (See note 2.)	5.3.2.4.2	1, 2, 3, 6, 7, 8, 10, 11, 13, 15, 16, 17, and 19	Certified	Met threshold CRs/FRs for IEEE 802.3i and 802.3j for the AS-SIP trunk.
100Base-X	No (See note 2.)	5.3.2.4.2	1, 2, 3, 6, 7, 8, 10, 11, 13, 15, 16, 17, and 19	Certified	Met threshold CRs/FRs for IEEE 802.3u for the AS-SIP trunk.
1000Base-X	No (See note 2.)	5.3.2.4.2	1, 2, 3, 6, 7, 8, 10, 11, 13, 15, 16, 17, and 19	Certified	Met threshold CRs/FRs for IEEE 802.3z for the AS-SIP trunk.
ISDN T1 PRI ANSI T1.619a	Yes	5.3.2.4.3	2, 3, 7, 8, 10, 13, and 19	Certified	Met threshold CRs/FRs. This interface provides legacy DSN and TELEPORT connectivity.
ISDN T1 PRI NI-2	Yes	5.3.2.4.3	2, 3, 7, 8, 10, 13, and 19	Certified	Met threshold CRs/FRs. This interface provides PSTN connectivity.
T1 CCS7 ANSI T1.619a	No	5.3.2.12.9	2, 3, 7, 8, 10, 13, and 19	Not Tested	Although this interface is offered by the SUT, it was not tested. This interface is not certified by JITC and is not required for an LSC.
T1 CAS	No	5.3.2.12.11	2, 3, 7, 8, 10, 13, and 19	Not Tested	This interface is not offered by the SUT and it is not required for an LSC.
E1 PRI ITU-T Q.955.3	No (See note 3.)	5.3.2.12.10	2, 3, 7, 8, 10, 13, and 19	Not Tested	Although this interface is offered by the SUT, it was not tested. This interface is not certified by JITC and is not required for an LSC.
E1 PRI ITU-T Q.931	No (See note 3.)	5.3.2.12.10	2, 3, 7, 8, 10, 13, and 19	Certified	This interface was not tested during the original test. During testing for DTR 3, this interface was tested and met all requirements. This interface is certified for use in ETSI-compliant countries.
NM Interfaces					
10Base-X	No (See note 2.)	5.3.2.4.4 5.3.2.7.2.8	17, 18, and 19	Certified	Met threshold CRs/FRs. Verified via LoC.
100Base-X	No (See note 2.)	5.3.2.4.4 5.3.2.7.2.8	17, 18, and 19	Certified	Met threshold CRs/FRs. Verified via LoC.
1000Base-X	No (See note 2.)	5.3.2.4.4 5.3.2.7.2.8	17, 18, and 19	Certified	Met threshold CRs/FRs. Verified via LoC.
NOTES:					
1. The SUT high-level CR and FR ID numbers depicted in the Threshold CRs/FRs column can be cross-referenced in Table 3. These high-level CR/FR requirements refer to a detailed list of requirements provided in Reference (e), Enclosure 3.					
2. The SUT must provide a minimum of one of the listed interfaces.					
3. This interface is conditionally required for deployment in Europe.					

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Table 2. SUT Interface Interoperability Status (continued)

LEGEND:			
10Base-X	10 Mbps Ethernet	IEEE	Institute of Electrical and Electronics Engineers
100Base-X	100 Mbps Ethernet	ISDN	Integrated Services Digital Network
1000Base-X	1000 Mbps Ethernet	ITU-T	International Telecommunication Union - Telecommunication Standardization Sector
802.3i	10 Mbps twisted pair media for 10Base-X networks	JITC	Joint Interoperability Test Command
802.3j	10 Mbps fiber media for 10Base-X networks	LoC	Letter of Compliance
802.3u	100BASE-TX, 100BASE-T4, 100BASE-FX Fast Ethernet at 100 Mbps with auto negotiation	LSC	Local Session Controller
802.3z	Gigabit Ethernet Standard	Mbps	Megabits per second
ANSI	American National Standards Institute	MLPP	Multi-Level Precedence and Preemption
AS-SIP	Assured Services Session Initiation Protocol	NI-2	National ISDN Standard 2
BRI	Basic Rate Interface	NM	Network Management
CAS	Channel Associated Signaling	PEI	Proprietary End Instrument
CCS7	Common Channel Signaling Number 7	PRI	Primary Rate Interface
CR	Capability Requirement	PSTN	Public Switched Telephone Network
DSN	Defense Switched Network	Q.931	Signaling Standard for ISDN
E1	European Basic Multiplex Rate (2.048 Mbps)	Q.955.3	ISDN Signaling Standard for E1 MLPP
ETSI	European Telecommunications Standards Institute	SS7	Signaling System 7
FR	Functional Requirement	SUT	System Under Test
Gbps	Gigabits per second	T1	Digital Transmission Link Level 1 (1.544 Mbps)
IAD	Integrated Access Device	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
ID	Identification	UCR	Unified Capabilities Requirements

Table 3. SUT Capability Requirements and Functional Requirements Status

CR/FR ID	Capability/Function	Applicability (See note 1.)	UCR Reference	Status
1	Assured Services Product Features and Capabilities			
	DSCP Packet Marking	Required	5.3.2.2.1.4	Met (See note 2.)
	Voice Features and Capabilities	Required	5.3.2.2.2.1	Met (See note 3, 4.)
	Public Safety Features	Required	5.3.2.2.2.2	Partially Met (See note 5.)
	ASAC – Open Loop	Required	5.3.2.2.2.3	Met
	Signaling Protocols	Required	5.3.2.2.3	Partially Met (See note 6.)
	Signaling Performance	Conditional	5.3.2.2.4	Met
2	Registration, Authentication, and Failover			
	Registration	Required	5.3.2.3.1	Met
	Failover	Required	5.3.2.3.2	Partially Met (See notes 7, 8.)
3	Product Physical, Quality, and Environmental Factors			
	Availability	Required	5.3.2.5.2.1	Met
	Maximum Downtimes	Required	5.3.2.5.2.2	Met
	Loss of Packets	Required	5.3.2.5.4	Met
4	Voice End Instruments			
	Tones and Announcements	Required	5.3.2.6.1.1	Partially Met (See note 9.)
	Audio Codecs	Required	5.3.2.6.1.2	Partially Met (See note 10.)
	VoIP PEI or AEI Audio Performance Requirements	Required	5.3.2.6.1.3	Partially Met (See notes 6, 11.)
	VoIP Sampling Standard	Required	5.3.2.6.1.4	Met
	Authentication to LSC	Required	5.3.2.6.1.5	Met
	Analog Telephone Support	Required	5.3.2.6.1.6	Partially Met (See notes 12, 13.)
	Softphones	Conditional	5.3.2.6.1.7	Partially Met (See notes 2, 14, 15.)
ISDN BRI	Conditional	5.3.2.6.1.8	Not Tested (See note 16.)	

Table 3. SUT Capability Requirements and Functional Requirements Status (continued)

CR/FR ID	Capability/Function	Applicability (See note 1.)	UCR Reference	Status
5	Video End Instruments			
	Video End Instrument	Required	5.3.2.6.2	Partially Met (See notes 2, 17.)
	Display Messages, Tones, and Announcements	Required	5.3.2.6.2.1	Partially Met (See notes 2, 17.)
	Video Codecs (Including Associated Audio Codecs)	Required	5.3.2.6.2.2	Partially Met (See notes 2, 14, 15, 17.)
6	LSC Requirements			
	PBAS/ASAC Requirements	Required	5.3.2.7.2.1	Met
	Calling Number Delivery Requirements	Required	5.3.2.7.2.2	Met
	LSC Signaling Requirements	Required	5.3.2.7.2.3	Met
	Service Requirements under Total Loss of WAN Transport	Required	5.3.2.7.2.4	Met
	Local Location Server and Directory	Required	5.3.2.7.2.5	Met
	LSC Transport Interface Functions	Required	5.3.2.7.2.7	Met
	LSC to IP PEI, AEI, and Operator Console Status Verification	Required	5.3.2.7.2.10	Not Met (See notes 6, 18.)
7	Call Connection Agent Requirements			
	CCA IWF Component	Required	5.3.2.9.2.1	Met
	CCA MGC Component	Required	5.3.2.9.2.2	Met
	SG Component	Conditional	5.3.2.9.2.3	Not Tested (See note 16.)
	CCA-IWF Support for AS-SIP	Required	5.3.2.9.5.1	Met
	CCA-IWF Support for SS7	Conditional	5.3.2.9.5.2	Not Tested (See note 16.)
	CCA-IWF Support for PRI via MG	Required	5.3.2.9.5.3	Met
	CCA-IWF Support for CAS Trunks via MG	Conditional	5.3.2.9.5.4	Not Tested (See note 16.)
	CCA-IWF Support for PEI and AEI Signaling Protocols	Required	5.3.2.9.5.5	Partially Met (See notes 6, 17, 18.)
	CCA-IWF Support for VoIP and TDM Protocol Interworking	Required	5.3.2.9.5.6	Met
	CCA Preservation of Call Ringing State during Failure Conditions	Required	5.3.2.9.6	Not Met (See note 20.)
	CCA Interactions with Transport Interface Functions	Required	5.3.2.10.3	Met
	CCA Interactions with the EBC	Required	5.3.2.10.4	Met
	CCA Support for Admission Control	Required	5.3.2.10.5	Met
	CCA Support for UFS	Required	5.3.2.10.6	Met
	CCA Support for IA	Required	5.3.2.10.7	Met
CCA Interaction with VoIP EIs	Required	5.3.2.10.10	Partially Met (See notes 6, 17, 18.)	
CCA Support for AS Voice and Video	Required	5.3.2.10.11	Met (See notes 6, 11, 17.)	
CCA Interactions with Service Control Functions	Required	5.3.2.10.12	Met	
CCA Interworking between AS-SIP and SS7	Conditional	5.3.2.11	Not Tested (See note 16.)	
8	MG Requirements			
	Role of MG In LSC	Required	5.3.2.12.3.1	Met (See note 21.)
	MG Support for ASAC	Required	5.3.2.12.4.1	Met
	MG and IA Functions	Required	5.3.2.12.4.2	Met
	MG Interaction with Service Control Function	Required	5.3.2.12.4.3	Met
	MG Interactions with IP Transport Interface Functions	Required	5.3.2.12.4.4	Met
	MG-EBC interactions	Required	5.3.2.12.4.5	Met
	MG IP-Based PSTN Interface Requirements	Conditional	5.3.2.12.4.7	Not Tested (See note 16.)
	MG Interaction with VoIP EIs	Required	5.3.2.12.4.8	Partially Met (See note 6.)
	MG support for User Features and Services	Required	5.3.2.12.4.9	Met
MG Interface to TDM	Required	5.3.2.12.5	Met	

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Table 3. SUT Capability Requirements and Functional Requirements Status (continued)

CR/FR ID	Capability/Function	Applicability (See note 1.)	UCR Reference	Status
8	MG Requirements (continued)			
	MG Interface to TDM Allied and Coalition	Conditional	5.3.2.12.6	Met (See note 22.)
	MG Interface to TDM PSTN in U.S.	Required	5.3.2.12.7	Met
	MG Interfaces to TDM PSTN OCONUS	Conditional	5.3.2.12.8	Met (See note 22.)
	MG Support for CCS7	Conditional	5.3.2.12.9	Not Tested (See note 16.)
	MG Support for ISDN PRI Trunks	Required	5.3.2.12.10	Met
	MG Support for CAS Trunks	Conditional	5.3.2.12.11	Not Tested (See note 16.)
	MG requirements for VoIP Internal Interfaces	Required	5.3.2.12.12	Met (See note 23.)
	MG Echo Cancellation	Required	5.3.2.12.13	Met
	MG Clock Timing	Required	5.3.2.12.14	Met
	MGC-MG CCA Functions	Required	5.3.2.12.15	Met
MG ITU-T V.150.1	Required	5.3.2.12.16	Not Met (See notes 12, 13.)	
MG Preservation of Call Ringing during Failure	Required	5.3.2.12.17	Met (See notes 20, 24.)	
9	SG Requirements			
	SG and CCS7 Network Interactions	Conditional	5.3.2.13.5.1	Not Tested (See note 16.)
	SG Interactions with CCA	Conditional	5.3.2.13.5.2	Not Tested (See note 16.)
	SG Interworking Functions	Conditional	5.3.2.13.5.3	Not Tested (See note 16.)
10	WWNDP Requirements			
	WWNDP	Required	5.3.2.16	Met
	DSN WWNDP	Required	5.3.2.16.1	Partially Met (See note 25.)
11	Commercial Cost Avoidance			
	Commercial Cost Avoidance	Required	5.3.2.23	Not Tested (See note 26.)
12	AS-SIP Based for External Devices (Voicemail, Unified Messaging, and Automated Receiving Devices)			
	AS-SIP Requirements for External Interfaces	Conditional	5.3.2.24	Not Tested (See note 16.)
13	Precedence Call Diversion			
	Precedence Call Diversion	Required	5.3.2.25	Partially Met (See note 18.)
14	Attendant Station Features			
	Precedence and Preemption	Required	5.3.2.26.1	Not Met (See note 18.)
	Call Display	Required	5.3.2.26.2	Not Met (See note 18.)
	Class of Service Override	Required	5.3.2.26.3	Not Met (See note 18.)
	Busy Override and Busy Verification	Required	5.3.2.26.4	Not Met (See note 18.)
	Night service	Required	5.3.2.26.5	Not Met (See note 18.)
	Automatic Recall of Attendant	Required	5.3.2.26.6	Not Met (See note 18.)
	Calls in Queue to the Attendant	Required	5.3.2.26.7	Not Met (See note 18.)
15	RTS Routing Database Requirements			
	LSC to LRDB Interface: DB Queries for CCA	Required	5.3.2.28.3	Not Tested (See note 26.)
	CCA Query from LSC	Required	5.3.2.28.3.1	Not Tested (See note 26.)
	DB Response When Commercial Number is Not Found	Required	5.3.2.28.3.3	Not Tested (See note 26.)
	LSC to MRDB Interface: DB Updates for CCA and HR	Required	5.3.2.28.4	Not Tested (See note 26.)
	LDAP Update Operations	Required	5.3.2.28.4.1	Not Tested (See note 26.)
	RTS Routing DB "Opt Out" for LSC End Users	Required	5.3.2.28.4.2	Not Tested (See note 26.)
	Request Processing	Required	5.3.2.28.5.2.3	Not Tested (See note 26.)
	Client Time-Out	Required	5.3.2.28.5.2.3.1	Not Tested (See note 26.)
Data Caching	Required	5.3.2.28.5.2.4.2	Not Tested (See note 26.)	

Table 3. SUT Capability Requirements and Functional Requirements Status (continued)

CR/FR ID	Capability/Function	Applicability (See note 1.)	UCR Reference	Status
15	RTS Routing Database Requirements (continued)			
	Failover Procedures	Required	5.3.2.28.5.2.5	Not Tested (See note 26.)
	MRDB Failover	Required	5.3.2.28.5.2.5.1	Not Tested (See note 26.)
	LRDB Failover	Required	5.3.2.28.5.2.5.2	Not Tested (See note 26.)
	Alarms	Required	5.3.2.28.6.3	Not Tested (See note 26.)
	Logs	Required	5.3.2.28.6.4	Not Tested (See note 26.)
	Performance Monitoring	Conditional	5.3.2.28.6.7	Not Tested (See note 26.)
16	AS-SIP Requirements			
	SIP Requirements for AS-SIP Signaling Appliances and AS-SIP EIs	Required	5.3.4.7	Partially Met (See note 6.)
	SIP Session Keep-Alive Timer	Required	5.3.4.8	Met
	Session Description Protocol	Required	5.3.4.9	Met
	Precedence and Preemption	Required	5.3.4.10	Partially Met (See note 27.)
	Video Telephony – General Rules	Required	5.3.4.12	Met
	Calling Services	Required	5.3.4.13	Met
	SIP Translation Requirements for Inter-working AS-SIP Signaling Appliances	Required	5.3.4.14	Met
	Relevant Timers for the Terminating Gateway and the Originating Gateway	Required	5.3.4.15	Not Tested (See note 28.)
	SIP Requirements for Interworking AS-SIP Signaling Appliances	Required	5.3.4.16	Met
	Keep-Alive Timer Requirements for Interworking AS-SIP Signaling Appliances	Required	5.3.4.17	Met
Precedence and Preemption Extensions for Interworking AS-SIP Signaling Appliances	Required	5.3.4.18	Met	
Supplementary Services	Required	5.3.4.19	Met	
17	IPv6 Requirements			
	Product Requirements	Required	5.3.5.4	Not Met (See notes 29, 30.)
18	NM Requirements			
	LSC Management Function	Required	5.3.2.7.2.6	Met
	VVoIP NMS Interface Requirements	Required	5.3.2.4.4	Met
	General Management requirements	Required	5.3.2.17.2	Met
	Requirement for FCAPS Management	Required	5.3.2.17.3	Partially Met (See notes 31, 32.)
	NM requirements of Appliance Functions	Required	5.3.2.18	Met
19	Accounting Management			
	Accounting Management	Required	5.3.2.19	Met
19	Information Assurance			
	Information Assurance Requirements	Required	5.4	Met (See note 33.)
<p>NOTES:</p> <p>1. The annotation of ‘required’ refers to a high-level requirement category. The applicability of each sub-requirement is provided in Reference (e), Enclosure 3.</p> <p>2. During the original test, the SUT softphones did not support a distinct DSCP tag for each of the five precedence levels. Only one DSCP tag was supported for all precedence levels. This is a limitation of the operating system on the softphones (Microsoft Windows 7). This discrepancy was fixed and successfully tested with DTR 3, which included SP3.</p> <p>3. During the original test, the SUT did not support a reminder ring notification with Call Forwarding Variable. This discrepancy was fixed and successfully tested with DTR 3, which included SP3.</p> <p>4. During the original test, when the SUT was in a call with the Cisco Unified Communications Manager 8.0(2), the SUT IP EIs did not release a call from hold and the call could not be resumed. This discrepancy was fixed and successfully tested with DTR 3, which included SP3.</p>				

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

NOTES (continued):

5. The SUT allows the preemption of a 911 caller and the 911 operator. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
6. Testing with the Teo AEI was unable to be completed due to issues with TLS and therefore the SUT is not certified with non-proprietary AEIs. DISA adjudicated this as minor and changed this requirement to optional in UCR 2013.
7. During the original test, when the SUT failed over from the primary SESM to the secondary SESM, the SUT IP EI's configured to use IPv6 took approximately 10 to 15 minutes to register to the secondary SESM. After this time, the IP EI's did successfully register to the secondary SESM and gain full functionality. Also, the SUT IP EI's intermittently dropped active calls during the failover. This discrepancy was fixed and successfully tested with DTR 3, which included 1120E/1140E IP telephone Firmware Release 04.02.13.00 as part of SP3.
8. During the original test, the SUT did not fully support LSC dual-homing failover requirements. DISA adjudicated this discrepancy and determined that the UCR failover requirements are immature and require a rewrite. Avaya, in coordination with DISA NS2, has agreed to participate in a multi-vendor interoperability test event to test failover mechanisms between LSCs and SSs in the timeframe determined by DISA NS2 in order to address this discrepancy. JITC conducted multi-vendor V&V failover testing from 8 through 19 October 2012. The SUT was unable to successfully demonstrate failover based on the new draft requirements. DISA has accepted and approved the vendor's POA&M.
9. The SUT IAD EI's (Audiocodes 112/124) do not provide PNT during preempt for reuse scenarios. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
10. The vendor submitted LoC states the SUT does not support the ITU-T G.722.1 voice codec. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
11. The SUT PEI's were tested and met audio performance requirements.
12. The SUT does not support the ITU-T V.150.1 protocol. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
13. The vendor cannot dynamically invoke ITU-T T.38 and ITU-T V.150.1 in accordance with UCR 2008, change 3, section 5.3.2.12.16. The vendor stated this is a limitation of the Audiocodes gateway and requires an update before this can be tested. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
14. The SUT video soft client does not support the H.263-2000 video codec. The SUT video soft client does support the H.263-1998 video codec. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
15. The SUT soft client does not display incoming video with Cisco C Series Codecs when using the H.264 codec. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact. The SUT soft client is limited to fielding with the H.263-1998 video codec.
16. This interface or capability is a conditional requirement for an LSC and was not tested.
17. The SUT demonstrated video requirements via Softphone only, not PEIs (Proprietary Hard Video Phones) nor AEI video phones. The vendor did not provide a PEI or AEI video capability. This was previously adjudicated for another vendor by DISA to have a low operational impact because of the limited deployment of PEIs with video.
18. The SUT does not support an attendant console. DISA adjudicated this as minor and changed this requirement to optional in UCR 2013. Furthermore, the SUT meets all MLPP diversion requirements with an alternate DN in lieu of an attendant console in accordance with UCR 2008, Change 3, section 5.3.2.2.2.1.2.5.
19. The SUT is not capable of preventing or detecting and stopping hair-pin routing loops over ANSI T1.619a and commercial PRI trunk groups between a legacy switch and an LSC. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
20. The SUT allows AS-SIP sessions in a ringing state to fail when an internal failure occurs within the CCA. DISA adjudicated this as minor and deleted this requirement in UCR 2013.
21. During the original test, the AudioCodes M800 and M3K gateways did not allow a mix of PSTN/DSN trunk gateway configurations. Based on the vendor's POA&M from Release 2.0, the vendor stated this discrepancy would be fixed in AudioCodes version 6.02.054 and would be implemented in the AS 5300 Release 3 by 7 June 2012. However, Release 3 included AudioCodes version 6.02A.043.001 and not 6.02A.054. This discrepancy was fixed and successfully tested with DTR 3, which included AudioCodes Release 6.20A.055.001 as part of SP3.
22. This requirement states that the appliance suppliers should support TDM trunk groups on their MG product that can interconnect with NEs in U.S. allied and coalition partner networks worldwide or foreign country PTT networks (OCONUS) worldwide. This requirement is for interconnection with a foreign country. The SUT is certified for use in the U.S., including CONUS, Alaska, Hawaii, and U.S. Caribbean and Pacific Territories. The E1 interface was not tested during the original test. During testing for DTR 3, the ITU-T Q.931 E1 interface was tested and met all requirements. This interface is certified for use in ETSI-compliant countries.
23. The SUT MGs do not support analog trunks. DISA adjudicated this as minor and deleted this requirement in UCR 2013.
24. The SUT MGs allow AS-SIP sessions in ringing state to fail during internal failure in MG. DISA adjudicated this as minor and deleted this requirement in UCR 2013.
25. The SUT does not support domain directory. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
26. The vendor has an LDAP server which is covered under a separate Interoperability Certification listed on the UC APL; however, this LDAP feature was not tested with the Release 3.0. DISA adjudicated this as minor because it was tested with Release 2.0. This feature will be tested with Release 3.0 once the LDAP is installed at JITC.

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Table 3. SUT Capability Requirements and Functional Requirements Status (continued)

NOTES (continued):

27. ASAC does not function on the SUT's AS5300 3.0 SP3 LSC with IPv6. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.

28. This requirement applies to gateways between AS-SIP and CCS7 links. Because CCS7 is a conditional requirement for LSCs and not supported by the SUT, this requirement was not tested.

29. Per the vendor submitted LoC, the SUT does not properly support the following IPv6 requirements. The SUT does not support all DHCPv6 client messages and options. The SUT does not log all reconfigure events. The SUT SIP Core/Avaya Media Server does not allow disabling of duplicate address detection. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.

30. The SUT is not capable of supporting IPv6 signaling. The SUT supports IPv4 signaling only, with dual stack IPv4/IPv6 media. The SUT does not allow IPv4 to be set to "None". Due to this, when IPv4 and IPv6 are enabled, the SUT mixes IPv4 and IPv6 addresses in all SIP messages (OPTIONS, INVITES, etc.), which causes TLS failures and call failures with the EBC fronting the SUT. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.

31. The SUT is not fully compliant with following NM call detail records format requirements. The SUT does not provide a voice quality record at the completion of each voice session. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact. The SUT has the ability to send the records over a secure connection. However, the SUT does not have the ability to transfer records to a removable physical storage media. DISA adjudicated this as minor and deleted this requirement in UCR 2013.

32. Although the SUT supports destination code controls, the SUT does not play the correct announcement to the calling party IAW the reference. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.

33. The IA requirements are tested by an IA test team and the results published in a separate report, Reference (g).

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Table 3. SUT Capability Requirements and Functional Requirements Status (continued)

LEGEND:			
AEI	AS-SIP End Instrument	LSC	Local Session Controller
ANSI	American National Standards Institute	Mbps	Megabits per second
APL	Approved Products List	MG	Media Gateway
AS	Assured Services	MGC	Media Gateway Controller
ASAC	Assured Services Admission Control	MLPP	Multi-Level Precedence and Preemption
ASLAN	Assured Services Local Area Network	MRDB	Master Routing Database
AS-SIP	Assured Services Session Initiation Protocol	NE	Network Element
BRI	Basic Rate Interface	NM	Network Management
CAS	Channel Associated Signaling	NMS	Network Management System
CCA	Call Connection Agent	NS2	Network Services
CCS7	Common Channel Signaling Number 7	OCONUS	Outside the Continental United States
CONUS	Continental United States	PBAS	Precedence Based Assured Services
CR	Capability Requirement	PEI	Proprietary End Instrument
DB	database	PNT	Precedence Notification Tone
DHCPv6	Dynamic Host Control Protocol for IPv6	POA&M	Plan of Action and Milestones
DISA	Defense Information Systems Agency	PRI	Primary Rate Interface
DN	Directory Number	PSTN	Public Switched Telephone Network
DSCP	Differentiated Services Code Point	PTT	Push-to-Talk
DSN	Defense Switched Network	RTS	Real Time Services
DTR	Desktop Review	SESM	Subscriber Edge Services Manager
E1	European Basic Multiplex Rate (2.048 Mbps)	SG	Signaling Gateway
EBC	Edge Boundary Controller	SIP	Session Initiation Protocol
EI	End Instrument	SP	Service Pack
FCAPS	Fault, Configuration, Accounting, Performance and Security	SS	Softswitch
FR	Functional Requirement	SS7	Signaling System 7
G.722.1	ITU-T audio codec standard	SUT	System Under Test
HR	Hybrid Routing	T1	Digital Transmission Link Level 1 (1.544 Mbps)
IA	Information Assurance	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
IAD	Integrated Access Device	T.38	Fax over IP
IAW	in accordance with	TDM	Time Division Multiplexing
ID	Identification	TLS	Transport Layer Security
IP	Internet Protocol	UC	Unified Capabilities
IPv6	Internet Protocol version 6	UCR	Unified Capabilities Requirements
ISDN	Integrated Services Digital Network	UFS	User Features and Services
ITU-T	International Telecommunication Union - Telecommunication Standardization Sector	U.S.	United States
IWF	Interworking Function	V&V	Verification and Validation
JITC	Joint Interoperability Test Command	V.150	Modem over Internet Protocol Networks
LDAP	Lightweight Directory Access Protocol	VoIP	Voice over Internet Protocol
LoC	Letter of Compliance	VVoIP	Voice and Video over Internet Protocol
LRDB	Local Routing Database	WAN	Wide Area Network
		WWNDP	Worldwide Numbering and Dialing Plan

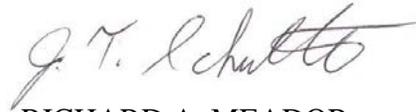
5. No detailed test report was developed in accordance with the Program Manager's request. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Unclassified-But-Sensitive Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive interoperability status information is available via the JITC System Tracking Program (STP). 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

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deployment guide must be requested directly through government civilian or uniformed military personnel from the Unified Capabilities Certification Office (UCCO), e-mail: disa.meade.ns.list.unified-capabilities-certification-office@mail.mil. All associated data is available on the DISA UCCO website located at <http://www.disa.mil/ucco/>.

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.P.Arsenault.fm@mail.mil. JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The UCCO tracking number for the SUT is 1129302.

FOR THE COMMANDER:



for RICHARD A. MEADOR
Chief
Battlespace Communications Portfolio

Enclosure a/s

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DISA/TEMC

DIA, Office of the Acquisition Executive

NSG Interoperability Assessment Team

DOT&E, Netcentric Systems and Naval Warfare

Medical Health Systems, JMIS IV&V

HQUSAISEC, AMSEL-IE-IS

UCCO

ADDITIONAL REFERENCES

- (c) Department of Defense Instruction 8100.04, "DoD Unified Capabilities (UC)," 9 December 2010
- (d) Office of the Assistant Secretary of Defense, "Department of Defense Unified Capabilities Requirements 2008, Change 3," September 2011
- (e) Joint Interoperability Test Command, "Unified Capabilities Test Plan (UCTP)," Draft
- (f) Joint Interoperability Test Command, Memo, JTE, "Special Interoperability Test Certification of the Avaya Aura[®] Application Server (AS) 5300 with Software Release 3.0 Local Session Controller (LSC)," 27 September 2012
- (g) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Avaya Application Server (AS) 5300 Release (Rel.) 3.0 Local Session Controller (LSC) (Tracking Number 1129302)," Draft