



DEFENSE INFORMATION SYSTEMS AGENCY

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

8 Jul 09

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Special Interoperability Test Certification of the Alcatel-Lucent 1665 Data Multiplexer (DMX) with Software Release 7.1.2 and 1665 Data Multiplexer Extend (DMXtend) with Software Release 5.1.2

References: (a) DoD Directive 4630.5, "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 (e), 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 Alcatel-Lucent Alcatel-Lucent 1665 DMX with Software Release 7.1.2 and 1665 DMXtend with Software Release 5.1.2 are hereinafter referred to as the System Under Test (SUT). The SUT met all of the interface and functional requirements and is certified for joint use within the DSN as a and Strategic Network Element (S-NE) as set forth in appendices 5 and 9 of reference (c) using test procedures derived from reference (d). The SUT offers an Internet Protocol (IP) interface; however, as determined by the vendor's documentation their supported IP interfaces do not support Voice over IP traffic. Therefore, this interface was not tested and is not certified, nor authorized for use within the DSN. No other configurations, features, or functions, except those cited within this report, are certified by the JITC, or authorized by the Program Management Office for use within the DSN. This certification expires upon changes that affect interoperability, but no later than three years from the date of the original memorandum (23 February 2009).
3. The extension of this certification is based upon a desktop review and Defense Information Assurance (IA)/Security Accreditation Working Group (DSAWG) accreditation. The original certification is based on interoperability testing of the SUT, review of the vendor's Letters of Compliance (LoC), and DSAWG accreditation. Interoperability testing was conducted by JITC at the Global Information Grid Network Test Facility, Fort Huachuca, Arizona, from 29 September through 10 October 2008 and documented in reference (e). Review of vendor's LoC was completed on 7 November 2008. DSAWG grants accreditation based on the security testing completed by DISA-led Information Assurance test teams and published in a separate report (reference (f)). DSAWG accreditation was granted on 10 February 2009. A desktop review was

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requested to include Ethernet transport to the certified fielded options. The desktop review request was approved on 7 May 2009. DSAWG accreditation was granted on 30 June 2009.

4. The SUT Interoperability Test Summary is shown in Table 1 and the Capability and Feature Requirements used to evaluate the interoperability of the SUT are indicated in Table 2.

Table 1. SUT Interoperability Test Summary

DSN Access Interfaces				
Interface & Signaling		Critical	Status	Remarks
T1 CAS (AMI/SF) DTMF, DP, MFR1		No ¹	Certified	Met all CRs and FRs.
T1 CAS (B8ZS/ESF) DTMF, DP, MFR1		No ¹	Certified	Met all CRs and FRs.
T1 PRI (ANSI T1.619a)		No ¹	Certified	Met all CRs and FRs.
T1 SS7 (ANSI T1.619a)		No ¹	Certified	Met all CRs and FRs.
DS3		No ¹	Certified	Met all CRs and FRs.
100BaseT		No ¹	Certified	Met all CRs and FRs.
100BaseTX		No ¹	Certified	Met all CRs and FRs.
1000BaseSX		No ¹	Certified	Met all CRs and FRs.
1000BaseLX		No ¹	Certified	Met all CRs and FRs.
DSN Transport Interfaces				
Optical Carrier Level	Transport Level	Critical	Status	Remarks
OC-3	VT1.5	No ²	Certified	Met all CRs and FRs.
	STS-1	No ²	Certified	Met all CRs and FRs.
OC-12	VT1.5	No ²	Certified	Met all CRs and FRs.
	STS-1	No ²	Certified	Met all CRs and FRs.
OC-48	VT1.5	No ²	Certified	Met all CRs and FRs.
	STS-1	No ²	Certified	Met all CRs and FRs.
OC-192	VT1.5	No ²	Certified	Met all CRs and FRs.
	STS-1	No ²	Certified	Met all CRs and FRs.
Features And Capabilities				
Features and Capabilities		Critical	Status	Remarks
Synchronization		Yes	Certified	Met all CRs and FRs.
Network Management		Yes	Certified	Met all CRs and FRs.
Security		Yes	Certified	See note 3.
NOTES:				
1 The UCR does not stipulate a minimum Access interface requirement for a Strategic Network Element.				
2 The UCR does not stipulate a minimum Transport interface requirement for a Strategic Network Element.				
3 Information assurance testing is accomplished via DISA-led Information Assurance test teams and published in a separate report, reference (f).				

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Table 1. SUT Interoperability Test Summary (continued)

LEGEND:			
100BaseT	100 Mbps (Baseband Operation, Twisted Pair) Ethernet	Gbps	Gigabits per second
100BaseTX	100 Mbps Ethernet over Category 5 Twisted Pair Copper	ISDN	Integrated Services Digital Network
1000BaseLX	1000 Mbps Baseband Optical, Long Range	Mbps	Megabits per second
1000BaseSX	1000 Mbps Baseband Optical, Short Range	MFR1	Multi-Frequency Recommendation 1
AMI	Alternate Mark Inversion	MLPP	Multi-Level Precedence and Preemption
ANSI	American National Standards Institute	OC-3	Optical Carrier Level 3 (155 Mbps)
B8ZS	Bipolar Eight Zero Substitution	OC-12	Optical Carrier Level 12 (622 Mbps)
CAS	Channel Associated Signaling	OC-48	Optical Carrier Level 48 (2.448 Gbps)
CRs	Capability Requirements	OC-192	Optical Carrier Level 192 (10 Gbps)
DISA	Defense Information Systems Agency	PRI	Primary Rate Interface
DP	Dial Pulse	SF	Super Frame
DS3	Digital Signal Level 3 (44.736 Mbps)	SS7	Signaling System 7
DSN	Defense Switched Network	SUT	System Under Test
DTMF	Dual Tone Multi-Frequency	STS-1	Synchronous Transport Signal-1
ESF	Extended Super Frame	T1	Digital Transmission Link Level 1 (1.544 Mbps)
FRs	Feature Requirements	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
		VT1.5	Virtual Tributary 1.5
		UCR	Unified Capabilities Requirements

Table 2. SUT Capability and Feature Interoperability Requirements

DSN Access Interfaces			
Interface	Critical	Requirements Required or Conditional	References
T1 CAS	No ¹		
T1 SS7 (ANSI T1.619a)	No ¹	<ul style="list-style-type: none"> • DS1 Interface Characteristics (R) • DS1 Supervisory Channel Associated Signaling (R) • DS1 Clear Channel Capability (R) 	<ul style="list-style-type: none"> • UCR App. A9.5.1.2.4 • UCR App. A9.5.1.2.4 • UCR App. A9.5.1.2.4
T1 ISDN PRI (ANSI T1.619a)	No ¹	<ul style="list-style-type: none"> • DS1 Alarm and Restoral Requirements (R) • MOS (R) • BERT (R) 	<ul style="list-style-type: none"> • UCR App. A9.5.1.2.4 • UCR App. A9.5.1.1 • UCR App. A9.5.1.1
DS3	No ¹	<ul style="list-style-type: none"> • Secure Transmission (Voice and Data) (R) • Modem (R) 	<ul style="list-style-type: none"> • UCR App. A9.5.1.1 • UCR App. A9.5.1.1
100BaseT	No ¹	<ul style="list-style-type: none"> • Facsimile (R) • Call Control Signals (R) 	<ul style="list-style-type: none"> • UCR App. A9.5.1.1 • UCR App. A9.5.1.1.3
100BaseTX	No ¹	<ul style="list-style-type: none"> • Call Congestion (R) • Voice Compression (C) 	<ul style="list-style-type: none"> • UCR App. A9.5.1.1.4 • UCR App. A9.5.1.2.6
1000BaseSX	No ¹	<ul style="list-style-type: none"> • DS3 Interface Requirements (R) • IP Interface (C) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.2.9
1000BaseLX	No ¹		

Table 2. SUT Capability and Feature Interoperability Requirements (continued)

DSN Transport Interfaces			
Interface	Critical	Requirements Required or Conditional	References
OC-3	No ²	<ul style="list-style-type: none"> • MLPP (R) • GR-303-CORE (R) • GR-253-CORE (R) • GR-782-CORE (R) • ANSI T1.105-2001 (R) • DS1 Rate Transport via VT1.5 (R) • DS1 Rate Provisioning (R) • DS0 Call Processing (R) 	<ul style="list-style-type: none"> • UCR App. A5.5.1 • UCR App. A5.5.2
OC-12	No ²	<ul style="list-style-type: none"> • DS0 to OC-3 Route Assignment (R) • Facility Alarms (R) • DS1 AIS/Yellow (R) • DS0 AIS/DS0 RAI (R) • Synchronization in accordance with GR-518-CORE (R) • Synchronization in accordance with GR-253-CORE (R) 	<ul style="list-style-type: none"> • UCR App. A5.5.3 • UCR App. A5.5.4 • UCR App. A5.5.4 • UCR App. A5.5.4 • UCR App. A5.5.5 • UCR App. A5.5.5
OC-48	No ²	<ul style="list-style-type: none"> • Synchronization in accordance with GR-436-CORE (R) • Reliability in accordance with GR-874-CORE (R) • Security (R) • MOS (R) • BERT (R) • Secure Transmission (Voice and Data) (R) 	<ul style="list-style-type: none"> • UCR App. A5.5.6 • UCR App. A5.5.7 • UCR App. A9.5.1.1 • UCR App. A9.5.1.1 • UCR App. A9.5.1.1 • UCR App. A9.5.1.1
OC-192	No ²	<ul style="list-style-type: none"> • Modem (R) • Facsimile (R) • Call Control Signals (R) • Call Congestion (R) • Voice Compression (C) 	<ul style="list-style-type: none"> • UCR App. A9.5.1.1 • UCR App. A9.5.1.1 • UCR App. A9.5.1.1.3 • UCR App. A9.5.1.1.4
SUT Features And Capabilities			
Feature/Capability	Critical	Requirements Required or Conditional	References
Synchronization	Yes	<ul style="list-style-type: none"> • Timing (R) 	<ul style="list-style-type: none"> • UCR App. A9.5.1.7
Network Management	Yes	<ul style="list-style-type: none"> • Management Option (R) <ul style="list-style-type: none"> - Local Management (Front Panel and/or External Console) (C) - ADMISS (C) • Fault Management (C) • Loop Back Capability (C) • Operational Configuration Restoral (R) 	<ul style="list-style-type: none"> • UCR App. A9.5.2.1 • UCR App. A9.5.2.2 • UCR App. A9.5.2.3 • UCR App. A9.5.3
Security	Yes	<ul style="list-style-type: none"> • GR-815, STIGs, and DIACAP (R) 	<ul style="list-style-type: none"> • UCR App. A9.6
NOTES:			
1 The UCR does not stipulate a minimum Access interface requirement for a Strategic Network Element.			
2 The UCR does not stipulate a minimum Transport interface requirement for a Strategic Network Element.			

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Table 2. SUT Capability and Feature Interoperability Requirements (continued)

LEGEND:			
100BaseT	100 Mbps (Baseband Operation, Twisted Pair) Ethernet	GR-518-CORE	LSSGR: Synchronization, Section 18
100BaseTX	100 Mbps Ethernet over Category 5 Twisted Pair Copper	GR-782-CORE	SONET Digital Switch Trunk Interface Criteria
1000BaseLX	1000 Mbps Baseband Optical, Long Range	GR-815	Generic Requirement for Network Element/Network System (NE/NS) Security
1000BaseSX	1000 Mbps Baseband Optical, Short Range	GR-874-CORE	An Introduction to the Reliability and Quality Generic Requirements (RQGR)
ADMISS	Advanced DSN Integrated Management Support System	IP	Internet Protocol
ANSI	American National Standards Institute	ISDN	Integrated Services Digital Network
App.	Appendix	LSSGR	Local Access and Transport Area (LATA) Switching Systems Generic Requirements
AIS	Alarm Indication Signal	Mbps	Megabits per second
BERT	Bit Error Rate Test	MLPP	Multi-Level Precedence and Preemption
BRI	Basic Rate Interface	MOS	Mean Opinion Score
C	Conditional	NE	Network Element
CAS	Channel Associated Signaling	OC-3	Optical Carrier Level 3 (155 Mbps)
DIACAP	DoD Information Assurance Certification and Accreditation Process	OC-12	Optical Carrier Level 12 (622 Mbps)
DoD	Department of Defense	OC-48	Optical Carrier Level 48 (2.448 Gbps)
DS0	Digital Signal Level 0	OC-192	Optical Carrier Level 192 (10 Gbps)
DS1	Digital Signal Level 1	PRI	Primary Rate Interface
DS3	Digital Signal Level 3	R	Required
DSN	Defense Switched Network	RAI	Remote Alarm Indication
E1	European Basic Multiplex Rate (2.048 Mbps)	SONET	Synchronous Optical Network
Gbps	Gigabits per second	SS7	Signaling System 7
GR	Generic Requirement	STIGs	Security Technical Implementation Guides
GR-253-CORE	SONET Transport Systems: Common Generic Criteria	SUT	System Under Test
GR-303-CORE	Integrated Digital Loop Carrier System Generic Requirements, Objectives, and Interface	T1	Digital Transmission Link Level 1 (1.544 Mbps)
GR-436-CORE	Digital Network Synchronization Plan	T1.105-2001	SONET - Basic Description include Multiplexer structure, rates, formats
		T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
		VT1.5	Virtual Tributary 1.5
		UCR	Unified Capabilities Requirements

5. 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>.

6. The JITC point of contact is Mr. Joseph Roby, DSN 879-6787, commercial (520) 538-0507, FAX DSN 879-0507, 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 0818501.

FOR THE COMMANDER:

Enclosure a/s


for RICHARD A. MEADOR
Chief
Battlespace Communications Portfolio

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ADDITIONAL REFERENCES

- (c) Defense Information Systems Agency, "Department of Defense Networks, Unified Capabilities Requirements," 21 December 2007
- (d) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006
- (e) Joint Interoperability Test Command (JITC), Memo, JTE, "Special Interoperability Test Certification of the Alcatel-Lucent 1665 Data Multiplexer (DMX) with Software Release 7.1.2 and 1665 Data Multiplexer Extend (DMXtend) with Software Release 5.1.2," 23 February 2009
- (f) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Alcatel-Lucent 1665 Data Multiplexer (DMX) with Software Release 7.1.2 and 1665 Data Multiplexer Extend (DMXtend) with Software Release 5.1.2 (Tracking Number 0818501)," 10 February 2009