



DEFENSE INFORMATION SYSTEMS AGENCY

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

12 Nov 09

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Special Interoperability Test Certification of the Tandberg Codian Media Services Engine (MSE) 8000 Version 2.0 (1.13)

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 (e), see Enclosure 1

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 Tandberg Codian MSE 8000 Version 2.0 (1.13) is hereinafter referred to as the System Under Test (SUT). The SUT met all the critical interface and functional interoperability requirements and is certified for joint use within the Defense Switched Network (DSN) as a Video Teleconferencing (VTC) system. The SUT also 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 affect interoperability, but no later than three years from the date of this memorandum.

3. This finding is based on interoperability testing conducted by JITC, review of the vendor's Letters of Compliance (LoC), and Defense Information Assurance (IA)/Security Accreditation Working Group (DSAWG) accreditation. Interoperability testing was conducted by JITC at the Global Information Grid Network Test Facility, Fort Huachuca, Arizona, from 15 through 26 June 2009. Regression testing of a patch to fix two interoperability discrepancies was conducted on 12 August 2009. Review of the vendor's LoC was completed on 20 July 2009. DSAWG grants accreditation based on the security testing completed by DISA-led Information Assurance test teams and published in a separate report (reference (e)). DSAWG accreditation

was granted on 10 November 2009. The Certification Testing Summary (Enclosure 2) documents the test results and describes the test configuration.

4. The Functional Requirements used to evaluate the interoperability of the SUT and the interoperability statuses are indicated in Table 1.

Table 1. SUT Functional Requirements and Interoperability Status

Interface	Critical	Certified	Requirements Required or Conditional	Status	UCR Reference
IP 10/100 Mbps (ITU-T H.323)	No ¹	Yes ²	The VTC system/endpoints shall meet the requirements of FTR1080B-2002 (R)	Met	5.2.12.4.5
			ITU-T H.323 in accordance with FTR 1080B-2002 (C)	Met	5.2.12.4.5
			Layer 3 Differential Service Code Point tagging as specified in UCR, 5.2.12.8.2.9 (C)	Met	5.2.12.4.5
			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	5.2.12.4.5
			Audio add-on interface, implemented independently of an IAS, shall be in accordance with UCR, 5.2.12.3 (CPE) (C)	Met	5.2.12.4.5
			Physical, electrical, and software characteristics shall not degrade or impair switch and associated network operations (R)	Met	5.2.12.4.5
ISDN PRI T1, ISDN PRI E1 (ITU-T H.320)	No ¹	Yes	The VTC system/endpoints shall meet the requirements of FTR 1080B-2002 (R)	Met	5.2.12.4.5
			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	5.2.12.4.5
			Audio add-on interface, implemented independently of an IAS, shall be in accordance with UCR, 5.2.12.3 (CPE) (C)	Met	5.2.12.4.5
			Integrated PRI interface shall be in conformance with IAS requirements in UCR, 5.2.12.7 (IAS) (C)	Met	5.2.12.4.5
			Physical, electrical, and software characteristics of VTU system(s)/endpoint(s) that are used in the DSN network shall not degrade or impair the serving DSN switch and its associated network operations.(R)	Met	5.2.12.4.5
	Yes	Certified	Security (IA/DIACAP) (R)	See note 3.	3.2.3

NOTES:

- The VTC system interface requirements can be met with ISDN PRI, Serial, or ISDN BRI. In addition the SUT may include an ITU-T H.323 conditional interface.
- The SUT also 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. Furthermore, the SUT does not offer IPv6, however this requirement is currently a conditional requirement for an MCU or VTU. This requirement will be changed as required in the UCR change 1. In the interim OSD has issued an interim rules of engagement dated 23 June 2009, and the vendor will have 18 months from this date to comply. There is no operational impact.
- Security is tested by DISA-led Information Assurance test teams and published in a separate report, reference (e).

LEGEND:

BRI	Basic Rate Interface	IAS	Integrated Access Switch
C	Conditional	IP	Internet Protocol
C2	Command and Control	ISDN	Integrated Services Digital Network
CPE	Customer Premise Equipment	ITU-T	International Telecommunication Union - Telecommunication Standardization Sector
DIACAP	Department of Defense Information Assurance Certification and Accreditation Process	Mbps	Megabits per seconds
DISA	Defense Information Systems Agency	PRI	Primary Rate Interface
DSN	Defense Switched Network	R	Required
E1	European Basic Multiplex Rate (2.048 Mbps)	SUT	System Under Test
FTR	Federal Telecommunications Recommendation	T1	Digital Transmission Link Level 1 (1.544 Mbps)
H.320	Standard for narrowband VTC	UCR	Unified Capabilities Requirements
H.323	Standard for multi-media communications on packet-based networks	VTC	Video Teleconferencing
IA	Information Assurance	VTU	Video Teleconferencing Unit

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 Mr. Brad Friedman, DSN 879-5057, commercial (520) 538-5057, FAX DSN 879-4347, or e-mail to brad.friedman@disa.mil. The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 0818201.

FOR THE COMMANDER:

2 Enclosures a/s


for RICHARD A. MEADOR
Chief
Battlespace Communications Portfolio

JITC Memo, JTE, Special Interoperability Test Certification of the Tandberg Codian Media Services Engine (MSE) 8000 Version 2.0 (1.13)

Distribution (electronic mail):

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ADDITIONAL REFERENCES

- (c) Office of the Assistant Secretary of Defense, "Department of Defense Unified Capabilities Requirements 2008," 22 January 2009
- (d) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006
- (e) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Tandberg Codian Media Service Engine (MSE) 8000 Version 2.0(1 rev 13) (Tracking Number 0818201)," 10 November 2009

CERTIFICATION TESTING SUMMARY

1. SYSTEM TITLE. Tandberg Codian Media Services Engine (MSE) 8000 Version 2.0 (1.13); hereinafter referred to as the System Under Test (SUT).

2. PROPONENT. United States Special Operations Command (USSOCOM).

3. PROGRAM MANAGER. Mr. John Van Buren, SONC J61, 7701 Tampa Point Blvd. Macdill Air Force Base, Florida. 33621, Email: john.vanburen@socom.mil.

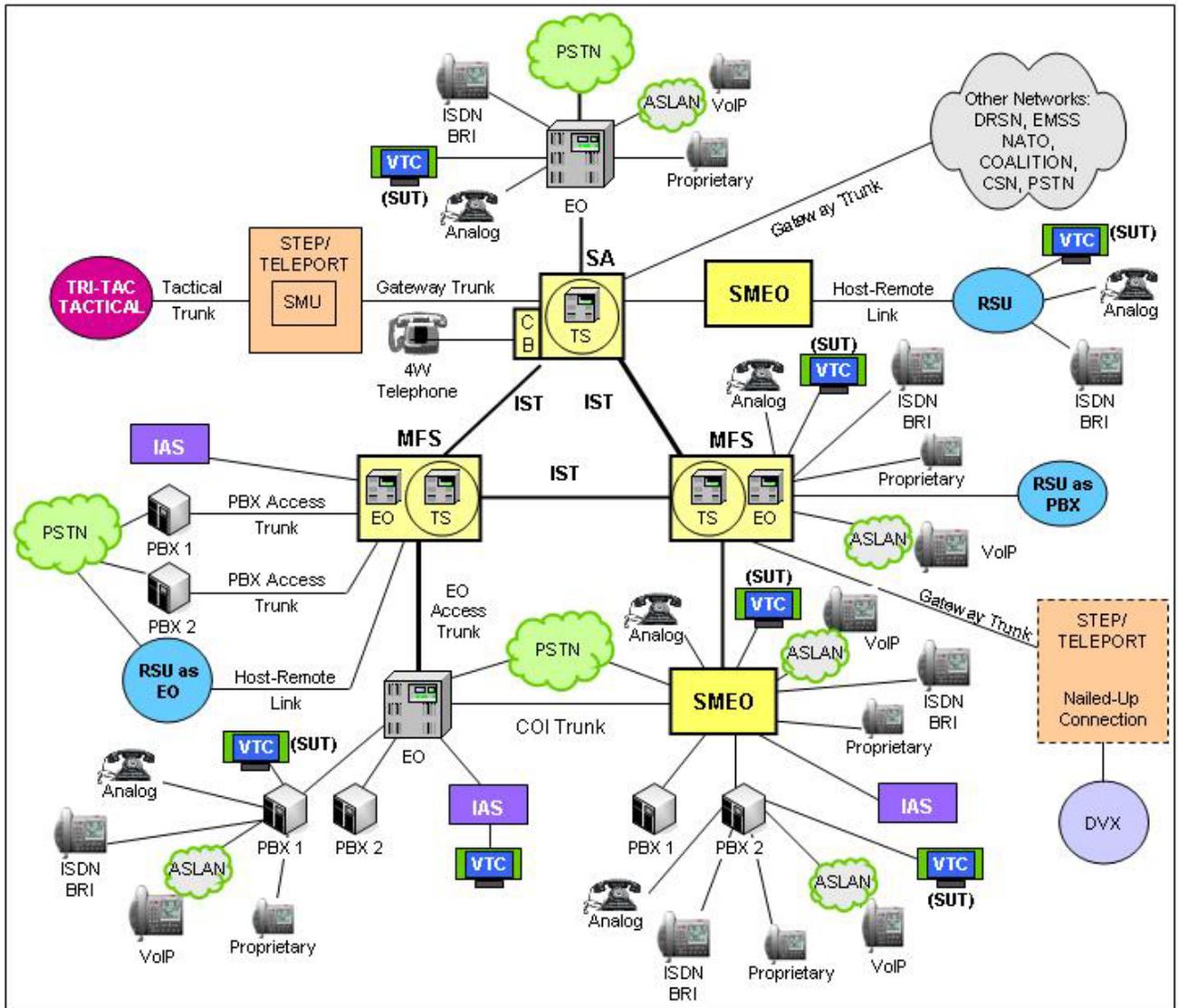
4. TESTER. Joint Interoperability Test Command (JITC), Fort Huachuca, Arizona.

5. SYSTEM UNDER TEST DESCRIPTION. The SUT is a network appliance that provides multi-site Video Teleconferencing (VTC) capabilities. The primary function is to serve as a bridge to allow multiple endpoints such as codecs and other VTC units to communicate in a single call. The SUT supports endpoints using International Telecommunication Union-Telecommunication Standardization Sector (ITU-T) H.323 and ITU-T H.320. The SUT is equipped with the following blades:

- Codian 8050 Supervisor blade - used to monitor and the management and configuration of the system.
- Codian 8510 Media 2 blade - provides up to 20 High Definition (HD) ports or 80 Standard Definition (SD) ports plus 40 audio ports for multipoint conferencing.
- Codain 8321 Integrated Services Digital Network (ISDN) Gateway - provides up to 8 European Basic Multiplex Rate (E1) or Digital Transmission Link Level 1 (T1) Primary Rate Interface (PRI) for ITU-T H.320 to ITU-T H.323 call integration.

The SUT does not offer IPv6, however this requirement is currently a conditional requirement for an MCU or VTU. This requirement will be changed as required in the UCR change 1. In the interim OSD has issued an interim rules of engagement dated 23 June 2009, and the vendor will have 18 months from this date to comply. There is no operational impact.

6. OPERATIONAL ARCHITECTURE. The Unified Capabilities Requirements (UCR) Defense Switched Network (DSN) architecture in Figure 2-1 depicts the relationship of the SUT to the DSN switches.



LEGEND:

4W 4-Wire
 ASLAN Assured Services Local Area Network
 BRI Basic Rate Interface
 CB Channel Bank
 COI Community of Interest
 CSN Canadian Switch Network
 DRSN Defense Red Switch Network
 DSN Defense Switched Network
 DVX Deployable Voice Exchange System
 EMSS Enhanced Mobile Satellite System
 EO End Office
 IAS Integrated Access Switch
 ISDN Integrated Services Digital Network
 IST Interswitch Trunk
 MFS Multifunction Switch

NATO North Atlantic Treaty Organization
 PBX Private Branch Exchange
 PBX 1 Private Branch Exchange 1
 PBX 2 Private Branch Exchange 2
 PSTN Public Switched Telephone Network
 RSU Remote Switching Unit
 SA Standalone
 SMEO Small End Office
 SMU Switched Multiplex Unit
 STEP Standardized Tactical Entry Point
 SUT System Under Test
 Tri-Tac Tri-Service Tactical Communications Program
 TS Tandem Switch
 VoIP Voice over Internet Protocol
 VTC Video Teleconferencing

Figure 2-1. DSN Architecture

7. REQUIRED SYSTEM INTERFACES. Requirements specific to the SUT and interoperability results are listed in Table 2-1. These requirements are derived from the UCR, 5.2.12.4, Interface and Functional Requirements and verified through JITC testing and review of vendor's Letters of Compliance (LoC).

Table 2-1. SUT Functional Requirements and Interoperability Status

Interface	Critical	Certified	Requirements Required or Conditional	Status	UCR Reference
IP 10/100 Mbps (ITU-T H.323)	No ¹	Yes ²	The VTC system/endpoints shall meet the requirements of FTR1080B-2002 (R)	Met	5.2.12.4.5
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Yes	Certified	Security (IA/DIACAP) (R)	See note 3,	3.2.3	

NOTES:

- The VTC system interface requirements can be met with ISDN PRI, Serial, or ISDN BRI. In addition the SUT may include an ITU-T H.323 conditional interface.
- The SUT also 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. Furthermore, the SUT does not offer IPv6, however this requirement is currently a conditional requirement for an MCU or VTU. This requirement will be changed as required in the UCR change 1. In the interim OSD has issued an interim rules of engagement dated 23 June 2009, and the vendor will have 18 months from this date to comply. There is no operational impact.
- Security is tested by DISA-led Information Assurance test teams and published in a separate report, reference (e).

LEGEND:

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8. TEST NETWORK DESCRIPTION. The SUT was tested at JITC's Global Information Grid Network Test Facility (GNTF) in a manner and configuration similar to that of the DSN operational environment. Testing the system's required functions and features was conducted using the test configuration depicted in Figure 2-2.

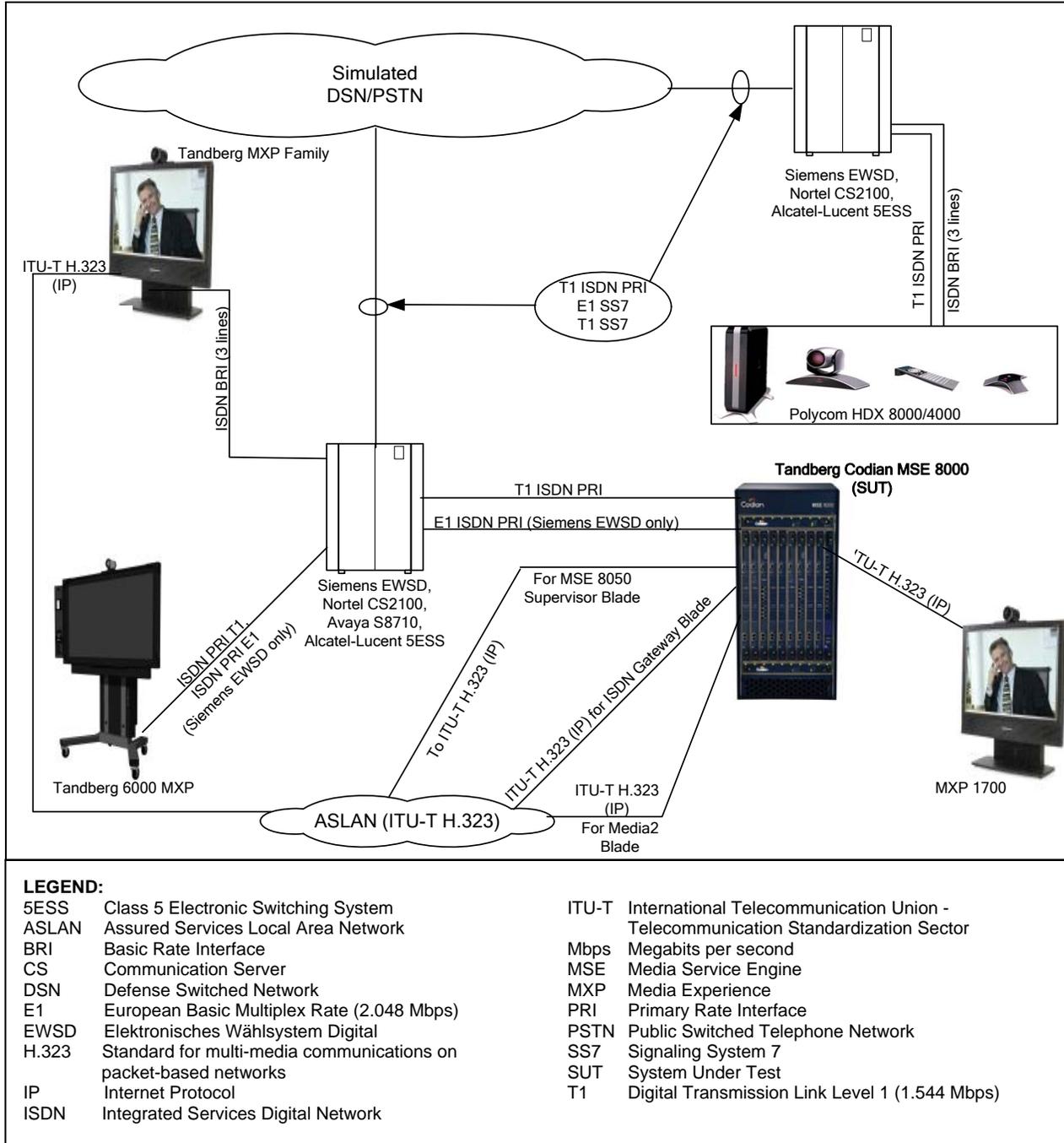


Figure 2-2. SUT ISDN PRI and ITU-T H.323 (IP) Test Configuration

Table 2-3. Video and Voice Subjective Quality Scale

Rating	Reference	Definition
1	<i>Unusable</i>	<u>Quality is unusable.</u> Voice and video may be heard and seen but is unrecognizable.
2	<i>Poor</i>	<u>Quality is unusable.</u> Words and phrases are not fully understandable or video cannot be properly identified.
3	<i>Fair</i>	<u>Quality is seriously affected by distortion.</u> Repeating words and phrases are required to convey speech or video is seriously impacted and barely recognizable.
4	Good	Quality is usable. Audio or video is not impaired but some distortion is noticeable
5	<i>Excellent</i>	<u>Quality is unaffected.</u> No discernable problems with either audio or video.

NOTE: Audio and video quality during a conference will receive a subjective rating on the Data Collection Form. A rating of lower than 4 on this reference scale is considered a failure.

b. Test Conduct. Multiple two-way 112 - 384-kbps bonding mode 1 Multipoint and Point-to-Point test calls at different durations (15-minute, 30-minute, 1-hour, 24-hours, and 48-hours) and different precedence levels were placed over the test network shown in Figure 2-2 via all the combinations depicted in Table 2-1.

(1) Seven- and ten-digit calls were placed to verify that the SUT met the capability to support both the North American Numbering Plan and the DSN World Wide Numbering and Dialing Plan (WWNDP) defined in UCR, 5.2.12.4.5 (5.2.12.7.4). Multilevel precedence video calls were placed from the SUT and established within the DSN at the respective precedence level dialing the DSN WWNDP access code (e.g. 93: Priority, 92: Immediate, 91: Flash, etc.). The SUT has the ability to prefix any DSN 7 or 10 digit number with a 9X access code which meets this requirement.

(2) The UCR, 5.2.12.4.5 requirements state that the VTC system/endpoints shall meet the requirements of FTR 1080B-2002. The SUT met this requirement through testing and the vendor's LoC.

(3) The UCR, 5.2.12.4.5 requirements state that 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. This was tested during each multipoint session established with the SUT by disconnecting single and multiple conferees. This was done by hanging up and simulating a failure by disconnecting the physical interface. The remaining conferees on the multipoint conference were not affected and remained in the conference 100 percent of the time, which met this requirement.

(4) The UCR, 5.2.12.4.5 requirements state that an audio add-on interface, implemented independently of an Integrated Access Switch (IAS), shall be in accordance with the UCR, 5.2.12.3. The SUT met this requirement through testing and the vendor's LoC.

(5) The UCR, 5.2.12.4.5 requirements state that a VTC features and functions used in conjunction with Internet Protocol (IP) network services shall meet the requirements of ITU-T H.323 in accordance with FTR 1080B-2002. Additionally, ITU-T

H.323 video end instruments must meet the tagging requirements as specified in UCR 2008, section 5.2.12.8.2.9. This requirement was met by the SUT with testing and the vendors LoC. The SUT has the ability to apply a Service Class Tag for signaling and video media at any value from 0 to 63, which met the requirement.

(6) A VTC system/endpoint that uses an integrated PRI interface to connect to the DSN shall be in conformance with the requirements associated with an IAS as described in the UCR, 5.2.12.7. The SUT met this requirement through testing and the vendor's LoC.

(7) The physical, electrical, and software characteristics of Video Teleconferencing Unit system(s)/ endpoint(s) that are used in the DSN network shall not degrade or impair the serving DSN switch and its associated network operations. This was tested by conducting other tests on the serving DSN switch to include bulk call loading while point-to-point and multipoint video sessions were established. The SUT physical, electrical, and software characteristics did not impair the serving DSN switch and its associated operations, which met the requirement.

c. Test Summary. The SUT met the critical interface and functional requirements for a VTC system with the interfaces depicted in Table 2-1 and is certified for joint use within the DSN. The SUT meets the critical interoperability requirements for T1 and E1 ISDN PRI interfaces. The SUT met the requirements for an IP interface with the ITU-T H.323 protocol; however, Assured Service is not yet defined for an IP interface with the ITU-T H.323 protocol. Since the IP interface with the ITU-T H.323 protocol does not provide Assured Services during a crisis or contingency, users' access to the DSN will be on a best effort basis. 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.

12. TEST AND ANALYSIS REPORT. 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://jtc.fhu.disa.mil/tssi>.