



DEFENSE INFORMATION SYSTEMS AGENCY

JOINT INTEROPERABILITY TEST COMMAND

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FORT HUACHUCA, ARIZONA 85670-2798

IN REPLY
REFER TO:

Networks and Transport Division (JTE)

13 June 2006

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Special Interoperability Test Certification of the of Avaya G3CSI (ProLogix) with Software Release CM 3.0 (R013i.00.0.340.5) Digital Switching System with Specified Hardware and Firmware (Includes Voice over Internet Protocol)

References: (a) DoD Directive 4630.5, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004
(b) CJCSI 6212.01D, "Interoperability and Supportability of Information Technology and National Security Systems," 8 March 2006

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. Additional references are provided in the enclosure.

2. The Avaya G3CSI (ProLogix) with Software Release CM 3.0 (R013i.00.0.340.5) Digital Switching System with Specified Hardware and Firmware listed in table 1 is hereinafter referred to as the System Under Test (SUT). The SUT met all of its critical interoperability requirements and is certified as interoperable for joint use within the Defense Switched Network (DSN). The SUT was tested and met the critical interoperability requirements for the following DSN switch types: Private Branch Exchange (PBX) 1 and PBX 2. The SUT meets the interoperability requirements set forth in reference (c) and testing was conducted using test procedures derived from reference (d). This Certification expires upon changes that affect interoperability, but no later than three years from the date of the original memorandum for certification, which was 28 October 2005.

3. This certification is based on interoperability testing conducted by the JITC at the Global Information Grid Network Test Facility, Fort Huachuca, Arizona, and review of the vendor's Letters of Compliance (LoC). Interoperability testing of the Avaya G3CSI (ProLogix) with Software Release CM 3.0 (R013i.00.0.340.5) was conducted from 18 May through 5 August 2005 and documented in reference (e). The cards listed in table 1 were not available for the initial interoperability testing and were therefore not covered under that certification. Follow-on testing of the SUT specifically for the cards in table 1 was conducted from 2 through 17 March 2006. Review of the vendor's LoC was completed on 3 May 2006. Users should verify interoperability before deploying the SUT in an environment that varies significantly from that described.

JITC Memo, Special Interoperability Test Certification of the of Avaya G3CSI (ProLogix) with Software Release CM 3.0 (R013i.00.0.340.5) Digital Switching System with Specified Hardware and Firmware (Includes Voice over Internet Protocol)

Table 1. Specified Hardware and Firmware Tested

	Part Description (see note)	Vintage/Version	Software Release
Avaya G3CSI (Prologix)	Processor TN2402	Vintage 9	CM 3.0 (R013i.00.0.340.5)
	DS1 Interface Card (T1/E1) TN464HP	HW1 FW18	
	DS1 Interface Card (T1/E1) TN464HP	HW2 FW18	
	E&M Trunk 4-Wire Board TN760E	Vintage 3	
	Analog Station Card TN793B	Version 18	
	Analog Station Card TN793CP	HW4 FW5	
	Analog Station Card TN793CP	HW7 FW6	
	Analog FXO Module TN747B	Vintages 3, 29	
	IP Media Processor Board TN2302AP	HW20 FW107, HW20 FW108	
	Control LAN Card TN799DP	HW1 FW16	
	Call Classifier Board TN744E	Vintage 2	
	Call Classifier Board TN744E	Vintage 4	
	Processor TN2402	000004	
	Maintenance TN771D	000007	
	Tone Clock Card TN2182C	000004	
	IP Media Processor Board TN2302AP	HW13 FW102	
	Announcement Card TN750C	000013	
	Control LAN Card TN799DP	HW01 FW131	
	Analog Card TN793B	000006	
	DS1 Interface Card TN464HP	HW00 FW117	
DS1 Interface Card TN464GP	HW06 FW017		
BRI Line Card TN556D	000001		
DS1 Interface Card TN2464BP	HW05 FW017		
Digital Line Card TN2224B	000003		
LEGEND:			
BRI	- Basic Rate Interface	HW	- Hardware
CM	- Communication Manager	IP	- Internet Protocol
DS1	- Digital Signal Level 1	LAN	- Local Area Network
E1	- European Basic Multiplex Rate (2.048 Mbps)	Mbps	- Megabits per second
E&M	- Ear & Mouth	T1	- Digital Transmission Link Level 1 (1.544 Mbps)
FW	- Firmware		
NOTE: This certification specifically covers testing of hardware and firmware listed in bold. The other hardware and firmware were tested and covered under a certification letter that was signed on 28 October 2005.			

4. The SUT Interoperability Test Summary is shown in table 2 and the Capability and Functional Requirements used to evaluate the interoperability of the SUT are shown in table 3.

Table 2. 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 exceptions: The SUT acknowledges a wink start signal beyond the maximum 350 ms. ¹ The SUT does not support the correct length of PNT. ² The SUT does not support distinctive ring cadence for ROUTINE and precedence above ROUTINE calls. ³
E1 CAS (DTMF, MFR1, DP)	No (Europe only)	Certified	Met all critical CRs and FRs with the following minor exceptions: The SUT does not support the correct length of PNT. ² The SUT does not support distinctive ring cadence for ROUTINE and precedence above ROUTINE calls. ³
T1 ISDN PRI NI 1/2 (ANSI T1.619a)	Yes	Certified	Met all critical CRs and FRs with the following minor exceptions: The SUT does not support the correct length of PNT. ² The SUT does not support distinctive ring cadence for ROUTINE and precedence above ROUTINE calls. ³

Table 2. SUT Interoperability Test Summary (continued)

JITC Memo, Special Interoperability Test Certification of the of Avaya G3CSI (ProLogix) with Software Release CM 3.0 (R013i.00.0.340.5) Digital Switching System with Specified Hardware and Firmware (Includes Voice over Internet Protocol)

DSN Line Interfaces				
Interface & Signaling	Critical	Status	Remarks	
2-Wire Analog (GR-506-CORE)	Yes	Certified	Met all CRs and FRs.	
ISDN BRI NI 1/2	No	Certified	Met all CRs and FRs.	
2-Wire Proprietary Digital	No	Certified	Met all CRs and FRs.	
VoIP	No	Certified	Met all CRs and FRs.	
DSN Features and Capabilities				
Features and Capabilities	Critical	Status	Remarks	
Common Features	No	Certified	Met all critical CRs and FRs with the following minor exceptions: The SUT does not support priority call pickup with calls above ROUTINE ⁴ and does not allow the two legs of a three-way call to be established at different precedence levels. ⁵	
Attendant	No	Not Tested	This feature is not supported. There is no operational impact because it is not a critical requirement for a PBX 1.	
Public Safety	No	Certified	Met all critical CRs and FRs.	
Preset Conferencing	No	Not Tested	This feature is not supported. There is no operational impact because it is not a critical requirement for a PBX 1.	
Nailed-up Connections	No	Not Tested	This feature is not supported. There is no operational impact because it is not a critical requirement for a PBX 1.	
PAT	No	Not Tested	This feature is not supported. There is no operational impact because it is not a critical requirement for a PBX 1.	
DSN Hotline Services	No	Certified	Met all CRs and FRs.	
Network Management	No	Not Tested	This feature is not supported. There is no operational impact because it is not a critical requirement for a PBX 1.	
ISDN Services (EKTS)	No	Certified	Met all CRs and FRs.	
Synchronization	Yes	Certified	Met all CRs and FRs.	
Reliability	Yes	Certified	Met all CRs and FRs.	
Security	Yes	See note 6.	See note 6.	
VoIP System	No	Certified	Met all CRs and FRs. ⁷	
VoIP LANs	No	Certified	Met all CRs and FRs.	
Network Gateways				
	Interface & Signaling	Critical	Status	Remarks
PSTN	T1 CAS (DTMF, DP)	No	Certified	Met all CRs and FRs.
	E1 CAS (DTMF, DP)	No (Europe only)	Certified	Met all CRs and FRs.
	T1 ISDN PRI NI 1/2 (ANSI T1.607)	No	Certified	Met all CRs and FRs.
	Ground Start Line	Yes	Certified	Met all CRs and FRs.

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Table 2. SUT Interoperability Test Summary (continued)

Network Gateways																																																																																
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DRSN	TPC 2-Wire Analog (GR-506-CORE)	Yes	Certified ⁸	Met all critical CRs and FRs.																																																																												
<p>LEGEND:</p> <table border="0"> <tr> <td>ANSI</td> <td>- American National Standards Institute</td> <td>LSSGR</td> <td>- Local Access and Transport Area (LATA) Switching Systems Generic Requirements</td> </tr> <tr> <td>BR1</td> <td>- Basic Rate Interface</td> <td>Mbps</td> <td>- Megabits per second</td> </tr> <tr> <td>CAS</td> <td>- Channel Associated Signaling</td> <td>MFR1</td> <td>- Multifrequency Recommendation 1</td> </tr> <tr> <td>CRs</td> <td>- Capability Requirements</td> <td>MLPP</td> <td>- Multi-Level Precedence and Preemption</td> </tr> <tr> <td>DISA</td> <td>- Defense Information Systems Agency</td> <td>ms</td> <td>- milliseconds</td> </tr> <tr> <td>DP</td> <td>- Dial Pulse</td> <td>NI 1/2</td> <td>- National ISDN Standard 1 or 2</td> </tr> <tr> <td>DRSN</td> <td>- Defense Red Switch Network</td> <td>PAT</td> <td>- Precedence Access Threshold</td> </tr> <tr> <td>DSN</td> <td>- Defense Switched Network</td> <td>PBX 1</td> <td>- Private Branch Exchange 1</td> </tr> <tr> <td>DSS1</td> <td>- Digital Subscriber Signaling 1</td> <td>PM</td> <td>- Program Manager</td> </tr> <tr> <td>DTMF</td> <td>- Dual Tone Multi-Frequency</td> <td>PNT</td> <td>- Preemption Notification Tone</td> </tr> <tr> <td>E1</td> <td>- European Basic Multiplex Rate (2.048 Mbps)</td> <td>PRI</td> <td>- Primary Rate Interface</td> </tr> <tr> <td>EKTS</td> <td>- Electronic Key Telephone System</td> <td>PSTN</td> <td>- Public Switched Telephone Network</td> </tr> <tr> <td>FRs</td> <td>- Feature Requirements</td> <td>SS7</td> <td>- Signaling System 7</td> </tr> <tr> <td>GR</td> <td>- Generic Requirement</td> <td>SUT</td> <td>- System Under Test</td> </tr> <tr> <td>GR-506</td> <td>- LSSGR: Signaling for Analog Interfaces</td> <td>T1</td> <td>- Digital Transmission Link Level 1 (1.544 Mbps)</td> </tr> <tr> <td>GSCR</td> <td>- Generic Switching Center Requirements</td> <td>T1.607</td> <td>- ISDN Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1</td> </tr> <tr> <td>IPv6</td> <td>- Internet Protocol version 6</td> <td>T1.619a</td> <td>- SS7 and ISDN MLPP Signaling Standard For T1</td> </tr> <tr> <td>ISDN</td> <td>- Integrated Services Digital Network</td> <td>TPC</td> <td>- Twisted Pair Copper</td> </tr> <tr> <td>LAN</td> <td>- Local Area Network</td> <td>VoIP</td> <td>- Voice over Internet Protocol</td> </tr> </table> <p>NOTES:</p> <ol style="list-style-type: none"> The SUT acknowledges a wink start signal beyond the 350 ms maximum (approximately 390 ms). Since switches are required to generate a wink start signal between 140 and 290 ms and this value is less than a glare condition, the operational impact is minor. On an E1 CAS the SUT will correctly acknowledge a wink start signal. The SUT does not support the correct length of PNT when an active call is directly preempted. A three second PNT is sent to the party being preempted instead of sending PNT until the preempted party goes on hook. The operational impact is minor. The SUT does not support the correct distinctive ring cadence in accordance with the GSCR for ROUTINE and precedence above ROUTINE calls placed via a trunk. Since the ROUTINE and precedence above ROUTINE ring cadence are distinctive, the operational impact is minor. The SUT does not support priority Call Pickup with precedence calls above ROUTINE. When a precedence call above ROUTINE is ringing in a call pickup group and a ROUTINE call is also ringing in the same call pickup group, the SUT randomly picks which call to pickup when the feature is activated. Since the higher precedence call is diverted to an alternate directory number if unanswered, the operational impact is minor. The SUT does not support the classmarking of the two legs of a three-way call at different precedence levels. This is due to the fact that the SUT connects all three parties to a single time slot. Instead, the SUT classmarks all the parties at the highest precedence. The operational impact is minor. Information assurance testing is accomplished via DISA-led Information Assurance test teams and published in a separate report. The SUT's IPv6 capability is verified via the vendor's Letters of Compliance. Interoperability certification of the SUT does not constitute DRSN PM approval for connectivity to the DRSN. It is the user's responsibility to request connectivity approval directly from the PM. 					ANSI	- American National Standards Institute	LSSGR	- Local Access and Transport Area (LATA) Switching Systems Generic Requirements	BR1	- Basic Rate Interface	Mbps	- Megabits per second	CAS	- Channel Associated Signaling	MFR1	- Multifrequency Recommendation 1	CRs	- Capability Requirements	MLPP	- Multi-Level Precedence and Preemption	DISA	- Defense Information Systems Agency	ms	- milliseconds	DP	- Dial Pulse	NI 1/2	- National ISDN Standard 1 or 2	DRSN	- Defense Red Switch Network	PAT	- Precedence Access Threshold	DSN	- Defense Switched Network	PBX 1	- Private Branch Exchange 1	DSS1	- Digital Subscriber Signaling 1	PM	- Program Manager	DTMF	- Dual Tone Multi-Frequency	PNT	- Preemption Notification Tone	E1	- European Basic Multiplex Rate (2.048 Mbps)	PRI	- Primary Rate Interface	EKTS	- Electronic Key Telephone System	PSTN	- Public Switched Telephone Network	FRs	- Feature Requirements	SS7	- Signaling System 7	GR	- Generic Requirement	SUT	- System Under Test	GR-506	- LSSGR: Signaling for Analog Interfaces	T1	- Digital Transmission Link Level 1 (1.544 Mbps)	GSCR	- Generic Switching Center Requirements	T1.607	- ISDN Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1	IPv6	- Internet Protocol version 6	T1.619a	- SS7 and ISDN MLPP Signaling Standard For T1	ISDN	- Integrated Services Digital Network	TPC	- Twisted Pair Copper	LAN	- Local Area Network	VoIP	- Voice over Internet Protocol
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Table 3. PBX 1 Requirements

DSN Trunk Interfaces				
Interface	Critical	Requirements Required or Conditional		References
T1 CAS (MFR1, DTMF, DP)	No	Trunking	<ul style="list-style-type: none"> • Framing (R) • Line Code (R) • Signaling (R) • Alarms (R) • WWNDP (R) • Outpulsing digit formats (C: CAS only) • Routing (C) • Trunk Groups (C) • Call Processing (C) • CAS to CCS trunk interworking (C) • PCM-24/PCM-30 Interoperation (C) • Direct Inward Dialing (C) 	<ul style="list-style-type: none"> • GSCR Sect. 7 • GSCR Sect. 7 • GSCR Sect. 5 • GSCR Sect. 2.5.7, 7.1.4 & 7.2.2 • GSCR Sect. 4.5.1 • GSCR Sect. 4.5.2 • GSCR Sect. 4.2 • GSCR Sect. 2.5.5 & 2.5.6 • GSCR Sect. 4 • GSCR Sect. 3.10 • GSCR Sect. 7.3 • GSCR Sect.2.3.2
E1 CAS (MFR1, DTMF, DP)	No (Europe only)			
T1 ISDN PRI NI 1/2 (ANSI T1.619a)	Yes	Facsimile	<ul style="list-style-type: none"> • Analog: TIA/EIA-465-A (R) 	<ul style="list-style-type: none"> • DISR
E1 ISDN PRI (ITU-T Q.955.3)	No (Europe only)	Data	<ul style="list-style-type: none"> • Modem (VBD) (R) • 56 kbps switched data (R: PRI only) • 64 kbps switched data (R: PRI only) • NX56 synchronous BER (R: PRI only) • NX64 synchronous BER (R: PRI only) • Secure data (STE/STU-III) (R) 	<ul style="list-style-type: none"> • CJCSI 6215.01B • GSCR Sect. 3.10 • GSCR Sect. 3.10 • GSCR Sect. 3.10 • GSCR Sect. 3.10 • CJCSI 6215.01B
		VTC	<ul style="list-style-type: none"> • ITU-T H.320 (R: PRI only) 	<ul style="list-style-type: none"> • DISR
DSN Line Interfaces				
2-Wire Analog	Yes	Access	<ul style="list-style-type: none"> • DN Identification (R) • Line signaling (R) • Alerting Signals and Tones (R) • WWNDP (R) • Call Treatments (R) • 2W user access (R: 2-Wire Analog only) • Analog busy/idle (R: 2-Wire Analog only) 	<ul style="list-style-type: none"> • GSCR Sect. 2.1.1 • GSCR Sect. 5.2 • GSCR Sect. 5.5 • GSCR Sect. 4.5 • GSCR Sect. 4.1 • GSCR Sect. 4.3.3 • GSCR Sect. 4.3.4.1
		Voice	<ul style="list-style-type: none"> • MOS (R) • Announcements (R) • MLPP (R) • Secure Calls (R) 	<ul style="list-style-type: none"> • CJCSI 6215.01B • GSCR Sect. 3.1.3 • GSCR Sect. 3.4.3/3.9 • CJCSI 6215.01B
ISDN BRI NI 1/2 (ANSI T1.619a)	No	Facsimile	<ul style="list-style-type: none"> • Analog: TIA/EIA-465-A (R) 	<ul style="list-style-type: none"> • DISR
		Data	<ul style="list-style-type: none"> • Modem (VBD) (R) • 56 kbps switched data (R: BRI only) • 64 kbps switched data (R: BRI only) • NX56 synchronous BER (R: BRI only) • NX64 synchronous BER (R: BRI only) • Secure data (STE/STU-III) (R) 	<ul style="list-style-type: none"> • CJCSI 6215.01B • GSCR Sect. 3.10 • GSCR Sect. 3.10 • GSCR Sect. 3.10 • GSCR Sect. 3.10 • CJCSI 6215.01B
		VTC	<ul style="list-style-type: none"> • ITU-T H.320 (R: BRI only) 	<ul style="list-style-type: none"> • DISR

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Table 3. PBX 1 Requirements (continued)

DSN Features & Capabilities			
Feature/ Capability	Critical	Requirements Required or Conditional	References
Common Features	No	<ul style="list-style-type: none"> • Selective call rejection (C) • Denied originating service (C) • Code restriction and diversion (C) • Call waiting (C) • Three-way calling (C) • Add-on transfer, conference calling, and call hold (C) • Call forwarding (C) • Call pick-up (C) 	<ul style="list-style-type: none"> • GSCR Sect. 2.1.2 • GSCR Sect. 2.1.3 • GSCR Sect. 2.1.4 • GSCR Sect. 2.1.5 • GSCR Sect. 2.1.6 • GSCR Sect. 2.1.7 • GSCR Sect. 2.1.8 • GSCR Sect. 2.1.9
Attendant	No	<ul style="list-style-type: none"> • Initiate all precedence levels (C) • Visual display (C) • Override class of service (C) • Override busy line (C) • Call deflection (C) • Auto recall (C) • Waiting queue (C) 	<ul style="list-style-type: none"> • GSCR Sect. 2.2.1 • GSCR Sect. 2.2.2 • GSCR Sect. 2.2.3 • GSCR Sect. 2.2.4 • GSCR Sect. 2.2.5 • GSCR Sect. 2.2.6 • GSCR Sect. 2.2.7
Public Safety	No	<ul style="list-style-type: none"> • E911 (C) • Trace of terminating calls (C) • Outgoing call trace (C) • Tandem call trace (C) • Trace of a call in progress (C) 	<ul style="list-style-type: none"> • GSCR Sect. 2.4.1 • GSCR Sect. 2.4.2 • GSCR Sect. 2.4.3 • GSCR Sect. 2.4.4 • GSCR Sect. 2.4.5
Preset Conferencing	No	<ul style="list-style-type: none"> • Support 10 bridges; 1 originator and 20 conferees per bridge(C) • Assign up to 20 address numbers per bridge (C) • Use KXX codes for bridge access (C) • Conference notification recorded announcement (C) • Auto retrieval and alternate address (C) • Bridge release (C) • Lost connection (C) • Secondary conferencing (C) • Address translation (C) 	<ul style="list-style-type: none"> • GSCR Sect. 2.6 • GSCR Sect. 2.6 • GSCR Sect. 2.6 • GSCR Sect. 2.6.1 • GSCR Sect. 2.6.2 • GSCR Sect. 2.6.3 • GSCR Sect. 2.6.4 • GSCR Sect. 2.6.5 • GSCR Sect. 2.7
Nailed-up Connections	No	<ul style="list-style-type: none"> • Between any two like terminations (C) • PCM-24 and PCM-30, both CAS and CCS (C) • Supervision passed end-to-end for A/D or D/A (C) • Monitored and auto reconfigure (C) • Support at least 10% of circuits as nailed-up (C) • Non-preemptable (C) 	<ul style="list-style-type: none"> • GSCR Sect. 2.8
PAT	No	<ul style="list-style-type: none"> • Classmark for/not for PAT screening (C) • 7 PAT mechanisms (C) • Outgoing call screening (C) • Functional structure (C) • Simultaneous calls limitation (C) • Overflow process (C) • Decrementing call-in-progress count (C) • Call treatment (C) • Queuing (C) • Attendant calls (C) • Operations measurement registers (C) • Maintenance and Administration of thresholds (C) 	<ul style="list-style-type: none"> • GSCR Sect. 2.11.1 • GSCR Sect. 2.11.1 • GSCR Sect. 2.11.1.1 • GSCR Sect. 2.11.1.2 • GSCR Sect. 2.11.1.3 • GSCR Sect. 2.11.1.4 • GSCR Sect. 2.11.1.5 • GSCR Sect. 2.11.1.6 • GSCR Sect. 2.11.1.7 • GSCR Sect. 2.11.1.8 • GSCR Sect. 2.11.1.9 • GSCR Sect. 2.11.1.10
DSN Hotline Services	No	<ul style="list-style-type: none"> • Hotline restrictions (C) • Auto initiate (C) • Analog and digital (C) • Subscription basis (C) • Protected hotline calling (C) • WWNDP interoperable (C) 	<ul style="list-style-type: none"> • GSCR Sect. 2.12 • GSCR Sect. 2.12 • GSCR Sect. 2.12 • GSCR Sect. 2.12 • GSCR Sect. 2.12.1-4 • GSCR Sect. 2.12.5

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Table 3. PBX 1 Requirements (continued)

DSN Features & Capabilities (continued)			
Feature/ Capability	Critical	Requirements Required or Conditional	References
Network Management	No	<ul style="list-style-type: none"> • Interfaces (C) • Measurements and data generation (C) • Fault management (C) • Configuration management (C) • Accounting management (C) • Performance management (C) • NM controls (C) • Remote access (C) 	<ul style="list-style-type: none"> • GSCR Sect. 9.1 • GSCR Sect. 9.2 • GSCR Sect. 9.3 • GSCR Sect. 9.4 • GSCR Sect. 9.5 • GSCR Sect. 9.6 • GSCR Sect. 9.7 • GSCR Sect. 9.8
ISDN Services	No	<ul style="list-style-type: none"> • EKTS (C) 	<ul style="list-style-type: none"> • GSCR Sect. 10, table 10-3
Synchronization	Yes	<ul style="list-style-type: none"> • Line timing mode (R) • Internal Stratum 4 (R) 	<ul style="list-style-type: none"> • GSCR Sect. 11.1.1.2 • GSCR Sect. 11.1.2.2
Reliability	Yes	<ul style="list-style-type: none"> • GR-512-CORE (R) 	<ul style="list-style-type: none"> • GSCR Sect. 12
Security ¹	Yes	<ul style="list-style-type: none"> • DITSCAP (R) 	<ul style="list-style-type: none"> • GSCR Sect. 13
VoIP			
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"> •MOS 4.0 or better •ITU-T G.711 PCM Codec •Security in accordance with DITSCAP •NM •Line timing •Internal Clock •Latency ≤ 60 ms •IPv6 capable 	<ul style="list-style-type: none"> • GSCR App. 3
LANs	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"> •LAN parameters • CoS/QoS •Policing •VLANs •IEEE Standards Conformance •.99999 availability • Modular devices • 2 second link restoral • LAN NM • Security • Traffic Engineering 	<ul style="list-style-type: none"> • GSCR App. 3

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Table 3. PBX 1 Requirements (continued)

Network Gateways					
Gateway	Critical	Requirements Required or Conditional		References	
PSTN ²	No	Trunking	<ul style="list-style-type: none"> Positive Identification Control (C) On-Netting (C) Off-Netting (C) 	<ul style="list-style-type: none"> CJCSI 6215.01B CJCSI 6215.01B CJCSI 6215.01B 	
DRSN ³	Yes	Access	<ul style="list-style-type: none"> Alerting Signals and Tones (R) Call Processing (R) Call Treatments (R) Analog busy/idle (R) 	<ul style="list-style-type: none"> GSCR Sect. 5.5 GSCR Sect. 4.4 GSCR Sect. 4.1 GSCR Sect. 4.3.4.1 	
		Voice	<ul style="list-style-type: none"> MOS (C) MLPP (C) Secure calls (C) 	<ul style="list-style-type: none"> CJCSI 6215.01B GSCR Sect. 3 CJCSI 6215.01B 	
EMSS	No	CJCS approved requirements not defined.			
NGCS	No	CJCS approved requirements not defined.			
LEGEND:					
2W	- 2-Wire	EIA	- Electronic Industries Alliance	NX56	- Data format restricted to multiples of 56 kbps
A/D	- Analog to Digital Conversion	EKTS	- Electronic Key Telephone System	NX64	- Data format restricted to multiples of 64 kbps
ANSI	- American National Standards Institute	EMSS	- Enhanced Mobile Satellite System	PAT	- Precedence Access Threshold
App.	- Appendix	G.711	- Standard for PCM of Voice Frequencies	PBX 1	- Private Branch Exchange 1
BER	- Bit Error Ratio	GR	- Generic Requirement	PCM	- Pulse Code Modulation
BRI	- Basic Rate Interface	GSCR	- Generic Switching Center Requirements	PCM-24	- Pulse Code Modulation - 24 Channels
C	- Conditional	H.320	- Standard for Narrowband VTC	PCM-30	- Pulse Code Modulation - 30 Channels
CAS	- Channel Associated Signaling	IEEE	- Institute of Electrical and Electronics Engineers, Inc.	PRI	- Primary Rate Interface
CCS	- Common Channel Signaling	IPv6	- Internet Protocol version 6	PSTN	- Public Switched Telephone Network
CJCS	- Chairman of the Joint Chiefs of Staff	ISDN	- Integrated Services Digital Network	Q.955.3	- ISDN Signaling Standard for E1 MLPP
CJCSI	- CJCS Instruction	IT	- Information Technology	QoS	- Quality of Service
CoS	- Class of Service	ITU-T	- International Telecommunication Union - Telecommunication Standardization Sector	R	- Required
D/A	- Digital to Analog Conversion	kbps	- kilobits per second	Sect.	- Section
DISA	- Defense Information Systems Agency	KXX	- K= any number 2-8; X= any number 1-9	SS7	- Signaling System 7
DIRS	- DoD IT Standards Registry	LAN	- Local Area Network	STE	- Secure Terminal Equipment
DITSCAP	- DoD IT Security Certification and Accreditation Process	Mbps	- Megabits per second	STU-III	- Secure Telephone Unit -3rd generation
DN	- Directory Number	LAN	- Local Area Network	T1	- Digital Transmission Link Level 1 (1.544 Mbps)
DoD	- Department of Defense	MFR1	- Multi-Frequency Recommendation 1	T1.619a	- SS7 and ISDN MLPP Signaling Standard for T1
DP	- Dial Pulse	MLPP	- Multi-Level Precedence and Preemption	TIA	- Telecommunications Industry Association
DRSN	- Defense Red Switch Network	MOS	- Mean Opinion Score	TIA/EIA-465-A	- Group 3 Facsimile Apparatus for Document Transmission
DSN	- Defense Switched Network	ms	- milliseconds	VBD	- Variable bit data
DTMF	- Dual Tone Multi-Frequency	NATO	- North Atlantic Treaty Organization	VLAN	- Virtual LAN
E1	- European Basic Multiplex Rate (2.048 Mbps)	NGCS	- NATO Gateway Communication Switch	VoIP	- Voice over Internet Protocol
E911	- Emergency 911 Service	NI 1/2	- National ISDN 1 or 2	VTC	- Video Teleconferencing
		NM	- Network Management	WWNDP	- Worldwide Numbering and Dialing Plan
NOTES:					
1 Information Assurance testing is accomplished by DISA-led Information Assurance test teams in accordance with the Information Assurance Test Plan and published in a separate report.					
2 Voice, facsimile, data, and VTC service requirements for PSTN are identical to DSN with the exception of MLPP.					
3 Facsimile, data, and VTC services are not provided via the DSN to DRSN interface.					

5. No detailed test report was developed in accordance with the Program Manager's request. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Unclassified-But-Sensitive Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive interoperability status information is available via the JITC System Tracking Program (STP). The STP is accessible by .mil/gov users on the NIPRNet at <https://stp.fhu.disa.mil>. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at <http://jit.fhu.disa.mil> (NIPRNet), or <http://199.208.204.125> (SIPRNet). Information related to DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at <http://jitc.fhu.disa.mil/tssi>.

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Enclosure a/s



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ADDITIONAL REFERENCES

- (c) Defense Information Systems Agency (DISA), "Defense Switched Network (DSN) Generic Switching Center Requirements (GSCR), Change 1," 1 March 2005
- (d) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP)," Change 1, Revision 1, 1 June 2005
- (e) Special Interoperability Test Certification of Avaya G3CSI (ProLogix) with Software Release CM 3.0 (R013i.00.0.340.5) Digital Switching Systems (Includes Voice over Internet Protocol), 28 October 2005