DEFENSE INFORMATION SYSTEMS AGENCY
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IN REPLY REFER TO: Joint Interoperability Test Command (JTE) **23 Jan 14**

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Joint Interoperability Test Certification of Cisco TelePresence C series, EX series, and MX series Video Codecs with Software version TC5.0.2, the ISDN Link with version IL1.0.0, and Video Communication Server (VCS) with version X7.1

References: (a) DoD Directive 4630.05, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004
(b) Department of Defense Instruction 8100.04, "DoD Unified Capabilities (UC)," 9 December 2010
(c) through (g), 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 Cisco TelePresence C90, C60, and C40 with Software Version TC 5.0.2, and ISDN Link with version IL1.0.0, and VCS with version X7.1 is hereinafter referred to as the System Under Test (SUT). The Quickset C20, EX90, EX60, MX200, MX300 Series Codecs in the family series were not tested; however, they utilize the same software and similar hardware and JITC analysis determined them to be functionally identical for interoperability certification purposes and they are also certified for joint use. The SUT meets all of its critical interface and functional interoperability requirements and is certified for joint use within the Defense Information Systems Network (DISN) as a Video Teleconferencing Unit (VTU). The SUT met the conditional requirements for an Internet Protocol (IP) interface with the International Telecommunication Union - Telecommunication Standardization Sector (ITU-T) H.323 protocol; however, Assured Service is not yet defined for an IP interface with ITU-T H.323 protocol. Therefore, Command and Control (C2) VTC users and Special C2 VTC users are not authorized to be served by an IP interface with the ITU-T H.323 protocol. 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 could affect interoperability, but no later than three years from the date of the original Unified Capabilities (UC) Approved Products List (APL) memorandum (8 November 2012).

3. The extension of this certification is based upon Desktop Review (DTR) 6. The original certification, documented in Reference (e), is based on interoperability testing conducted by JITC, review of the vendor's Letters of Compliance (LoC), DISA adjudication of open test discrepancy reports (TDRs), and DISA Certifying Authority (CA) Recommendation. Interoperability testing was conducted by JITC at the Global Information Grid Network Test Facility, Fort Huachuca, Arizona, from 21 May through 8 June 2012. Review of the vendor's LoC was completed on 1 November 2012. DISA adjudication of outstanding TDRs was completed on 1 November 2012 and the Internet Protocol version 6 (IPv6) deficiencies were adjudicated as minor. The DISA CA provided a positive recommendation on 21 September 2012 based on the security testing completed by DISA-led Information Assurance (IA) test teams and published in a separate report, Reference (g). This DTR was requested to include TC 7.0.1 on the video codecs, which includes interoperability fixes. JITC determined Verification & Validation (V&V) testing was required. JITC conducted interoperability testing from 16 through 20 December 2013. There were no new interoperability discrepancies found during this V&V test. Additionally, the four discrepancies mentioned in the subparagraphs below, identified during previous testing, were closed as a result of this V&V test.

a. During the original test, the SUT was not able to disable all IPv6 services in the IPv6 stack, only media and signaling. This discrepancy was fixed and successfully tested.

b. During testing for DTR 2, the Advanced Encryption Standard (AES) encryption was no longer optional, but mandatory in the Federal Information Processing Standard (FIPS) mode for this new release of software, therefore the user must ensure the deployment environment is capable of operation with AES encryption. This discrepancy was fixed and successfully tested with DTR 6, which included TC 7.0.1. With this version, the SUT is capable of switching the Encryption mode from On, to Off to Best Effort.

c. During testing for DTR 2, users were unable to use remote control with EX90 endpoint. This discrepancy was fixed and successfully tested.

d. During testing for DTR 2, the touch panel occasionally lost connection with the EX90 codec and required unplugging and re-plugging the touch panel to recover from this anomaly. This discrepancy was fixed and successfully tested.

The IA posture has not changed. The original IA approval applies to this DTR. Therefore, JITC approves this DTR.

4. The UC APL product Summary is depicted in Table 1. The Functional Requirements (FR) used to evaluate the interoperability of the SUT, certified interfaces and the interoperability statuses are indicated in Table 2.

Table 1. UC APL Product Summary

Hardware (See note 1.)	Software
Cisco Telepresence C90, C60, C40, Quickset C20, **EX90**, EX60 MX200, MX300, **SX20**, VX Tactical, VX Clinical Assistant, Avizia VX Tactical, MX300G2 (See note 2.)	TC 7.0.1 (See note 3.)
ISDN Link Gateway	IL1.1 (See note 4.)
VCS	X7.1

NOTES:
1. Components bolded and underlined were tested by JITC. The other components in the family series were not tested; however, they utilize the same software and similar hardware and JITC analysis determined them to be functionally identical for interoperability certification purposes and they are also certified for joint use.
2. The SX20, VX Tactical, VX Clinical Assistant codecs were included with DTR 4. The Avizia VX Tactical was included with DTR 7. The MX300G2 was included with DTR 8.
3. The SUT was updated from Release TC 5.0.2.282462 to TC 6.1.0 with DTR 2. The SUT was updated from TC 6.1.0 to TC 7.0.1 with DTR 6 and successfully tested on the EX90.
4. The SUT ISDN Link was updated from version IL1.0.0 to IL1.1 with DTR 3. Limited interoperability V&V testing was conducted during the Information Assurance test window. The V&V testing was to verify a fix for an interoperability TDR.

LEGEND:

APL	Approved Products List	UC	Unified Capabilities
DTR	Desktop Review	V&V	Verification and Validation
TDR	Test Discrepancy Report	VCS	Video Communication Server

Table 2. SUT FRs and Interoperability Status

Interface	Critical	Certified	Requirements Required or Conditional	Status	UCR Reference (See note 1.)
IP (10/100/1000 Mbps) ITU-T H.323	No (See note 2.)	Yes (See note 3.)	The VTC system/endpoints shall meet the requirements of FTR 1080B-2002. (R)	Met	5.2.4.2
			ITU-T H.323 in accordance with FTR 1080B-2002. (C)	Met	5.2.4.2
			Layer 3 DSCP tagging as specified in the UCR, Section 5.3.1. (C)	Partially Met (See note 4.)	5.2.4.2
			A loss of any conferee on a multipoint videoconference shall not terminate or degrade the DSN service supporting VTC connections of any of the other conferees on the videoconference. (R)	Met	5.2.4.2
			Audio add-on interface, implemented independently of an IAS, shall be in accordance with the UCR, Section 5.2.3. (C)	Met	5.2.4.2
			Physical, electrical, and software characteristics shall not degrade or impair switch and associated network operations. (R)	Met	5.2.4.2
			VTC IP interface must be IPv6 capable and meet the Simple Server/Network Appliance IPv6 profile (R)	Met (See notes 5, 6.)	5.3.5
ISDN PRI T1/E1 (See note 7.)	No (See note 2.)	Yes (See notes 7, 8.)	The VTC system/endpoints shall meet the requirements of FTR 1080B-2002. (R)	Met	5.2.4.2
			A loss of any conferee on a multipoint videoconference shall not terminate or degrade the DSN service supporting VTC connections of any of the other conferees on the videoconference. (R)	Met	5.2.4.2
			Audio add-on interface, implemented independently of an IAS, shall be in accordance with the UCR, Section 5.2.3. (C)	Met	5.2.4.2
			Integrated PRI interface shall be in conformance with IAS requirements in the UCR, Section 5.2.6. (C)	Met	5.2.4.2
			Physical, electrical, and software characteristics shall not degrade or impair switch and associated network operations. (R)	Met	5.2.4.2

Table 2. SUT FRs and Interoperability Status

Interface	Critical	Certified	Requirements Required or Conditional	Status	UCR Reference (See note 1.)
ISDN BRI	No (See note 2.)	Yes (See note 8.)	The VTC system/endpoints shall meet the requirements of FTR 1080B-2002. (R)	Met	5.2.4.2
			A loss of any conferee on a multipoint videoconference shall not terminate or degrade the DSN service supporting VTC connections of any of the other conferees on the videoconference. (R)	Met	5.2.4.2
			Audio add-on interface, implemented independently of an IAS, shall be in accordance with the UCR, Section 5.2.3. (C)	Met	5.2.4.2
			Integrated BRI interface shall be in conformance with IAS requirements in the UCR, Section 5.2.3.2.4 (C)	Met	5.2.4.2
			Physical, electrical, and software characteristics shall not degrade or impair switch and associated network operations. (R)	Met	5.2.4.2
Serial (ITU-T V.35, EIA-530, EIA-449, EIA-366)	Yes	Yes (See note 8.)	The VTC system/endpoints shall meet the requirements of FTR 1080B-2002. (R)	Met	5.2.4.2
			A loss of any conferee on a multipoint videoconference shall not terminate or degrade the DSN service supporting VTC connections of any of the other conferees on the videoconference. (R)	Met	5.2.4.2
			Audio add-on interface, implemented independently of an IAS, shall be in accordance with the UCR, Section 5.2.3. (C)	Met	5.2.4.2
			A VTC system and/or end point that uses a serial interface(s) to another device, such as a cryptographic device, IAS, or TA, for eventual connection to the DSN, shall be in conformance with the requirements for that serial interface(s) as described in FTR 1080B-2002. (C)	Met	5.2.4.2
			Physical, electrical, and software characteristics shall not degrade or impair switch and associated network operations. (R)	Met	5.2.4.2
Security	Yes	Yes	GR-815 and STIGs (R)	Met (See note 9.)	4.3.1 and 5.4.6.1

NOTES:
1. The IPv6 and Information Assurance requirements were derived from the UCR 2008, Change 3. All other requirements were derived from the UCR 2008, Change 1.
2. The VTC system interface requirements can be met with ISDN PRI, Serial, or ISDN BRI. In addition the SUT may include an IP ITU-T H.323 conditional interface.
3. The SUT met the conditional requirements for an IP interface with the ITU-T H.323 protocol; however, Assured Service is not yet defined for an IP interface with ITU-T H.323 protocol. Therefore, C2 VTC users and Special C2 VTC users are not authorized to be served by an IP interface with the ITU-T H.323 protocol.
4. During the original test, the SUT did not tag IPv6 traffic correctly for call signaling per the reference. All IPv6 media packets were tagged properly. Call Signaling packets were tagged at 0 (best effort), with the exception of Registration Admission Status (RAS) signaling packets. In addition, the SUT was not able to set the DSCP tag any value 0-63 for these packets as required by the reference. Video codec software version 6.1 corrects this discrepancy. JITC conducted limited verification and validation testing during the Information Assurance test for DTR 3. JITC verified this has been fixed.
5. The SUT codecs are capable of supporting IPv4 or IPv6 independently, but in order for the SUT codecs to support IPv4 and IPv6 dual stack operations, the Cisco VCS is required.
6. During the original test, the SUT was not able to disable all IPv6 services in the IPv6 stack, only media and signaling. This discrepancy was fixed and successfully tested with DTR 6, which included TC 7.0.1.
7. Video freezes when the ITU-T H.320 to ITU-T H.323 video call is placed via the E1 interface on the TelePresence ISDN Link. This is a known defect that the vendor is working to resolve. DISA adjudicated this as critical for the interface; therefore, the E1 PRI interface is not certified. This is not a critical interface for the SUT.
8. The ISDN PRI, ISDN BRI, and serial interfaces require the TelePresence ISDN Link.
9. Security is tested by DISA-led Information Assurance test teams and published in a separate report, Reference (g).

Table 2. SUT FRs and Interoperability Status (continued)

LEGEND:

BRI	Basic Rate Interface
C	Conditional
C2	Command and Control
DCE	Data Circuit-Terminating Equipment
DISA	Defense Information Systems Agency
DSCP	Differentiated Services Code Point
DSN	Defense Switched Network
DTE	Data Terminal Equipment
E1	European Basic Multiplex Rate (2.048 Mbps)
EIA	Electronic Industries Alliance
EIA-366	Standard for interface between DTE and automatic calling equipment for data communication
EIA-449	Standard for 37-position and 9-position interface for DTE and DCE employing serial binary data interchange
EIA-530	Standard for 25-position interface for DTE and DCE employing serial binary data interchange
FRs	Functional Requirements
FTR	Federal Telecommunications Recommendation
GR	Generic Requirement
GR-815	Generic Requirements For Network Element/Network System (NE/NS) Security
H.320	Standard for narrowband VTC
H.323	Standard for multi-media communications on packet-based networks
IAS	Integrated Access Switch
IP	Internet Protocol
IPv4	Internet Protocol version 4
IPv6	Internet Protocol version 6
ISDN	Integrated Services Digital Network
ITU-T	International Telecommunication Union – Telecommunication Standardization Sector
kbps	kilobits per second
kHz	kiloHertz
Mbps	Megabits per seconds
PRI	Primary Rate Interface
POA&M	Plan of Action and Milestones
R	Required
STIGs	Security Technical Implementation Guides
SUT	System Under Test
T1	Digital Transmission Link Level 1 (1.544 Mbps)
UCR	Unified Capabilities Requirements
V.35	Standard for data transmission at 48 kbps using 60-108 kHz group band circuits
VCS	Video Communication Server
VTC	Video Teleconferencing

5. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Sensitive but Unclassified IP Data (formerly known as NIPRNet) e-mail. Interoperability status information is available via the JITC System Tracking Program (STP). STP is accessible by .mil/.gov users 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 https://jit.fhu.disa.mil/. 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 from the Unified Capabilities Certification Office (UCCO), e-mail: disa.meade.ns.list.unified-capabilities-certification-office@mail.mil. All associated information is available on the DISA UCCO website located at http://www.disa.mil/Services/Network-Services/UCCO.

6. The JITC point of contact is Mr. Edward Mellon, commercial telephone (520) 538-5159, DSN telephone 879-5159, FAX DSN 879-4347; e-mail address edward.a.mellon.civ@mail.mil; mailing address Joint Interoperability Test Command, ATTN: JTE (Mr. Edward Mellon) P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The UCCO tracking number for the SUT is 1127303.

FOR THE COMMANDER:

Enclosure a/s

for RIC HARRISON
Chief
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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, "Joint Interoperability Test Certification of Cisco TelePresence C series, EX series, and MX series Video Codecs with Software version TC5.0.2, the ISDN Link with version IL1.0.0, and Video Communication Server (VCS) with version X7.1," 11 December 2012

(f) Office of the Department of Defense Chief Information Officer, "Department of Defense Unified Capabilities Requirements 2008 Change 3," 11 September 2011

(g) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Cisco TelePresence Codec C90 Release (Rel.) TC5.0.2 (Tracking Number 1127303)," 17 September 2012