



DEFENSE INFORMATION SYSTEMS AGENCY

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

23 Mar 09

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Special Interoperability Test Certification of the ION SA5600 Release 1.2 with ION Proactive Remote Integrated Intelligent Secure Management Solution (PRIISMS) Release 2.7

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 (f), see Enclosure 1

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 ION SA5600 Release 1.2 with ION PRIISMS Release 2.7 is 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 Customer Premises Equipment Secure Modem set forth in appendix 7 of reference (c). Testing was conducted using test procedures derived from reference (d). Test discrepancies that remain open are discussed in the Certification Testing Summary (Enclosure 2) and have only minor operational impacts. No other configurations, features, or functions, except those cited within this report, are certified by the JITC, or authorized by the Program Management Office for use within the DSN. This certification expires upon changes that affect interoperability, but no later than four years from the date of this memorandum.

3. This finding is based on interoperability testing conducted by JITC, DISA adjudication of open test discrepancy reports, review of the vendor's Letters of Compliance (LoC), and Defense Information Assurance (IA)/Security Accreditation Working Group (DSAWG) accreditation. Interoperability testing of the SUT was conducted at JITC's Global Information Grid Network Test Facility at Fort Huachuca, Arizona, from 11 July through 15 August 2008. DISA adjudication of outstanding test discrepancy reports was completed on 17 December 2008. Review of the vendor's LoC was completed on 5 September 2008. 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 March 2009. Enclosure 2 documents the test results and describes the tested network and system configurations.

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

Interfaces	Critical	Certified	Functional Requirements	Status	UCR Paragraph
ISDN BRI S/T NI2	No ¹	Yes	DISR compliance as applicable (R)	Met	A7.5
			FCC Part15/Part 68 (R)	Met	A7.5
			In accordance with ANSI T1.605-1991 (R1999)	Met	A7.5.3
IEEE 802.3u	No ¹	Yes	Ethernet interfaces in accordance with IEEE 802.3-2002	Met	A7.5
EIA-232 Serial	No ¹	Yes	FCC Part15/Part 68 (R)	Met	A7.5
			DISR compliance as applicable (R)	Met	A7.5
			Serial EIA-232 Interfaces in accordance with TIA-232-F (C)	Met	A7.5
2-Wire Analog (GR-506-CORE)	No ¹	Yes	FCC Part15/Part 68 (R)	Met	A7.5
			DTMF outpulsing (C)	Met	A7.5, 5.4.1, 5.4.2
			DISR compliance as applicable (R)	Met	A7.5
			TIA/EIA-470-B (R)	Met	A7.5.1
Security	Yes	Yes	Security (R)	See note 2.	A7.6

NOTES:

- 1 Customer Premises Equipment required interfaces are not specified in the UCR.
- 2 Security is tested by DISA-led Information Assurance test teams and published in a separate report, reference (e).

LEGEND:

802.3u	Standard for carrier sense multiple access with collision detection at 100 Mbps	GR-506-CORE	LSSGR: Signaling for Analog Interfaces
A	Appendix	IEEE	Institute of Electrical and Electronics Engineers
ANSI	American National Standards Institute	ISDN	Integrated Services Digital Network
BRI	Basic Rate Interface	LSSGR	Local Access and Transport Area (LATA) Switching Systems Generic Requirements
C	Conditional	Mbps	Megabits per second
DISA	Defense Information Systems Agency	NI2	National ISDN Standard 2
DISR	Department of Defense Information Technology Standards Registry	R	Required
DTMF	Dual Tone Multi-Frequency	S/T	ISDN BRI 4-wire interface
EIA	Electronic Industries Alliance	SUT	System Under Test
EIA-232	Standard for defining the mechanical and electrical characteristics for connecting Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) data communications devices	T1.605-1991	ISDN Basic Access Interface for S/T Reference Points and Layer 1 Specification
FCC	Federal Communications Commission	TIA	Telecommunications Industry Association
GR	Generic Requirement	TIA/EIA-470-B	Performance and Compatibility Requirements for Telephone Sets with Loop Signaling
		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), 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>.

JITC, Memo, JTE, Special Interoperability Test Certification of the ION SA5600 Release 1.2 with ION Proactive Remote Integrated Intelligent Secure Management Solution (PRIISMS) Release 2.7

6. The JITC point of contact is Mr. Joseph Roby, DSN 879-0507, commercial (520) 538-0507, FAX DSN 879-4347, or e-mail to joseph.robby@disa.mil. The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 0830101.

FOR THE COMMANDER:



for RICHARD A. MEADOR
Chief
Battlespace Communications Portfolio

2 Enclosures a/s

Distribution (electronic mail):

Joint Staff J-6

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U.S. Joint Forces Command, Net-Centric Integration, Communication, and Capabilities
Division, J68

Defense Information Systems Agency, GS23

ADDITIONAL REFERENCES

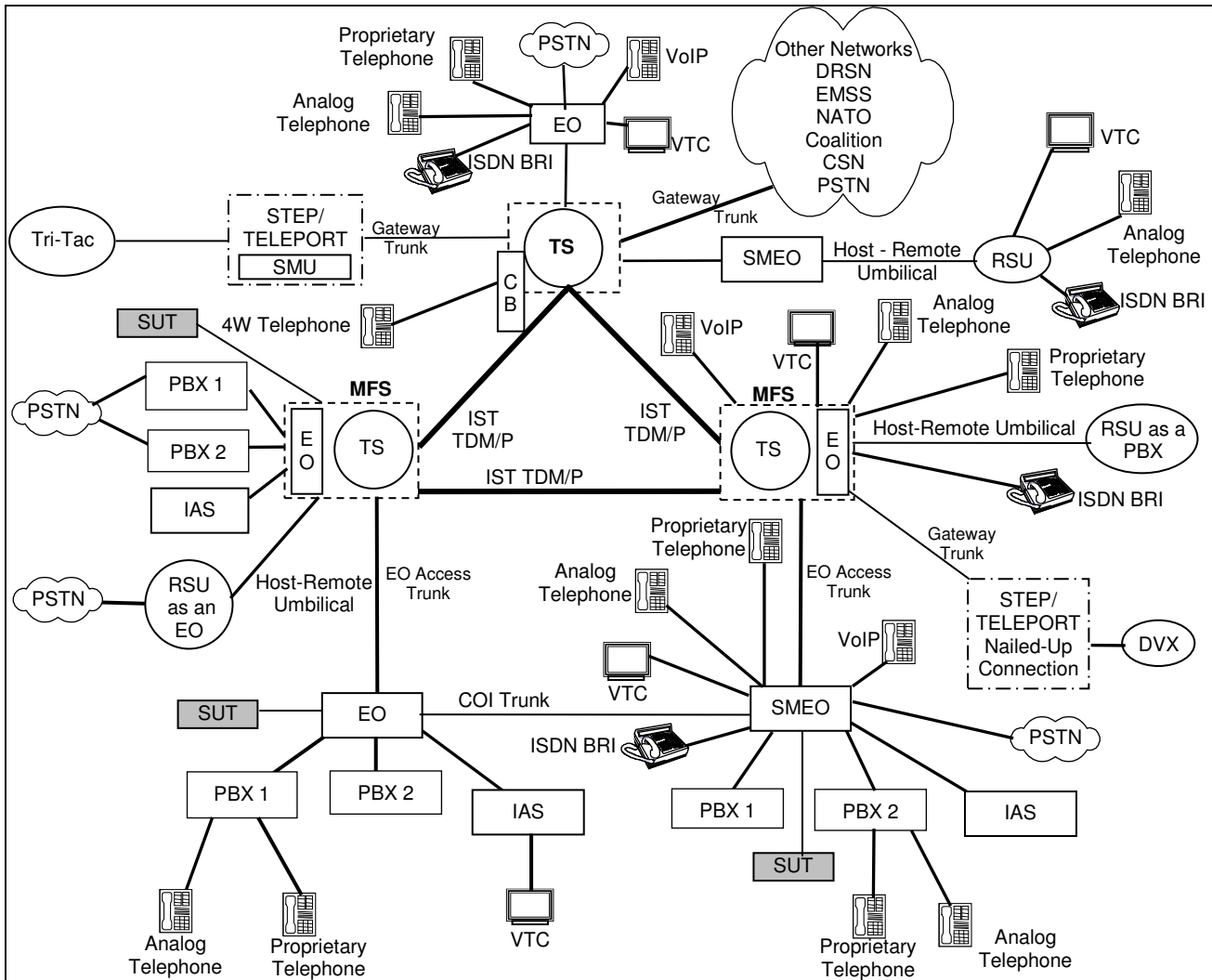
- (c) Defense Information Systems Agency, "Department of Defense Networks Unified Capabilities Requirements," 21 December 2007
- (d) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006
- (e) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of ION SA5600 Release 1.2 with ION Proactive Remote Integrated Intelligent Secure Management Solution (PRIISMS) Release 2.7," 10 March 2009

CERTIFICATION TESTING SUMMARY

- 1. SYSTEM TITLE.** Special Interoperability Test Certification of the ION SA5600 Release 1.2 with ION Proactive Remote Integrated Intelligent Secure Management Solution (PRIISMS) Release 2.7, hereinafter referred to as the System Under Test (SUT).
- 2. PROPONENT.** Defense Information Systems Agency (DISA).
- 3. PROGRAM MANAGER.** Mr. Louis Schmuckler, GS23, Room 5W23, 5275 Leesburg Pike, Falls Church, Virginia, 22041, E-mail: Louis.Schmuckler@disa.mil.
- 4. TESTER.** Joint Interoperability Test Command (JITC), Fort Huachuca, Arizona.
- 5. SYSTEM UNDER TEST DESCRIPTION.**
- 6. SYSTEM DESCRIPTION.** The SUT is a Customer Premises Equipment (CPE) Secure Modem which consists of the ION SA5600 and the ION PRIISMS server. The ION PRIISMS secure access gateway is required with the SA5600 secure appliance to meet the Information Assurance security requirements. The ION SA5600 is a series of secure appliances that are used to control, audit, and monitor remote devices. The two SA5600 devices are: the ION Enclave and ION Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) appliances. Each SA5600 device is capable of recording access events, including any keystroke logs of the remote devices. When the SA5600 devices are used in conjunction with the ION PRIISMS server, all of the event logs, audit logs, access logs, and keystroke logs are forwarded and stored in the ION PRIISMS Structured Query Language (SQL) server database. The ION PRIISMS server serves as an endpoint for an Open Secure Sockets Layer (OpenSSL) tunnel from each of the ION SA5600 appliances. The ION PRIISMS server is also used as a management interface to the ION SA5600 appliances and remote devices managed by the ION SA5600 appliances. In addition, the ION PRIISMS operates as a data and configuration backup server for the ION SA5600 appliances and ION PRIISMS data.

The SUT will be used to provide a secure shell virtual private network connection between the Defense Information System Network (DISN) Network Operations Center (NOC) and remote systems over Internet Protocol (IP), 2-wire analog, and ISDN BRI dialup. The SUT interfaces to remote systems are IP or Electronic Industries Alliance (EIA)-232 serial interfaces.

- 6. OPERATIONAL ARCHITECTURE.** The Unified Capabilities Requirements (GSCR) DSN Architecture in Figure 2-1 depicts the relationship of the SUT to the DSN switches.



LEGEND:

4W	4-Wire	PBX	Private Branch Exchange
BRI	Basic Rate Interface	PBX 1	Private Branch Exchange 1
CB	Channel Bank	PBX 2	Private Branch Exchange 2
COI	Community of Interest	PSTN	Public Switched Telephone Network
CSN	Canadian Switch Network	RSU	Remote Switching Unit
DRSN	Defense Red Switch Network	SMEO	Small End Office
DSN	Defense Switched Network	SMU	Switched Multiplexer Unit
DVX	Deployable Voice Exchange	STEP	Standardized Tactical Entry Point
EMSS	Enhanced Mobile Satellite System	SUT	System Under Test
EO	End Office	TDM/P	Time Division Multiplex/Packetized
IAS	Integrated Access Switch	Tri-Tac	Tri-Service Tactical Communications Program
ISDN	Integrated Services Digital Network	TS	Tandem Switch
IST	Inter-switch Trunk	VoIP	Voice over Internet Protocol
MFS	Multifunction Switch	VTC	Video Teleconferencing
NATO	North Atlantic Treaty Organization		

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 Interface and Functional Requirements and were verified through JITC testing.

Table 2-1. SUT Functional Requirements and Interoperability Status

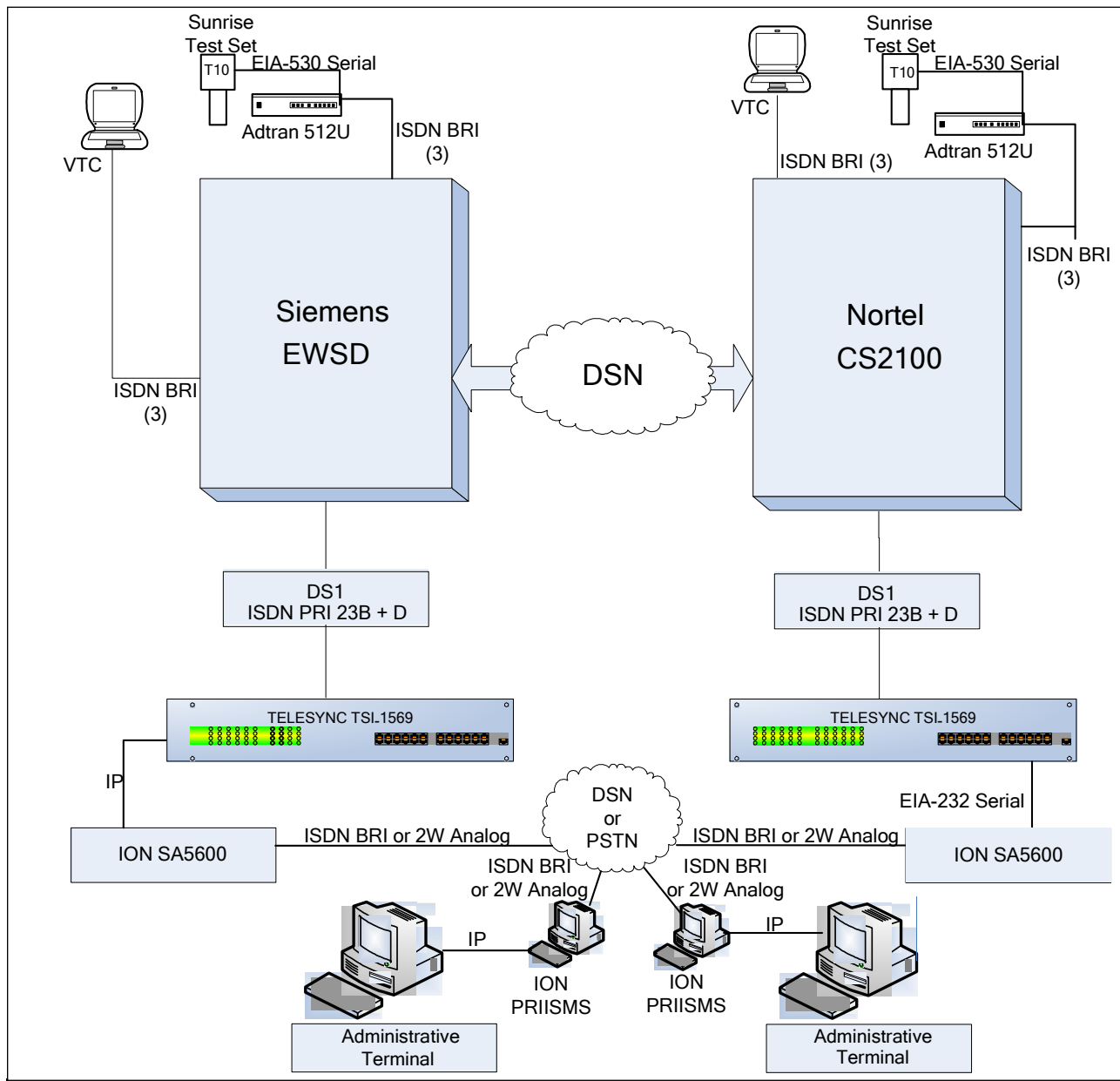
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NOTES:
1 Customer Premise Equipment required interfaces are not specified in the UCR.
2 Security is tested by DISA-led Information Assurance test teams and published in a separate report, reference (e).

LEGEND:

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C	Conditional	Mbps	Megabits per second
DISA	Defense Information Systems Agency	NI2	National ISDN Standard 2
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DTMF	Dual Tone Multi-Frequency	S/T	ISDN BRI 4-wire interface
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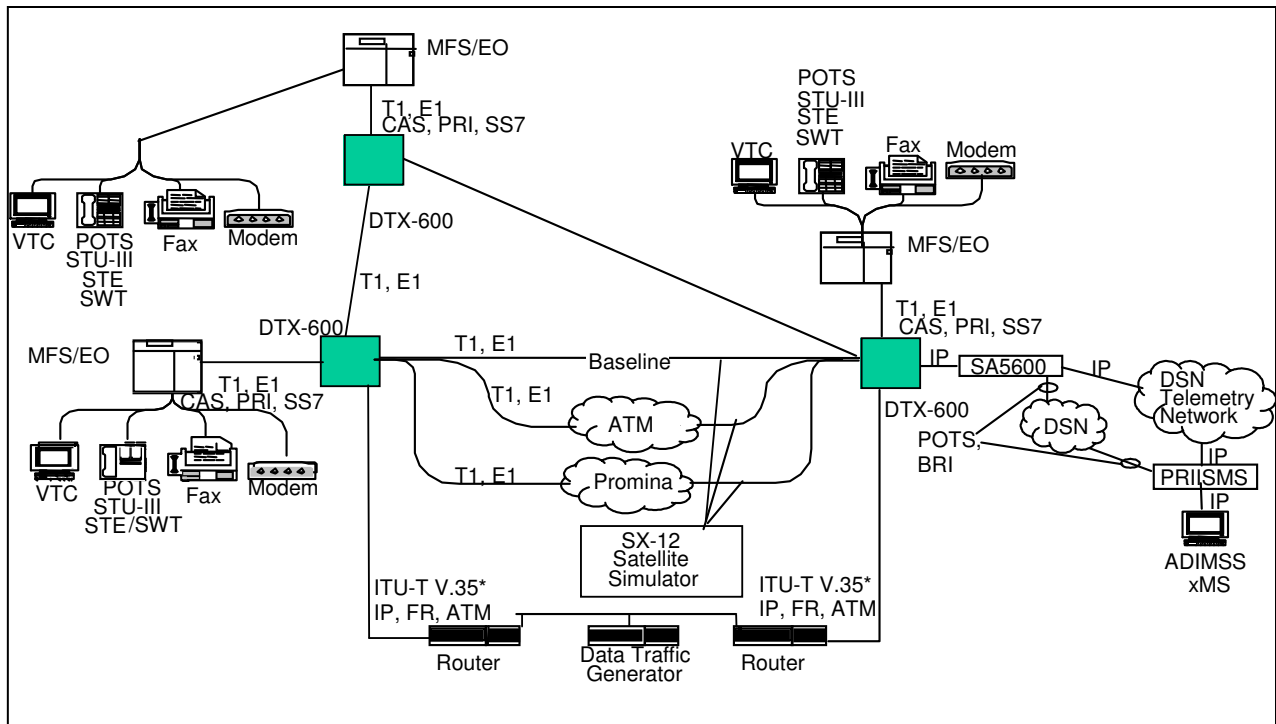
8. TEST NETWORK DESCRIPTION. The SUT was tested at JITC's Global Information Grid Network Test Facility. Testing of the system's required functions and features was conducted using the test configuration depicted in Figures 2-2, and 2-3 which accurately emulates the DSN operational environment.



LEGEND:

2W	2-Wire	EIA-530	Standard for 25-position interface for DTE and DCE employing serial binary data interchange
B	Bearer Channel	EWSD	Elektronisches Wählsystem Digital
BRI	Basic Rate Interface	ISDN	Integrated Services Digital Network
CS	Communication Server	IP	Internet Protocol
D	Data Channel	Mbps	Megabits per second
DCE	Data Circuit-terminating Equipment	PRI	Primary Rate Interface
DS1	Digital Transmission Link Level 1 (1.544 Mbps) (2.048 Mbps European)	PRIISMS	Proactive Remote Integrated Intelligent Secure Management Solution
DSN	Defense Switched Network	PSTN	Public Switched Telephone Network
DTE	Data Terminal Equipment	SUT	System Under Test
EIA	Electronic Industries Alliance	VTC	Video Teleconferencing
EIA-232	Standard for defining the mechanical and electrical characteristics for connecting DTE and DCE data communications devices		

Figure 2-2. SUT Test Configuration with Telesync



NOTE: The electrical physical interface tested was ITU-T V.35 in accordance with ITU-T V.36/V.37.

LEGEND:

ADIMSS	Advanced Integrated Management Support System	PRIISMS	Proactive Remote Integrated Intelligent Secure Management Solution
ATM	Asynchronous Transfer Mode	SS7	Signaling System 7
BRI	Basic Rate Interface	STE	Secure Terminal Equipment
CAS	Channel Associated Signaling	STU-III	Secure Telephone Unit-3 rd generation
DSN	Defense Switched Network	SUT	System Under Test
E1	European Basic Multiplex Rate (2.048 Mbps)	SWT	Secure Wireline Terminal
EO	End Office	T1	Digital Transmission Link Level 1 (1.544 Mbps)
Fax	Facsimile	V.35	Standard for data transmission at 48 kbps using 60-108 kHz group band circuits
FR	Frame Relay	V.36	Modems for synchronous data transmission using 60-108 kHz group band circuits
IP	Internet Protocol	V.37	Synchronous data transmission at a data signaling rate higher than 72 kbps using 60-108 kHz group band circuits
ITU-T	International Telecommunication Union - Telecommunication Standardization Sector	VTC	Video Teleconferencing
kbps	kilobits per second	xMS	DTX-600 Management System
kHz	kilohertz		
Mbps	Megabits per second		
MFS	Multifunction Switch		
POTS	Plain Old Telephone Service		
PRI	Primary Rate Interface		

Figure 2-3. SUT Test Configuration with Veraz DTX 600

9. SYSTEM CONFIGURATIONS. Table 2-2 provides the system configurations, hardware, and software components tested with the SUT. The SUT was tested in an operationally realistic environment to determine interoperability with a complement of DSN switches noted in Table 2-2. Table 2-2 lists the DSN switches, which depict the tested configuration, and is not intended to identify the only switches that are certified with the SUT. The SUT is certified with switching systems listed on the Unified Capabilities (UC) Approved Products List (APL) that offer the same certified interfaces.

Table 2-2. Tested System Configurations

System Name		Hardware/Software Release		
Siemens EWSD (MFS, EO, SMEO, PBX 1, PBX 2)		19d with Patch Set 46		
Nortel Networks CS2100 (MFS, EO, SMEO, PBX 1, PBX 2)		Succession Enterprise (SE) 09.1		
Polycom HDX 9004		2.0.0_J		
Adtran 512-U		Version CS.0, Cksum10b2		
TELESYNC® TSI 1569		2.23, Firmware Version V1.39.06		
Veraz DTX-600		JITC022.1		
MARCONI ATM switch ASX-1000 and ASX-200BX		Versions 6.2 and 7.1		
NET Promina 800/400		4.x.2.02 Version 92.45		
SUT	Administrative Terminals		Tower PC with Pentium IV, 1.7 GHz, 512 Mb RAM	Windows 2000
	ION PRIISMS Rel. 2.7 and ION SA5600 Rel. 1.2	ION Management Client		Microsoft Windows XP SP2 SSH v2, HTTPS, RDP ST520 Token
		ION PRIISMS	7B0GQC1	PRIISMS Management Software Rel. 2.7, Microsoft Windows 2003 SP2, IIS 6.0 SQL Server 2005 SP2
		MultiTech Systems ION Secure Modem	MTA5634ZBA	NA
		MultiTech Systems IWay Hopper 128Kbps 2B+D ISDN	MTA128ST	NA
		ION Enclave appliance (SA5630G2-RW)	6080537082	Release 1.2
		ION ISDN BRI appliance (SA5630I-RW)	6080537083	Release 1.2
LEGEND:				
ATM	Asynchronous Transfer Mode	PBX 1	Private Branch Exchange 1	
B	Bearer Channel	PBX 2	Private Branch Exchange 2	
BRI	Basic Rate Interface	PC	Personal Computer	
CS	Communication Server	PRIISMS	Proactive Remote Integrated Intelligent Secure Management Solution	
D	Data Channel	RAM	Random Access Memory	
EO	End Office	RDP	Remote Desktop Protocol	
EWSD	Elektronisches Wählsystem Digital	SMEO	Small End Office	
GHz	Gigahertz	SP2	Service Pack 2	
HTTPS	Hyper Text Transfer Protocol Secure	SQL	Structured Query Language	
IIS	Internet Information Services	SSH	Secure Shell	
ISDN	Integrated Services Digital Network	SUT	System Under Test	
Mb	Megabyte	VTC	Video Teleconferencing	
MFS	Multifunction Switch			
NA	Not Applicable			

10. TESTING LIMITATIONS. None.

11. TEST RESULTS. The following paragraphs describe the test results of the certification testing.

a. Discussion. The SUT provides a secure shell virtual private network data only connection between a NOC and remote equipment. Since the SUT does not transport voice, testing was conducted to verify the SUT's ability to perform remote Network Management functions via a simulated DSN voice and telemetry network with no degradation of performance. Testing of the SUT was conducted in three transport configurations which included switched ISDN BRI, 2-wire analog, and IP as shown in Figures 2-2, and 2-3. The SUT IP interface is a 10/100 BaseT Ethernet interface;

however, when generating IP load traffic via the SUT with the Ixia Explorer and Chariot applications the following discrepancies were noted regarding packet loss:

- When traffic generated was 0-6% of the total bandwidth, 1 percent packet loss was recorded.
- When traffic generated was 7-8% of the total bandwidth, 20 percent packet loss was recorded.
- When traffic generated was 9-100% of total bandwidth, 21 to 100 percent packet loss was recorded.

These discrepancies were adjudicated by DISA and due the SUTs fielded applications within the DoD, they were determined to have a minor operational impact.

b. Test Summary. The SUT meets all of its critical interoperability requirements and is certified as interoperable for joint use within the DSN as a CPE Secure Modem as set forth in appendix 7 of reference (c). The SUT, which consists of the PRIISMS and SA5600, provides a secure shell virtual private network data only connection between a NOC and remote equipment.

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://jitc.fhu.disa.mil/tssi>.