



DEFENSE INFORMATION SYSTEMS AGENCY

JOINT INTEROPERABILITY TEST COMMAND

P.O. BOX 12798

FORT HUACHUCA, ARIZONA 85670-2798

IN REPLY
REFER TO:

Networks and Transport Division (JTE)

16 MARCH 2006

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Special Interoperability Test Certification of the SecureLogix Enterprise Telephony Management (ETM)® System with Software Version 5.0.2, Build 12-9 (Includes hardware appliances ETM® 2100 and 3200 with software package 5.02.20)

References: (a) DOD Directive 4630.5, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004
(b) CJCSI 6212.01C, "Interoperability and Supportability of Information Technology and National Security Systems," 20 November 2003

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. Additional references are provided in enclosure 1.

2. The SecureLogix ETM® System with Software Version 5.0.2, Build 12-9 (Includes hardware appliance ETM® 2100 with software package 5.02.20) is hereinafter referred to as the System Under Test (SUT). The SUT meets all of the critical interoperability requirements for the Defense Switched Network (DSN) and is certified for joint use. The ETM® 3200 platform has the same hardware and software as the ETM® 2100. JITC analysis determined the ETM® 3200 to be functionally identical for interoperability certification purposes, and it is also certified for joint use within the DSN. The ETM® 1060 is a call recorder that records audio calls and automatically uploads the recorded calls to a target server drive. The SUT Application Suite consists of Telecom Firewall, Performance Manager, and the Usage Manager. Each application within the SUT application suite was tested to insure that it had no adverse affect on the critical interoperability requirements when intrusively inserted within the DSN. When the SUT is intrusively inserted within the DSN, it is transparent and all critical Capability and Functional Requirements between switching systems were met in accordance with reference (c) using test procedures derived from reference (d). The SUT Telecom Firewall application has the capability to terminate DSN calls based on "policies" regardless of the precedence level of the call. As a result, assured services mandated by reference (e) cannot be guaranteed. Therefore the SUT is certified for joint use within the DSN only in the following configurations: Non-intrusive mode (monitor only), and in the intrusive mode with the terminate policy "Allow Call Terminations" block unchecked, which is optioned under the edit spans/firewall tab. The SUT is certified with terminate policies only when intrusively inserted in the Public Switched Telephone Network (PSTN). This certification expires upon changes that affect interoperability, but no later than three years from the date of this memorandum.

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3. This certification is based on interoperability testing conducted by JITC at the Global Information Grid Network Test Facility, Fort Huachuca, Arizona from 29 August through 2 September 2005 with review and analysis of the test data completed on 30 September 2005 and additional regression testing conducted from 30 January through 10 February 2006 with review and analysis of the test data completed on 17 February 2006. The Certification Testing Summary (enclosure 2) documents the test results and describes the test network. Users should verify interoperability before deploying the SUT in an environment that varies significantly from that described.

4. The SUT Interoperability Test Summary is shown in table 1 and the Capability and Functional Requirements used to evaluate the interoperability of the SUT are indicated in table 2.

Table 1. SUT Interoperability Test Summary

DSN Trunk Interfaces				
Hardware Appliance	Interface & Signaling	Critical	Status	Remarks
ETM® 2100 ETM® 3200	T1 CAS (MFR1, DTMF, DP)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	E1 CAS (MFR1, DTMF, DP)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	T1 ISDN PRI NI 1/2 (ANSI T1.619a)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	E1 ISDN PRI (ITU-T Q.955.3)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	T1 SS7 (ANSI T1.619a)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	E1 SS7 (ANSI T1.619a)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
DSN Features and Capabilities				
Features and Capabilities		Critical	Status	Remarks
Synchronization		Yes	Certified	Met all critical CRs and FRs.
Security		Yes	See note 3.	
PSTN Trunk Interfaces				
Hardware Appliance	Interface & Signaling	Critical	Status	Remarks
ETM® 2100 ETM® 3200	T1 CAS (MFR1, DTMF, DP)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	E1 CAS (MFR1, DTMF, DP)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	T1 ISDN PRI NI 1/2 (ANSI T1.607)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	E1 ISDN PRI (ITU-T Q.931)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	T1 SS7 (ANSI T1.113)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	E1 SS7 (ANSI T1.113)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.

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Table 1. SUT Interoperability Test Summary (continued)

LEGEND:	
ANSI	- American National Standards Institute
CAS	- Channel Associated Signaling
CRs	- Capability Requirements
DISA	- Defense Information Systems Agency
DITSCAP	- Department of Defense Information Technology Security Certification and Accreditation Process
DP	- Dial Pulse
DSN	- Defense Switched Network
DSS1	- Digital Subscriber Signaling 1
DTMF	- Dual Tone Multi-Frequency
E1	- European Basic Multiplex Rate (2.048 Mbps)
ETM®	- Enterprise Telephony Management
FRs	- Functional Requirements
ISDN	- Integrated Services Digital Network
ITU-T	- International Telecommunication Union – Telecommunication Standardization Sector
Mbps	- Megabits per second
MFR1	- Multi-Frequency Recommendation 1
MLPP	- Multi-Level Precedence and Preemption
NI 1/2	- National ISDN Standard 1 or 2
PRI	- Primary Rate Interface
PSTN	- Public Switched Telephone Network
Q.931	- Signaling Standard for ISDN
Q.955.3	- ISDN Signaling standard for E1 MLPP
SS7	- Signaling System 7
SUT	- System Under Test
T1	- Digital Transmission Link Level 1 (1.544 Mbps)
T1.113	- SS7 ISDN User Part
T1.607	- ISDN - Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1
T1.619a	- SS7 and ISDN MLPP signaling standard for T1

NOTES:

1 The SUT interface can be met with any one of the following interfaces: T1 CAS, E1 CAS, T1 ISDN PRI, E1 ISDN PRI, T1 SS7, or E1 SS7.

2 The SUT Telecom Firewall application had the capability to terminate DSN calls based on “policies” regardless of the precedence level of the call. As a result, assured services mandated by reference (e) cannot be guaranteed. Therefore the SUT is certified for joint use within the DSN only in the following configurations: Non-intrusive mode (monitor-only), and in the intrusive mode with the terminate policy “Allow Call Terminations” block unchecked, which is optioned under the edit spans/firewall tab.

3 DITSCAP information assurance testing is accomplished via DISA-led Information Assurance test teams and published in a separate report.

Table 2. SUT Capability and Functional Interoperability Requirements

DSN Trunk Interfaces					
Interface	Critical	Requirements Required or Conditional		References	
T1 CAS (MFR1, DTMF, DP)	No	Trunking	<ul style="list-style-type: none"> • Framing (R) • Line Code (R) • Signaling (R) • Alarms (R) • WWNDP (R) • Routing (R) • Trunk Groups (R) • Direct Inward Dialing (R) 	<ul style="list-style-type: none"> • GSCR Sect. 7 • GSCR Sect. 7 • GSCR Sect. 5 • GSCR Sect. 2.5.7, 7.1.4 & 7.2.2 • GSCR Sect. 4.5.1 • GSCR Sect. 4.2 • GSCR Sect. 2.5.5 & 2.5.6 • GSCR Sect. 2.3.2 	
E1 CAS (MFR1, DTMF, DP)	No		Voice	<ul style="list-style-type: none"> • MOS (R) • MLPP (R) • Secure calls (R) 	<ul style="list-style-type: none"> • CJCSI 6215.01B • GSCR Sect. 3 • CJCSI 6215.01B
T1 ISDN PRI NI 1/2 (ANSI T1.619a)	No			Facsimile	<ul style="list-style-type: none"> • Analog: TIA/EIA-465-A (R)
T1 SS7 (ANSI T1.619a)	No	Data	<ul style="list-style-type: none"> • Modem (R) • 56 kbps switched data (R) • 64 kbps switched data (R) • NX56 kbps synchronous BER (R) • NX64 kbps synchronous BER (R) • Secure data (STE/STU-III) (R) 	<ul style="list-style-type: none"> • CJCSI 6215.01B • GSCR Sect. 3.10 • GSCR Sect. 3.10 • GSCR Sect. 3.10 • GSCR Sect. 3.10 • CJCSI 6215.01B 	
E1 SS7 (ANSI T1.619a)	No		VTC	<ul style="list-style-type: none"> • ITU-T H.320 (R) 	<ul style="list-style-type: none"> • DISR
DSN Features and Capabilities					
Interface	Critical	Requirements Required or Conditional		References	
Synchronization	Yes	<ul style="list-style-type: none"> • Line timing mode (R) 		<ul style="list-style-type: none"> • GSCR Sect. 11.1.1.1 	
Security	Yes	<ul style="list-style-type: none"> • DITSCAP (R) 		<ul style="list-style-type: none"> • GSCR Sect. 13 	

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

PSTN Trunk Interfaces				
Interface	Critical	Requirements Required or Conditional		References
T1 CAS (MFR1, DTMF, DP)	No			
E1 CAS (MFR1, DTMF, DP)	No			
T1 ISDN PRI NI 1/2 (ANSI T1.607)	No	Trunking	<ul style="list-style-type: none"> • Positive Identification Control (C) • On-Netting (C) • Off-Netting (C) 	<ul style="list-style-type: none"> • CJCSI 6215.01B • CJCSI 6215.01B • CJCSI 6215.01B
E1 ISDN PRI (ITU-T Q.931)	No			
T1 SS7 (ANSI T1.113)	No			
E1 SS7 (ANSI T1.113)	No			
LEGEND: ANSI - American National Standards Institute BER - Bit Error Ratio C - Conditional CAS - Channel Associated Signaling CJCSI - Chairman of the Joint Chiefs of Staff Instruction DISR - Department of Defense Information Technology Standards Registry DITSCAP - Department of Defense Information Technology Security Certification and Accreditation Process DP - Dial Pulse DSN - Defense Switched Network DTMF - Dual Tone Multi-Frequency E1 - European Basic Multiplex Rate (2.048 Mbps) EIA - Electronic Industries Alliance GSCR - Generic Switching Center Requirements H.320 - Standard for Narrowband VTC ISDN - Integrated Services Digital Network ITU-T - International Telecommunication Union - Telecommunication Standardization Sector kbps - kilobits per second Mbps - Megabits per second MFR1 - Multi-Frequency Recommendation 1 MLPP - Multi-Level Precedence and Preemption MOS - Mean Opinion Score NI 1/2 - National ISDN Standard 1 or 2 NX56 - Data format restricted to multiples of 56 kbps NX64 - Data format restricted to multiples of 64 kbps PRI - Primary Rate Interface PSTN - Public Switched Telephone Network Q.931 - Signaling Standard for ISDN Q.955.3 - ISDN Signaling standard for E1 MLPP R - Required Sect. - Section SS7 - Signaling System 7 STE - Secure Terminal Equipment STU-III - Secure Telephone Unit-3 rd Generation SUT - System Under Test T1 - Digital Transmission Link Level 1 (1.544 Mbps) T1.113 - SS7 ISDN User Part T1.607 - ISDN - Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1 T1.619a - SS7 and ISDN MLPP Signaling Standard for T1 TIA - Telecommunications Industry Association TIA/EIA-465-A - Group 3 Facsimile Apparatus for Document Transmission VTC - Video Teleconferencing WWNDP - Worldwide Numbering and Dialing Plan				

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>.

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6. The JITC point of contact is Capt. Michel Roy, DSN 821-8575, commercial (520) 533-8575, FAX DSN 879-4347, or e-mail to michel.roy.ca@disa.mil.

FOR THE COMMANDER:



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Chief
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Defense Information Systems Agency (DISA), ATTN: GS23 (Mr. Osman), Room 5w23, 5275 Leesburg Pike (RTE 7), Falls Church, VA 22041

ADDITIONAL REFERENCES

- (c) Defense Information Systems Agency (DISA), "Defense Switched Network (DSN) Generic Switching Center Requirements (GSCR), Change 1," 1 March 2005
- (d) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP)," 23 April 2004
- (e) Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 6215.01B, "Policy for Department of Defense Voice Services," 23 September 2001

CERTIFICATION TESTING SUMMARY

1. SYSTEM TITLE. SecureLogix Enterprise Telephony Management (ETM)[®] System with Software Version 5.0.2, Build 12-9 (Includes hardware appliance ETM[®] 2100 with software package 5.02.20), hereinafter referred to as the System Under Test (SUT).

2. PROPONENTS. Defense Information Systems Agency (DISA)/SecureLogix Corporation.

3. PROGRAM MANAGER. Mr. Howard Osman, GS23, Room 5W23, 5275 Leesburg Pike, Falls Church, VA, 22041, e-mail: Howard.Osman@disa.mil.

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

5. SYSTEM UNDER TEST DESCRIPTION. The SUT includes expandable, managed appliances, which are deployed as customer premise devices on trunks. These appliances are controlled by remote servers and support a number of existing security and management applications. The SUT is managed from a remote client, which can be used to manage multiple servers and appliances.

- **ETM[®] Platform Appliances** - The ETM[®] Platform Appliances are rack-mountable in-line devices, which are deployed on trunks between two digital switching systems. The ETM[®] Platform Appliances continuously monitor all signaling and bearer traffic, and use an expandable policy engine to examine calls and take actions based upon user-defined rules. The ETM[®] Platform Appliances are remotely managed and can be remotely upgraded with new software and applications. There are several versions of the ETM[®] Platform Appliance to suit a variety of different telephone signaling types (e.g. Channel Associated Signaling (CAS), Primary Rate Interface (PRI), Signaling System Number 7 (SS7), and Analog). The ETM[®] 3200 platform has the same hardware and software as the ETM[®] 2100. JITC analysis determined the ETM[®] 3200 to be functionally identical for interoperability certification purposes, and is also certified for joint use within the Defense Switched Network (DSN). The analog appliances (ETM[®] 1010, 1012, and 1024) are covered under a separate certification.

- **ETM[®] Applications** - The ETM[®] Server consists of the ETM[®] Management Server and the ETM[®] Report Server. These processes can run on one or multiple physical servers to allow the system to be configured to meet customer requirements. The ETM[®] Management Server consists of processes that collect data from ETM[®] Appliances, maintain system configuration and policy data, store all call data in a database, generate reports, and provide an anchor point for the Graphical User Interface (GUI) client. The Database Server provides backend data storage duties for the ETM[®] Management Server. The ETM[®] Client Server is the client GUI used to monitor and control the ETM[®] system. Individual client applications available from the console include the Performance Manager, Directory Manager, and the Usage Manager. All security, management, and real-time visibility functions are available via these tools. The client applications include a visual representation of all ETM[®] System

hardware and each monitored circuit. The client also includes tools for appliance and server administration, log review, call monitoring, viewing of real-time alerts, and user configuration. The ETM® Collection Server is an application to which one or more Call Recording Caches transmit the stored call recordings at user-defined intervals for permanent storage, playback, and analysis.

6. OPERATIONAL ARCHITECTURE. The Generic Switching Center Requirements (GSCR) DSN operational architecture is depicted in figure 2-1. The SUT is currently deployed at various camps, posts, or stations, within the DSN.

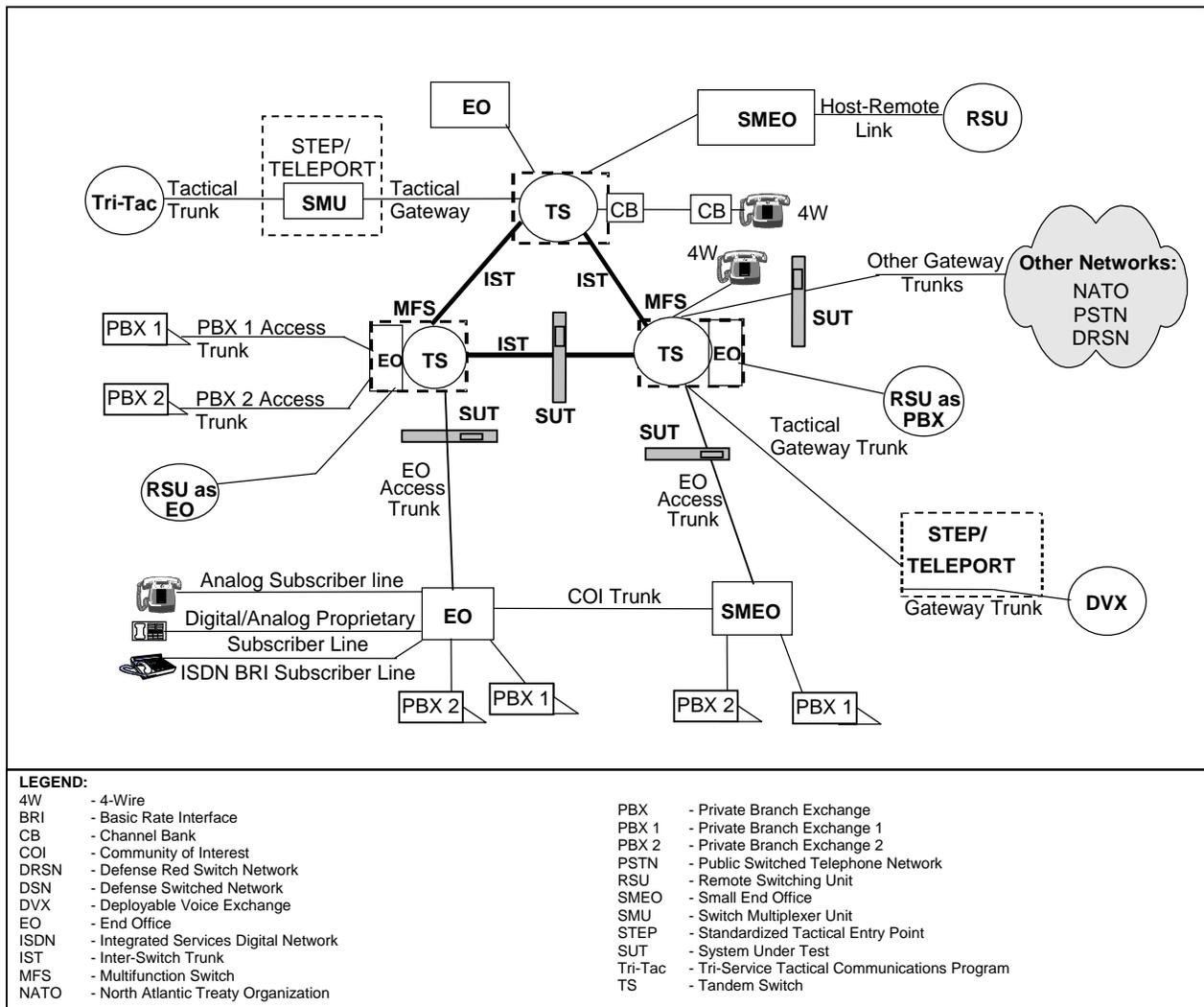


Figure 2-1. DSN Architecture

7. REQUIRED SYSTEM INTERFACES. The SUT Interoperability Test Summary is shown in table 2-1 and the Capability and Functional Requirements used to evaluate the interoperability of the SUT are indicated in table 2-2.

Table 2-1. SUT Interoperability Test Summary

DSN Trunk Interfaces				
Hardware Appliance	Interface & Signaling	Critical	Status	Remarks
ETM® 2100 ETM® 3200	T1 CAS (MFR1, DTMF, DP)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	E1 CAS (MFR1, DTMF, DP)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	T1 ISDN PRI NI 1/2 (ANSI T1.619a)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	E1 ISDN PRI (ITU-T Q.955.3)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	T1 SS7 (ANSI T1.619a)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	E1 SS7 (ANSI T1.619a)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
DSN Features and Capabilities				
Features and Capabilities		Critical	Status	Remarks
Synchronization		Yes	Certified	Met all critical CRs and FRs.
Security		Yes	See Note 3	
PSTN Trunk Interfaces				
Hardware Appliance	Interface & Signaling	Critical	Status	Remarks
ETM® 2100 ETM® 3200	T1 CAS (MFR1, DTMF, DP)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	E1 CAS (MFR1, DTMF, DP)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	T1 ISDN PRI NI 1/2 (ANSI T1.607)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	E1 ISDN PRI (ITU-T Q.931)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	T1 SS7 (ANSI T1.113)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.
	E1 SS7 (ANSI T1.113)	No ¹	Certified	Met all Critical CRs and FRs when intrusively inserted ² or non-intrusively inserted (monitor-only) via this interface.

Table 2-1. SUT Interoperability Test Summary (continued)

LEGEND:	
ANSI	- American National Standards Institute
CAS	- Channel Associated Signaling
CRs	- Capability Requirements
DISA	- Defense Information Systems Agency
DITSCAP	- Department of Defense Information Technology Security Certification and Accreditation Process
DP	- Dial Pulse
DSN	- Defense Switched Network
DSS1	- Digital Subscriber Signaling 1
DTMF	- Dual Tone Multi-Frequency
E1	- European Basic Multiplex Rate (2.048 Mbps)
ETM®	- Enterprise Telephony Management
FRs	- Functional Requirements
ISDN	- Integrated Services Digital Network
ITU-T	- International Telecommunication Union – Telecommunication Standardization Sector
Mbps	- Megabits per second
MFR1	- Multi-Frequency Recommendation 1
MLPP	- Multi-Level Precedence and Preemption
NI 1/2	- National ISDN Standard 1 or 2
PRI	- Primary Rate Interface
PSTN	- Public Switched Telephone Network
Q.931	- Signaling Standard for ISDN
Q.955.3	- ISDN Signaling standard for E1 MLPP
SS7	- Signaling System 7
SUT	- System Under Test
T1	- Digital Transmission Link Level 1 (1.544 Mbps)
T1.113	- SS7 ISDN User Part
T1.607	- ISDN - Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1
T1.619a	- SS7 and ISDN MLPP signaling standard for T1

NOTES:

- The SUT interface can be met with any one of the following interfaces: T1 CAS, E1 CAS, T1 ISDN PRI, E1 ISDN PRI, T1 SS7, or E1 SS7.
- The SUT Telecom Firewall application had the capability to terminate DSN calls based on "policies" regardless of the precedence level of the call. As a result, assured services mandated by reference (e) cannot be guaranteed. Therefore the SUT is certified for joint use within the DSN only in the following configurations: Non-intrusive mode (monitor-only), and in the intrusive mode with the terminate policy "Allow Call Terminations" block unchecked, which is optioned under the edit spans/firewall tab.
- DITSCAP information assurance testing is accomplished via DISA-led Information Assurance test teams and published in a separate report.

Table 2-2. SUT Capability and Feature Interoperability Requirements

DSN Trunk Interfaces			
Interface	Critical	Requirements Required or Conditional	References
T1 CAS (MFR1, DTMF, DP)	No	Trunking	<ul style="list-style-type: none"> • GSCR Sect. 7 • GSCR Sect. 7 • GSCR Sect. 5 • GSCR Sect. 2.5.7, 7.1.4 & 7.2.2
E1 CAS (MFR1, DTMF, DP)	No		<ul style="list-style-type: none"> • GSCR Sect. 4.5.1 • GSCR Sect. 4.2 • GSCR Sect. 2.5.5 & 2.5.6
T1 ISDN PRI NI 1/2 (ANSI T1.619a)	No		<ul style="list-style-type: none"> • Direct Inward Dialing (R)
E1 ISDN PRI (ITU-T Q.955.3)	No	Voice	<ul style="list-style-type: none"> • MOS (R) • MLPP (R) • Secure calls (R)
		Facsimile	<ul style="list-style-type: none"> • Analog: TIA/EIA-465-A (R) • DISR
T1 SS7 (ANSI T1.619a)	No	Data	<ul style="list-style-type: none"> • CJCISI 6215.01B • GSCR Sect. 3.10
E1 SS7 (ANSI T1.619a)	No		<ul style="list-style-type: none"> • GSCR Sect. 3.10 • GSCR Sect. 3.10 • GSCR Sect. 3.10 • CJCISI 6215.01B
			VTC
DSN Features and Capabilities			
Interface	Critical	Requirements Required or Conditional	References
Synchronization	Yes	<ul style="list-style-type: none"> • Line timing mode (R) 	<ul style="list-style-type: none"> • GSCR Sect. 11.1.1.1
Security	Yes	<ul style="list-style-type: none"> • DITSCAP (R) 	<ul style="list-style-type: none"> • GSCR Sect. 13

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

PSTN Trunk Interfaces				
Interface	Critical	Requirements Required or Conditional		References
T1 CAS (MFR1, DTMF, DP)	No			
E1 CAS (MFR1, DTMF, DP)	No			
T1 ISDN PRI NI 1/2 (ANSI T1.607)	No	Trunking	<ul style="list-style-type: none"> • Positive Identification Control (C) • On-Netting (C) • Off-Netting (C) 	<ul style="list-style-type: none"> • CJCSI 6215.01B • CJCSI 6215.01B • CJCSI 6215.01B
E1 ISDN PRI (ITU-T Q.931)	No			
T1 SS7 (ANSI T1.113)	No			
E1 SS7 (ANSI T1.113)	No			
LEGEND: ANSI - American National Standards Institute BER - Bit Error Ratio C - Conditional CAS - Channel Associated Signaling CJCSI - Chairman of the Joint Chiefs of Staff Instruction DISR - Department of Defense Information Technology Standards Registry DITSCAP - Department of Defense Information Technology Security Certification and Accreditation Process DP - Dial Pulse DSN - Defense Switched Network DTMF - Dual Tone Multi-Frequency E1 - European Basic Multiplex Rate (2.048 Mbps) EIA - Electronic Industries Alliance GSCR - Generic Switching Center Requirements H.320 - Standard for Narrowband VTC ISDN - Integrated Services Digital Network ITU-T - International Telecommunication Union - Telecommunication Standardization Sector kbps - kilobits per second Mbps - Megabits per second MFR1 - Multi-Frequency Recommendation 1 MLPP - Multi-Level Precedence and Preemption MOS - Mean Opinion Score NI 1/2 - National ISDN Standard 1 or 2 NX56 - Data format restricted to multiples of 56 kbps NX64 - Data format restricted to multiples of 64 kbps PRI - Primary Rate Interface PSTN - Public Switched Telephone Network Q.931 - Signaling Standard for ISDN Q.955.3 - ISDN Signaling standard for E1 MLPP R - Required Sect. - Section SS7 - Signaling System 7 STE - Secure Terminal Equipment STU-III - Secure Telephone Unit-3 rd Generation SUT - System Under Test T1 - Digital Transmission Link Level 1 (1.544 Mbps) T1.113 - SS7 ISDN User Part T1.607 - ISDN - Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1 T1.619a - SS7 and ISDN MLPP Signaling Standard for T1 TIA - Telecommunications Industry Association TIA/EIA-465-A - Group 3 Facsimile Apparatus for Document Transmission VTC - Video Teleconferencing WWNDP - Worldwide Numbering and Dialing Plan				

8. TEST NETWORK DESCRIPTION. The SUT was tested at JITC's Global Information Grid Network Test Facility in a manner and configuration similar to that of the DSN operational environment. This test was conducted using two test configurations shown in figures 2-2 and 2-3. Figure 2-2 depicts the test configuration used to test the SUT in the intrusive mode. Figure 2-3 depicts the test configuration used to test the SUT in the non-intrusive mode.

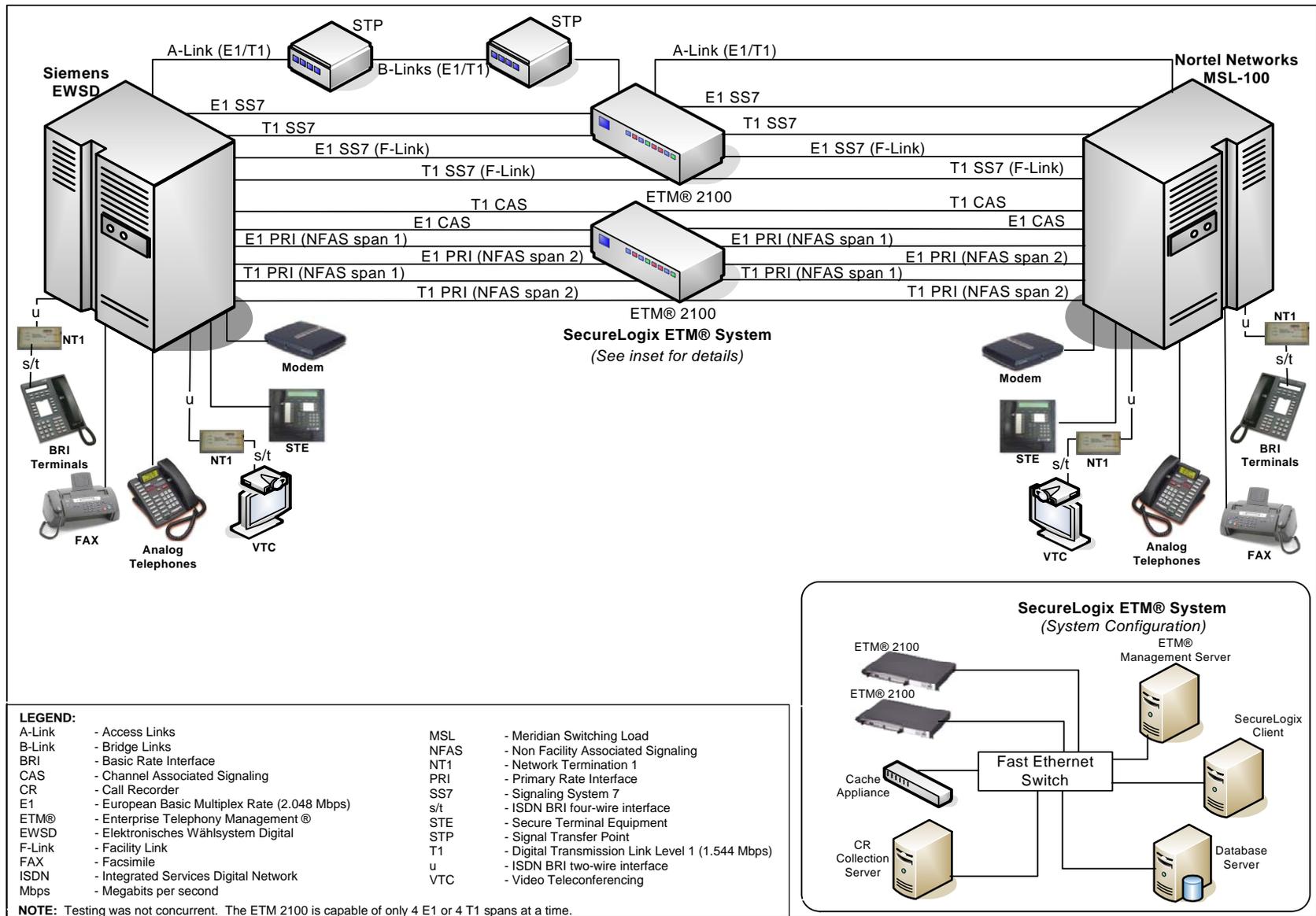


Figure 2-2. Test Network Configuration (Intrusive Mode)

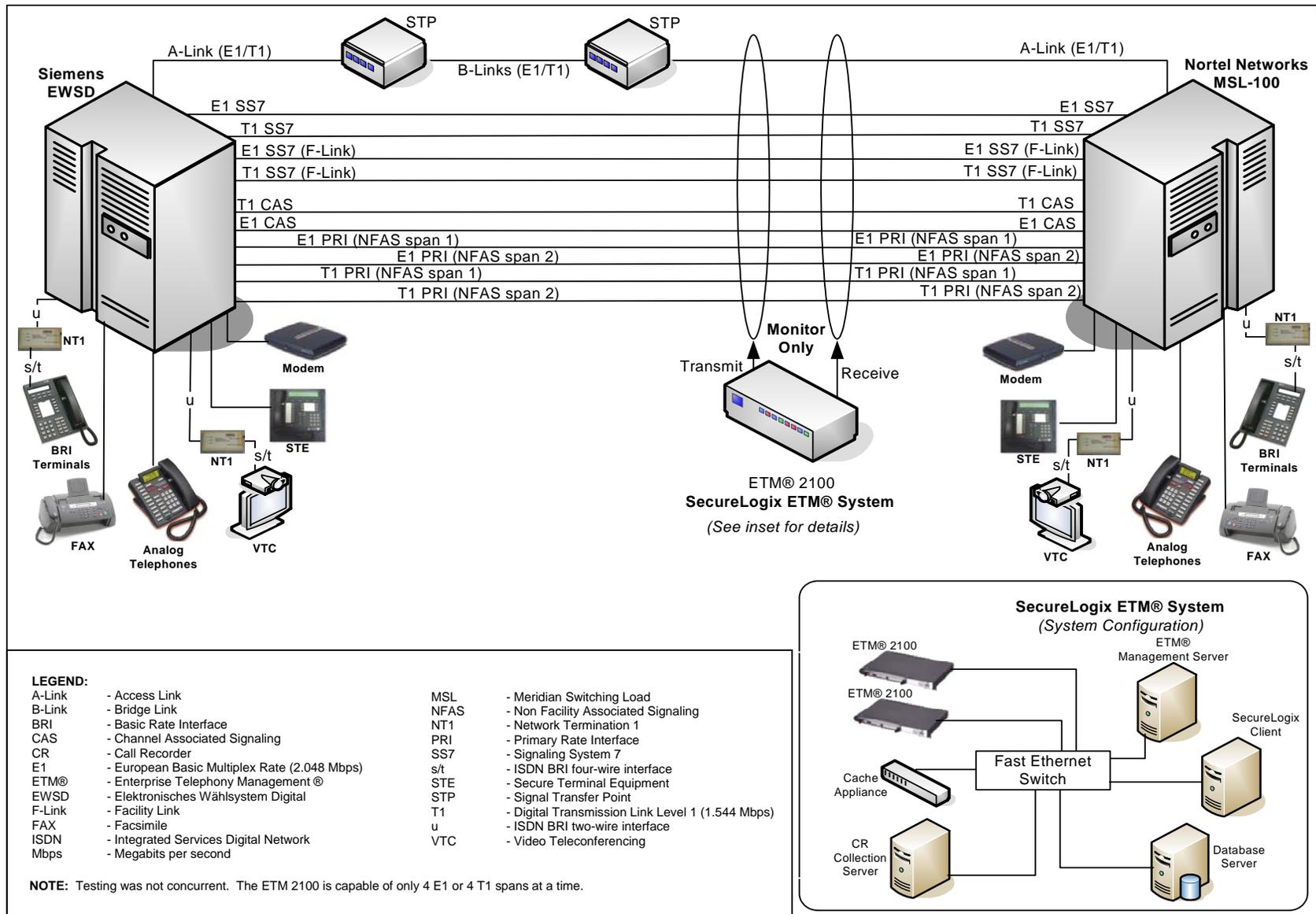


Figure 2-3. Test Network Configuration (Non-Intrusive Mode)

9. SYSTEM CONFIGURATIONS. Table 2-3 lists the system configurations used in the test.

Table 2-3. Tested System Configurations

System Name	Software Release	
	Hardware Appliance	Software
SecureLogix ETM® System (SUT)	ETM® 2100	5.02.20
	ETM® Management Server, Call Recorder Collection Server, and Database Server	MS Win 2003 with SP1, Intel® Pentium® 4 CPU, HD 2.80 GHz 248 MB RAM
	Client	MS Win 2003 with SP1, Intel® Pentium® 4 CPU, HD 2.80 GHz 248 MB RAM
Nortel Networks MSL-100	SE08	
Siemens EWSD	Release 19d with Patch Set 46	
LEGEND: CPU - Central Processing Unit DSN - Defense Switched Network DTI - Digital Trunk Interface Card EWSD - Elektronisches Wählsystem Digital ETM® - Enterprise Telephony Management GHz - GigaHertz HD - Hard Drive MB - Mega Byte MS - Microsoft MSL - Meridian Switching Load RAM - Random Access Memory SE08 - Succession Enterprise Version 08 SP - Service Pack 1 SUT - System Under Test Win - Windows		

10. TEST LIMITATIONS. None.

11. TEST RESULTS

a. Discussion

(1) Digital Transmission Link Level 1 (T1) CAS Alternate Mark Inversion (AMI)/Super Frame (SF) and Bipolar Eight Zero Substitution (B8ZS)/Extended Super Frame (ESF).

(a) Call Loading. The SUT has the ability to automatically or manually enter a bypass mode. In this mode, the input and output connections of the T1 CAS (AMI/SF and B8ZS/ESF) circuits are electronically connected, bypassing the monitoring functionality of the SUT. The call loader was used to generate approximately 2000 calls per hour over both the T1 CAS (AMI/SF and B8ZS/ESF) through the SUT. Call load scenarios were also generated through the SUT to simulate 56 kilobits per second (kbps) data calls, facsimile, and modem calls for approximately 30 seconds per call. The power was disconnected during each call loading scenario and the SUT automatically entered the bypass mode without affecting call processing. The SUT was also placed in the manual bypass mode during call loading producing the same results as recorded during the automatic mode. There were no noted negative effects with the SUT inserted in the circuit.

(b) Alarms. Red (Loss of Signal) and yellow (Remote Alarm Indication) Carrier Group Alarms met the GSCR requirements and were propagated through the SUT transparently in both the intrusive and non-intrusive modes.

(c) Asynchronous Data Calls. All asynchronous modem calls were placed over the T1 CAS (AMI/SF and B8ZS/ESF) circuits through the SUT with a 100-percent success rate with no adverse effects in either the intrusive or non-intrusive mode.

(d) Multi-Level Precedence and Preemption (MLPP). The four types of MLPP call scenarios listed below were tested over the T1 CAS (AMI/SF and B8ZS/ESF). Each preemption scenario met the GSCR MLPP requirements with no adverse effects.

- (1) Answered Call; Circuit to be Reused
- (2) Unanswered Call; Circuit to be Reused
- (3) Answered Call; Circuit not to be Reused
- (4) Unanswered Call; Circuit not to be Reused

(e) Non-Secure Facsimile (FAX). Manual FAX calls were placed over the T1 CAS (AMI/SF and B8ZS/ESF) circuits through the SUT with a 100-percent success rate with no adverse effects in either the intrusive or non-intrusive mode.

(f) Voice Calls. Voice calls were placed over the T1 CAS (AMI/SF and B8ZS/ESF) circuits through the SUT and measured a Mean Opinion Score of 4.0 or better with the SAGE 935 AT test set as required by the GSCR. The SUT had no adverse effects in either the intrusive or non-intrusive mode.

(g) Secure FAX. Secure FAX calls were placed over the T1 CAS (AMI/SF and B8ZS/ESF) circuits through the SUT with a 100-percent success rate with no adverse effects in either the intrusive or non-intrusive mode.

(h) Secure Terminal Equipment (STE) Secure Voice Calls. Secure voice call scenarios (STE to STE calls @ 6.4 & 32 kbps) were conducted over the T1 CAS (AMI/SF and B8ZS/ESF) through the SUT with a 100-percent success rate with no adverse effects in either the intrusive or non-intrusive mode.

(i) STE Secure Data Calls. The Sunrise Sunset T10 test set was used to conduct an asynchronous Bit Error Rate Test (BERT) using a 511 test pattern in the secure data mode for a period of 30 minutes per call over the T1 CAS (AMI/SF and B8ZS/ESF) circuits through the SUT with no adverse effects in either the intrusive or non-intrusive mode. Secure data calls scenarios (STE to STE calls @ 19.2, 64, and 128 kbps) were conducted with a 100-percent success rate.

(j) Synchronous 56 kbps Data Calls. The Sunrise Sunset Integrated Services Digital Network (ISDN) Basic Rate Interface test set was used to conduct switched 56 kbps synchronous BERT calls using a 2047 test pattern over the T1 CAS (AMI/SF and B8ZS/ESF) circuits through the SUT with no adverse effects in either the intrusive or non-intrusive mode.

(k) T1 Electrical Interface Characteristics. A pulse mask analysis was conducted on both the T1 CAS (AMI/SF and B8ZS/ESF) interfaces to verify the SUT met the required T1 electrical interface characteristics. The pulse mask analysis met the GSCR requirement.

(l) Video Teleconferencing (VTC). Multiple 336 kbps bonding mode 1 VTC calls were placed over T1 CAS (AMI/SF and B8ZS/ESF) interfaces through the SUT with a 100-percent call completion rate with no adverse effects in either the intrusive or non-intrusive mode.

(2) The same test scenarios conducted over T1 CAS above were also conducted over the following interfaces with the same results with one exception noted below. The SUT had no adverse effect on any of the interfaces in both the intrusive and non-intrusive modes.

- (a) T1 ISDN PRI (See Note)
- (b) T1 Signaling System 7 (SS7)
- (c) E1 CAS
- (c) E1 ISDN PRI (See Note)
- (d) E1 SS7

Note: When the SUT is interfaced with ISDN PRI T1/E1 circuits configured between the switching systems as Non Facility Associated Signaling, it must be configured as follows: At the Management Server under the PRI tab for the span configuration there is an option labeled “layer 2 crossover”, which must be set to “Auto”. This option prevents interoperability anomalies noted during testing when the primary or backup D-channels are busied at the switch maintenance terminal. If the “layer 2 crossover” option is set to “Off”, the switches may fail to transfer control to the back-up D-channel when the primary D-channel is busied, which could result in a loss of up to 20 T1s.

b. Summary. The SUT is certified for joint use in the DSN in accordance with the requirements set forth in reference (c). The SUT and its associated applications met all the critical interoperability requirements and were transparent to the switching systems interfaced, causing no degradation of service or negative impact when connected to the interfaces certified in this letter. The SUT Telecom Firewall application has the capability to terminate DSN calls based on “policies” regardless of the precedence level of the call. As a result, assured services mandated by reference (e) cannot be guaranteed. Therefore the SUT is certified for joint use within the DSN only in the following configurations: Non-intrusive mode (monitor only), and in the intrusive mode with the terminate policy “Allow Call Terminations” block unchecked, which is optioned

under the edit spans/firewall tab. The SUT is certified with terminate policies only when intrusively inserted in the PSTN.

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>.