



DEFENSE INFORMATION SYSTEMS AGENCY

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

20 Sept 12

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Special Interoperability Test Certification of the Juniper Circuit to Packet (CTP) 1004, 2024, and 2056 from Software Release CTPOS 5.4 R2-P6 to Release CTPOS 5.4r11

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

1. References (a) and (b) establish Defense Information Systems Agency (DISA), Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification.

2. The Juniper CTP 1004, 2024, and 2056 with software release 5.4 R2-P1 are hereinafter referred to as the SUT. The SUT meets all of its critical interoperability requirements and is certified as interoperable for joint use within the Defense Switched Network (DSN) as a Strategic Network Element. The SUT is deployed as a mated pair, and both SUTs must be loaded with the same certified software release in order to interoperate correctly. The SUT has three certified types of encapsulation which are Circuit to Packet (CTP), Structured-Agnostic Time Division Multiplexing over Internet Protocol, and Circuit Emulation Services over a Packet Switched Network (CESOPSN). There is a fourth encapsulation called Voice Compression (VCOMP); however, this encapsulation type failed initial interoperability testing and was not certified until release CTPOS 5.4 R2-P6 and only on the CTP 2056 and 2024. 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 original Defense Information Assurance (IA)/Security Accreditation Working Group (DSAWG) accreditation (14 June 2010).

3. The extension of this certification is based upon Desktop Review (DTR) 3. The original certification is based on interoperability testing, review of the vendor's Letters of Compliance (LoC), and DSAWG accreditation and documented in Reference (e). Interoperability testing was conducted by JITC at the Global Information Grid Network Test Facility (GNTF), Fort Huachuca, Arizona, from 28 September through 30 October 2009. Review of the vendor's LoC was completed on 23 February 2010. The DSAWG granted accreditation on 14 June 2010 based on the security testing completed by DISA-led IA test teams and published in a separate report,

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Reference (f). This DTR was requested to include the SUT software release update from CTPOS 5.4R2-P6 to CTPOS 5.4r11. This maintenance release contains bug fixes that are required by many Department of Defense customers who are operating CTP systems in the field. This DTR was also requested to include the CTPView Management Platform update from CTPViewOS3.R2-P3 to CTPViewOS 5.4r5. JITC determined that Verification and Validation (V&V) testing was required for this DTR. JITC successfully conducted V&V testing from 27 August through 10 September 2012. V&V testing of the CESOPSN encapsulation configuration was performed on the SUT using Digital Transmission Link Level 1 (T1) Primary Rate Interface (PRI) and T1 Channel Associated Signaling (CAS) interfaces. Secure voice and data calls, EMOS and delay testing were also successfully completed with no deficiencies noted with this software update. JITC determined that the results of testing on these interfaces would apply to the other certified interfaces. Therefore, JITC approves these DTRs. The IA posture has not changed. The original IA approval applies to these DTRs.

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. 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 CAS (AM/SF) DTMF, MFR1	No ¹	Certified	Met all CRs and FRs.
T1 CAS (B8ZS/ESF) DTMF, MFR1	No ¹	Certified	Met all CRs and FRs.
T1 PRI (ANSI T1.607/T1.619a)	No ¹	Certified	Met all CRs and FRs. ²
T1 SS7 (ANSI T1.619a)	No ¹	Certified	Met all CRs and FRs.
E1 CAS (HDB3) DTMF, MFR1, DP	No ¹ (Europe only)	Certified	Met all CRs and FRs.
E1 ISDN PRI (ITU-T Q.955.3)	No ¹ (Europe only)	Certified	Met all CRs and FRs.
E1 SS7 (ANSI T1.619a)	No ¹ (Europe only)	Certified	Met all CRs and FRs.
Serial (EIA-232, EIA-530)	No ¹	Certified	Met all CRs and FRs.
Analog E&M Type 1 ³	No ¹	Certified	Met all CRs and FRs. ³
Transport Level	Critical	Status	Remarks
Fast Ethernet (IEEE 802.3u)	No ⁴	Certified	Met all CRs and FRs.
Features And Capabilities			
Features And Capabilities	Critical	Status	Remarks
Synchronization	Yes	Certified	Met all CRs and FRs.
Network Management	Yes	Certified	Met all CRs and FRs.
Security	Yes	Certified	See note 5.
NOTES:			
1. The UCR does not stipulate a minimum Access interface requirement for a Strategic Network Element.			
2. DTR 2 included VCOMP encapsulation for this interface on the Juniper CTP 2024 and CTP 2056 with CTPOS 5.4 R2-P6 or later releases.			
3. This interface was included with Desktop Review 1 and is only supported with the Juniper CTP 2024 and CTP 2056 with CTPOS 5.4 R2-P6 or later releases. The SUT is capable of Analog E&M type 1, 2, 3, and type 5 interfaces. Type 1 was the interface tested; however, JITC determined that type 2, 3, and 5 were similar for interoperability certification purposes. JITC finds little risk in certifying these analog E&M interfaces along with type 1.			
4. The UCR does not stipulate a minimum Transport interface requirement for a Strategic Network Element.			
5. Information assurance testing is accomplished via DISA-led Information Assurance test teams and published in a separate report, Reference (f).			
LEGEND:			
802.3u	Standard for carrier sense multiple access with collision detection at 100 Mbps	EIA-530	Standard for 25-position interface for DTE and DCE employing serial binary data interchange
AMI	Alternate Mark Inversion	IEEE	Institute of Electrical and Electronics Engineers
ANSI	American National Standards Institute	ISDN	Integrated Services Digital Network
B8ZS	Bipolar Eight Zero Substitution	ITU-T	International Telecommunication Union – Telecommunication Standardization Sector
CAS	Channel Associated Signaling	Mbps	Megabits per second
CR	Capability Requirements	MFR1	Multi-Frequency Recommendation 1
DCE	Data Circuit-terminating Equipment	MLPP	Multi-Level Precedence and Preemption
DISA	Defense Information Systems Agency	PRI	Primary Rate Interface
DP	Dial Pulse	Q.955.3	ISDN Signaling Standard for E1 MLPP
DSN	Defense Switched Network	SF	Super Frame
DSS1	Digital Subscriber Signaling 1	SR	Software Release
DTE	Data Terminal Equipment	SS7	Signaling System 7
DTMF	Dual Tone Multi-Frequency	SUT	System Under Test
E&M	Ear and Mouth	T1	Digital Transmission Link Level 1 (1.544 Mbps)
E1	European Basic Multiplex Rate (2.048 Mbps)	T1.607	ISDN – Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1
ESF	Extended Super Frame	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
FR	Feature Requirements	UCR	Unified Capabilities Requirements
HDB3	High Density Bipolar 3	VCOMP	Voice Compression
EIA	Electronic Industries Alliance		
EIA-232	Standard for defining the mechanical and electrical characteristics for connecting DTE and DCE data communications devices		

Table 2. SUT Capability and Feature Interoperability Requirements

DSN Access Interfaces			
Interface	Critical	Requirements Required or Conditional	References
T1 CAS (AM/SF) DTMF, MFR1	No ¹	<ul style="list-style-type: none"> • DS1 Interface Characteristics (C) • DS1 Supervisory Channel Associated Signaling (C) 	<ul style="list-style-type: none"> • UCR Section 5.2.12.5.5.1.2.4 • UCR Section 5.2.12.5.5.1.2.4
T1 CAS (B8ZS/ESF) DTMF, MFR1	No ¹	<ul style="list-style-type: none"> • DS1 Clear Channel Capability (C) • DS1 Alarm and Restoral Requirements (C) 	<ul style="list-style-type: none"> • UCR Section 5.2.12.5.5.1.2.4 • UCR Section 5.2.12.5.5.1.2.4
T1 PRI (ANSI T1.607/T1.619a)	No ¹	<ul style="list-style-type: none"> • E1 Interface Characteristics (C) • E1 Supervisory Channel Associated Signaling (C) • E1 Clear Channel Capability (C) 	<ul style="list-style-type: none"> • UCR Section 5.2.12.5.5.1.2.5 • UCR Section 5.2.12.5.5.1.2.5 • UCR Section 5.2.12.5.5.1.2.5
T1 SS7 (ANSI T1.619a)	No ¹	<ul style="list-style-type: none"> • E1 Alarm and Restoral Requirements (C) • MOS (R) • BERT (R) 	<ul style="list-style-type: none"> • UCR Section 5.2.12.5.5.1.2.5 • UCR Section 5.2.12.5.5.1.1 • UCR Section 5.2.12.5.5.1.1
E1 CAS (HDB3) DTMF, MFR1, DP	No ¹	<ul style="list-style-type: none"> • Secure Transmission (Voice and Data) (R) • Modem (R) 	<ul style="list-style-type: none"> • UCR Section 5.2.12.5.5.1.1 • UCR Section 5.2.12.5.5.1.1
E1 ISDN PRI (ITU-T Q.955.3)	No ¹	<ul style="list-style-type: none"> • Facsimile (R) • Call Control Signals (R) • Alarms (R) 	<ul style="list-style-type: none"> • UCR Section 5.2.12.5.5.1.1 • UCR Section 5.2.12.5.5.1.1 • UCR Section 5.2.12.5.5.1.1.1
E1 SS7 (ANSI T1.619a)	No ¹	<ul style="list-style-type: none"> • Call Congestion Control (R) • Call Congestion for TDM Transport (C) 	<ul style="list-style-type: none"> • UCR Section 5.2.12.5.5.1.1.2 • UCR Section 5.2.12.5.5.1.1.2.1
Serial (EIA-232, EIA- 530)	No ¹	<ul style="list-style-type: none"> • Voice Compression (C) • TIA/EIA-232, TIA-EIA-530 (R) 	<ul style="list-style-type: none"> • UCR Section 5.2.12.5.5.1.1.3 • UCR Section 5.2.8.1
DSN Transport Interfaces			
Interface	Critical	Requirements Required or Conditional	References
IP	No ²	<ul style="list-style-type: none"> • DS1 Interface Characteristics (R) • E1 Interface Characteristics (R) • MOS (R) • BERT (R) • Secure Transmission (Voice and Data) (R) • 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) 	<ul style="list-style-type: none"> • UCR Section 5.2.12.5.5.1.2.4 • UCR Section 5.2.12.5.5.1.2.5 • UCR Section 5.2.12.5.5.1.1 • UCR Section 5.2.12.5.5.1.1.2.2 • UCR Section 5.2.12.5.5.1.1.3 • UCR Section 5.2.12.5.5.1.1.1 • UCR Section 5.2.12.5.5.1.2.9 • UCR Section 5.2.12.5.5.1.2.9 • UCR Section 5.2.12.5.5.1.2.9
SUT Features And Capabilities			
Feature/Capability	Critical	Requirements Required or Conditional	References
Synchronization	Yes	<ul style="list-style-type: none"> • Timing (R) 	<ul style="list-style-type: none"> • UCR Section 5.2.12.5.5.1.2.7
Network Management	Yes	<ul style="list-style-type: none"> • Management Option (R) • Local Management (Front Panel and/or External Console) (C) • ADIMSS (C) • Fault Management (C) • Loop Back Capability (C) • Operational Configuration Restoral (R) 	<ul style="list-style-type: none"> • UCR Section 5.2.12.5.5.2.1 • UCR Section 5.2.12.5.5.2.2 • UCR Section 5.2.12.5.5.2.3 • UCR Section 5.2.12.5.5.2.4
Security	Yes	<ul style="list-style-type: none"> • STIGs and DoDI 8510.01 (DIACAP) (R) 	<ul style="list-style-type: none"> • UCR Section 5.2.12.5.5.7
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.			

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

LEGEND:			
ADIMSS	Advanced DSN Integrated Management Support System	ESF	Extended Super Frame
AMI	Alternate Mark Inversion	HDB3	High Density Bipolar Three
ANSI	American National Standards Institute	IP	Internet Protocol
B8ZS	Bipolar Eight Zero Substitution	ISDN	Integrated Services Digital Network
BERT	Bit Error Rate Test	ITU-T	International Telecommunication Union – Telecommunication Standardization Sector
C	Conditional	Mbps	Megabits per second
CAS	Channel Associated Signaling	MFR1	Multi-Frequency Recommendation 1
DCE	Data Circuit-terminating Equipment	MLPP	Multi-Level Precedence and Preemption
DIACAP	Department of Defense Information Assurance Certification and Accreditation Process	MOS	Mean Opinion Score
DoDI	Department of Defense Instruction	PRI	Primary Rate Interface
DP	Dial Pulse	Q.955.3	ISDN Signaling Standard for E1 MLPP
DS1	Digital Signal Level 1	R	Required
DSN	Defense Switched Network	SF	Super Frame
DSS1	Digital Subscriber Signaling 1	SS7	Signaling System 7
DTE	Data Terminal Equipment	STIG	Security Technical Implementation Guide
DTMF	Dual Tone Multi-Frequency	SUT	System Under Test
E1	European Basic Multiplex Rate (2.048 Mbps)	T1	Digital Transmission Link Level 1 (1.544 Mbps)
EIA	Electronic Industries Alliance	T1.607	ISDN – Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1
EIA-232	Standard for defining the mechanical and electrical characteristics for connecting DTE and DCE data communications devices	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
EIA-530	Standard for 25-position interface for DTE and DCE employing serial binary data interchange	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 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). 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: disa.meade.ns.list.unified-capabilities-certification-office@mail.mil. All associated data is available on the DISA UCCO website located at <http://www.disa.mil/ucco/>.

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6. The JITC point of contact is CPT Trevor Sayer, DSN 879-5013, commercial (520) 538-5013, FAX DSN 879-4347, or e-mail to trevor.l.sayer.mil@mail.mil. JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 0910501.

FOR THE COMMANDER:

1 Enclosure a/s


for RICHARD A. MEADOR
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UCCO

ADDITIONAL REFERENCES

- (c) Defense Information Systems Agency (DISA), "Department of Defense Networks Unified Capabilities Requirements," 22 January 2009
- (d) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006
- (e) JITC Memo, JTE, "Special Interoperability Test Certification of the Juniper Circuit to Packet (CTP) 1004, 2024, and 2056 with software release 5.4 R2-P1," 9 June 2010
- (f) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Juniper CTP 1004, 2024, and 2056 with software release 5.4 R2-P1 (Tracking Number 0910501)," 14 June 2010