



DEFENSE INFORMATION SYSTEMS AGENCY

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

3 Dec 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)

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. However, the SUT E1 Primary Rate Interface (PRI) interface was successfully tested with Desktop Review (DTR) 3 and it is now included with this certification. 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.

3. The extension of this certification is based upon DTR 5. 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 SP6, which includes both IA and interoperability fixes. Therefore, JITC determined Verification & Validation (V&V) testing was required. JITC conducted interoperability testing from 7 through 18 October 2013. DISA adjudication of outstanding TDRs was completed on 19 November 2013. There were four new interoperability discrepancies found during this V&V test as discussed in the subparagraphs below.

- a. Precedence calls above ROUTINE from the Avaya Communication Manager (CM) 6.3 LSCs to an Internet Protocol (IP) End Instrument (EI) on the SUT receive a Blocked Precedence Announcement (BPA) and fail to complete. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
- b. The SUT does not provide Precedence Notification Tone (PNT) to an IP EI preempted while in a ringing state. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
- c. The SUT only supports one way audio on hold interaction with IAD subscribers with Music on Hold (MoH). DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
- d. The SUT dial tone is not in line with required specifications. The SUT dial tone provided when there is a message waiting is a PNT instead of a standard dial tone. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.

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

- a. During testing for DTR 3, ASAC did not function on the SUT's AS5300 3.0 SP3 LSC with IPv6. This discrepancy was fixed and successfully tested with DTR 5, which included SP6.

b. 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. This discrepancy was fixed and successfully tested with DTR 5, which included SP6.

Additionally, the following discrepancy identified during previous testing was closed as a result of DISA re-adjudication during this V&V test. The SUT was not tested with the DISN Real Time Services Routing Database or Lightweight Directory Access Protocol Version 3 messages for a Database Query. DISA stated the intent to remove this requirement from the UCR; therefore, this discrepancy is no longer applicable. The DISA CA provided a positive recommendation for this DTR on 27 November 2013, based on the security testing completed DISA-led IA test teams and published in a separate report, Reference (g). Therefore, JITC approves this DTR.

4. Table 1 provides a UC APL product summary including SP6. 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.

Table 1. SUT UC APL Product Summary

| Avaya Aura[®] AS 5300 Rel. 3.0 SP6 (LSC) | |
|--|---|
| Hardware | Software/Firmware (See note.) |
| SIP Core OAM&P/ LSC SESM x2 (HP DL360 or IBM 3550) | Postgresql 9.0.13 |
| | RedHat 5.4 mcp core linux ple2 15.0.35 |
| | MCP 15.1.0.21 2013-06-07-0907 |
| | rsit-server-8.0.0.71 |
| Avaya Media Server x2 (HP DL360 or IBM 3550) | AMS base 7.5.0.919_2012.11.29_1014 |
| | AMS apps 7.6.0.13 2013.02.20 |
| | RedHat 5.4 mcp core linux ple2 15.0.35 |
| | rsit-server-8.0.0.71 |
| AudioCodes EMS (Sun Netra T5220) | Solaris 10 |
| | EMS Server 6.2.121 |
| AudioCodes M3000 GW | 6.20A.055.001 |
| AudioCodes M800 GW | pSoS 2.5.4 |
| | Embedded Linux Kernel 2.6.21.7 |
| UC Client (site-provided, STIG-compliant) | 6.20A.055.001 |
| | Windows 7 SP1 |
| AudioCodes M800 IAD | UC Client Version: 8.1.5146 |
| | Embedded Linux Kernel 2.6.21.7 |
| AudioCodes MP112 IAD | 6.20A.055.001 |
| | 6.20A.055.001 |
| | pSoS 2.5.4 |

Table 1. SUT UC APL Product Summary (continued)

| Avaya Aura® AS 5300 Rel. 3.0 SP6 (LSC) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------------------------|-------------------------------|---|------------------------|-------|---|-----|---------------------------|------|----------------------------------|----|---------|-----|-----------------------------|-----|--------------------------|----|--------------|-----|--------------------------|------|--|-----|--------------------------------|-----|-------------------|----|----------------|----|----------------------|
| Hardware | | Software/Firmware (See note.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AudioCodes MP124 IAD | | 6.20A.055.001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | pSoS 2.5.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Management Workstation (site-provided, STIG-compliant) | | Windows 7 SP1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | EMS Client 6.2.94 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Telephones | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Telephone Type | Model | Software/Firmware (See note.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analog | NA | NA | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SIP | 1140E | 04.02.13.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SIP | 1120E | 04.02.13.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>NOTE: The bold, underlined software and firmware releases were included in SP6.</p> <p>LEGEND:</p> <table> <tr> <td>APL</td> <td>Approved Products List</td> <td>OAM&P</td> <td>Operations, Administration, Maintenance, and Provisioning</td> </tr> <tr> <td>EMS</td> <td>Element Management System</td> <td>SESM</td> <td>Subscriber Edge Services Manager</td> </tr> <tr> <td>GW</td> <td>Gateway</td> <td>SIP</td> <td>Session Initiation Protocol</td> </tr> <tr> <td>IAD</td> <td>Integrated Access Device</td> <td>SP</td> <td>Service Pack</td> </tr> <tr> <td>LSC</td> <td>Local Session Controller</td> <td>STIG</td> <td>Security Technical Implementation Guides</td> </tr> <tr> <td>MCP</td> <td>Media Communications Processor</td> <td>SUT</td> <td>System Under Test</td> </tr> <tr> <td>NA</td> <td>Not Applicable</td> <td>UC</td> <td>Unified Capabilities</td> </tr> </table> | | | 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 |
| 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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, 17, and 20 | 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, 17, and 20 | 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, 17, and 20 | 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 20 | 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 20 | 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, 18, and 20 | 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, 18, and 20 | 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, 18, and 20 | 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, 16, and 20 | 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, 16, and 20 | 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, 16, and 20 | 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, 16, and 20 | Not Tested | This interface is not offered by the SUT and it is not required for an LSC. |

Table 2. SUT Interface Interoperability Status (continued)

| Interface | Critical | UCR Reference | Threshold CR/FR (See note 1.) | Status | Remarks |
|--|--|--------------------------|--------------------------------|--|--|
| E1 PRI ITU-T Q.955.3 | No (See note 3.) | 5.3.2.12.10 | 2, 3, 7, 8, 10, 13, 16, and 20 | 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, 16, and 20 | 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 | 18, 19, and 20 | 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 | 18, 19, and 20 | 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 | 18, 19, and 20 | 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. | | | | | |
| 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 notes 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 |

Table 3. SUT Capability Requirements and Functional Requirements Status

| CR/FR ID | Capability/Function | Applicability (See note 1.) | UCR Reference | Status |
|----------|--|-----------------------------|---------------|--|
| 2 | Registration, Authentication, and Failover | | | |
| | Registration | Required | 5.3.2.3.1 | Met |
| | Failover | Required | 5.3.2.3.2 | 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.) |
| 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.) |
| | Line-Side Custom Features Interference | Conditional | 5.3.2.7.2.11 | Met |
| | Loop Avoidance | Required | 5.3.2.7.3 | Not Met (See note 19.) |
| 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 |

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

| CR/FR ID | Capability/Function | Applicability (See note 1.) | UCR Reference | Status |
|--|--|-----------------------------|-----------------------------|--------------------------------------|
| 7 | Call Connection Agent Requirements (continued) | | | |
| | 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 |
| | 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.) |

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

| CR/FR ID | Capability/Function | Applicability (See note 1.) | UCR Reference | Status |
|------------------------|---|-----------------------------|---------------------------|---------------------------------------|
| 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.) |
| | 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 | Other UC Voice Requirements | | | |
| | Other UC Voice Requirements | Required | 5.3.2.31 | Partially Met (See notes 27, 28, 29.) |
| 17 | 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 30.) |
| | Video Telephony – General Rules | Required | 5.3.4.12 | Met |
| | Calling Services | Required | 5.3.4.13 | Partially Met (See note 31.) |
| | 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 32.) |
| | 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 | |
| 18 | IPv6 Requirements | | | |
| | Product Requirements | Required | 5.3.5.4 | Not Met (See notes 33, 34.) |

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

| CR/FR ID | Capability/Function | Applicability (See note 1.) | UCR Reference | Status |
|----------|--|-----------------------------|---------------|-----------------------------------|
| 19 | 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 35, 36.) |
| | NM requirements of Appliance Functions | Required | 5.3.2.18 | Met |
| | Accounting Management | Required | 5.3.2.19 | Met |
| 20 | Information Assurance | | | |
| | Information Assurance Requirements | Required | 5.4 | Met (See note 37.) |

NOTES:

- The annotation of 'required' refers to a high-level requirement category. The applicability of each sub-requirement is provided in Reference (e), Enclosure 3.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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. This discrepancy was fixed and successfully tested with DTR 5, which included SP6.
- 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.
- 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.
- The SUT PEI's were tested and met audio performance requirements.
- 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.
- 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.
- 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.
- 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.
- This interface or capability is a conditional requirement for an LSC and was not tested.
- 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.
- 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.

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

NOTES (continued):

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 stated the intent to remove this requirement from the UCR; therefore, this discrepancy is no longer applicable.
27. Precedence calls above ROUTINE from the Avaya Communication Manager (CM) 6.3 LSCs to an Internet Protocol (IP) End Instrument (EI) on the SUT receive a Blocked Precedence Announcement (BPA) and fail to complete. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
28. The SUT does not provide Precedence Notification Tone (PNT) to an IP EI preempted while in a ringing state. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
29. The SUT dial tone is not in line with required specifications. The SUT dial tone provided when there is a message waiting is a PNT instead of a standard dial tone. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
30. ASAC does not function on the SUT's AS5300 3.0 SP3 LSC with IPv6. This discrepancy was fixed and successfully tested with DTR 5, which included SP6.
31. The SUT only supports one way audio on hold interaction with IAD subscribers with Music on Hold (MoH). DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
32. 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.
33. 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.
34. 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.
35. 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.
36. 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.
37. The IA requirements are tested by an IA test team and the results published in a separate report, Reference (g).

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. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Sensitive but Unclassified IP Data (formerly known as NIPRNet) e-mail. Interoperability status information is available via the JITC System Tracking Program (STP). STP is accessible by .mil/.gov users 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 <https://jit.fhu.disa.mil/>. 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 from the Unified Capabilities Certification Office (UCCO), e-mail: disa.meade.ns.list.unified-capabilities-certification-office@mail.mil. All associated information is available on the DISA UCCO website located at <http://www.disa.mil/Services/Network-Services/UCCO>.

JITC Memo, JTE, Extension of the Special Interoperability Test Certification of the Avaya Aura® Application Server (AS) 5300 with Software Release 3.0 Local Session Controller (LSC)

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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