DEFENSE INFORMATION SYSTEMS AGENCY
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IN REPLY REFER TO: Joint Interoperability Test Command (JTE)

MEMORANDUM FOR DISTRIBUTION 1 Feb 11

SUBJECT: Extension of the Special Interoperability Test Certification of the Network Equipment Technologies (NET)™ Voice Exchange™ (VX)900, VX1200, and VX1800 with Software Version 4.7.4v7

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 (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 NET™ VX900, VX1200, and VX1800 with software version 4.7.4v7 are hereinafter referred to as the SUT. The SUT meets all of its critical interoperability requirements and is certified for joint use within the Defense Information System Network (DISN) as a Deployed Network Element only with the American National Standards Institute (ANSI) T1.607 and T1.619a Digital Transmission Link Level 1 (T1) Primary Rate Interface (PRI) access interfaces. The SUT is also certified with the Fast Ethernet Institute of Electrical and Electronic Engineers (IEEE) 802.3u transport interface. The SUT is deployed as a mated pair, and both SUTs must be loaded with the same certified 4.7.4v7 software release in order to interoperate correctly. The SUT meets the critical interoperability requirements set forth in Reference (c), using test procedures derived from Reference (d). 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 Defense Information Assurance (IA)/Security Accreditation Working Group (DSAWG) accreditation.

3. The extension of this certification is based upon Desktop Review (DTR) 1. The original certification is based on interoperability testing, DISA adjudication of open test discrepancy reports, 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 5 July through 6 August 2010 and is documented in Reference (e). The DISA adjudication of outstanding test discrepancy reports was completed on 30 July 2010. Review of the vendor's LoC was completed on 23 August 2010. The DSAWG granted accreditation on 5 November 2010 based on the security testing completed by DISA-led

IA test teams and published in a separate report, Reference (f). This DTR was requested to approve a software patch that changes the certified software version from 4.7.4v7 to 4.7.4v9. This software patch was developed to fix a problem encountered in the field which could prevent the VXBuilder from being used to configure the VX node. The JITC analyzed data from NET testing on this software patch and determined there was minor risk in approving this DTR because this patch only affects the VXBuilder capability and does not affect the SUT interoperability as documented in Table 1. Therefore, JITC approves this DTR. The DSAWG accreditation for this DTR was granted on 27 January 2011.

4. The overall interoperability status of the SUT is indicated in Table 1. The interfaces and associated Capability Requirements (CRs) and Feature Requirements (FRs) critical used to evaluate the interoperability status are listed in Table 2. The interoperability test status is based on the SUT's ability to meet:

a. Defense Switched Network (DSN) services for Network and Applications specified in Reference (c).

b. The overall system interoperability performance derived from test procedures listed in Reference (d).

Table 1. SUT Interoperability Test Summary

DSN Access Interfaces			
Interface & Signaling	**Critical**	**Status**	**Remarks**
T1 PRI (ANSI T1.607/T1.619a)	No[1]	Certified	Met all CRs and FRs.
DSN Transport Interfaces			
Transport Level	**Critical**	**Status**	**Remarks**
Fast Ethernet (IEEE 802.3u)	No[2]	Certified	Met all CRs and FRs with the following minor exceptions. The TDM ingress ITU-T G.711 secure and non-secure calls to non-transcoding ITU-T G.711 IP egress had a measured delay of 68 ms.[3] The SUT does not support forward error correction.[4]
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.
MLPP	Yes	Certified	Met all CRs and FRs.
Voice Compression	Yes[5]	Certified	Met all CRs and FRs.
Secure Calls	Yes	Certified	Met all CRs and FRs.
Security	Yes	Certified	See note 6.

NOTES:
1 The UCR does not stipulate a minimum access interface requirement for a Deployed Network Element.
2 The UCR does not stipulate a minimum transport interface requirement for a Deployed Network Element.
3 The UCR states that TDM Ingress ITU-T G.711 secure and non-secure calls to non-transcoding ITU-T G.711 IP egress shall not increase delay by more than 50 ms per network element pair as measured end-to end. The SUT had a measured delay of 68 ms. This was adjudicated by DISA as having a minor operational impact on 30 July 2010.
4 The SUT does not support forward error correction in accordance with the UCR 2008, Change 1, paragraph 5.9.3.1. This is a new UCR requirement and the vendor has 18 months (until July 2011) to develop and meet this requirement.
5 The UCR, section 5.9.3.1, states that the SUT must support at least one voice codec. The SUT is certified for use with voice compression codecs ITU-T G.711, ITU-T G.726, ITU-T G.729, ITU-T G.727, and both 6 and 5 kilobits per second ITU-T G.723.1.
6 Information assurance testing is accomplished via DISA-led Information Assurance test teams and published in a separate report, Reference (f).

Table 1. SUT Interoperability Test Summary (continued)

LEGEND:

802.3u	Standard for carrier sense multiple access with collision detection at 100 Mbps	IP	Internet Protocol
ANSI	American National Standards Institute	ISDN	Integrated Services Digital Network
CRs	Capability Requirements	ITU-T	International Telecommunication Union - Telecommunication Standardization Sector
DISA	Defense Information Systems Agency	kbps	kilobits per second
DSN	Defense Switched Network	Mbps	Megabits per second
DSS1	Digital Subscriber Signaling 1	MLPP	Multi-Level Precedence and Preemption
FRs	Feature Requirements	ms	milliseconds
G.711	Pulse Code Modulation of voice frequencies	PRI	Primary Rate Interface
G.723.1	Dual rate speech coder for multimedia communications transmitting at 5.3 and 6.3 kbps	SS7	Signaling System 7
G.726	32 kbps Adaptive Differential Pulse Code Modulation (ADPCM)	SUT	System Under Test
G.727	5-, 4-, 3- and 2-bit/sample embedded adaptive differential pulse code modulation (ADPCM)	T1	Digital Transmission Link Level 1 (1.544 Mbps)
G.729	9.6 kbps Conjugate-Structure Algebraic-Code-Excited Linear-Prediction (CS-A CELP)	T1.607	ISDN – Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1
IEEE	Institute of Electrical and Electronics Engineers	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
		TDM	Time Division Multiplex
		UCR	Unified Capabilities Requirements

Table 2. SUT Capability and Feature Interoperability Requirements

DSN Access Interfaces			
Interface	**Critical**	**Requirements Required or Conditional**	**References**
T1 PRI (ANSI T1.607/T1.619a)	No[1]	• DS1 Interface Characteristics (C) as specified in UCR 2008, Section 5.2.6.1	• UCR Section 5.9.2.3.4
		• DS1 Supervisory Channel Associated Signaling (C) as specified in UCR 2008, Section 5.2.6.1	• UCR Section 5.9.2.3.4
		• DS1 Clear Channel Capability (C) as specified in UCR 2008, Section 5.2.6.1	• UCR Section 5.9.2.3.4
		• DS1 Alarm and Restoral Requirements (C) as specified in UCR 2008, Section 5.2.6.1	• UCR Section 5.9.2.3.4
		• MOS (R)	• UCR Section 5.9.3.1
		• BERT (R)	• UCR Section 5.9.3.1
		• Secure Transmission (Voice and Data) (R) as specified in UCR 2008, Section 5.2.12.6	• UCR Section 5.9.3.8
		• Modem (R)	• UCR Section 5.9.3.1
		• Facsimile (R)	• UCR Section 5.9.3.1
		• Call Control Signals (R)	• UCR Section 5.9.3.1
		• Alarms (R) as specified in UCR 2008, Section 5.2.1.5.7	• UCR Section 5.9.3.5
		• Call Congestion Control (R)	• UCR Section 5.9.3.4
		• Call Congestion for TDM Transport (C)	• UCR Section 5.9.2.1.2.1
		• Voice Compression (C)	• UCR Section 5.9.3.1

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

DSN Transport Interfaces			
Interface	**Critical**	**Requirements Required or Conditional**	**References**
IP Fast Ethernet (IEEE 802.3u)	No[2]	• DS1 Interface Characteristics (R) • MOS (R) • BERT (R) • Forward Error Correction (R) • Secure Transmission (Voice and Data) (R) as specified in UCR 2008, Section 5.2.12.6 • Modem (R) • Facsimile (R) • Call Control Signals (includes MLPP) (R) • Congestion Control (C) (IP interface only) • Voice Compression (C) • Alarms • Delay (R) • Jitter (R) • Packet Loss (R)	• UCR Section 5.9.2.3.4 • UCR Section 5.9.3.1 • UCR Section 5.9.3.1 • UCR Section 5.9.3.1 • UCR Section 5.9.3.8 • UCR Section 5.9.2.1 • UCR Section 5.9.2.1 • UCR Section 5.9.3.7 • UCR Section 5.9.3.4 • UCR Section 5.9.3.1 • UCR Section 5.9.3.5 • UCR Section 5.9.3.3 • UCR Section 5.9.3.3 • UCR Section 5.9.3.3
SUT Features And Capabilities			
Feature/Capability	**Critical**	**Requirements Required or Conditional**	**References**
Synchronization	Yes	• Timing (R) as specified in UCR 2008, Section 5.2.10.1	• UCR Section 5.9.2.3.7
Network Management	Yes	• Management Option (R) Local Management (Front or Back Panel and/or External Console) (C) ADIMSS (C) as specified in UCR 2008, sections 5.2.8, Network Management, 5.2.8.3, Fault Management, and 5.2.8.4, Configuration Management. • Fault Management (C) • Loop Back Capability (C) • Operational Configuration Restoral (R)	• UCR Section 5.9.2.4.1 • UCR Section 5.9.2.4.2 • UCR Section 5.9.2.4.3 • UCR Section 5.9.2.4.4
Security	Yes	• STIGs and DoDI 8510.01 (DIACAP) (R)	• UCR Section 5.9.2.6

NOTES:
1 The UCR does not stipulate a minimum required DSN access interface.
2 The UCR does not stipulate a minimum required DSN transport interface.

LEGEND:

802.3u	Standard for carrier sense multiple access with collision detection at 100 Mbps	ISDN	Integrated Services Digital Network
ADIMSS	Advanced DSN Integrated Management Support System	Mbps	Megabits per second
ANSI	American National Standards Institute	MLPP	Multi-Level Precedence and Preemption
BERT	Bit Error Rate Test	MOS	Mean Opinion Score
C	Conditional	PRI	Primary Rate Interface
DIACAP	Department of Defense Information Assurance Certification and Accreditation Process	R	Required
DoDI	Department of Defense Instruction	SS7	Signaling System 7
DS1	Digital Signal Level 1	STIGs	Security Technical Implementation Guides
DSN	Defense Switched Network	SUT	System Under Test
DSS1	Digital Subscriber Signaling 1	T1	Digital Transmission Link Level 1 (1.544 Mbps)
IEEE	Institute of Electrical and Electronics Engineers	T1.607	ISDN – Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1
IP	Internet Protocol	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
		TDM	Time Division Multiplexing
		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 I

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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. 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.

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. The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 1001501.

FOR THE COMMANDER:

Enclosure a/s

for BRADLEY A. CLARK
Acting Chief
Battlespace Communications Portfolio

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Defense Information Systems Agency, GS23

ADDITIONAL REFERENCES

(c) Office of the Assistant Secretary of Defense, "Department of Defense Unified Capabilities Requirements 2008 Change 1," 22 January 2010

(d) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006

(e) Joint Interoperability Test Command, Memo, JTE, "Special Interoperability Test Certification of the Network Equipment Technologies (NET)™ Voice Exchange™ (VX)900, VX1200, and VX1800 with Software Version 4.7.4v7," 15 November 2010

(f) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Network Equipment Technology (NET) Voice Exchange (VX) 900, 1200, 1800 Release (Rel.) 4.7.4 (Tracking Number 1001501)," 5 November 2010