



DEFENSE INFORMATION SYSTEMS AGENCY

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

5 Nov 09

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Special Interoperability Test Certification of the Alcatel-Lucent Class 5 Electronic Switching System (5ESS) Very Compact Digital Exchange (VCDX) Digital Switching System with Software Release 5E16.2, Broadcast Warning Message (BWM) 07-0003

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
(c) through (f), see Enclosure

1. References (a) and (b) establish the Defense Information Systems Agency, Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification.

2. The Alcatel-Lucent 5ESS VCDX Digital Switching System with Software Release 5E16.2, BWM 07-0003 is hereinafter referred to as the System Under Test (SUT). The SUT meets the 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: Multifunction Switch (MFS) (except Europe), End Office (EO) (except Europe), Small End Office (SMEO) (except Europe), Private Branch Exchange (PBX) 1, PBX 2, and Deployable Voice Exchange. Therefore, the SUT is not certified by JITC nor approved by the DSN Program Management Office (PMO) for use in Europe as a MFS, EO, or SMEO. The identified test discrepancies shown in the SUT Interoperability Summary that remained open after software patches were applied and regression testing was completed have a 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 affect interoperability, but no later than three years from the date of the original memorandum (10 December 2007).

3. The extension of this certification is based upon Desktop Review (DTR) 5. The original certification is based on interoperability testing conducted by JITC and a review of the vendor's Letters of Compliance (LoC). Certification testing was conducted at JITC's Global Information Grid Network Test Facility at Fort Huachuca, Arizona from 13 August through 24 September 2007 and documented in reference (c). Review of the vendor's LoC was completed on 10 October 2007. This DTR was requested to include software patches BWM09-

JITC Memo, JTE, Extension of the Special Interoperability Test Certification of the Alcatel-Lucent Class 5 Electronic Switching System (5ESS) Very Compact Digital Exchange (VCDX) Digital Switching System with Software Release 5E16.2, Broadcast Warning Message (BWM) 07-0003

0001 and BWM09-0002. The DTR was approved on 14 August 2009. DSAWG accreditation was granted on 28 October 2009.

4. The SUT interoperability test summary is listed in Table 1. The MFS required and conditional Capability Requirements (CRs) and Feature Requirements (FRs) for the SUT are listed in Table 2. This interoperability test summary is based on the SUT's ability to meet:

a. The following network interfaces as specified in reference (d): DSN, Defense Red Switch Network Gateway, Tactical Network Gateway, and Public Switched Telecommunications Network.

b. Interface and signaling requirements for trunk, line, and network management interfaces, and interoperability CRs and FRs derived from reference (e).

c. The overall system interoperability performance derived from test procedures listed in reference (f).

d. Review of the LoC submitted by Alcatel-Lucent.

Table 1. SUT Interoperability Summary

DSN Trunk Interfaces			
Interface & Signaling	Critical	Status	Remarks
T1 CAS (DTMF, MFR1, DP)	Yes	Certified	Met all CRs and FRs.
E1 CAS (DTMF, MFR1, DP)	Yes (Europe only)	Not Tested	This interface is not supported. Therefore, the SUT is not certified by JITC nor approved by the DSN PMO for use in Europe as a MFS, EO, or SMEO. Since this is not a required interface for a MFS except when deployed in Europe, there is no operational impact.
T1 ISDN PRI NI 1/2 (ANSI T1.619a)	Yes	Certified	Met all CRs and FRs with the following exception: Does not support the full range of MLPP service domain. ¹
E1 ISDN PRI (ITU-T Q.955.3)	Yes (Europe only)	Not Tested	This interface is not supported. Therefore, the SUT is not certified by JITC nor approved by the DSN PMO for use in Europe as a MFS, EO, or SMEO. Since this is not a required interface for a MFS except when deployed in Europe, there is no operational impact.
T1 SS7 (ANSI T1.619a)	Yes	Certified	Met all CRs and FRs with the following exceptions: Does not support the full range of MLPP service domain. ¹ Does not have the capability to assign prioritization to the Initial Address Message based on precedence level. ²
E1 SS7 (ITU-T Q.735.3)	Yes (Europe only)	Not Tested	This interface is not supported. Therefore, the SUT is not certified by JITC nor approved by the DSN PMO for use in Europe as a MFS, EO, or SMEO. Since this is not a required interface for a MFS except when deployed in Europe, there is no operational impact.

Table 1. SUT Interoperability Summary (continued)

DSN Line Interfaces			
Interface & Signaling	Critical	Status	Remarks
2-Wire Analog (GR-506-CORE)	Yes	Certified	Met all CRs and FRs with the following exceptions: Does not fully support MLPP functionality on a 3-Party call. ³ Does not properly support MLPP interaction for call pick-up. ⁴
ISDN BRI S/T and U Interface ITU-T Q.931	Yes	Certified	Met all CRs and FRs with the following exceptions: Does not fully support MLPP functionality on a 3-Party call. ³ Does not properly support MLPP interaction for call pick-up. ⁴ The SUT will only support MLPP (voice) with 5E Custom BRI protocol. ⁵
2-Wire Digital and Analog (Proprietary)	No	Not Tested	This interface is not supported. Since this is not a required interface for a MFS, there is no operational impact.
2-Wire Analog Ground Start Line (GR-506-CORE)	Yes	Certified	Met all CRs and FRs.
Voicemail			
Interface	Critical	Status	Remarks
T1 CAS	No	Certified	Met all CRs and FRs.
T1 ISDN PRI NI 1/2 (ANSI T1.607)	No	Certified	Met all CRs and FRs.
Serial SMDI interface ⁶	No	Certified	Met all CRs and FRs.
Automated Call Distributor			
Interface	Critical	Status	Remarks
T1 CAS (DTMF, MFR1, DP)	No	Certified	Met all CRs and FRs. The SUT is certified for use with any ACD on the DSN APL which is certified for this interface.
T1 ISDN PRI NI 1/2 (ANSI T1.607)	No	Certified	Met all CRs and FRs. The SUT is certified for use with any ACD on the DSN APL which is certified for this interface.
Analog	No	Certified	Met all CRs and FRs. The SUT is certified for use with any ACD on the DSN APL which is certified for this interface.
Network Management⁷			
Interface & Signaling	Critical	Status	Remarks
IEEE 802.3 10BaseT Ethernet, TCP/IP	No	Certified	Met all CRs and FRs.
EIA-232 Asynchronous at 9.6 kbps	No	Certified	Met all CRs and FRs.
ITU-T X.25	No	Not-Tested	This interface is not supported. Since this is not a required interface for a MFS, there is no operational impact.
DSN Features and Capabilities			
Features and Capabilities	Critical	Status	Remarks
Common Features	Yes	Certified	Met all CRs and FRs.
Attendant	Yes	Certified	Met all CRs and FRs.
Public Safety	Yes	Certified	Met all CRs and FRs.
Preset Conferencing	Yes	Certified	Met all CRs and FRs. Certified with any conference bridge on the DSN APL which is certified for the same interfaces.
Nailed-up Connections	Yes	Certified	Met all CRs and FRs.
Precedence Access Threshold	No	Certified	Met all CRs and FRs with the following exceptions: Does not support PAT queuing. ⁸
DSN Hotline Services	Yes	Certified	Met all CRs and FRs.
Tandem Switching	Yes	Certified	Met all CRs and FRs.
ISDN Services (EKTS)	No	Not Certified	Does not support MLPP with EKTS. ⁹
Synchronization	Yes	Certified	Met all CRs and FRs.
Reliability	Yes	Certified	Met all CRs and FRs.
Security	Yes	See note 10.	See note 10.

Table 1. SUT Interoperability Summary (continued)

Network Gateways				
Gateway	Interface & Signaling	Critical	Status	Remarks
PSTN	T1 CAS (DTMF, MFR1, DP)	Yes	Certified	Met all CRs and FRs.
	E1 CAS (DTMF, MFR1, DP)	Yes (Europe only)	Not Tested	This interface is not supported. Therefore, the SUT is not certified by JITC nor approved by the DSN PMO for use in Europe as a MFS, EO, or SMEO. Since this is not a required interface for a MFS except when deployed in Europe, there is no operational impact.
	T1 ISDN PRI NI 1/2 (ANSI T1.607)	Yes	Certified	Met all CRs and FRs.
	E1 ISDN PRI (ITU-T Q.931)	Yes (Europe only)	Not Tested	This interface is not supported. Therefore, the SUT is not certified by JITC nor approved by the DSN PMO for use in Europe as a MFS, EO, or SMEO. Since this is not a required interface for a MFS except when deployed in Europe, there is no operational impact.
	Ground Start Line	Yes	Certified	Met all CRs and FRs.
Tactical	T1 CAS (DTMF, MFR1, DP)	Yes	Certified	Met all CRs and FRs.
	E1 CAS (MFR1)	Yes (Europe only)	Not Tested	This interface is not supported. Therefore, the SUT is not certified by JITC nor approved by the DSN PMO for use in Europe as a MFS, EO, or SMEO. Since this is not a required interface for a MFS except when deployed in Europe, there is no operational impact.
DRSN ¹¹	2-Wire Analog (GR-506-CORE)	Yes	Certified	Met all CRs and FRs.
<p>NOTES:</p> <ol style="list-style-type: none"> The SUT does not support the full range of MLPP service domains on the ANSI T1.619a ISDN T1 PRI and the ANSI T1.619a T1 SS7 trunk types. The SUT supports 256 MLPP service domains instead of the required 16,777,216. Since there is only one MLPP service domain used in the DSN, there is no operational impact. The GSCR states that, in case of congestion, IAMs carrying FLASH or FLASH OVERRIDE calls shall be assigned a priority of three, IMMEDIATE calls shall be assigned a priority of two, PRIORITY calls shall be assigned a priority of one, and ROUTINE calls a priority of zero. The SUT does not have the capability to assign prioritization to SS7 IAMs based on precedence level (i.e. FLASH OVERRIDE, FLASH, IMMEDIATE, etc.). The SUT assigns a priority level of one in the IAMs to all precedence levels. Due to the amount of traffic in the DSN, congestion is not possible over the SS7 56 kbps link; therefore there is no operational impact. The GSCR states that when any party of a 3-party call is preempted, the remaining parties will receive a conference disconnect tone. The SUT however, preempts all parties of the conference when the originator of the 3-party call is preempted. Since the originator is properly classmarked at the highest precedence of both legs of the 3-party call, the operational impact is minor. 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 GSCR 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 the attendant, night service, or alternate DN. The same method is used for diverting calls that go to an unattended phone. There is no operational impact because all precedence calls are answered. The SUT only supports MLPP (voice) with 5E Custom protocol on their ISDN BRI interface with their proprietary 8510 instruments and certified Tone Commander ISDN BRI instruments. The Tone Commander ISDN BRI instruments have been tested and are the only ISDN BRI vendor certified for joint use within the DSN for all major DSN switches to include the SUT. In addition, the SUT BRI interface has been tested and is interoperable with all versions of the L3 Communications Secure Terminal Equipment devices using 5E Custom Protocol; therefore, there is no operational impact. The SMDI serial interface is required for voice mail systems to turn on and turn off the voice mail lamp or stutter dial tone. The GSCR NM requirements state that a switch can provide NM capabilities via Ethernet, serial asynchronous (EIA-232), or serial synchronous (ITU-T X.25). The SUT meets all the requirements for NM over EIA-232 asynchronous serial. The SUT met all CRs and FRs for PAT with the following minor exception: PAT Queuing is not supported by the SUT. PAT is a conditional requirement for a MFS which makes the operational impact of this discrepancy minor. The SUT did not meet all CRs and FRs for ISDN services EKTS. The SUT does not support MLPP interaction with telephones assigned the MADN option. This option applies to EKTS ISDN BRI telephones. The SUT does not support MLPP interaction with these instruments when more than one ISDN BRI instrument shares the same DN. Therefore, the EKTS MADN functionality of the SUT is not certified for use in the DSN. The operational impact is minor. Information assurance testing is accomplished via DISA-led Information Assurance test teams and published in a separate report. 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. 				

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Table 1. SUT Interoperability Summary (continued)

LEGEND:			
10BaseT	10 Mbps (Baseband Operation, Twisted Pair) Ethernet	ITU-T	International Telecommunication Union - Telecommunication Standardization Sector
802.3	Standard for carrier sense multiple access with collision detection at 10 Mbps	JITC	Joint Interoperability Test Command
ACD	Automated Call Distributor	kpbs	kilobits per second
ANSI	American National Standards Institute	MADN	Multiple Appearance Directory Number
APL	Approved Products List	Mbps	Megabits per second
BRI	Basic Rate Interface	MFR1	Multifrequency Recommendation 1
CAS	Channel Associated Signaling	MFS	Multifunction Switch
CRs	Capability Requirements	MLPP	Multi-Level Precedence and Preemption
DCE	Data Circuit-Terminating Equipment	NI 1/2	National ISDN Standard 1 or 2
DISA	Defense Information Systems Agency	NM	Network Management
DN	Directory Number	PAT	Precedence Access Threshold
DP	Dial Pulse	PM	Program Manager
DRSN	Defense Red Switch Network	PMO	Program Management Office
DSN	Defense Switched Network	PRI	Primary Rate Interface
DSS1	Digital Subscriber Signaling 1	PSTN	Public Switched Telephone Network
DTE	Data Terminal Equipment	Q.735.3	SS7 Signaling Standard for E1 MLPP
DTMF	Dual Tone Multi-Frequency	Q.931	Signaling Standard for ISDN
E1	European Basic Multiplex Rate (2.048 Mbps)	Q.955.3	ISDN Signaling standard for E1 MLPP
EIA	Electronic Industries Alliance	SMDI	Simplified Message Desk Interface
EIA-232	Standard for defining the mechanical and electrical characteristics for connecting DTE and DCE data communications devices	SMEO	Small End Office
EKTS	Electronic Key Telephone System	SS7	Signaling System 7
EO	End Office	S/T	ISDN BRI four-wire interface
FRs	Feature Requirements	SUT	System Under Test
GR	Generic Requirement	T1	Digital Transmission Link Level 1 (1.544 Mbps)
GR-506-CORE	Telcordia Signaling for Analog Interface Generic Requirement	T1.607	ISDN – Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1
GSCR	Generic Switching Center Requirements	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
IAM	Initial Address Message	TCP/IP	Transmission Control Protocol/Internet Protocol
IEEE	Institute of Electrical and Electronics Engineers	U	ISDN BRI two-wire interface
ISDN	Integrated Services Digital Network	X.25	Interface between DTE and DCE for terminals operating in the packet mode and connected to public data networks by dedicated circuit

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Table 2. MFS Requirements

DSN Trunk Interfaces					
Interface	Critical	Requirements Required or Conditional		References	
T1 SS7 (ANSI T1.619a)	Yes	Trunking	<ul style="list-style-type: none"> • Framing (R) • Line Code (R) • Signaling (R) • Alarms (R) 	<ul style="list-style-type: none"> • GSCR Section 7 • GSCR Section 7 • GSCR Section 5 • GSCR Section 2.5.7, 7.1.4 & 7.2.2 	
E1 SS7 (ITU-T Q.735.3)	Yes (Europe only)		<ul style="list-style-type: none"> • WWNDP (R) • Outpulsing digit formats (R: CAS only) • Routing (R) • Trunk Groups (R) • CAS to CCS trunk interworking (R) • PCM-24/PCM-30 Interoperation (R) • Direct Inward Dialing (R) 	<ul style="list-style-type: none"> • GSCR Section 4.5.1 • GSCR Section 4.5.2 • GSCR Section 4.2 • GSCR Section 2.5.5 & 2.5.6 • GSCR Section 3.10 • GSCR Section 7.3 • GSCR Section 2.3.2 	
T1 CAS (MFR1, DTMF, DP)	Yes		Voice	<ul style="list-style-type: none"> • MOS (R) • MLPP (R) • Secure calls (R) 	<ul style="list-style-type: none"> • CJCSI 6215.01B • GSCR Section 3 • CJCSI 6215.01B
E1 CAS (MFR1, DTMF, DP)	Yes (Europe only)			Facsimile	<ul style="list-style-type: none"> • Analog: TIA/EIA-465-A (R)
T1 ISDN PRI NI 1/2 (ANSI T1.619a)	Yes		Data	<ul style="list-style-type: none"> • Modem (VBD) (R) • 56 kbps switched data (R) • 64 kbps switched data (R: E1, PRI, and SS7) • NX56 synchronous BER (R) • NX64 synchronous BER (R: E1, PRI, and SS7) • Secure data (STE/STU-III) (R) 	<ul style="list-style-type: none"> • CJCSI 6215.01B • GSCR Section 3.10 • GSCR Section 3.10 • GSCR Section 3.10 • GSCR Section 3.10 • CJCSI 6215.01B
E1 ISDN PRI (ITU-T Q.955.3)	Yes (Europe Only)			VTC	<ul style="list-style-type: none"> • ITU-T H.320 (R)
DSN Line Interfaces					
2-Wire Analog	Yes	Access	<ul style="list-style-type: none"> • Directory Number Identification (R) • Line signaling (R) • Loop Start Line (R: 2-Wire Analog only) • Analog Ground Start (R) • Alerting Signals and Tones (R) • WWNDP (R) • Call Processing (R) • Call Treatments (R) • 2-Wire user access (R: 2-Wire Analog only) • Analog busy/idle (R: 2-Wire Analog only) 	<ul style="list-style-type: none"> • GSCR Section 2.1.1 • GSCR Section 5.2 • GSCR Section 5.2.1 • GSCR Section 5.2.2 • GSCR Section 5.5 • GSCR Section 4.5 • GSCR Section 4.4 • GSCR Section 4.1 • GSCR Section 4.3.3 • GSCR Section 4.3.4.1 	
ISDN BRI NI 1/2 (ANSI T1.619a)	Yes		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 Section 3.1.3 • GSCR Section 3.4.3/3.9 • CJCSI 6215.01B
Proprietary	No	Facsimile		<ul style="list-style-type: none"> • Analog: TIA/EIA-465-A (R) 	<ul style="list-style-type: none"> • DISR
IEEE 802.3 TCP/IP	No	Data	<ul style="list-style-type: none"> • Modem (VBD) (R: 2-Wire analog only) • 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 Section 3.10 • GSCR Section 3.10 • GSCR Section 3.10 • GSCR Section 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 2. MFS Requirements (continued)

Voice Mail Interfaces			
T1 CAS T1 ISDN PRI with B Channel Transfer Serial SMDI Interface	No	<ul style="list-style-type: none"> FCC Part15/Part 68 (R) DTMF outpulsing (C) ROUTINE precedence only in accordance with GSCR, Section 3.3 (R) 	<ul style="list-style-type: none"> GSCR A7.5 GSCR A7.5, 5.4.1, 5.4.2 GSCR A7.5.5
ACD Interfaces			
T1 CAS (DTMF, MFR1, DP) T1 ISDN PRI NI 1/2 (ANSI T1.607) Analog	No	<ul style="list-style-type: none"> DTMF outpulsing (C) TIA/EIA-470-B (R): Analog only PCM-24 as specified in GSCR, section 7.1 (R) ROUTINE precedence only in accordance with GSCR, Section 3.3 (R) 	<ul style="list-style-type: none"> GSCR Sect. A7.5, 5.4.1, 5.4.2 GSCR A7.5.1 GSCR Sect. A7.5.5 GSCR Sect. A7.5.5
DSN Features & Capabilities			
Feature/ Capability	Critical	Requirements Required or Conditional	References
Common Features	Yes	<ul style="list-style-type: none"> Selective call rejection (C) Denied originating service (C) Code restriction and diversion (R) 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 Section 2.1.2 GSCR Section 2.1.3 GSCR Section 2.1.4 GSCR Section 2.1.5 GSCR Section 2.1.6 GSCR Section 2.1.7 GSCR Section 2.1.8 GSCR Section 2.1.9
Attendant	Yes	<ul style="list-style-type: none"> Initiate all precedence levels (R) Visual display (R) Override class of service (R) Override busy line (R) Call deflection (R) Auto recall (R) Waiting queue (R) Release to pivot (R: SS7 only) 	<ul style="list-style-type: none"> GSCR Section 2.2.1 GSCR Section 2.2.2 GSCR Section 2.2.3 GSCR Section 2.2.4 GSCR Section 2.2.5 GSCR Section 2.2.6 GSCR Section 2.2.7 GSCR Section 2.2.8
Public Safety	Yes	<ul style="list-style-type: none"> Basic Emergency Service (911) (C) Trace of terminating calls (R) Outgoing call trace (R) Tandem call trace (R) Trace of a call in progress (R) 	<ul style="list-style-type: none"> GSCR Section 2.4.1 GSCR Section 2.4.2 GSCR Section 2.4.3 GSCR Section 2.4.4 GSCR Section 2.4.5
Preset Conferencing	Yes	<ul style="list-style-type: none"> Support 10 bridges; 1 originator and 20 conferees per bridge (R) Assign up to 20 address numbers per bridge (R) Use KXX codes for bridge access (R) Conference notification recorded announcement (R) Auto retrieval and alternate address (R) Bridge release (R) Lost connection (R) Secondary conferencing (R) Address translation (R) 	<ul style="list-style-type: none"> GSCR Section 2.6 GSCR Section 2.6 GSCR Section 2.6 GSCR Section 2.6.1 GSCR Section 2.6.2 GSCR Section 2.6.3 GSCR Section 2.6.4 GSCR Section 2.6.5 GSCR Section 2.7
Nailed-up Connections	Yes	<ul style="list-style-type: none"> Between any two like terminations (R) PCM-24 and PCM-30, both CAS and CCS (R) Supervision passed end-to-end for A/D or D/A (R) Monitored and auto reconfigure (R) Support at least 10% of circuits as nailed-up (R) Non-preemptable (R) 	<ul style="list-style-type: none"> GSCR Section 2.8

Table 2. MFS Requirements (continued)

DSN Features & Capabilities			
Feature/ Capability	Critical	Requirements Required or Conditional	References
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) • Operation measurement registers (C) • Maintenance and Administration of thresholds (C) 	<ul style="list-style-type: none"> • GSCR Section 2.11.1 • GSCR Section 2.11.1 • GSCR Section 2.11.1.1 • GSCR Section 2.11.1.2 • GSCR Section 2.11.1.3 • GSCR Section 2.11.1.4 • GSCR Section 2.11.1.5 • GSCR Section 2.11.1.6 • GSCR Section 2.11.1.7 • GSCR Section 2.11.1.8 • GSCR Section 2.11.1.9 • GSCR Section 2.11.1.10
DSN Hotline Services	Yes	<ul style="list-style-type: none"> • Hotline restrictions (R) • Auto initiate (R) • Analog and digital (R) • Subscription basis (R) • Protected hotline calling (R) • WWNDP interoperable (R) 	<ul style="list-style-type: none"> • GSCR Section 2.12 • GSCR Section 2.12 • GSCR Section 2.12 • GSCR Section 2.12 • GSCR Section 2.12.1-4 • GSCR Section 2.12.2
Tandem Switching	Yes	<ul style="list-style-type: none"> • Tandem Features (R) 	<ul style="list-style-type: none"> • GSCR Section 8 table 8-1
Network Management	Yes	<ul style="list-style-type: none"> • Interfaces (R) • Measurements and data generation (R) • Fault management (R) • Configuration management (R) • Accounting management (R) • Performance management (R) • Network Management controls (R) • Remote access (R) 	<ul style="list-style-type: none"> • GSCR Section 9.1 • GSCR Section 9.2 • GSCR Section 9.3 • GSCR Section 9.4 • GSCR Section 9.5 • GSCR Section 9.6 • GSCR Section 9.7 • GSCR Section 9.8
ISDN Services	No	<ul style="list-style-type: none"> • Electronic Key Telephone Systems (EKTS) (C) 	<ul style="list-style-type: none"> • GSCR Section 10, Table 10-3
Synchronization	Yes	<ul style="list-style-type: none"> • External line timing mode (R) • Line timing mode (R) • Internal Stratum 3 (R) 	<ul style="list-style-type: none"> • GSCR Section 11.1.1.1 • GSCR Section 11.1.1.2 • GSCR Section 11.1.2.1
Reliability	Yes	<ul style="list-style-type: none"> • GR-512-CORE (R) 	<ul style="list-style-type: none"> • GSCR Section 12
Security	Yes	<ul style="list-style-type: none"> • GR-815, STIGs, and DIACAP (replacement for DITSCAP) (R) 	<ul style="list-style-type: none"> • GSCR Section 13

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Table 2. MFS Requirements (continued)

Network Gateways				
Gateway	Critical	Requirements Required or Conditional		References
PSTN ¹	Yes	Trunking	<ul style="list-style-type: none"> • Positive Identification Control (R) • On-Netting (R) • Off-Netting (R) 	<ul style="list-style-type: none"> • CJCSI 6215.01B • CJCSI 6215.01B • CJCSI 6215.01B
Tactical ²	Yes	Trunking	<ul style="list-style-type: none"> • Trunk Groups (R) • Call Processing (R) 	<ul style="list-style-type: none"> • GSCR Section 2.5.5 & 2.5.6 • GSCR Section 4
		Voice	<ul style="list-style-type: none"> • MLPP (R) • Secure calls (R) 	<ul style="list-style-type: none"> • GSCR Section 3 • CJCSI 6215.01B
		Facsimile	<ul style="list-style-type: none"> • Analog: TIA/EIA-465-A (R) 	<ul style="list-style-type: none"> • DISR
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 Section 5.5 • GSCR Section 4.4 • GSCR Section 4.1 • GSCR Section 4.3.4.1
		Voice	<ul style="list-style-type: none"> • MOS (R) • MLPP (R) • Secure calls (R) 	<ul style="list-style-type: none"> • CJCSI 6215.01B • GSCR Section 3 • CJCSI 6215.01B

NOTES:
1 Voice, facsimile, data, and VTC service requirements for PSTN are identical to DSN with the exception of MLPP.
2 Data and VTC services are not provided via the DSN to tactical (SMU) interface.
3 Facsimile, data, and VTC services are not provided via the DSN to DRSN interface.

JITC Memo, JTE, Extension of the Special Interoperability Test Certification of the Alcatel-Lucent Class 5 Electronic Switching System (5ESS) Very Compact Digital Exchange (VCDX) Digital Switching System with Software Release 5E16.2, Broadcast Warning Message (BWM) 07-0003

Table 2. MFS Requirements (continued)

LEGEND:					
802.3	Standard for carrier sense multiple access with collision detection at 10 Mbps	GSCR	Generic Switching Center Requirements	PRI	Primary Rate Interface
A	Appendix	H.320	Standard for Narrowband VTC	PSTN	Public Switched Telephone Network
A/D	Analog to Digital Conversion	IEEE	Institute of Electrical and Electronics Engineers	Q.735.3	SS7 Signaling Standard for E1 MLPP
ACD	Automated Call Distributor	IEEE	Institute of Electrical and Electronics Engineers	Q.955.3	ISDN Signaling standard for E1 MLPP
ANSI	American National Standards Institute	ISDN	Integrated Services Digital Network	R	Required
BER	Bit Error Ratio	IT	Information Technology	SMDI	Simplified Message Desk Interface
BRI	Basic Rate Interface	ITU-T	International Telecommunication Union - Telecommunication	SMU	Switch Multiplexer Unit
C	Conditional	ITU-T	International Telecommunication Standardization Sector	SS7	Signaling System 7
CAS	Channel Associated Signaling	ITU-T	International Telecommunication Standardization Sector	STE	Secure Terminal Equipment
CCS	Common Channel Signaling	ITU-T	International Telecommunication Standardization Sector	STIGs	Security Technical Implementation Guides
CJCSI	Chairman of the Joint Chiefs of Staff Instruction	kbps	kilobits per second	STU-III	Secure Telephone Unit - 3rd generation
D/A	Digital to Analog Conversion	KXX	K= any number 2-8; X= any number 1-9	T1	Digital Transmission Link Level 1 (1.544 Mbps)
DIACAP	DoD Information Assurance Certification and Accreditation Process	LSSGR	Local Access and Transport Area (LATA) Switching Systems Generic Requirements	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
DISR	DoD IT Standards Registry	Mbps	Megabits per second	TCP/IP	Transmission Control Protocol/Internet Protocol
DITSCAP	DoD IT Security Certification and Accreditation Process	MFR1	Multi-Frequency Recommendation 1	TIA	Telecommunications Industry Association
DoD	Department of Defense	MFS	Multifunction Switch	TIA/EIA-465-A	Group 3 Facsimile Apparatus for Document Transmission
DP	Dial Pulse	MLPP	Multi-Level Precedence and Preemption	TIA/EIA-470-B	Performance and Compatibility Requirements for Telephone Sets with Loop Signaling
DRSN	Defense Red Switch Network	MOS	Mean Opinion Score	VBD	Variable bit data
DSN	Defense Switched Network	NI 1/2	National ISDN Standard 1 or 2	VTC	Video Teleconferencing
DTMF	Dual Tone Multi-Frequency	NX56	Data format restricted to multiples of 56 kbps	WWNDP	Worldwide Numbering and Dialing Plan
E1	European Basic Multiplex Rate (2.048 Mbps)	NX64	Data format restricted to multiples of 64 kbps		
EIA	Electronic Industries Alliance	PAT	Precedence Access Threshold		
FCC	Federal Communications Commission	PCM-24	Pulse Code Modulation - 24 Channels		
GR	Generic Requirement	PCM-30	Pulse Code Modulation - 30 Channels		
GR-512	LSSGR: Reliability, Section 12				
GR-815	Generic Requirements For Network Element/Network System (NE/NS) Security				

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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6. The JITC point of contact is Mr. Joseph Roby, DSN 879-0507, commercial (520) 538-0507, FAX DSN 879-4347, or e-mail to joseph.robby@disa.mil. The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 0706704.

FOR THE COMMANDER:

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DOT&E, Net-Centric Systems and Naval Warfare

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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) JITC Memo, JTE, "Special Interoperability Test Certification of the Alcatel-Lucent Class 5 Electronic Switching System (5ESS) Very Compact Digital Exchange (VCDX) Digital Switching System with Software Release 5E16.2, Broadcast Warning Message (BWM) 07-0003," 10 December 2007
- (d) Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 6215.01B, "Policy for Department of Defense Voice Services," 23 September 2001
- (e) Defense Information Systems Agency, "Department of Defense Voice Networks Generic Switching Center Requirements (GSCR), Errata Change 2," 14 December 2006, Revised 27 March 2007
- (f) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006