



## DEFENSE INFORMATION SYSTEMS AGENCY

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

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

**21 Sep 10**

### MEMORANDUM FOR DISTRIBUTION

**SUBJECT:** Extension of the Special Interoperability Test Certification of Avaya S8300/G350 Release Communication Manager (CM) 4.0 (R14x.00.2.732.1) with Service Pack 16538

**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 (h), see Enclosure

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 S8300 Release CM 4.0 (R14x.00.2.732.1) with Service Pack 16538, is hereinafter referred to as the system under test (SUT). The SUT meets all of the critical interoperability requirements and is certified for joint use within the Defense Switched Network (DSN) for the following switch types: Private Branch Exchange (PBX) 1 and PBX 2. The SUT meets the Voice over Internet Protocol critical interoperability requirements with any certified Assured Services Local Area Network (ASLAN) on the Unified Capabilities (UC) Approved Products List (APL). The identified test discrepancies shown in the SUT Interoperability Test Summary have an overall minor operational impact. No other configurations, features, or functions, except those cited within this report, are certified by the JITC. This certification expires upon changes that could affect interoperability, but no later than three years from the date of the original memorandum (21 January 2009).

The S8300 media servers work in conjunction with the G350 complementary media gateways which support multi-protocol environments for concurrent support of Time Division Multiplex (TDM) and Internet Protocol (IP)-based telephony. The SUT can support more than one G350 gateway; however, due to timing issues noted during testing, the SUT is certified with only one G350.

3. The extension of this certification is based upon Desktop Review (DTR) 2. The original certification is based on interoperability testing conducted by JITC, review of the vendor's Letters of Compliance (LoC), and Defense Information System Network (DISN) Security Accreditation Working Group (DSAWG) accreditation. Interoperability testing of the SUT was

conducted at JITC’s Global Information Grid Network Test Facility at Fort Huachuca, Arizona, from 18 August through 3 October 2008 and documented in Reference (c). Review of vendor’s LoC was completed on 21 October 2008. Regression Testing was conducted from 10 through 18 November 2008. The DSAWG granted accreditation on 13 January 2009 based on the security testing completed by DISA-led Information Assurance test teams and published in a separate report, Reference (d). This DTR was requested to include the Avaya IP Softphone Release 6.0. The JITC determined there was a minor risk in approving this DTR because the Avaya IP Softphone was included in Real Time Services (RTS) testing conducted at JITC. The Avaya IP Softphone will be certified with the following client hardware/software or equivalent: Dell Latitude 510/Dell Inspiron 6000, Microsoft Windows XP with Service Pack 3, 1.73 GigaHertz Intel Pentium Processor, and 1 gigabyte of Random Access Memory. The DSAWG accreditation of this DTR was granted on [XX August 2010](#).

4. The interoperability test summary of the SUT is indicated in Table 1. The PBX 1 Capability Requirements (CRs) and Feature Requirements (FRs) are listed in Table 2. This interoperability test status is based on the PBX 1’s ability to meet:

- a. DSN services for Network and Applications specified in Reference (e).
- b. PBX 1 interface and signaling requirements for trunks/lines specified in Reference (f) verified through JITC testing and/or vendor submission of LoC.
- c. PBX 1 CRs/FRs specified in Reference (f) verified through JITC testing and/or vendor submission of LoC.
- d. The overall system interoperability performance derived from test procedures listed in Reference (g).
- e. The overall softphone requirements specified in Reference (h), paragraph 5.3.2.6.1.7.

**Table 1. SUT Interoperability Test Summary**

DSN Trunk Interfaces			
Interface & Signaling	Critical	Status	Remarks
T1 CAS (DTMF, MFR1, DP)	No	Certified	Met all critical CRs and FRs with the following minor exception: Wink start recognition is not within the required tolerance. <sup>1</sup>
E1 CAS (DTMF, MFR1, DP)	No (Europe only)	Certified	Met all critical CRs and FRs with the following minor exception: Wink start recognition is not within the required tolerance. <sup>1</sup>
T1 ISDN PRI NI 1/2 (ANSI T1.619a)	Yes	Certified	Met all critical CRs and FRs.
E1 ISDN PRI (ITU-T Q.955.3)	No (Europe only)	Not Tested	This interface is not supported by the SUT. This is not a required interface for a PBX 1. There is no risk associated with the SUT not supporting this feature.

**Table 1. SUT Interoperability Test Summary (continued)**

<b>DSN Line Interfaces</b>				
<b>Interface &amp; Signaling</b>	<b>Critical</b>	<b>Status</b>	<b>Remarks</b>	
2-Wire Analog (GR-506-CORE)	Yes	Certified	Met all critical CRs and FRs with the following minor exception: Precedence ring cadence not in accordance with UCR requirement. <sup>2</sup>	
ISDN BRI NI 1/2 (ANSI T1.619a)	No	Certified	Met all critical CRs and FRs with the following minor exception: Precedence ring cadence not in accordance with UCR requirement. <sup>2</sup>	
2-Wire Proprietary Digital	No	Certified	Met all critical CRs and FRs with the following minor exception: Precedence ring cadence not in accordance with UCR requirement. <sup>2</sup>	
VoIP	No	Certified	Met all critical CRs and FRs with the following minor exception: Precedence ring cadence not in accordance with UCR requirement. <sup>2</sup>	
<b>DSN Features and Capabilities</b>				
<b>Features and Capabilities</b>	<b>Critical</b>	<b>Status</b>	<b>Remarks</b>	
Common Features	Yes	Certified	Met all critical CRs and FRs with the following minor exceptions: The call pick-up feature does not pick-up the call with the highest precedence or longest ringing call first. <sup>3</sup> Three-way conference members do not maintain their assigned precedence levels. <sup>4</sup>	
Attendant	No	Not Tested	This feature is not supported by the SUT. This is not a required feature for a PBX 1. There is no risk associated with the SUT not supporting this feature.	
Public Safety	Yes	Certified	The SUT met all critical CRs and FRs for Basic 911. Additionally the SUT met the following non-critical CRs and FRs: Tracing of a Terminating Call, Outgoing Call Tracing, and Trace of a Call in Progress.	
Preset Conferencing	No	Not Tested	This feature is not supported by the SUT. This is not a required feature for a PBX 1. There is no risk associated with the SUT not supporting this feature.	
Meet-me Conferencing	Yes	Not Tested	This feature is not supported by the SUT. This is a new UCR requirement and the vendor has until June 2009 to develop this capability.	
Progressive Conferencing	No	Certified	Met all CRs and FRs for Progressive Conferencing with the following minor exception: Progressive Conference members do not maintain their assigned precedence level for each leg of the conference. <sup>5</sup>	
Nailed-up Connections	No	Not Tested	This feature is not supported by the SUT. This is not a required feature for a PBX 1. There is no risk associated with the SUT not supporting this feature.	
DSN Hotline Services	No	Not Certified	The SUT offers this feature however; it does not fully meet all the CRs and FRs for Hotline Services. <sup>6</sup> This is not a required feature for a PBX 1. There is no risk associated with the SUT not supporting this feature.	
MLPP	Yes	Certified	Met all critical CRs and FRs.	
Call Processing	Yes	Certified	Met all critical CRs and FRs.	
ISDN Services	Yes	Certified	Met all critical CRs and FRs.	
Synchronization	Yes	Certified	Met all critical CRs and FRs.	
Reliability	Yes	Certified	Met all critical CRs and FRs.	
Security	Yes	Certified	See note 7.	
VoIP System	No	Certified	The SUT is certified for VoIP specifically with any certified ASLAN posted on the UC APL. The SUT did not meet the IPv6 capability requirement to be compliant no later than 31 December 2008. <sup>8</sup>	
Softphone	No	Certified	The SUT is certified with the Avaya IP Softphone Release 6.0 based upon Desktop Review 2.	
<b>Network Gateways</b>				
<b>Gateway</b>	<b>Interface &amp; Signaling</b>	<b>Critical</b>	<b>Status</b>	<b>Remarks</b>
PSTN	T1 CAS (DTMF, MFR1, DP)	No	Certified	Met all critical CRs and FRs with the following minor exception: Wink start recognition is not within the required tolerance. <sup>1</sup>
	E1 CAS (DTMF, MFR1, DP)	No (Europe only)	Certified	Met all critical CRs and FRs with the following minor exception: Wink start recognition is not within the required tolerance. <sup>1</sup>
	T1 ISDN PRI NI 1/2 (ANSI T1.607)	No	Certified	Met all critical CRs and FRs.
	E1 ISDN PRI (ITU-T Q.931)	No (Europe only)	Not Tested	This interface is not supported by the SUT. This is not a required interface for a PBX 1. There is no risk associated with the SUT not supporting this feature.

**Table 1. SUT Interoperability Test Summary (continued)**

<b>NOTES:</b>			
1	T1 and E1 CAS wink start recognition is not within the required tolerance of 100 ms to 350 ms. The SUT recognizes a wink start signal from 100 ms to 390 ms over a T1 CAS interface and 100 ms to 395 ms over an E1 CAS interface. Since all switches certified with T1 and/or E1 CAS are required to generate a wink start signal from 140-290 ms, this discrepancy has no operational impact on call processing.		
2	The SUT precedence above ROUTINE ring cadence is not within the specification stipulated in the UCR. Since the precedence above ROUTINE ring cadence is distinguished from the ROUTINE ring cadence, there is no operational impact.		
3	The SUT call pickup feature doesn't retrieve the call with the highest precedence first. The SUT retrieves unanswered call pickup group calls above ROUTINE in a random sequence. The UCR requires that "If a call pickup group has more than one party in an unanswered condition and the unanswered parties are at different precedence levels, a call pickup attempt in that group shall retrieve the highest precedence call first." All unanswered precedence calls above ROUTINE in the pickup group do divert after 15-45 seconds if unanswered and are positively connected to either the attendant, night service, or alternate DN. The operational impact is minor.		
4	Three-way conference members do not maintain their assigned precedence levels. Since the SUT classmarks the conference members at the highest precedence level, the operational impact is minor.		
5	Progressive conference members do not maintain their assigned precedence levels for each respective leg of the conference. Since the SUT classmarks all conference members at the highest precedence level, the operational impact is minor.		
6	This feature is supported by SUT. However it does not support ISDN PRI Codeset 5 off Hook Indicator Information Elements for Hotline. This is not a required feature for a PBX 1. There is no risk associated with the SUT not supporting this feature.		
7	Security is tested by DISA-led Information Assurance test teams and published in a separate report, Reference (c).		
8	An IPv6 capable system or product, as defined in the UCR, paragraph 1.7, shall be capable of receiving, processing, and forwarding IPv6 packets and/or interfacing with other systems and protocols in a manner similar to that of IPv4. IPv6 capability is currently satisfied by a vendor Letter of Compliance signed by the Vice President of the company. The vendor stated, in writing, compliance to the following criteria with one exception. The vendor stated in their LoC that the G350 will not be IPv6 compliant. OSD waived this requirement for the G350 on 19 November 2008.		
	a.	Conformant with IPv6 standards profile contained in the Department of Defense Information Technology Standards Registry (DISR).	
	b.	Maintaining interoperability in heterogeneous environments and with IPv4.	
	c.	Commitment to upgrade as the IPv6 standard evolves.	
	d.	Availability of contractor/vendor IPv6 technical support.	
<b>LEGEND:</b>			
ANSI	American National Standards Institute	Mbps	Megabits per second
APL	Approved Products List	MFR1	Multi-Frequency Recommendation 1
ASLAN	Assured Services Local Area Network	MLPP	Multi-Level Precedence and Preemption
BRI	Basic Rate Interface	ms	milliseconds
CAS	Channel Associated Signaling	NI 1/2	National ISDN Standard 1 or 2
CRs	Capability Requirements	OSD	Office of the Secretary of Defense
DISA	Defense Information Systems Agency	PBX 1	Private Branch Exchange 1
DN	Directory Number	PRI	Primary Rate Interface
DP	Dial Pulse	PSTN	Public Switched Telephone Network
DSN	Defense Switched Network	Q.931	Signaling Standard for ISDN
DSS1	Digital Subscriber Signaling 1	Q.955.3	ISDN Signaling standard for E1 MLPP
DTMF	Dual Tone Multi-Frequency	SS7	Signaling System 7
E1	European Basic Multiplex Rate (2.048 Mbps)	SUT	System Under Test
FRs	Feature Requirements	T1	Digital Transmission Link Level 1 (1.544 Mbps)
GR	Generic Requirement	T1.607	ISDN Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1
GR-506-CORE	LSSGR: Signaling for Analog Interfaces	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
IPv4	Internet Protocol version 4	UC	Unified Capabilities
IPv6	Internet Protocol version 6	UCR	Unified Capabilities Requirements
ISDN	Integrated Services Digital Network	VoIP	Voice over Internet Protocol
ITU-T	International Telecommunication Union - Telecommunication Standardization Sector		
LSSGR	Local Access and Transport Area (LATA) Switching Systems Generic Requirements		

**Table 2. PBX 1 Requirements**

DSN Trunk Interfaces				
Interface	Critical	Requirements Required or Conditional	References	
T1 CAS (MFR1, DTMF, DP)	No	<ul style="list-style-type: none"> <li>• PBX Line (C)</li> <li>• Direct Inward Dialing (C)</li> <li>• National ISDN 1/2 Primary Access (R)</li> <li>• ISDN ANSI MLPP Service Capability (R)</li> <li>• ITU-T ISDN Primary Access (Europe only) (C)</li> <li>• ITU-T ISDN Primary Access Digital Subscriber Signaling System Number 1 MLPP (Europe only) (C)</li> <li>• Normal Wink Start Operations (C)</li> <li>• Glare Operation (C)</li> <li>• Abnormal Wink Start (C)</li> <li>• Glare Resolution (C)</li> <li>• Call for Service Timing (R)</li> <li>• Guard Timing (R)</li> <li>• Satellite Timing (C)</li> <li>• Disconnect Control (C)</li> <li>• Reselect and Retrial (C)</li> <li>• Off-Hook Supervision Transition (C)</li> <li>• Dial-Pulse Signals (C)</li> <li>• DTMF Signaling (C)</li> <li>• Standard Digit Format for Precedence (C)</li> <li>• MFR1 2/6 Signaling (C)</li> <li>• Alerting Signals and Tones (R)</li> <li>• DSN ISDN User-to-Network Signaling (R)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR Section 2.3.1</li> <li>• UCR Section 2.3.2</li> <li>• UCR Section 2.3.4.1</li> <li>• UCR Section 2.3.4.1.1</li> <li>• UCR Section 2.3.4.2</li> <li>• UCR Section 2.3.4.2.1</li> <li>• UCR Section 5.3.3.1.1</li> <li>• UCR Section 5.3.3.1.2</li> <li>• UCR Section 5.3.3.2.1</li> <li>• UCR Section 5.3.3.2.2</li> <li>• UCR Section 5.3.5</li> <li>• UCR Section 5.3.6</li> <li>• UCR Section 5.3.7</li> <li>• UCR Section 5.3.8</li> <li>• UCR Section 5.3.9</li> <li>• UCR Section 5.3.10</li> <li>• UCR Section 5.4.1</li> <li>• UCR Section 5.4.2</li> <li>• UCR Section 5.4.2.1</li> <li>• UCR Section 5.4.3</li> <li>• UCR Section 5.5</li> <li>• UCR Section 5.7.1</li> </ul>	
E1 CAS (MFR1, DTMF, DP)	No (Europe only)	<ul style="list-style-type: none"> <li>• Application (R)</li> <li>• Physical Layer (R)</li> <li>• Data Link Layer (R)</li> <li>• Data Link Connection (R)</li> <li>• Peer-to-Peer Procedures of Data-Link Layer (R)</li> <li>• Layer 3 DSN User-to-Network Signaling (R)</li> <li>• DSN User-to-Network Signaling for Circuit-Switched Bearer Services (R)</li> <li>• Sequence of Messages for DSN Circuit-Switched Calls (R)</li> <li>• Message Functional Definition and Content (R)</li> <li>• General Message Format and Information Elements Coding (R)</li> <li>• Supplementary Services (C)</li> <li>• PCM-24 Digital Trunk Interface (R)</li> <li>• Interface Characteristics (R)</li> <li>• Supervisory Channel Associated Signaling (C)</li> <li>• Clear Channel Capability (R)</li> <li>• Alarm and Restoral Requirements (R)</li> <li>• PCM-30 Digital Trunk Interface (Europe only) (C)</li> <li>• Interoperation of PCM-24 and PCM-30 (C)</li> <li>• Analog Trunk Interface (C)</li> <li>• Integrated Digital Loop Carrier (C)</li> <li>• Trunk Group-Remove from Service (C)</li> <li>• Trunk Group-Restore to Service (C)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR Section 5.7.1.1</li> <li>• UCR Section 5.7.1.2</li> <li>• UCR Section 5.7.1.3</li> <li>• UCR Section 5.7.1.3.1</li> <li>• UCR Section 5.7.1.3.2</li> <li>• UCR Section 5.7.1.4</li> <li>• UCR Section 5.7.1.4.2</li> <li>• UCR Section 5.7.1.4.3</li> <li>• UCR Section 5.7.1.4.4</li> <li>• UCR Section 5.7.1.4.5</li> <li>• UCR Section 5.7.1.4.6</li> </ul>	
T1 ISDN PRI NI 1/2 (ANSI T1.619a)	Yes	<ul style="list-style-type: none"> <li>• MOS (R)</li> <li>• Secure calls (R)</li> </ul>	<ul style="list-style-type: none"> <li>• CJCSI 6215.01C</li> <li>• CJCSI 6215.01C</li> </ul>	
E1 ISDN PRI (ITU-T Q.955.3)	No (Europe only)	<ul style="list-style-type: none"> <li>• Analog: ITU-T T.4 (R)</li> </ul>	<ul style="list-style-type: none"> <li>• DISR</li> </ul>	
		Voice	<ul style="list-style-type: none"> <li>• Modem (VBD) (R)</li> <li>• 56 kbps switched data (R: PRI only)</li> <li>• 64 kbps switched data (R: PRI only)</li> <li>• NX56 synchronous BER (R: PRI only)</li> <li>• NX64 synchronous BER (R: PRI only)</li> <li>• Secure data (STE/STU-III) (R)</li> </ul>	<ul style="list-style-type: none"> <li>• CJCSI 6215.01C</li> <li>• UCR Section 3.10</li> <li>• UCR Section 3.10</li> <li>• UCR Section 3.10</li> <li>• UCR Section 3.10</li> <li>• CJCSI 6215.01C</li> </ul>
		Facsimile	<ul style="list-style-type: none"> <li>• ITU-T H.320 (R: PRI only)</li> </ul>	<ul style="list-style-type: none"> <li>• FTR 1080B-2002</li> </ul>
		Data		
		VTC		

**Table 2. PBX 1 Requirements (continued)**

DSN Line Interfaces				
Interface	Critical	Requirements Required or Conditional		References
2-Wire Analog	Yes	Access	<ul style="list-style-type: none"> <li>• Directory Number Identification (R)</li> <li>• National ISDN 1/2 Basic Access (C)</li> <li>• Analog Line (R)</li> <li>• Basic Line Test Capabilities (R)</li> <li>• Advanced Line Test Capabilities (C)</li> <li>• Loop Start Line (R: 2-Wire Analog only)</li> <li>• Reverse Battery (R)</li> <li>• Alerting Signals and Tones (R)</li> <li>• S/T Reference Point (ISDN BRI) (C)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR Section 2.1.1</li> <li>• UCR Section 2.3.3</li> <li>• UCR Section 2.3.5</li> <li>• UCR Section 2.5.4.1.1</li> <li>• UCR Section 2.5.4.1.2</li> <li>• UCR Section 5.2.1</li> <li>• UCR Section 5.3.1</li> <li>• UCR Section 5.5</li> <li>• UCR Section 5.7.1.2.1</li> </ul>
ISDN BRI NI 1/2 (ANSI T1.619a)	No		Voice	<ul style="list-style-type: none"> <li>• MOS (R)</li> <li>• Secure Calls (R)</li> </ul>
2-Wire Proprietary Digital	No	Facsimile	<ul style="list-style-type: none"> <li>• Analog: ITU-T T.4 (R)</li> </ul>	<ul style="list-style-type: none"> <li>• DISR</li> </ul>
		Data	<ul style="list-style-type: none"> <li>• Modem (VBD) (R)</li> <li>• Secure data (STE/STU-III) (R)</li> </ul>	<ul style="list-style-type: none"> <li>• CJCSI 6215.01C</li> <li>• CJCSI 6215.01C</li> </ul>
		VTC	<ul style="list-style-type: none"> <li>• ITU-T H.320 (R: BRI only)</li> </ul>	<ul style="list-style-type: none"> <li>• FTR 1080B-2002</li> </ul>
DSN Features & Capabilities				
Feature/ Capability	Critical	Requirements Required or Conditional		References
Common Features	Yes	<ul style="list-style-type: none"> <li>• Individual Lines (R)</li> <li>• Denied originating service (C)</li> <li>• Code restriction and diversion (C)</li> <li>• Call waiting (R)</li> <li>• Three-way calling (R)</li> <li>• Add-on transfer, conference calling, and call hold (C)</li> <li>• Call Transfer Individual – All calls (R)</li> <li>• Call Transfer - Internal Only (R)</li> <li>• Call Transfer – Individual – Incoming Only/Add-On Consultation Hold – Incoming Call (R)</li> <li>• Call Transfer – Outside (R)</li> <li>• Call Transfer – Add-On Restricted Station (C)</li> <li>• Call Transfer – Attendant (C)</li> <li>• Call Hold (R)</li> <li>• Conference Calling – Six Way Station Controlled (C)</li> <li>• Call forwarding Variable (R)</li> <li>• Call Forward Busy Line (R)</li> <li>• Call Forwarding – Don't Answer – All Calls (R)</li> <li>• Selective Call Forwarding (C)</li> <li>• Call pick-up (C)</li> <li>• Address Translation (C)</li> <li>• Assured Dial Tone (R)</li> </ul>		<ul style="list-style-type: none"> <li>• UCR Section 2.1</li> <li>• UCR Section 2.1.3</li> <li>• UCR Section 2.1.4</li> <li>• UCR Section 2.1.5</li> <li>• UCR Section 2.1.6</li> <li>• UCR Section 2.1.7</li> <li>• UCR Section 2.1.7.1</li> <li>• UCR Section 2.1.7.2</li> <li>• UCR Section 2.1.7.3</li> <li>• UCR Section 2.1.7.4</li> <li>• UCR Section 2.1.7.5</li> <li>• UCR Section 2.1.7.6</li> <li>• UCR Section 2.1.7.7</li> <li>• UCR Section 2.1.7.8</li> <li>• UCR Section 2.1.8.1</li> <li>• UCR Section 2.1.8.2</li> <li>• UCR Section 2.1.8.3</li> <li>• UCR Section 2.1.8.4</li> <li>• UCR Section 2.1.9</li> <li>• UCR Section 2.7</li> <li>• UCR Section 2.9</li> </ul>
Attendant	No	<ul style="list-style-type: none"> <li>• Attendant Features (C)</li> </ul>		<ul style="list-style-type: none"> <li>• UCR Section 2.2</li> </ul>
Public Safety	Yes	<ul style="list-style-type: none"> <li>• Emergency Service (911) Caller (R)</li> <li>• Emergency Service (911) Public Safety Answering Service (C)</li> <li>• Enhanced Emergency Service (E911) (C)</li> <li>• Trace of terminating calls (C)</li> <li>• Outgoing call trace (C)</li> <li>• Trace of a Call in Progress (C)</li> </ul>		<ul style="list-style-type: none"> <li>• UCR Section 2.4.1.1</li> <li>• UCR Section 2.4.1.2</li> <li>• UCR Section 2.4.1.3</li> <li>• UCR Section 2.4.2</li> <li>• UCR Section 2.4.3</li> <li>• UCR Section 2.4.5</li> </ul>
Conferencing	Yes	<ul style="list-style-type: none"> <li>• Preset Conferencing (C)</li> <li>• Meet-Me Conferencing (R)</li> <li>• Progressive Conferencing (C)</li> </ul>		<ul style="list-style-type: none"> <li>• UCR Section 2.6.1</li> <li>• UCR Section 2.6.2</li> <li>• UCR Section 2.6.3</li> </ul>
Nailed-up Connections	No	<ul style="list-style-type: none"> <li>• Nailed-Up Connections (C)</li> </ul>		<ul style="list-style-type: none"> <li>• UCR Section 2.8</li> </ul>
DSN Hotline Services	No	<ul style="list-style-type: none"> <li>• DSN Analog Hotline Service (C)</li> </ul>		<ul style="list-style-type: none"> <li>• UCR Section 2.12</li> </ul>

**Table 2. PBX 1 Requirements (continued)**

DSN Features & Capabilities			
Feature/ Capability	Critical	Requirements Required or Conditional	References
MLPP	Yes	<ul style="list-style-type: none"> <li>• MLPP Overview (R)</li> <li>• Precedence Levels (R)</li> <li>• Announcements (R)</li> <li>• Invocation and Operation (R)</li> <li>• Preemption in the Network (R)</li> <li>• Network Facility with Lower Precedence Calls (R)</li> <li>• Network Facility with Equal or Higher Precedence Calls (R)</li> <li>• MLPP Trunk Selection (R)</li> <li>• Precedence Call Diversion (R)</li> <li>• Channel Associated Signaling (C)</li> <li>• Primary Rate Interface (R)</li> <li>• Analog Line MLPP (R)</li> <li>• ISDN MLPP Basic Rate Interface (C)</li> <li>• ISDN Primary Rate Interface (R)</li> <li>• Precedence Call Waiting (R)</li> <li>• Call Forwarding (R)</li> <li>• Call Transfer (R)</li> <li>• Call Hold (R)</li> <li>• Three-Way Calling (R)</li> <li>• Call Pickup (C)</li> <li>• Conferencing (C)</li> <li>• Multiline Hunt Group (C)</li> <li>• Community of Interest (C)</li> <li>• MLPP Interaction with EKTS features (C)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR Section 3.1</li> <li>• UCR Section 3.1.2</li> <li>• UCR Section 3.1.3</li> <li>• UCR Section 3.1.4</li> <li>• UCR Section 3.2</li> <li>• UCR Section 3.2.1</li> <li>• UCR Section 3.2.2</li> <li>• UCR Section 3.2.3</li> <li>• UCR Section 3.3</li> <li>• UCR Section 3.4.1</li> <li>• UCR Section 3.4.2</li> <li>• UCR Section 3.5</li> <li>• UCR Section 3.6</li> <li>• UCR Section 3.7</li> <li>• UCR Section 3.8.1</li> <li>• UCR Section 3.8.2</li> <li>• UCR Section 3.8.3</li> <li>• UCR Section 3.8.4</li> <li>• UCR Section 3.8.5</li> <li>• UCR Section 3.8.6</li> <li>• UCR Section 3.8.7</li> <li>• UCR Section 3.8.8</li> <li>• UCR Section 3.8.9</li> <li>• UCR Section 3.11</li> </ul>
Call Processing	Yes	<ul style="list-style-type: none"> <li>• Call Treatments (R)</li> <li>• Primary and Alternate Routing (C)</li> <li>• E&amp;M Lead Signaling States (C)</li> <li>• 4-Wire Analog User Access Lines (C)</li> <li>• 2-Wire User Access Lines (R)</li> <li>• Termination of Analog Lines (R)</li> <li>• DSN User Dialing (R)</li> <li>• Interswitch and Intraswitch Dialing (R)</li> <li>• Seven-Digit Dialing (R)</li> <li>• Ten-Digit Dialing (R)</li> <li>• Access Code (R)</li> <li>• Access Digit (R)</li> <li>• Precedence Digit (R)</li> <li>• Service Digit (R)</li> <li>• Route Code (R)</li> <li>• Area Code (R)</li> <li>• Switch Code (R)</li> <li>• Line Number (R)</li> <li>• Calling Name Delivery (C)</li> <li>• Calling Number Delivery (R)</li> <li>• Emergency Service 911 Conflict Resolution (R)</li> <li>• DSN Switch Outpulsing Digit Formats (C)</li> <li>• Standard Directory Number (R)</li> <li>• Standard Test Numbers (C)</li> <li>• Base Services – Abbreviated Numbers (C)</li> <li>• Digit Reception Requirements (R)</li> <li>• Screening (C)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR Section 4.1</li> <li>• UCR Section 4.2</li> <li>• UCR Section 4.3.1</li> <li>• UCR Section 4.3.2</li> <li>• UCR Section 4.3.3</li> <li>• UCR Section 4.3.4</li> <li>• UCR Section 4.5.1.1</li> <li>• UCR Section 4.5.1.2</li> <li>• UCR Section 4.5.1.2.1</li> <li>• UCR Section 4.5.1.2.2</li> <li>• UCR Section 4.5.1.3</li> <li>• UCR Section 4.5.1.3.1</li> <li>• UCR Section 4.5.1.3.2</li> <li>• UCR Section 4.5.1.3.3</li> <li>• UCR Section 4.5.1.4</li> <li>• UCR Section 4.5.1.5</li> <li>• UCR Section 4.5.1.6</li> <li>• UCR Section 4.5.1.7</li> <li>• UCR Section 4.5.1.8.1</li> <li>• UCR Section 4.5.1.8.2</li> <li>• UCR Section 4.5.1.9</li> <li>• UCR Section 4.5.2</li> <li>• UCR Section 4.5.3</li> <li>• UCR Section 4.5.4</li> <li>• UCR Section 4.5.5</li> <li>• UCR Section 4.5.6</li> <li>• UCR Section 4.5.8</li> </ul>

**Table 2. PBX 1 Requirements (continued)**

<b>DSN Features &amp; Capabilities (continued)</b>			
<b>Feature/ Capability</b>	<b>Critical</b>	<b>Requirements Required or Conditional</b>	<b>References</b>
ISDN Services	Yes	<ul style="list-style-type: none"> <li>• BRI Access, Call Control and Signaling (C)</li> <li>• Uniform Interface Configuration for BRIs (C)</li> <li>• Electronic Key Telephone Systems (EKTS) (C)</li> <li>• PRI Access, Call Control and Signaling (R)</li> <li>• PRI Features (R)</li> <li>• Packet Data Features and Capabilities (C)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR Section 10, Table 10-1</li> <li>• UCR Section 10, Table 10-2</li> <li>• UCR Section 10, Table 10-3</li> <li>• UCR Section 10, Table 10-4</li> <li>• UCR Section 10, Table 10-5</li> <li>• UCR Section 10, Table 10-6</li> </ul>
Synchronization	Yes	<ul style="list-style-type: none"> <li>• Line timing mode (R)</li> <li>• Internal Stratum 4 (R)</li> <li>• Synchronization Performance Monitoring Criteria (C)</li> <li>• DS1 Traffic Interfaces (C)</li> <li>• DS0 Traffic Interconnects (C)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR Section 11.1.1.2</li> <li>• UCR Section 11.1.2.2</li> <li>• UCR Section 11.2</li> <li>• UCR Section 11.3</li> <li>• UCR Section 11.4</li> </ul>
Reliability (See note 1.)	Yes	<ul style="list-style-type: none"> <li>• System Availability (R)</li> <li>• Backup Power (R)</li> <li>• Power Components (R)</li> <li>• UPS Requirements (R)</li> <li>• UPS PBX 1 Load Capacity (R)</li> <li>• Backup Power (Environmental) (R)</li> <li>• Alarms (R)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR Section 12.2</li> <li>• UCR Section 12.3</li> <li>• UCR Section 12.3.1</li> <li>• UCR Section 12.3.2</li> <li>• UCR Section 12.3.2.2</li> <li>• UCR Section 12.3.3</li> <li>• UCR Section 12.3.4</li> </ul>
Security	Yes	<ul style="list-style-type: none"> <li>• GR-815, STIGs, and DoDI 8510.bb (DIACAP) (R)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR Section 13</li> </ul>
<b>VoIP</b>			
VoIP System	No	<p>VoIP function is conditional. If VoIP is provided, all of the following requirements must be met:</p> <ul style="list-style-type: none"> <li>• Voice Quality with MOS of 4.0 or better (R)</li> <li>• ITU-T G.711 PCM CODEC (R)</li> <li>• MLPP (R)</li> <li>• Security (R)</li> <li>• Network management (C)</li> <li>• System timing (R)</li> <li>• Latency ≤ 60 milliseconds (R)</li> <li>• IPv6 capable (R)</li> <li>• Service Class Tagging (R)</li> <li>• VoIP System Downtime (IP network 80 min/yr Subscriber 20 min/yr) (R)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR App. 3, para. A3.2.1</li> <li>• UCR App. 3, para. A3.2.2</li> <li>• UCR App. 3, para. A3.2.3</li> <li>• UCR App. 3, para. A3.2.4</li> <li>• UCR App. 3, para. A3.2.5</li> <li>• UCR App. 3, para. A3.2.6</li> <li>• UCR App. 3, para. A3.2.7</li> <li>• UCR App. 3, para. A3.2.8</li> <li>• UCR App. 3, para. A3.2.9</li> <li>• UCR App. 3, para. A3.2.10</li> </ul>
IP Softphone	No	<ul style="list-style-type: none"> <li>• Voice Features and Capabilities IAW Section 5.3.2.2.2.1</li> <li>• System Availability IAW Section 5.3.2.5.2.1</li> <li>• Voice Instrument IAW Section 5.3.2.6.1</li> <li>• Tones and Announcements IAW Section 5.3.2.6.1.1</li> <li>• Audio Codecs IAW Section 5.3.2.6.1.2</li> <li>• Handset Requirements IAW Section 5.3.2.6.1.3</li> <li>• VoIP Sampling Standard IAW Section 5.3.2.6.1.4</li> <li>• Authentication to LSC IAW Section 5.3.2.6.1.5</li> <li>• End Instrument to ASLAN Interface IAW Section 5.3.2.6.3</li> <li>• Network Infrastructure End-to-End Performance Requirements IAW Section 5.3.3</li> <li>• VVoIP DSCP IAW Section 5.3.3.3.2</li> <li>• Information Assurance Requirements IAW Section 5.4</li> </ul>	<ul style="list-style-type: none"> <li>• UCR 2008 Change 1, para. 5.3.2.6.1.7</li> </ul>

**Table 2. PBX 1 Requirements (continued)**

Network Gateways					
Gateway	Critical	Requirements Required or Conditional			References
PSTN (See note 2.)	No	Trunking	<ul style="list-style-type: none"> <li>• Positive Identification Control (C)</li> <li>• On-Netting (C)</li> <li>• Off-Netting (C)</li> <li>• Ground Start Line (R)</li> <li>• Immediate Start (C)</li> <li>• Delay Dial (C)</li> </ul>		<ul style="list-style-type: none"> <li>• CJCSI 6215.01C</li> <li>• CJCSI 6215.01C</li> <li>• CJCSI 6215.01C</li> <li>• UCR Section 5.2.2</li> <li>• UCR Section 5.3.2</li> <li>• UCR Section 5.3.4</li> </ul>
<b>NOTES:</b>					
1 Backup power, power components, UPS requirements, UPS load capacity and alarms are non-testable requirements. It is the responsibility of the respective base/post/camp/station communication agency to provide this with the SUT when installed.					
2 Voice, facsimile, data, and VTC service requirements for PSTN are identical to DSN with the exception of MLPP.					
<b>LEGEND:</b>					
2W	2-Wire	FTR 1080B-2002	Video Teleconferencing Services	PAT	Precedence Access Threshold
A/D	Analog to Digital Conversion	G.711	PCM of voice frequencies	PBX 1	Private Branch Exchange 1
ANSI	American National Standards Institute	GR	Generic Requirement	PCM	Pulse Code Modulation
App.	Appendix	GR-512	LSSGR: Reliability, Section 12	PCM-24	Pulse Code Modulation - 24 Channels
ASLAN	Assured Services Local Area Network	GR-815	Generic Requirements For Network Element/Network System (NE/NS) Security	PCM-30	Pulse Code Modulation - 30 Channels
BER	Bit Error Ratio	H.320	Standard for Narrowband VTC in accordance with	PRI	Primary Rate Interface
BRI	Basic Rate Interface	IAW	Internet Protocol	PSTN	Public Switched Telephone Network
C	Conditional	IP	Internet Protocol version 6	Q.955.3	ISDN Signaling Standard for E1 MLPP
CAS	Channel Associated Signaling	IPv6	Integrated Services Digital Network	R	Required
CCS	Common Channel Signaling	ISDN	Information Technology	SMEO	Small End Office
CJCSI	Chairman of the Joint Chiefs of Staff Instruction	IT	International	SS7	Signaling System 7
CODEC	Coder/Decoder	ITU-T	Telecommunication Union-Telecommunication Standardization Sector	STE	Secure Terminal Equipment
D/A	Digital to Analog Conversion			STIGs	Security Technical Implementation Guides
DIACAP	DoD Information Assurance Certification and Accreditation Process	kbps	kilobits per second	STU-III	Secure Telephone Unit -3rd generation
DISA	Defense Information Systems Agency	KXX	K= any number 2-8; X= any number 1-9	T1	Digital Transmission Link Level 1 (1.544 Mbps)
DISR	DoD IT Standards Registry	LSC	Local Session Controller	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
DoD	Department of Defense	Mbps	Megabits per second	TIA	Telecommunications Industry Association
DP	Dial Pulse	MFR1	Multi-Frequency Recommendation 1	UCR	Unified Capabilities Requirements
DSCP	Differentiated Services Code Point	min	minute	VB	Variable bit data
DSN	Defense Switched Network	MLPP	Multi-Level Precedence and Preemption	VBD	Variable bit data
DTMF	Dual Tone Multi-Frequency	MOS	Mean Opinion Score	VoIP	Voice over Internet Protocol
E1	European Basic Multiplex Rate (2.048 Mbps)	NI 1/2	National ISDN 1 or 2	VVoIP	Voice and Video over IP
EIA	Electronic Industries Alliance	NX56	Data format restricted to multiples of 56 kbps	VTC	Video Teleconferencing
FTR	Federal Telecommunications Recommendation	NX64	Data format restricted to multiples of 64 kbps	WWNDP	Worldwide Numbering and Dialing Plan
		para.	paragraph	yr	year

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

JITC Memo, JTE, Extension of the Special Interoperability Test Certification of Avaya S8300/G350 Release Communication Manager (CM) 4.0 (R14x.00.2.732.1) with Service Pack 16538

<https://stp.fhu.disa.mil>. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at <http://jit.fhu.disa.mil> (NIPRNet), or <http://199.208.204.125> (SIPRNet). Information related to DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at <http://jitc.fhu.disa.mil/tssi>. 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](mailto:ucco@disa.mil).

6. The JITC point of contact is Mr. Khoa Hoang, DSN 879-4376, commercial (520) 538-4376, FAX DSN 879-4347, or e-mail to [khoa.hoang@disa.mil](mailto:khoa.hoang@disa.mil). The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 0807301.

FOR THE COMMANDER:

Enclosure 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 MARCORSSYSCOM, 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) Joint Interoperability Test Command Memo, JTE, "Special Interoperability Test Certification of Avaya S8300/G350 Release Communication Manager (CM) 4.0 (R14x.00.2.732.1) with Service Pack 16538," 21 January 2009
- (d) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Avaya S8300/G350 Release Communication Manager (CM) 4.0 (R14x.00.2.732.1) with Service Pack 16538 (Tracking Number 0807301)," 13 January 2009
- (e) Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 6215.01C, "Policy for Department of Defense Voice Services with Real Time Services (RTS)," 9 November 2007
- (f) Defense Information Systems Agency, "Department of Defense Networks Unified Capabilities Requirements," 21 December 2007
- (g) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006
- (h) Office of the Assistant Secretary of Defense, "Department of Defense Unified Capabilities Requirements 2008 Change 1," 22 January 2010