



DEFENSE INFORMATION SYSTEMS AGENCY

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

12 Nov 09

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Special Interoperability Test Certification of the Nortel Optical Multiservice Edge (OME) 6500 with Software Release 5.12

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 (f), 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 Nortel OME 6500 with Software Release 5.12 is hereinafter referred to as the System Under Test (SUT). The SUT meets all of the critical interoperability requirements for the Defense Switched Network (DSN) and is certified for joint use. The SUT met the critical interoperability requirements for a Strategic Network Element set forth in appendices 5 and 9 of Reference (c) using test procedures derived from Reference (d). Although the SUT offers European Basic Multiplex Rate (E1) access interfaces, these interfaces were not tested by JITC and are not authorized for use within the DSN by the DSN Program Management Office (PMO). The SUT offers a 10/100 Megabits per second Ethernet Interface; however, this interface was not tested and is not authorized for use within the DSN by the DSN PMO. The SUT one and ten Gigabits per second Ethernet interfaces were tested and certified for voice only. The SUT can be deployed within the DSN as an extension to any Assured Services Local Area Network that is on the Unified Capabilities (UC) Approved Products List (APL). 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 (23 March 2009).

3. The extension of this certification is based upon a Desktop Review (DTR) #2 and Defense Information Assurance (IA)/Security Accreditation Working Group (DSAWG) accreditation. The original certification is based on interoperability testing and review of the vendor's Letters of Compliance (LoC) conducted by JITC. Interoperability testing was conducted at JITC's Global Information Grid Network Test Facility (GNTF) at Fort Huachuca, Arizona, from 13 through 24 October 2008 and documented in Reference (e). Review of vendor's LoC was completed on 18 November 2008. This DTR was requested to include the addition of an

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Ethernet module, part number NTK548BA as part of the SUT certification. This DTR was approved on 19 August 2009. DSAWG accreditation was granted on 28 October 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				
DSN Switch Access		Critical	Status	Remarks
T1 CAS (AMI/SF) DTMF, MFR1, DP		No ¹	Certified	Met all CRs and FRs.
T1 CAS (B8ZS/ESF) DTMF, MFR1, DP		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.
E1 CAS (HDB3) DTMF, MFR1, DP		No ¹ (Europe only)	Not Tested	E1 CAS is supported by the SUT; however it was not tested. The SUT E1 CAS interface is therefore not certified by JITC, or authorized for use by the DSN PMO for use within the DSN. This is not a required interface for a Strategic Network Element.
E1 ISDN PRI (ITU-T Q.955.3)		No ¹ (Europe only)	Not Tested	E1 ISDN PRI is supported by the SUT; however it was not tested. The SUT E1 ISDN PRI interface is therefore not certified by JITC, or authorized for use by the DSN PMO for use within the DSN. This is not a required interface for a Strategic Network Element.
E1 SS7 (ANSI T1.619a)		No ¹ (Europe only)	Not Tested	E1 SS7 is supported by the SUT; however it was not tested. The SUT E1 SS7 interface is therefore not certified by JITC, or authorized for use by the DSN PMO for use within the DSN. This is not a required interface for a Strategic Network Element.
DS3		No ¹	Certified	Met all CRs and FRs.
DS3C		No ¹	Certified	Met all CRs and FRs.
10/100BaseT Ethernet		No ¹	Certified	Met all CRs and FRs. ²
Gigabit Ethernet		No ¹	Certified	Met all CRs and FRs. ²
10 Gigabit Ethernet		No ¹	Certified	Met all CRs and FRs. ²
DSN Transport Interfaces				
Optical Carrier Level	Transport Level	Critical	Status	Remarks
OC-3	VT 1.5	No ³	Certified	Met all CRs and FRs.
	STS-1	No ³	Certified	Met all CRs and FRs.
OC-12	VT 1.5	No ³	Certified	Met all CRs and FRs.
	STS-1	No ³	Certified	Met all CRs and FRs.
OC-48	VT 1.5	No ³	Certified	Met all CRs and FRs.
	STS-1	No ³	Certified	Met all CRs and FRs.
OC-192	VT 1.5	No ³	Certified	Met all CRs and FRs.
	STS-1	No ³	Certified	Met all CRs and FRs.
DWDM	2.5, 10 and 40 Gigabit Channels	No ³	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 4.

Table 1. SUT Interoperability Test Summary (continued)

NOTES:			
1	The UCR does not stipulate a minimum Access interface requirement for a Strategic Network Element.		
2	The SUT 10/100BaseT, 1 Gbps, and 10 Gbps Ethernet interfaces were tested and certified for voice only as an extension to an ASLAN on the UC APL.		
3	The UCR does not stipulate a minimum Transport interface requirement for a Strategic Network Element.		
4	Information assurance testing is accomplished via DISA-led Information Assurance test teams and published in a separate report, reference (e).		
LEGEND:			
10/100BaseT	100 Mbps (Baseband Operation, Twisted Pair)	ISDN	Integrated Services Digital Network
	Ethernet	ITU-T	International Telecommunication Union – Telecommunication Standardization
AMI	Alternate Mark Inversion	Mbps	Megabits per second
ANSI	American National Standards Institute	MFR1	Multi-frequency Recommendation 1
APL	Approved Products List	MLPP	Multi-Level Precedence and Preemption
ASLAN	Assured Services Local Area Network	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)
CR	Capability Requirements	OC-192	Optical Carrier Level 192 (10 Gbps)
DISA	Defense Information Systems Agency	PRI	Primary Rate Interface
DP	Dial Pulse	Q.955.3	ISDN Signaling Standard for E1 MLPP
DS3	Digital Signal Level 3 (44.736 Mbps)	SF	Super Frame
DS3C	Digital Signal Level 3 Concatenated (89.472 Mbps)	SS7	Signaling System 7
DSN	Defense Switched Network	SUT	System Under Test
DTMF	Dual Tone Multi-Frequency	STS	Synchronous Transport Signal
DWDM	Dense Wavelength Division Multiplexing	T1	Digital Transmission Link Level 1 (1.544 Mbps)
E1	European Basic Multiplex Rate (2.048 Mbps)	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
ESF	Extended Super Frame	UC	Unified Capabilities
FR	Feature Requirements	UCR	Unified Capabilities Requirements
Gbps	Gigabits per second	VT	Virtual Tributary
HDB3	High Density Bipolar 3		

Table 2. SUT Capability and Feature Interoperability Requirements

DSN Access Interfaces			
Interface	Critical	Requirements Required or Conditional	References
T1 CAS	No ¹	<ul style="list-style-type: none"> • DS1 Interface Characteristics (C) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.2.4
T1 SS7 (ANSI T1.619a)	No ¹	<ul style="list-style-type: none"> • DS1 Supervisory Channel Associated Signaling (C) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.2.4
T1 ISDN PRI (ANSI T1.607/ANSI T1.619a)	No ¹	<ul style="list-style-type: none"> • DS1 Clear Channel Capability (C) • DS1 Alarm and Restoral Requirements (C) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.2.4
E1 ISDN PRI (ITU-T Q.955.3)	No ¹ (Europe only)	<ul style="list-style-type: none"> • E1 Interface Characteristics (C) • E1 Supervisory Channel Associated Signaling (C) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.2.5
E1 CAS	No ¹ (Europe only)	<ul style="list-style-type: none"> • E1 Clear Channel Capability (C) • E1 Alarm and Restoral Requirements (C) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.2.5
E1 SS7 (ANSI T1.619a)	No ¹ (Europe only)	<ul style="list-style-type: none"> • MOS (R) • BERT (R) • Secure Transmission (Voice and Data) (R) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.1
DS3, DS3C	No ¹	<ul style="list-style-type: none"> • Modem (R) • Facsimile (R) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.1
10/100BaseT	No ¹	<ul style="list-style-type: none"> • Call Control Signals (R) • Delay (R) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.1
Gigabit Ethernet	No ¹	<ul style="list-style-type: none"> • Call Congestion Control (R) • Call Congestion (R) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.1.2
10 Gigabit Ethernet	No ¹	<ul style="list-style-type: none"> • Voice Compression (C) • DS3 Interface Requirements (R) • IP Interface (C) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.1.4 • UCR para. A9.5.1.2.6 • UCR para. A9.5.1.2.9

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 VT 1.5 (R) 	<ul style="list-style-type: none"> • UCR para. A5.5.1 • UCR para. A5.5.2
OC-12	No ²	<ul style="list-style-type: none"> • DS1 Rate Provisioning (R) • DS0 Call Processing (R) • DS0 to OC-3 Route Assignment (R) • Facility Alarms (R) • DS1 AIS/Yellow (R) • DS0 AIS/DS0 RAI (R) 	<ul style="list-style-type: none"> • UCR para. A5.5.2 • UCR para. A5.5.2 • UCR para. A5.5.3 • UCR para. A5.5.4 • UCR para. A5.5.4 • UCR para. A5.5.4
OC-48	No ²	<ul style="list-style-type: none"> • Synchronization in accordance with GR-518-CORE (R) • Synchronization in accordance with GR-253-CORE (R) • Synchronization in accordance with GR-436-CORE (R) • Reliability (R) • Security (R) 	<ul style="list-style-type: none"> • UCR para. A5.5.5 • UCR para. A5.5.5 • UCR para. A5.5.5 • UCR para. A5.5.6 • UCR para. A5.6
OC-192	No ²	<ul style="list-style-type: none"> • MOS (R) • BERT (R) • Secure Transmission (Voice and Data) (R) • Modem (R) • Facsimile (R) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.1
DWDM	No ²	<ul style="list-style-type: none"> • Call Control Signals (R) • Delay (R) • Call Congestion Control (R) • Voice Compression (C) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1.3 • UCR para. 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 para. A9.5.1.2.7
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) - ADIMSS (C) • Fault Management (C) • Loop Back Capability (C) • Operational Configuration Restoral (R) 	<ul style="list-style-type: none"> • UCR para. A9.5.2.1 • UCR para. A9.5.2.2 • UCR para. A9.5.2.3 • UCR para. A9.5.3
Security	Yes	<ul style="list-style-type: none"> • DIACAP and STIGs (R) 	<ul style="list-style-type: none"> • UCR para. 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.			

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

LEGEND:			
10/100BaseT	100 Mbps (Baseband Operation, Twisted Pair) Ethernet	IP	Internet Protocol
A	Appendix	ISDN	Integrated Services Digital Network
ADIMSS	Advanced DSN Integrated Management Support System	ITU-T	International Telecommunication Union - Telecommunication Standardization Sector
AIS	Alarm Indication Signal	LSSGR	Local Access and Transport Area (LATA) Switching Systems Generic Requirements
ANSI	American National Standards Institute	Mbps	Megabits per second
BERT	Bit Error Rate Test	MLPP	Multi-Level Precedence and Preemption
C	Conditional	MOS	Mean Opinion Score
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)
DS0	Digital Signal Level 0	OC-48	Optical Carrier Level 48 (2.448 Gbps)
DS1	Digital Signal Level 1	OC-192	Optical Carrier Level 192 (10 Gbps)
DS3	Digital Signal Level 3 (44.736 Mbps)	para.	paragraph
DS3C	Digital Signal Level 3 Concatenated (89.472 Mbps)	PRI	Primary Rate Interface
DSN	Defense Switched Network	Q.955.3	ISDN Signaling standard for E1 MLPP
DSS1	Digital Subscriber Signaling 1	R	Required
DWDM	Dense Wavelength Division Multiplexing	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
GR-518-CORE	LSSGR: Synchronization, Section 18	T1.607	ISDN – Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1
GR-782-CORE	SONET Digital Switch Trunk Interface Criteria	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
		VT	Virtual Tributary
		UCR	Unified Capabilities Requirements

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>.

6. The JITC point of contact is Capt Oskar Widecki, DSN 879-5269, commercial (520) 538-5269, FAX DSN 879-4347, or e-mail oskar.widecki@disa.mil. The JITC’s mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 0812001.

FOR THE COMMANDER:

Enclosure a/s



for RICHARD A. MEADOR
Chief
Battlespace Communications Portfolio

JITC Memo, JTE, Extension of the Special Interoperability Test Certification of the Nortel Optical Multiservice Edge (OME) 6500 with Software Release 5.12

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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, Memo, "Special Interoperability Test Certification of the Nortel Optical Multiservice Edge (OME) 6500 with Software Release 5.12," 23 March 2009
- (f) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Nortel Optical Multiservice Edge (OME) 6500 Release 5.12 Information Assurance (Tracking Number 0812001)," 10 March 2009