



DEFENSE INFORMATION SYSTEMS AGENCY

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

1 Feb 10

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Special Interoperability Test Certification of PacStar 6300 Deployable Unified Capabilities (UC) Exchange with software version IQ-Core 3.0

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 (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 PacStar 6300 Deployable UC Exchange with software version IQ-Core 3.0 is hereinafter referred to as the System Under Test (SUT). The SUT, which includes a Cisco enclave and a REDCOM enclave, met all of its critical interoperability requirements and is certified as interoperable for joint use within the Defense Switched Network (DSN). The SUT was tested and met the critical interoperability requirements for the following switch types: Deployable Voice Exchange (DVX), Private Branch Exchange (PBX) 1, and PBX 2. The SUT is certified in either of the following two configurations: with a REDCOM SLICE or a REDCOM High Density Exchange (HDX) as the Time Division Multiplexing (TDM) part of the solution. The SUT is certified for Voice over Internet Protocol (VoIP) with certified Assured Services Local Area Networks (ASLANs) on the UC Approved Products List (APL). The listed test discrepancies shown in the SUT Interoperability Test Summary have an overall minor operational impact. 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 memorandum (13 August 2009).

3. The extension of this certification is based upon a Desktop Review (DTR). The original certification 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. Testing was conducted at JITC's Global Information Grid Network Test Facility at Fort Huachuca, Arizona, from 2 June through 25 July 2008. Regression testing was conducted from 9 January through 13 February 2009 and documented in

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Reference (c) to test configuration changes and patches developed to fix test discrepancies discovered during initial testing. Review of the vendor's LoC was completed on 8 April 2009. DSAWG grants accreditation based on the security testing completed by DISA-led IA test teams and published in a separate report, Reference (d). DSAWG accreditation was granted on 11 August 2009. This DTR includes nine additions, modifications, or updates that have been reviewed by JITC and approved for implementation as part of the original certification. The requested changes in this DTR are summarized as follows in the paragraphs below. DSAWG accreditation for these DTRs was granted on 8 January 2010.

a. Include the following list of Cisco telephone equipment for use with the Cisco Unified CallManager with Internetwork Operating System (IOS) 4.3(2): 7914, 7915, and 7916 Expansion Modules; CIS-7961G, CIS-7975G, and Cryptek-7961G VoIP TEMPEST phones; CP-7940G, CP-7960G, CP-7941G-GE, CP-7961G-GE, and CP-7971G VoIP phones; SW-CCM-UL-7971 VoIP phone license; and the Walker WS-2620 Push-to-talk handset for VoIP phones.

b. Include the following list of Cisco Voice/WAN interface cards for use with the Cisco Unified CallManager with IOS 4.3(2): EM HDA 8FXS, EVM HD 8FXS/DID, NM HDV2, NM HDV2 1T1/E1, NM HD 2V, NM HD 2VE, VIC2 2FXS, VWIC 1MFT T1, VWIC 2MFT T1, VWIC 2MFT T1 DI, VWIC2 1MFT T1/E1, and VWIC2 2MFT T1/E1.

c. Include the Acnodes KVM in lieu of the BSI MRK 107.

d. Include the BSI RMK 737 KVM in lieu of the BSI MRK 107.

e. Include the Cisco Media Convergence Server (MCS)7825-I4 as a replacement for MCS7825-I3.

f. Include the Cisco MCS7845-I2 as a replacement for MCS7845-I1.

g. Include the following software patches for the case controller with software 3.0.228: TT4981, TT4905, TT5004, and TT5025.

h. Include the Cisco MCS7825-H4 as a replacement for MCS7825-H3.

i. Include Signaling System 7 (SS7) on the T1 trunks served by the REDCOM HDX.

4. The interoperability test summary of the SUT is contained in Table 1. The DVX required and conditional Capability Requirements (CRs) and Feature Requirements (FRs) are listed in Table 2. The differences between DVX and PBX 1 requirements are depicted in Table 3. This interoperability test status is based on the SUT's ability to meet:

a. DSN services for Network and Applications specified in Reference (e).

b. DVX interface and signaling requirements for trunks/lines specified in Reference (f) verified through JITC testing and/or vendor submission of LoC.

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c. DVX CRs/FRs specified in Reference (f) verified through JITC testing and/or vendor submission of LoC.

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

Table 1. SUT Interoperability Test Summary

DSN Trunk Interfaces			
Interface & Signaling	Critical	Status	Remarks
T1 CAS (DTMF, DP, MFR1)	Yes	Certified	Met all critical CRs and FRs with the REDCOM enclave. Although Cisco offers this interface, it is not certified.
E1 CAS (DTMF, DP, MFR1)	Yes (Europe only)	Certified	Met all critical CRs and FRs with the REDCOM enclave. Although Cisco offers this interface, it is not certified.
T1 ISDN PRI NI 1/2 (ANSI T1.619a)	Yes	Certified	Met all critical CRs and FRs with the REDCOM enclave. The Cisco enclave does not support NFAS. ¹ The Cisco enclave monitoring tool occasionally provides inaccurate reports when a remote trunk is busy. ²
E1 PRI (ITU-T Q.955.3)	No (Europe only)	Certified	Met all critical CRs and FRs with the REDCOM enclave. The E1 ISDN PRI interface is supported by the Cisco enclave; however, it does not support ITU-T Q.955.3 MLPP.
T1 SS7 (ANSI T1.619a)	No	Certified	This interface was certified specifically with the REDCOM HDX with Desktop Review 13. This interface was previously certified for the REDCOM HDX.
E1 SS7 (ANSI T1.619a)	No	Not Tested	E1 SS7 is not supported by the SUT. This is not a required interface for a DVX or PBX 1. There is no risk associated with the SUT not supporting this interface.
Analog E&M Type I, II, V	Yes	Certified	Met all critical CRs and FRs.
DSN Line Interfaces			
Interface & Signaling	Critical	Status	Remarks
2-Wire Analog (GR-506-CORE)	Yes	Certified	Met all critical CRs and FRs with a minor configuration change ³ and the following minor exceptions: The REDCOM enclave conference disconnect tone on phones connected to the REDCOM switch do not meet the specifications. ⁴
ISDN BRI NI 1/2	Yes	Certified	Met all critical CRs and FRs with the REDCOM enclave with the following minor exceptions: The conference disconnect tone does not meet the specifications. ⁴ The precedence above ROUTINE ringing cadence that the SUT applies to BRI phones does not meet the specifications. ⁵ This interface is not supported on the Cisco enclave.
2-Wire Proprietary Digital	No	Not Tested	2-Wire Proprietary Digital is not supported by the SUT. This is not a required interface for a DVX. There is no risk associated with the SUT not supporting this interface.
VoIP (Session Initiation Protocol)	No	Certified	Met all critical CRs and FRs with the Cisco enclave.
Common Features	Yes	Certified	Met all critical CRs and FRs for the with the following minor exception: The SUT does not support Call Pickup between the two enclaves. ⁶ The REDCOM enclave does not correctly support the call forwarding variable "ping" ring feature. ⁷ Met all critical CRs and FRs for the Cisco enclave with the following minor exceptions: Full compliance of DSN Common Call Features was not met. ^{8, 9, 10, 11, 12, 13}
Attendant	No	Not Tested	The SUT does not support this feature. This is not a required feature for a DVX. There is no risk associated with the SUT not supporting this feature.
Public Safety	Yes	Certified	Met all critical CRs and FRs.

Table 1. SUT Interoperability Test Summary (continued)

DSN Features and Capabilities				
Features and Capabilities		Critical	Status	Remarks
Conferencing	Preset	Yes	Certified	Met all critical CRs and FRs with the REDCOM enclave.
	Conference Notification Recorded Announcement	Yes	Certified	Met all critical CRs and FRs with the REDCOM enclave.
	Automatic Retrial and Alternate Address	Yes	Certified	Met all critical CRs and FRs with the REDCOM enclave.
	Bridge Release	Yes	Certified	Met all critical CRs and FRs with the REDCOM enclave.
	Lost Connection	Yes	Certified	Met all critical CRs and FRs with the REDCOM enclave.
	Secondary Conferencing	Yes	Certified	Met all critical CRs and FRs with the REDCOM enclave.
	Meet-me	No	Certified	Met all critical CRs and FRs with the REDCOM enclave.
	Progressive	No	Certified	Met all critical CRs and FRs with the REDCOM enclave.
Nailed-up Connections		No	Not Tested	This feature is not supported by the SUT. This is not a required feature for a DVX or PBX 1. There is no risk associated with the SUT not supporting this feature.
DSN Hotline Services		Yes	Certified	Met all critical CRs and FRs with the following minor exception: The SUT does not support the ISDN PRI code set 5 off hook indicator elements for hotline services. ¹⁴
MLPP		Yes	Certified	Met all critical CRs and FRs with the following minor exceptions: The SUT does not support the loss of Command and Control announcement. ¹⁵ The SUT does not support Method 1 preemption search algorithm if the trunks are a combination of Cisco and REDCOM enclaves. ¹⁶ The SUT does not maintain the precedence level when transferring a call from the Cisco enclave to the REDCOM enclave. ¹⁷ The SUT does not support Call Pickup between the Cisco enclave and the REDCOM enclave. ⁶ When the initiator of a three-way call is preempted, the remaining parties do not receive a conference disconnect tone. ¹⁸
Call Processing		Yes	Certified	Met all critical CRs and FRs with the following minor exceptions: The REDCOM enclave does not support the full complement of CoS tables. ¹⁹ The SUT does not support calling number delivery. ²⁰
Network Management		Yes	Certified	Met all critical CRs and FRs with Internet Protocol (IP) interfaces.
ISDN Services		Yes	Certified	Met all critical CRs and FRs. The Cisco enclave does not support NFAS. NFAS is supported on the REDCOM enclave. ¹ The operational impact is minor.
Synchronization		Yes	Certified	Met all critical CRs and FRs.
Reliability		Yes	Certified	Met all critical CRs and FRs. ²¹
Security		Yes	Certified	See note 22.
VoIP System		No	Certified	The SUT is certified for VoIP with any certified ASLAN posted on the UC APL. See notes 23 and 24.
Network Gateways				
Gateway	Interface & Signaling	Critical	Status	Remarks
PSTN	T1 CAS (DTMF, DP, MFR1)	Yes	Certified	Met all critical CRs and FRs with the REDCOM enclave. Although Cisco offers this interface, it is not certified.
	E1 CAS (DTMF, DP, MFR1)	Yes (Europe only)	Certified	Met all critical CRs and FRs with the REDCOM enclave. Although Cisco offers this interface, it is not certified.
	T1 ISDN PRI NI 1/2 (ANSI T1.607)	Yes	Certified	Met all critical CRs and FRs with the REDCOM enclave. The Cisco enclave does not support NFAS. ¹ The operational impact is minor.
	E1 PRI (ITU-T Q.931)	No (Europe only)	Certified	Met all critical CRs and FRs.
	Ground Start Line	Yes	Certified	Met all critical CRs and FRs.

Table 1. SUT Interoperability Test Summary (continued)

NOTES:

- 1 The Cisco enclave does not support NFAS with its ISDN PRI NI2 interface, which is a requirement for a DVX. The SUT supports NFAS with the REDCOM enclave with one exception, the REDCOM HDX must be deployed in the REDCOM enclave. If the SUT is deployed with the REDCOM Slice, due to its limit of two ISDN PRI NI2 interfaces, the SUT cannot support NFAS. Since NFAS as a rule is deployed when more than four ISDN PRI NI2 interfaces are required, the operational impact of this discrepancy is minor. Therefore, if more than four ISDN PRI NI2 interfaces are required with NFAS, the SUT must be deployed with the HDX to meet this requirement. Both SUT enclaves do support FAS.
- 2 A discrepancy exists that is associated with the monitoring tool that Cisco enclave uses to check the status of the ISDN PRI trunks on the gateway. The monitoring tool occasionally provides an inaccurate representation of the status of the channels on the trunks when they are busied by the remote switching system. The SUT will occasionally provide an indication that the channel that was busied out by the far-end switch remains in an idle condition. This anomaly can be eliminated by insuring the trunks are busied at both the remote end and at the SUT. Furthermore, when this anomaly does occur, the correct busy state of the trunks is reflected in layer 3 protocol of the ISDN PRI interface, therefore, the operational impact is minor.
- 3 A configuration change was required on the Cisco enclave analog gateways to meet the requirement for interoperability with secure devices, specifically the L3 Omni Secure Wireline Terminal. On the individual voice ports, the minimum and maximum settings for "timing hookflash in" had to be changed to a maximum value of 500 ms and a minimum value of 150 ms. Otherwise, a call that is placed between two Omni devices on the SUT will not disconnect when placed on hook.
- 4 The conference disconnect tone that is provided by the REDCOM enclave does not meet the specifications designated in UCR, section 5.5.2. The SUT conference disconnect tone is distinguishable from other DSN tones and cadences; therefore, this anomaly has a minor operational impact.
- 5 The precedence above ROUTINE ringing cadence that the REDCOM enclave applies to BRI phones does not meet the specifications as detailed in the UCR, section 5.5.1. The precedence above ROUTINE cadence is distinct from the ROUTINE cadence when it is configured properly; therefore this anomaly has no operational impact.
- 6 The SUT does not support Call Pickup between the Cisco enclave and the REDCOM enclave. This solution is unique in that it offers DVX functionality with two switches (Cisco and REDCOM) and each switch offers call pickup. This action is mitigated by not mixing call pickup groups between the two switch enclaves. DISA's adjudication of this discrepancy was ruled to have a minor operational impact.
- 7 When CFV is assigned to any station on the REDCOM enclave and CFV is invoked by the user, any station with CFV invoked does not receive a "ping" ring when calls are being forwarded. The operational impact is minor.
- 8 Call Forward No Answer, Call Forward Busy, and Multi-Line Hunt Service are supported on both VoIP and analog stations of the Cisco enclave. Call Forward Variable, Three-way Calling, Call Hold, and Call Transfer are supported on VoIP stations only. These features are required for a DVX for all instruments; however, this is a new UCR requirement and the vendor has 18 months (until July 2009) to develop this capability. Denied Originating Service is not supported by the SUT and is therefore not covered in this certification. This feature is not required for a DVX.
- 9 The Cisco enclave does not support Call Waiting. However, there is no operational impact because the requirement is satisfied with multiple line appearances having a busy trigger. Also, this is a new UCR requirement and the vendor has 18 months (until July 2009) to develop this capability.
- 10 All of the features on the VoIP phones were tested using multiple line appearances. A minimum of two line appearances is required to meet the MLPP interoperability requirements for Call Features with the exception of call hold, call pickup, and call forwarding functions.
- 11 Although the Cisco enclave does not support Precedence Call Waiting, they do support multiple call appearances on their VoIP stations. This provides the ability for a user to receive additional calls while active with another call. Also, this is a new UCR requirement and the vendor has 18 months (until July 2009) to develop this capability. There is no operational impact.
- 12 A short "ping" ring is not provided when calls are forwarded on the Cisco enclave; however, the phone does visually display that call forward variable is enabled. There is a minor operational impact.
- 13 When a ROUTINE call is placed to a hunt group, and a ring-no-answer condition occurs, the calling party is diverted to the MLPP alternate directory number. This configuration must be done to allow correct treatment to be provided to precedence calls above ROUTINE that are placed to the hunt group. The UCR requires this only for precedence above ROUTINE calls. There is no operational impact.
- 14 The SUT does not support the ISDN PRI code set 5 off hook indicator elements for hotline services as required by the UCR. The vendor began testing prior to 14 June 2008 and, therefore, was not required to provide this feature. This anomaly has minor operational impact. Also, this feature is not required for a PBX 1.
- 15 The SUT does not support the Loss of C2 announcement. This announcement is invoked only when a DSN subscriber is automatically routed to a non-MLPP network. This requirement is currently under review by DISA and the Joint Staff. In addition, the specific conditions that invoke this announcement have not yet been defined. As a result, the vendors are not required to be in compliance until 18 months from the date the requirement is fully defined.
- 16 The SUT does not support Method 1 preemption search algorithm if the trunks are a combination of the Cisco and REDCOM enclaves. In order to use the Method 1 search preemption search algorithm, all trunk groups must be member of the Cisco Gateway or the REDCOM switch. DISA's adjudication of this discrepancy was ruled to have a minor operational impact.
- 17 The SUT does not maintain the precedence level when transferring a call between the Cisco enclave and the REDCOM enclave. This discrepancy is due to the functionality between the Cisco and REDCOM enclaves. DISA's adjudication of this discrepancy was ruled to have a minor operational impact.
- 18 When the initiator of a three-way call is preempted, the remaining parties do not receive a conference disconnect tone. However, the remaining members of the three-way call do stay connected. DISA's adjudication of this discrepancy was ruled to have a minor operational impact.

Table 1. SUT Interoperability Test Summary (continued)

NOTES (continued):					
19 The SUT does not support the full complement of CoS tables as specified in the UCR. The SUT supports 255 CoS tables for analog lines and does not support CoS tables on access lines, number codes, trunks, or groups of trunks. This limitation has posed a minor operational impact within the DSN when assigning lines and trunks on the SUT.					
20 This is a new UCR requirement and the vendor has 18 months (until July 2009) to develop this capability.					
21 Backup power, power components, UPS requirements, UPS load capacity and alarms are non-testable requirements. It is the responsibility of the respective base/post/camp/station communication agency to provide this with the SUT when installed.					
22 Security is tested by DISA-led Information Assurance test teams and published in a separate report, Reference (d).					
23 An IPv6 capable system or product, as defined in the UCR, paragraph 1.7, shall be capable of receiving, processing, and forwarding IPv6 packets and/or interfacing with other systems and protocols in manner similar to that of IPv4. IPv6 capability is currently satisfied by a vendor LoC signed by the Vice President of their respective company. The vendor stated in writing, their intent to return to JITC for testing of their solution with IPv6 enabled earliest date available. In addition they stated in writing, compliance to the following criteria:					
a. Conformant with IPv6 standards profile contained in the Department of Defense Information Technology Standards Registry (DISR). These standards are delineated in the UCR, appendix 11.					
b. Maintaining interoperability in heterogeneous environments and with IPv4.					
c. Commitment to upgrade as the IPv6 standard evolves.					
d. Availability of contractor/vendor IPv6 technical support.					
24 The SUT was tested with IPv4 only. In accordance with the Office of Secretary IPv6 Rules of engagement a solution can be tested and certified for IPv4 only, however the vendor is required to stipulate in an IPv6 LoC their way ahead to be IPv6 capable by end of CY 2008. In addition the vendor is required to return for retest with this IPv6 solution prior to the end of CY 2008. The vendor stated in their IPv6 LoC submission that they will not be able to deliver an IPv6 capable solution until 31 May of 2010. The vendor received a waiver for this requirement from OSD on 9 March 2009.					
LEGEND:					
ANSI	American National Standards Institute	GR-506-CORE	LSSGR: Signaling for Analog Interfaces	NI2	National ISDN Standard 2
APL	Approved Products List	HDX	High Density Exchange	OSD	Office of the Secretary of Defense
ASLAN	Assured Services Local Area Network	IPv4	Internet Protocol version 4	PRI	Primary Rate Interface
BRI	Basic Rate Interface	IPv6	Internet Protocol version 6	PSTN	Public Switched Telephone Network
C2	Command and Control	ISDN	Integrated Services Digital Network	Q.931	Signaling Standard for ISDN
CAS	Channel Associated Signaling	ITU-T	International Telecommunication Union - Telecommunication Standardization Sector	Q.955.3	ISDN signaling standard for E1 MLPP
CFV	Call Forwarding Variable			SS7	Signaling System 7
CoS	Class of Service	JITC	Joint Interoperability Test Command	SUT	System Under Test
CRs	Capability Requirements			T1	Digital Transmission Link Level 1 (1.544 Mbps)
CY	Calendar Year	LoC	Letters of Compliance	T1.607	ISDN – Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1
DISA	Defense Information Systems Agency	LSSGR	Local Access and Transport Area (LATA) Switching Systems Generic Requirements		
DP	Dial Pulse	Mbps	Megabits per second	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
DSN	Defense Switched Network	MFR1	Multi-Frequency Recommendation 1	UC	Unified Capabilities
DSS1	Digital Subscriber Signaling 1	MLPP	Multi-Level Precedence and Preemption	UCR	Unified Capabilities Requirements
DTMF	Dual Tone Multi-Frequency	ms	milliseconds	UPS	Uninterruptible Power Supply
DVX	Deployable Voice Exchange	NFAS	Non-Facility Associated Signaling	VoIP	Voice over Internet Protocol
E&M	Ear and Mouth	NI 1/2	National ISDN Standard 1 or 2		
E1	European Basic Multiplex Rate (2.048 Mbps)				
FAS	Facility Associated Signaling				
FRs	Feature Requirements				
GR	Generic Requirement				

Table 2. DVX Requirements

DSN Trunk Interfaces				
Interface	Critical	Requirements Required or Conditional		References
T1 SS7 (ANSI T1.619a)	No	Trunking	<ul style="list-style-type: none"> • Direct Inward Dialing (C) • National ISDN 1/2 Primary Access (R) • ISDN ANSI MLPP Service Capability (R) • ITU-T ISDN Primary Access (Europe only) (C) • ITU-T ISDN Primary Access Digital Subscriber Signaling System Number 1 MLPP (Europe only) (C) 	<ul style="list-style-type: none"> • UCR Section 2.3.2 • UCR Section 2.3.4.1 • UCR Section 2.3.4.1.1 • UCR Section 2.3.4.2 • UCR Section 2.3.4.2.1
E1 SS7 (ITU-T Q.735.3)	No (Europe only)		<ul style="list-style-type: none"> • Normal Wink Start Operations (R) • Glare Operation (R) • Abnormal Wink Start (R) • Glare Resolution (R) • Call for Service Timing (R) • Guard Timing (R) • Satellite Timing (R) • Disconnect Control (R) • Reselect and Retrial (R) • Off-Hook Supervision Transition (R) • Dial-Pulse Signals (R) • DTMF Signaling (R) 	<ul style="list-style-type: none"> • UCR Section 5.3.3.1.1 • UCR Section 5.3.3.1.2 • UCR Section 5.3.3.2.1 • UCR Section 5.3.3.2.2 • UCR Section 5.3.5 • UCR Section 5.3.6 • UCR Section 5.3.7 • UCR Section 5.3.8 • UCR Section 5.3.9 • UCR Section 5.3.10
T1 CAS (MFR1, DTMF, DP)	Yes		<ul style="list-style-type: none"> • Standard Digit Format for Precedence (C) • MFR1 2/6 Signaling (R) • Alerting Signals and Tones (R) • Common Channel Signaling 7 (C) • DSN ISDN User-to-Network Signaling (R) 	<ul style="list-style-type: none"> • UCR Section 5.4.1 • UCR Section 5.4.2 • UCR Section 5.4.2.1 • UCR Section 5.4.3 • UCR Section 5.4.3 • UCR Section 5.5 • UCR Section 5.6 • UCR Section 5.7.1
E1 CAS (MFR1, DTMF, DP)	Yes (Europe only)		<ul style="list-style-type: none"> • Application (R) • Physical Layer (R) • Data Link Layer (R) • Data Link Connection (R) • Peer-to-Peer Procedures of Data-Link Layer (R) • Layer 3 DSN User-to-Network Signaling (R) • DSN User-to-Network Signaling for Circuit-Switched Bearer Services (R) 	<ul style="list-style-type: none"> • UCR Section 5.7.1.1 • UCR Section 5.7.1.2 • UCR Section 5.7.1.3 • UCR Section 5.7.1.3.1 • UCR Section 5.7.1.3.2 • UCR Section 5.7.1.4 • UCR Section 5.7.1.4.2
T1 ISDN PRI NI 1/2 (ANSI T1.619a)	Yes		<ul style="list-style-type: none"> • Sequence of Messages for DSN Circuit-Switched Calls (R) • Message Functional Definition and Content (R) • General Message Format and Information Elements Coding (R) 	<ul style="list-style-type: none"> • UCR Section 5.7.1.4.3 • UCR Section 5.7.1.4.4 • UCR Section 5.7.1.4.5
E1 ISDN PRI (ITU-T Q.955.3)	No (Europe Only)		<ul style="list-style-type: none"> • Supplementary Services (C) 	<ul style="list-style-type: none"> • UCR Section 5.7.1.4.6
Analog E&M Type I, II, V	Yes			

Table 2. DVX Requirements (continued)

DSN Trunk Interfaces					
Interface	Critical	Requirements Required or Conditional		References	
T1 SS7 (ANSI T1.619a)	No	Trunking (continued)	<ul style="list-style-type: none"> • PCM-24 Digital Trunk Interface (R) • PCM-30 Digital Trunk Interface (Europe only) (R) • Interoperation of PCM-24 and PCM-30 (C) • Analog Trunk Interface (C) • Integrated Digital Loop Carrier (C) • Local Office Test Line (C) • Outside Plant Test Lines (C) • Test Incoming Trunks Tandem or Local State (C) • Manual Test of Trunks (R) • Trunk Group-Remove from Service (R) • Trunk Group-Restore to Service (R) • Carrier Group Alarm (R) • Software Carrier Group Alarm (C) 	<ul style="list-style-type: none"> • UCR Section 7.1 • UCR Section 7.2 • UCR Section 7.3 • UCR Section 7.4 • UCR Section 7.5 • UCR Section 2.5.1 • UCR Section 2.5.2 • UCR Section 2.5.3 • UCR Section 2.5.4.2 • UCR Section 2.5.5 • UCR Section 2.5.6 • UCR Section 2.5.7 • UCR Section 2.5.7.1 	
E1 SS7 (ITU-T Q.735.3)	No (Europe only)				
T1 CAS (MFR1, DTMF, DP)	Yes				
E1 CAS (MFR1, DTMF, DP)	Yes (Europe only)				
T1 ISDN PRI NI 1/2 (ANSI T1.619a)	Yes	Voice	<ul style="list-style-type: none"> • MOS (R) • Secure calls (R) 	<ul style="list-style-type: none"> • CJCSI 6215.01C • CJCSI 6215.01C 	
		Facsimile	<ul style="list-style-type: none"> • Analog: ITU-T T.4 (R) 	<ul style="list-style-type: none"> • DISR 	
E1 ISDN PRI (ITU-T Q.955.3)	No (Europe Only)	Data	<ul style="list-style-type: none"> • Modem (VBD) (R) • 56 kbps switched data (R: PRI only) • 64 kbps switched data (R: PRI only) • NX56 synchronous BER (R: PRI only) • NX64 synchronous BER (R: PRI only) • Secure data (STE/STU-III) (R) 	<ul style="list-style-type: none"> • CJCSI 6215.01C • UCR Section 3.10 • UCR Section 3.10 • UCR Section 3.10 • UCR Section 3.10 • CJCSI 6215.01C 	
Analog E&M Type I, II, V	Yes	VTC	<ul style="list-style-type: none"> • ITU-T H.320 (R: PRI only) 	<ul style="list-style-type: none"> • FTR 1080B-2002 	
Interface	Critical	Requirements Required or Conditional		References	
DSN Line Interfaces					
2-Wire Analog	Yes	Access	<ul style="list-style-type: none"> • Directory Number Identification (R) • PBX Line (C) • National ISDN 1/2 Basic Access (C) • Analog Line (R) • Basic Line Test Capabilities (C) • Advanced Line Test Capabilities (C) • Network Power Systems for External Interfaces (C) • Loop Start Line (R: 2-Wire Analog only) • Reverse Battery (R) • Alerting Signals and Tones (R) • S/T Reference Point (ISDN BRI) (C) 	<ul style="list-style-type: none"> • UCR Section 2.1.1 • UCR Section 2.3.1 • UCR Section 2.3.3 • UCR Section 2.3.5 • UCR Section 2.5.4.1.1 • UCR Section 2.5.4.1.2 • UCR Section 5.1 • UCR Section 5.2.1 • UCR Section 5.3.1 • UCR Section 5.5 • UCR Section 5.7.1.2.1 	
			Voice	<ul style="list-style-type: none"> • MOS (R) • Secure Calls (R) 	<ul style="list-style-type: none"> • CJCSI 6215.01C • CJCSI 6215.01C
ISDN BRI NI 1/2 (ANSI T1.619a)	Yes	Facsimile	<ul style="list-style-type: none"> • Analog: ITU-T T.4 (R) 	<ul style="list-style-type: none"> • DISR 	
		Data	<ul style="list-style-type: none"> • Modem (VBD) (R) • 56 kbps switched data (R) • 64 kbps switched data (R: BRI only) • NX56 synchronous BER (R: BRI only) • NX64 synchronous BER (R: BRI only) • Secure data (STE/STU-III) (R) 	<ul style="list-style-type: none"> • CJCSI 6215.01C • UCR Section 3.10 • UCR Section 3.10 • UCR Section 3.10 • UCR Section 3.10 • CJCSI 6215.01C 	
		VTC	<ul style="list-style-type: none"> • ITU-T H.320 (R: BRI only) 	<ul style="list-style-type: none"> • FTR 1080B-2002 	
2W Digital Proprietary	No				

Table 2. DVX Requirements (continued)

DSN Features & Capabilities			
Feature/ Capability	Critical	Requirements Required or Conditional	References
Common Features	Yes	<ul style="list-style-type: none"> • Individual Lines (R) • Selective call rejection (C) • Denied originating service (C) • Code restriction and diversion (R) • Call waiting (R) • Three-way calling (R) • Add-on transfer, conference calling, and call hold (C) • Call Transfer Individual – All calls (R) • Call Transfer - Internal Only (R) • Call Transfer – Individual – Incoming Only/Add-On Consultation Hold – Incoming Call (R) • Call Transfer – Outside (R) • Call Transfer – Add-On Restricted Station (C) • Call Transfer – Attendant (C) • Call Hold (R) • Conference Calling – Six Way Station Controlled (C) • Call Forwarding Variable (R) • Call Forward Busy Line (R) • Call Forwarding – Don't Answer – All Calls (R) • Selective Call Forwarding (C) • Call pick-up (C) • Address Translation (C) • Assured Dial Tone (R) 	<ul style="list-style-type: none"> • UCR Section 2.1 • UCR Section 2.1.2 • UCR Section 2.1.3 • UCR Section 2.1.4 • UCR Section 2.1.5 • UCR Section 2.1.6 • UCR Section 2.1.7 • UCR Section 2.1.7.1 • UCR Section 2.1.7.2 • UCR Section 2.1.7.3 • UCR Section 2.1.7.4 • UCR Section 2.1.7.5 • UCR Section 2.1.7.6 • UCR Section 2.1.7.7 • UCR Section 2.1.7.8 • UCR Section 2.1.8.1 • UCR Section 2.1.8.2 • UCR Section 2.1.8.3 • UCR Section 2.1.8.4 • UCR Section 2.1.9 • UCR Section 2.7 • UCR Section 2.9
Attendant	No	<ul style="list-style-type: none"> • Attendant Features (C) 	<ul style="list-style-type: none"> • UCR Section 2.2
Public Safety	Yes	<ul style="list-style-type: none"> • Basic Emergency Service (911) Caller (C) • Emergency Service (911) Public Safety Answering Point (C) • Enhanced Emergency Service (E911) (C) • Trace of terminating calls (R) • Outgoing call trace (R) • Tandem call trace (R) • Trace of a call in progress (R) 	<ul style="list-style-type: none"> • UCR Section 2.4.1.1 • UCR Section 2.4.1.2 • UCR Section 2.4.1.3 • UCR Section 2.4.2 • UCR Section 2.4.3 • UCR Section 2.4.4 • UCR Section 2.4.5
Conferencing	Yes	<ul style="list-style-type: none"> • Preset Conferencing (R) • Conference Notification Recorded Announcement (R) • Automatic Retrial and Alternate Address (R) • Bridge Release (R) • Lost Connection to Conferee or Originator (R) • Secondary Conferencing (R) • Meet-Me Conferencing (C) • Progressive Conferencing (C) 	<ul style="list-style-type: none"> • UCR Section A2.3.3 • UCR Section 2.6.2 • UCR Section 2.6.3
Nailed-up Connections	No	<ul style="list-style-type: none"> • Nailed-Up Connection (C) 	<ul style="list-style-type: none"> • UCR Section 2.8
DSN Hotline Services	Yes	<ul style="list-style-type: none"> • DSN Analog Hotline Service (R) • DSN ISDN Hotline Service (R) • Classmarking (R) • Protected Hotline Calling (R) • Hotline Service Protection (R) • Non-Pair Protected Hotline Calling (R) • Pair Protected Hotline Calling (R) 	<ul style="list-style-type: none"> • UCR Section 2.12 • UCR Section 2.12 • UCR Section 2.12 • UCR Section 2.12.1 • UCR Section 2.12.2 • UCR Section 2.12.3 • UCR Section 2.12.4

Table 2. DVX Requirements (continued)

DSN Features & Capabilities			
Feature/ Capability	Critical	Requirements Required or Conditional	References
MLPP	Yes	<ul style="list-style-type: none"> • MLPP Overview (R) • Precedence Levels (R) • Announcements (R) • Attendant Queue Announcement (C) • Loss of C2 Announcement (C) • Invocation and Operation (R) • Preemption in the Network (R) • Network Facility with Lower Precedence Calls (R) • Cancel to / Cancel from (C) • Network Facility with Equal or Higher Precedence Calls (R) • MLPP Trunk Selection (R) • Hunt Sequence for Trunks (R) • ROUTINE Precedence Calls (R) • Precedence Calls Above ROUTINE Precedence (R) • Method 1 (R) • Method 2 (C) • MLPP Interworking with Other Networks (R) • Precedence Call Diversion (R) • Channel Associated Signaling (R) • Primary Rate Interface (R) • Common Channel Signaling Number 7 (C) • Analog Line MLPP (R) • ISDN MLPP Basic Rate Interface General Description (C) • Single B Channel, Single Appearance, Single DN (C) • Line Active with a Lower Precedence Call (C) • Line Active with a Equal or Higher Precedence Call (C) • Single B Channel, Multiple Appearances, Single DN (C) • Two B Channels, Multiple Appearances, Single DN (C) • Two B Channel, Two DN (Data Mode Only) (C) • ISDN Primary Rate Interface (R) • Precedence Call Waiting (C) • Call Forwarding (C) • Call Transfer (C) • Call Hold (C) • Three-Way Calling (C) • Call Pickup (C) • Conferencing (C) • Multiline Hunt Group (C) • Community of Interest (C) • MLPP Common Channel Signaling Number 7 (C) • CAS to CCS Trunk Network in a Mixed Media Network (C) • MLPP Interaction with EKTS features (C) • Network Management Manual Controls (C) • Data Collection (R) 	<ul style="list-style-type: none"> • UCR Section 3.1 • UCR Section 3.1.2 • UCR Section 3.1.3 • UCR Section 3.1.3 • UCR Section 3.1.3 • UCR Section 3.1.4 • UCR Section 3.2 • UCR Section 3.2.1 • UCR Section 3.2.1.1 • UCR Section 3.2.2 • UCR Section 3.2.3 • UCR Section 3.2.3.1 • UCR Section 3.2.3.1.1 • UCR Section 3.2.3.1.2 • UCR Section 3.2.3.1.2.1 • UCR Section 3.2.3.1.2.2 • UCR Section 3.2.4 • UCR Section 3.3 • UCR Section 3.4.1 • UCR Section 3.4.2 • UCR Section 3.4.3 • UCR Section 3.5 • UCR Section 3.6.1 • UCR Section 3.6.2 • UCR Section 3.6.2.1 • UCR Section 3.6.2.2 • UCR Section 3.6.3 • UCR Section 3.6.4 • UCR Section 3.6.5 • UCR Section 3.7 • UCR Section 3.8.1 • UCR Section 3.8.2 • UCR Section 3.8.3 • UCR Section 3.8.4 • UCR Section 3.8.5 • UCR Section 3.8.6 • UCR Section 3.8.7 • UCR Section 3.8.8 • UCR Section 3.8.9 • UCR Section 3.9 • UCR Section 3.10 • UCR Section 3.11 • UCR Section 3.13 • UCR Section 3.14

Table 2. DVX Requirements (continued)

DSN Features & Capabilities			
Feature/ Capability	Critical	Requirements Required or Conditional	References
Call Processing	Yes	<ul style="list-style-type: none"> • Call Treatments (R) • Primary and Alternate Routing (R) • E&M Lead Signaling States (C) • 4-Wire Analog User Access Lines (C) • 2-Wire User Access Lines (R) • Termination of Analog Lines (R) • DSN Interswitch Trunk Call Processing (non-CCS/ISDN) (R) • DSN User Dialing (R) • Interswitch and Intraswitch Dialing (R) • Seven-Digit Dialing (R) • Ten-Digit Dialing (R) • Access Code (R) • Access Digit (R) • Precedence Digit (R) • Service Digit (R) • Route Code (R) • Area Code (R) • Switch Code (R) • Line Number (R) • Calling Name Delivery (C) • Calling Number Delivery (R) • Emergency Service 911 Conflict Resolution (C) • DSN Switch Outpulsing Digit Formats (R) • Standard Directory Number (R) • Standard Test Numbers (C) • Base Services – Abbreviated Numbers (R) • Digit Reception Requirements (R) • Digit Registration Capacity (R) • Screening (R) • Additional Dialing format for Coalition Forces (R) 	<ul style="list-style-type: none"> • UCR Section 4.1 • UCR Section 4.2 • UCR Section 4.3.1 • UCR Section 4.3.2 • UCR Section 4.3.3 • UCR Section 4.3.4 • UCR Section 4.4 • UCR Section A2.3.4 • UCR Section 4.5.1.2 • UCR Section 4.5.1.2.1 • UCR Section 4.5.1.2.2 • UCR Section 4.5.1.3 • UCR Section 4.5.1.3.1 • UCR Section 4.5.1.3.2 • UCR Section 4.5.1.3.3 • UCR Section 4.5.1.4 • UCR Section 4.5.1.5 • UCR Section 4.5.1.6 • UCR Section 4.5.1.7 • UCR Section 4.5.1.8.1 • UCR Section 4.5.1.8.2 • UCR Section 4.5.1.9 • UCR Section 4.5.2 • UCR Section 4.5.3 • UCR Section 4.5.4 • UCR Section 4.5.5 • UCR Section 4.5.6 • UCR Section 4.5.7 • UCR Section 4.5.8 • UCR App. 2 para A2.3.4
Network Management	Yes	<ul style="list-style-type: none"> • Interfaces (R) • Data Quality (R) • Traffic Measurements (R) • Reference Data (C) • Line Servicing (C) • Trunk Groups (C) • Call Processors (C) • Switch Services (C) • Special Studies (C) • Remote Switching Studies (C) • Features (C) • Common Channel Signaling Network Measurements (C) • ISDN Measurements (C) • Traffic Capacity (R) • Fault management (R) • Configuration management (R) • Call Detail Recording Data Retention (C) • Network Management controls (C) • Remote access (R) 	<ul style="list-style-type: none"> • UCR Section A2.3.6 • UCR Section 9.2.1 • UCR Section 9.2.2.1.1 • UCR Section 9.2.2.1.2 • UCR Section 9.2.2.2 • UCR Section 9.2.2.3 • UCR Section 9.2.2.4 • UCR Section 9.2.2.5 • UCR Section 9.2.2.6 • UCR Section 9.2.2.7 • UCR Section 9.2.2.8 • UCR Section 9.2.3 • UCR Section 9.2.4 • UCR Section 9.2.5 • UCR Section 9.3 • UCR Section 9.4 • UCR Section 9.5.2 • UCR Section 9.7 • UCR Section 9.8

Table 2. DVX Requirements (continued)

DSN Features & Capabilities (continued)				
Feature/ Capability	Critical	Requirements Required or Conditional		References
ISDN Services	Yes	<ul style="list-style-type: none"> • ISDN BRI signaling (C) • BRI Access, Call Control and Signaling (C) • Uniform Interface Configuration for BRIs (C) • Electronic Key Telephone Systems (EKTS) (C) • PRI Access, Call Control and Signaling (R) • PRI Features (C) • Packet Data Features and Capabilities (C) 		<ul style="list-style-type: none"> • UCR App. 2, para. A2.3.4 • UCR Section 10, Table 10-1 • UCR Section 10, Table 10-2 • UCR Section 10, Table 10-3 • UCR Section 10, Table 10-4 • UCR Section 10, Table 10-5 • UCR Section 10, Table 10-6
Synchronization	Yes	<ul style="list-style-type: none"> • External Timing Mode (C) • Line timing mode (R) • General (C) • Internal Stratum 4 (R) • Synchronization Performance Monitoring Criteria (C) • DS1 Traffic Interfaces (C) • DS0 Traffic Interconnects (C) 		<ul style="list-style-type: none"> • UCR Section 11.1.1.1 • UCR Section A2.3.9 • UCR Section 11.1.2.1 • UCR Section 11.1.2.2 • UCR Section 11.2 • UCR Section 11.3 • UCR Section 11.4
Reliability (See note 1.)	No	<ul style="list-style-type: none"> • Reliability Requirements (C) 		<ul style="list-style-type: none"> • UCR Section 12.1
Security	No	<ul style="list-style-type: none"> • GR-815, STIGs, and DoDI 8510.bb (DIACAP) (R) 		<ul style="list-style-type: none"> • UCR Section 13
Network Gateways				
Interface	Critical	Requirements Required or Conditional		References
PSTN (See note 2.)	Yes	Trunking	<ul style="list-style-type: none"> • Positive Identification Control (C) • On-Netting (C) • Off-Netting (C) • Ground Start Line (R) • Immediate Start (C) 	<ul style="list-style-type: none"> • CJCSI 6215.01C • CJCSI 6215.01C • CJCSI 6215.01C • UCR Section 5.2.2 • UCR Section 5.3.2
NOTES:				
1 Backup power, power components, UPS requirements, UPS load capacity and alarms are non-testable requirements. It is the responsibility of the respective base/post/camp/station communication agency to provide this with the SUT when installed.				
2 Voice, facsimile, data, and VTC service requirements for PSTN are identical to DSN with the exception of MLPP.				

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Table 2. DVX Requirements (continued)

LEGEND:					
2W	2-Wire	E1	European Basic Multiplex Rate (2.048 Mbps)	para	paragraph
ANSI	American National Standards Institute	EKTS	Electronic Key Telephone System	PBX	Private Branch Exchange
App	Appendix			PCM-24	Pulse Code Modulation - 24 Channels
BER	Bit Error Ratio	FTR	Federal Telecommunications Recommendation	PCM-30	Pulse Code Modulation - 30 Channels
BRI	Basic Rate Interface			PRI	Primary Rate Interface
C	Conditional	FTR 1080B-2002	Video Teleconferencing Services	PSTN	Public Switched Telephone Network
C2	Command and Control			Q.735.3	SS7 Signaling Standard for E1 MLPP
CAS	Channel Associated Signaling	GR	Generic Requirement (Telcordia)	Q.955.3	ISDN Signaling Standard for E1 MLPP
CCS	Common Channel Signaling	GR-815	Generic Requirements For Network Element/Network System (NE/NS) Security Standard for Narrowband VTC	R	Required
CJCSI	Chairman of the Joint Chiefs of Staff Instruction	H.320		SS7	Signaling System 7
DIACAP	DoD Information Assurance Certification and Accreditation Process	ISDN	Integrated Services Digital Network	STE	Secure Terminal Equipment
DISR	DoD IT Standards Registry	IT	Information Technology International	STIGs	Security Technical Implementation Guides
DoD	Department of Defense	ITU-T	Telecommunication Union - Standardization Sector	STU-III	Secure Telephone Unit – 3 rd Generation
DoDI	Department of Defense Instruction			S/T	ISDN BRI 4-wire interface
DP	Dial Pulse	kbps	kilobits per second	T1	Digital Transmission Link Level 1 (1.544 Mbps)
DN	Directory Number	Mbps	Megabits per second	T.4	Standardization of Group 3 facsimile terminals for document transmission
DS0	Digital Signal Level 0 (64 kbps)	MFR1	Multi-Frequency Recommendation 1	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
DS1	Digital Signal Level 1 (1.544 Mbps) (2.048 Mbps European)	MLPP	Multi-Level Precedence and Preemption	TIA	Telecommunications Industry Association
DSN	Defense Switched Network	MOS	Mean Opinion Score	UCR	Unified Capabilities Requirements
DTMF	Dual Tone Multi-Frequency	NI 1/2	National ISDN Standard 1 or 2	UPS	Uninterruptible Power Supply
DVX	Deployable Voice Exchange	NX56	Data format restricted to multiples of 56 kbps	VBD	Variable bit data
E&M	Ear and Mouth	NX64	Data format restricted to multiples of 64 kbps	VTC	Video Teleconferencing

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Table 3. SUT DVX/PBX 1 Requirement Differences and Interoperability Status

UCR Paragraph	Requirement (See note 1.)	DVX Critical	PBX 1 Critical	Status	Remarks
2.3.1	PBX Line	No	Yes	Certified	Met all critical CRs and FRs.
5.3.3.1.1	Normal Wink Start Operations	Yes	No	Certified	Met all critical CRs and FRs.
5.3.3.1.2	Glare Operation	Yes	No	Certified	Met all critical CRs and FRs.
5.3.3.2.1	Abnormal Wink Start	Yes	No	Certified	Met all critical CRs and FRs.
5.3.3.2.2	Glare Resolution	Yes	No	Certified	Met all critical CRs and FRs.
5.3.7	Satellite Timing	Yes	No	Certified	Met all critical CRs and FRs.
5.3.8	Disconnect Control	Yes	No	Certified	Met all critical CRs and FRs.
5.3.9	Reselect and Retrial	Yes	No	Certified	Met all critical CRs and FRs.
5.3.10	Off-Hook Supervision Transition	Yes	No	Certified	Met all critical CRs and FRs.
5.4.1	Dial Pulse Signals	Yes	No	Certified	Met all critical CRs and FRs.
5.4.2	DTMF Signaling	Yes	No	Certified	Met all critical CRs and FRs.
5.4.3	MFR1 2/6 Signaling	Yes	No	Certified	Met all critical CRs and FRs.
7.2	PCM-30 Digital Trunk Interface (Europe only)	Yes	No	Certified	Met all critical CRs and FRs.
2.5.4.2	Manual Test of Trunks	Yes	No	Certified	Met all critical CRs and FRs.
2.5.5	Trunk Group-Remove from Service	Yes	No	Certified	Met all critical CRs and FRs.
2.5.6	Trunk Group-Restore to Service	Yes	No	Certified	Met all critical CRs and FRs.
2.5.7	Carrier Group Alarm	Yes	No	Certified	Met all critical CRs and FRs.
2.5.4.1.1	Basic Line Test Capabilities	No	Yes	Certified	Met all critical CRs and FRs.
2.1.4	Code restriction and diversion	Yes	No	Certified	Met all critical CRs and FRs.
2.4.1.1	Basic Emergency Service (911) Caller	No	Yes	Certified	Met all critical CRs and FRs.
2.4.1.2	Emergency Service (911) Public Safety Answering Point	No	Yes	Certified	Met all critical CRs and FRs.
2.4.2	Trace of terminating calls	Yes	No	Certified	Met all critical CRs and FRs.
2.4.3	Outgoing call trace	Yes	No	Certified	Met all critical CRs and FRs.
2.4.4	Tandem call trace	Yes	No	Certified	Met all critical CRs and FRs.
2.4.5	Trace of a call in progress	Yes	No	Certified	Met all critical CRs and FRs.
A2.3.3	Preset Conferencing	Yes	No	Certified	Met all critical CRs and FRs.
A2.3.3	Conference Notification Recorded Announcement	Yes	No	Certified	Met all critical CRs and FRs.
A2.3.3	Automatic Retrial and Alternate Address	Yes	No	Certified	Met all critical CRs and FRs.
A2.3.3	Bridge Release	Yes	No	Certified	Met all critical CRs and FRs.
A2.3.3	Lost Connection to Conferee or Originator	Yes	No	Certified	Met all critical CRs and FRs.
A2.3.3	Secondary Conferencing	Yes	No	Certified	Met all critical CRs and FRs.
2.6.2	Meet-Me Conferencing	No	Yes	Certified	Met all critical CRs and FRs.
2.12	DSN Hotline Services	Yes	No	Certified	Met all critical CRs and FRs.
3.1.2	Precedence Levels	Yes	No	Certified	Met all critical CRs and FRs.
3.1.3	Announcements	Yes	No	Certified	Met all critical CRs and FRs.
3.1.4	Invocation and Operation	Yes	No	Certified	Met all critical CRs and FRs.
3.2.3	MLPP Trunk Selection	Yes	No	Certified	Met all critical CRs and FRs.
3.2.3.1	Hunt Sequence for Trunks	Yes	No	Certified	Met all critical CRs and FRs.
3.2.3.1.1	ROUTINE Precedence Calls	Yes	No	Certified	Met all critical CRs and FRs.
3.2.3.1.2	Precedence Calls Above ROUTINE Precedence	Yes	No	Certified	Met all critical CRs and FRs.
3.2.3.1.2.1	Method 1	Yes	No	Certified	Met all critical CRs and FRs.
3.2.4	MLPP Interworking with Other Networks	Yes	No	Certified	Met all critical CRs and FRs.

Table 3. SUT DVX/PBX 1 Requirement Differences and Interoperability Status (continued)

UCR Paragraph	Requirement (See note 1.)	DVX Critical	PBX 1 Critical	Status	Remarks
3.4.1	Channel Associated Signaling	Yes	No	Certified	Met all critical CRs and FRs.
3.8.2	Call Forwarding	No	Yes	Certified	Met all critical CRs and FRs.
3.8.3	Call Transfer	No	Yes	Certified	Met all critical CRs and FRs.
3.8.4	Call Hold	No	Yes	Certified	Met all critical CRs and FRs.
3.8.5	Three-Way Calling	No	Yes	Certified	Met all critical CRs and FRs.
3.14	Data Collection	Yes	No	Certified	Met all critical CRs and FRs.
4.2	Primary and Alternate Routing	Yes	No	Certified	Met all critical CRs and FRs.
4.4	DSN Interswitch Trunk Call Processing (non-CCS/ISDN)	Yes	No	Certified	Met all critical CRs and FRs.
4.5.1.9	Emergency Service 911 Conflict Resolution	No	Yes	Certified	Met all critical CRs and FRs.
4.5.2	DSN Switch Outpulsing Digit Formats	Yes	No	Certified	Met all critical CRs and FRs.
4.5.5	Base Services – Abbreviated Numbers	Yes	No	Certified	Met all critical CRs and FRs.
4.5.8	Screening	Yes	No	Certified	Met all critical CRs and FRs.
9	Network Management	Yes	No	Certified	Met all critical CRs and FRs.
12.2	System Availability	No	Yes	Certified	Met all critical CRs and FRs. ²
12.3	Backup Power	No	Yes	Certified	Met all critical CRs and FRs. ²
12.3.1	Power Components	No	Yes	Certified	Met all critical CRs and FRs. ²
12.3.2	UPS Requirements	No	Yes	Certified	Met all critical CRs and FRs. ²
12.3.2.2	UPS PBX 1 Load Capacity	No	Yes	Certified	Met all critical CRs and FRs. ²
12.3.3	Backup Power (Environmental)	No	Yes	Certified	Met all critical CRs and FRs. ²
12.3.4	Alarms	No	Yes	Certified	Met all critical CRs and FRs. ²
App. 3, para. A3.2.10	VoIP System Downtime (IP network 80 min/yr Subscriber 20 min/yr)	No	Yes	Certified	Met all critical CRs and FRs.

NOTES:

- 1 The requirements for DVXs and PBX 1s are identical except for those listed in above.
- 2 Backup power, power components, UPS requirements, UPS load capacity and alarms are non-testable requirements. It is the responsibility of the respective base/post/camp/station communication agency to provide this with the SUT when installed.

LEGEND:

A	Appendix	min	minute
BRI	Basic Rate Interface	MLPP	Multi-Level Precedence and Preemption
CCS	Common Channel Signaling	PBX	Private Branch Exchange
CRs	Capability Requirements	PBX 1	Private Branch Exchange 1
DSN	Defense Switched Network	PCM-30	Pulse Code Modulation - 30 Channels
DTMF	Dual Tone Multi-Frequency	S/T	Four-wire ISDN BRI interface
DVX	Deployable Voice Exchange	SUT	System Under Test
FRs	Feature Requirements	UCR	Unified Capabilities Requirements
IP	Internet Protocol	UPS	Uninterruptible Power Supply
ISDN	Integrated Services Digital Network	VoIP	Voice over Internet Protocol
MFR1	Multi-Frequency Recommendation 1	yr	year

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),

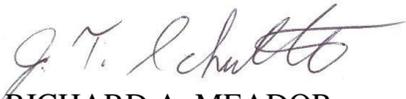
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or <http://199.208.204.125> (SIPRNet). Information related to DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at <http://jitc.fhu.disa.mil/tssi>.

6. The JITC point of contact is Mr. Edward Mellon, DSN 879-5269, commercial (520) 538-5159, FAX DSN 879-4347, or e-mail to edward.mellon@disa.mil. The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 0819001.

FOR THE COMMANDER:

Enclosure a/s


for RICHARD A. MEADOR
Chief
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U.S. Coast Guard, CG-64

Defense Intelligence Agency

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