



DEFENSE INFORMATION SYSTEMS AGENCY

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

MEMORANDUM FOR DISTRIBUTION

10 Aug 11

SUBJECT: Special Interoperability Test Certification of the Tekelec Eagle® with Software Release 42.0

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 (e), 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 Tekelec Eagle® with Software Release 42.0 is hereinafter referred to as the System Under Test (SUT). The SUT meets all of its critical interoperability requirements and is certified as interoperable for joint use within the Defense Information System Network (DISN) as a Common Channel Signaling Number 7 Signal Transfer Point (STP). The SUT met 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 could affect interoperability, but no later than three years from the date the DISA Certification and Accreditation (CA) provided a positive recommendation.

3. This finding is based on interoperability testing and DISA CA recommendation. Interoperability testing was conducted by JITC at the Global Information Grid Network Test Facility, Fort Huachuca, Arizona, from 28 February through 3 March 2011. The DISA CA provided a positive recommendation on 28 July 2011 based on the security testing completed by DISA-led IA test teams and published in a separate report, Reference (e). The Certification Testing Summary (Enclosure 2) documents the test results and describes the test network.

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:

JITC, Memo, JTE, Special Interoperability Test Certification of the Tekelec Eagle® Signal Transfer Point (STP) with Software Release 42.0

- a. Defense Switched Network (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
DS1	No	Certified	Met all CRs and FRs.
E1	No	Certified	Met all CRs and FRs.
LEGEND:			
CRs	Capability Requirements	Mbps	Megabits per second
DS1	Digital Signal Level 1 (1.544 Mbps)	OCU-DP	Office Channel Unit-Data Port
DS0	Digital Signal Level Zero (64 kbps)	STP	Signal Transfer Point
DS0A	A process where a sub-rate signal is repeated 20, 10, or 5 times to make a 64-kbps DS0 channel	SUT	System Under Test
E1	European Basic Multiplex Rate (2.048 Mbps)	V.35	Standard for data transmission at 48 kbps using 60-108 kHz group band circuits
FRs	Feature Requirements	V.36	Modems for synchronous data transmission using 60-108 kHz group band circuits
ITU-T	International Telecommunication Union – Telecommunication Standardization Sector	V.37	Synchronous data transmission at a data signaling rate higher than 72 kbps using 60-108 kHz group band circuits
kbps	kilobits per second		
kHz	kilohertz		

Table 2. SUT Capability and Feature Interoperability Requirements

DSN Access Interfaces			
Interface	Critical	Requirements Required or Conditional	References
DS1 (A and C Links)	No	<ul style="list-style-type: none"> • SS7 Network Structure (R) • Signaling System MTP Functions and Structure (R) • Signaling Network Functions and Messages (R) 	<ul style="list-style-type: none"> • UCR para 5.2.4.6.1 • UCR para 5.2.4.6.2 • UCR para 5.2.4.6.3
	No	<ul style="list-style-type: none"> • Non-circuit-Related Information Exchange-SCCP (R) • MTP Restart (R) 	<ul style="list-style-type: none"> • UCR para 5.2.4.6.4 • UCR para 5.2.4.6.6
E1 (A and C Links)	No	<ul style="list-style-type: none"> • Signaling Link Management (R) • Signaling Route Management (R) 	<ul style="list-style-type: none"> • UCR para 5.2.4.6.7 • UCR para 5.2.4.6.8
	No	<ul style="list-style-type: none"> • Common Characteristics of MSU (R) • Formats and Codes of Signaling Network Management Messages (R) 	<ul style="list-style-type: none"> • UCR para 5.2.4.6.9 • UCR para 5.2.4.6.10
	No	<ul style="list-style-type: none"> • Numbering of Signaling Point Codes (R) • Functional Descriptions of ISDN User Part (R) • Formats and Codes-ISDN User Part Parameters (R) 	<ul style="list-style-type: none"> • UCR para 5.2.4.6.11 • UCR para 5.2.4.6.12 • UCR para 5.2.4.6.13
LEGEND:			
A-Link	Access Link (SS7)	MSU	Message Signaling Unit
C-Link	Cross Link (SS7)	MTP	Message Transfer Part
DS1	Digital Signal Level 1 (1.544 Mbps)	OCU-D	Office Channel Unit-Data Port
DS0	Digital Signal Level Zero: One 64-kbps channel	Para	paragraph
E1	European Basic Multiplex Rate (2.048 Mbps)	R	Required
ISDN	Integrated Services Digital Network	SCCP	Signaling Connection Control Part
kbps	kilobits per second	SS7	Signaling System 7
kHz	kiloHertz	STP	Signal Transfer Point
Mbps	Megabits per second	SUT	System Under Test

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)

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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 <https://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: ucco@disa.mil.

6. The JITC point of contact is Ms. Anita Mananquil, DSN 879-5164, commercial (520) 538-5164, FAX DSN 879-4347, or e-mail to anita.mananquil@disa.mil. The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 1030701.

FOR THE COMMANDER:

2 Enclosures a/s


for BRADLEY A. CLARK
Chief
Battlespace Communications Portfolio

Distribution (electronic mail):

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ADDITIONAL REFERENCES

- (c) Office of the Assistant Secretary of Defense, "Department of Defense Unified Capabilities Requirements 2008 Change 1," 22 January 2010
- (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 Tekelec Eagle Release (Rel.) 42.0 (Tracking Number 1030701)," 28 July 2011

CERTIFICATION TESTING SUMMARY

1. **SYSTEM TITLE.** Tekelec Eagle® with Software Release 42.0; hereinafter referred to as the System Under Test (SUT).
2. **PROPONENT.** Defense Information Systems Agency (DISA).
3. **PROGRAM MANAGER.** Carrie Takenaka, 477 Essex St, Suite 183, Pearl Harbor, Hawaii 96860-5815, E-mail: Carrie.Takenaka@Disa.Mil.
4. **TESTER.** Joint Interoperability Test Command (JITC), Fort Huachuca, Arizona.
5. **SYSTEM UNDER TEST DESCRIPTION.** A Signaling System 7 (SS7) network is made up of three signaling node types: Signal Transfer Point (STPs), Service Switching Points (SSPs), and Service Control Points (SCPs). The SS7 network supports several signaling link types: Access Link (A-link), Bridge Link (B-Link), Cross Link (C-Link), Diagonal Link (D-Link), Extended Link (E-Link), and Fully Associated Link (F-Link). The SUT is deployed as an STP within the Defense Switched Network (DSN) connecting SSPs such as Multi-Function Switches (MFS), End Office (EO) switches, and Small End Office (SMEO) switches.

The SUT routes call setup, call control, network management, user-to-network, and user-to-user signaling messages. Based on the address fields of the SS7 messages, the SUT routes the messages over an outgoing signaling link to the appropriate SSP. To meet stringent reliability requirements, the SUT is typically provisioned in mated pairs with redundant signaling links to attached STPs and SSPs.

The SUT's primary function is to identify the best path to route SS7 messages for two SSPs to communicate. A typical application would be for two SSPs to agree on the use of a shared data path e.g., using Integrated Services Digital Network User Part (ISUP) to initiate a voice call between a user on one SSP and a user on the second SSP. In this way, the SUT routes signaling messages; for starting, maintaining, or finishing any kind of call originated by the SSP's attached users; while avoiding disabled routes to other SS7 nodes.

Signaling messages can be originated by the SUT to learn about the state of the signaling network. Some examples include:

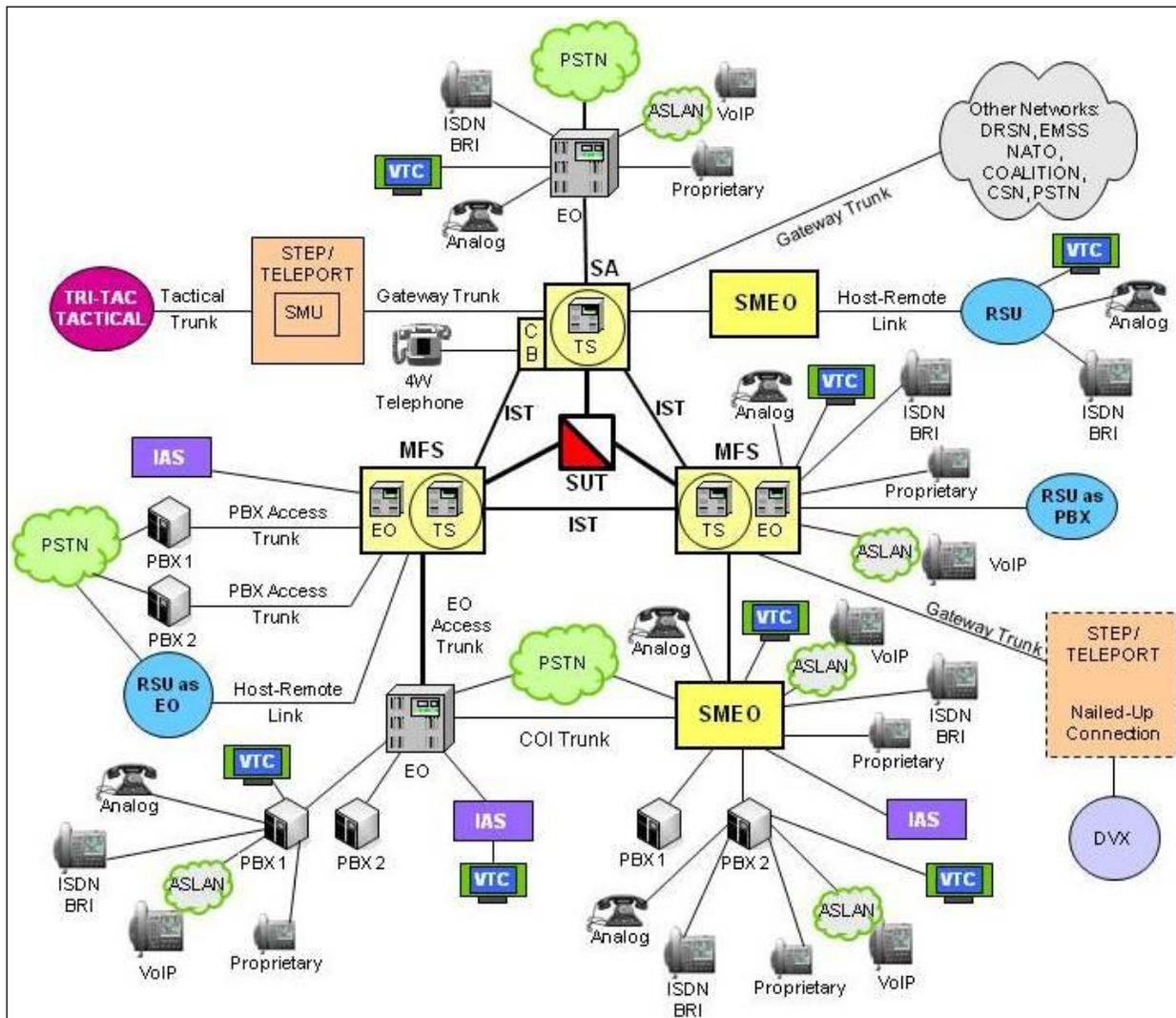
Send route set test messages to probe the availability of a particular SSP.

Low-level Message Transfer Part (MTP) messages are sent to an adjacent signaling point to check the Bit Error Rate (BER) on a particular signaling link.

Notify adjacent signaling points that it is going out of service; in this way, the adjacent signaling points will try to avoid this out of service STP.

The SUT can provide Advanced Intelligent Network (AIN) services such as Local Number Portability and Calling Name Delivery. These services are currently not deployed within the DSN and were therefore not tested or certified by JITC.

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



LEGEND:

- | | | | |
|-------|-------------------------------------|---------|---|
| 4W | 4-Wire | NATO | North Atlantic Treaty Organization |
| ASLAN | Assured Services Local Area Network | 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 | SA | Standalone |
| DSN | Defense Switched Network | SMEO | Small End Office |
| DVX | Deployable Voice Exchange | SMU | Switched Multiplex Unit |
| EMSS | Enhanced Mobile Satellite System | STEP | Standardized Tactical Entry Point |
| EO | End Office | SUT | System Under Test |
| IAS | Integrated Access Switch | Tri-Tac | Tri-Service Tactical Communications Program |
| ISDN | Integrated Services Digital Network | TS | Tandem Switch |
| IST | Interswitch Trunk | VoIP | Voice over Internet Protocol |
| MFS | Multifunction Switch | VTC | Video Teleconferencing |

Figure 2-1. DSN Architecture

7. REQUIRED SYSTEM INTERFACES. The SUT Interoperability Test Summary is shown in Table 2-1 and the Capability and Feature Requirements used to evaluate the interoperability of the SUT are indicated in Table 2-2. The SUT met these requirements through testing.

Table 2-1. SUT Interoperability Test Summary

DSN Access Interfaces			
Interface & Signaling	Critical	Status	Remarks
DS1	No	Certified	Met all CRs and FRs.
E1	No	Certified	Met all CRs and FRs.

LEGEND:
 CRs - Capability Requirements kHz - kiloHertz
 DS1 - Digital Signal Level 1 (1.544 Mbps) Mbps - Megabits per second
 DS0 - Digital Signal Level Zero (64 kbps) OCU-DP - Office Channel Unit-Data Port
 E1 - European Basic Multiplex Rate (2.048 Mbps) STP - Signal Transfer Point
 FRs - Feature Requirements SUT - System Under Test
 kbps - kilobits per second

Table 2-2. SUT Capability and Feature Interoperability Requirements

DSN Access Interfaces			
Interface	Critical	Requirements Required or Conditional	References
DS1 (A,B,C Links)	No	<ul style="list-style-type: none"> • SS7 Network Structure (R) • Signaling System MTP Functions and Structure (R) • Signaling Network Functions and Messages (R) • Non-circuit-Related Information Exchange-SCCP (R) 	<ul style="list-style-type: none"> • UCR para 5.2.4.6.1 • UCR para 5.2.4.6.2 • UCR para 5.2.4.6.3 • UCR para 5.2.4.6.4
	No	<ul style="list-style-type: none"> • MTP Restart (R) • Signaling Link Management (R) • Signaling Route Management (R) 	<ul style="list-style-type: none"> • UCR para 5.2.4.6.6 • UCR para 5.2.4.6.7 • UCR para 5.2.4.6.8 • UCR para 5.2.4.6.9
E1 (A,B,C Links)	No	<ul style="list-style-type: none"> • Common Characteristics of MSU (R) • Formats and Codes of Signaling Network Management Messages (R) 	<ul style="list-style-type: none"> • UCR para 5.2.4.6.10 • UCR para 5.2.4.6.11 • UCR para 5.2.4.6.12 • UCR para 5.2.4.6.13
	No	<ul style="list-style-type: none"> • Numbering of Signaling Point Codes (R) • Functional Descriptions of ISDN User Part (R) • Formats and Codes-ISDN User Part Parameters (R) 	

LEGEND:
 A-Link - Access Link (SS7) kHz - kiloHertz
 B-Link - Bridge Link (SS7) Mbps - Megabits per second
 C-Link - Cross Link (SS7) MSU - Message Signaling Unit
 DS1 - Digital Signal Level 1 (1.544 Mbps) MTP - Message Transfer Part
 DS0 - Digital Signal Level Zero: One 64-kbps channel OCU-DP - Office Channel Unit-Data Port
 E1 - European Basic Multiplex Rate (2.048 Mbps) para - paragraph
 ISDN - Integrated Services Digital Network R - Required
 kbps - kilobits per second SCCP - Signaling Connection Control Part
 SS7 - Signaling System 7
 STP - Signal Transfer Point
 SUT - System Under Test

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 the test configuration shown in figure 2-2. SS7 signaling links (A, B, C, D and E Links) are separated from the

bearer (voice) channels and called non-associated signaling. Quasi-associated signaling (F-Link) is similar to non-associated signaling with a logical separation but does not use STPs to handle the signaling path. A-Links are Access Links from an SSP or SCP to the STP. B Links are Bridge links between STPs in a network. C Links are Cross links between mated STPs. SCPs, D-links, and E-links are currently not used in the DSN. The tested configuration shown in figure 2-2 includes the signaling links and service points used in the DSN.

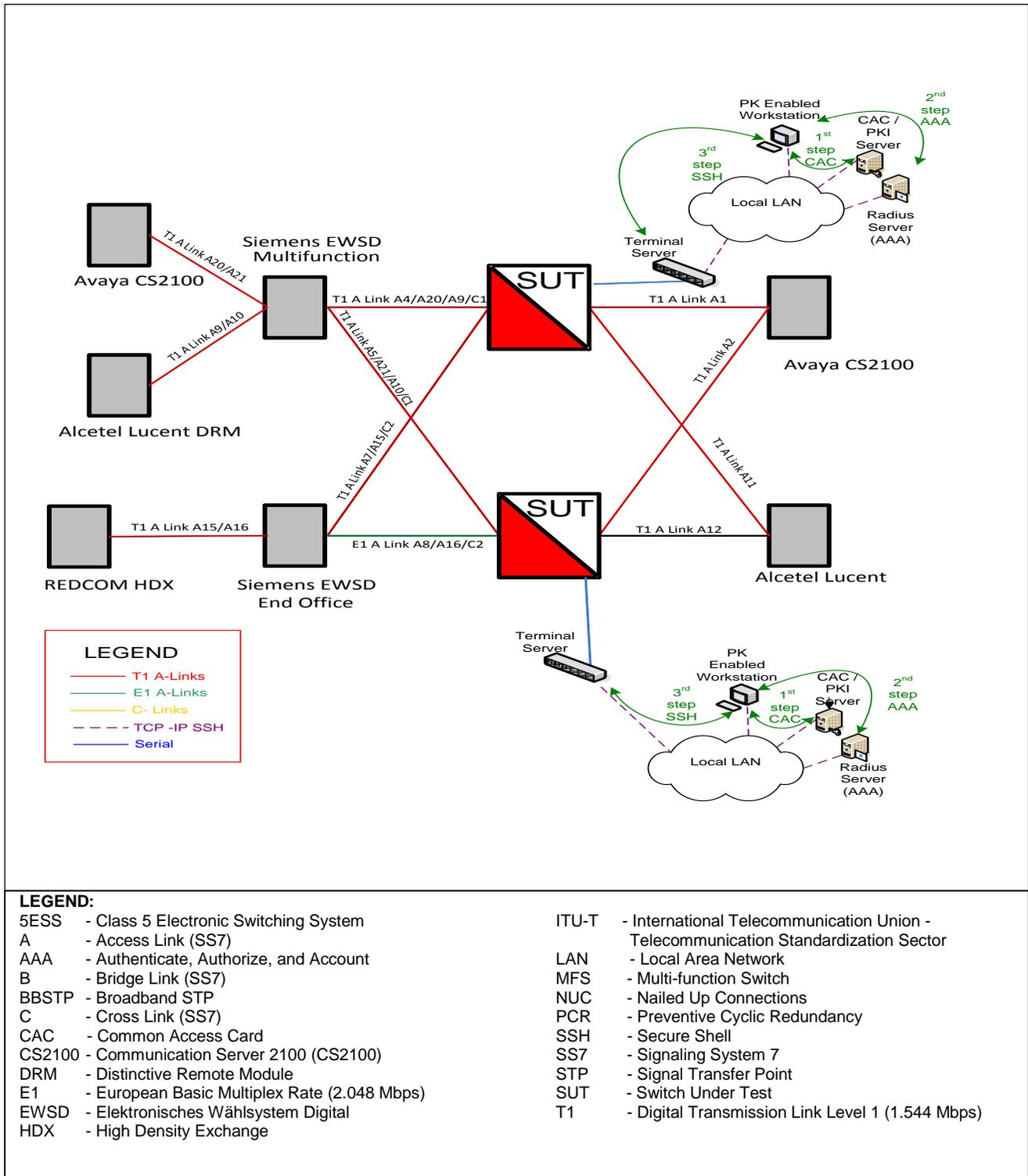


Figure 2-2. SUT Test Configuration

9. SYSTEM CONFIGURATIONS. Table 2-3 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 2-3. Table 2-3 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 access interfaces as the SUT. The SUT is fielded in pairs and each pair must have the same software release.

Table 2-3. Tested System Configurations

System Name		Software			
Avaya CS2100		Succession Enterprise (SE) 09.1			
Siemens EWSD		19d Patch Set 46			
REDCOM HDX		3.0a r3p0			
Alcatel-Lucent 5ESS		5E16.2 Broadcast Warning Message (BWM) 07-0003			
Alcatel-Lucent DRM		5E16.2 Broadcast Warning Message (BWM) 07-0003			
SUT					
Tekelec Eagle® STP with Software Release 42.0	Maintenance Personal Computer, Pentium 4, 3.4 GHz, 3 GB RAM		XP Pro Service Pack 2, VT100– Teraterm Pro Web Ver 3.1.3 SSH: PuTTY 2007-10-23:r7771		
	Integrated Signaling System (ISS)	Part Number	Part Description	Software	Firmware
		870-2860-02	E5-SM4G (Service Module)	Revision B	133-038-031
		870-2371-6	DSM 1G (Database Service Module)	Revisions B&C	133-038-014
		870-2372-1	EDCMA (Enhanced-Performance Database Communications Module)	Revision J	
		870-2198-1	E1/T1 MIM (Multi-channel Interface Module)	Revision L	133-038-014
		870-1873-03	E5-E1T1 (Eagle 5)	Revision F	133-038-014
		870-2574-02	HIPR (High-Speed Packet Router)	Revision A	133-034-000
		870-1289-4	.TSM-256 (Time Slot Counter)	Revision K	133-038-031
		870-2360-1	GPSPM II (General Purpose Service Module)	Revisions G&J	133-038-017
870-0774-10	TDM (Terminal Disk Module)	Revision D			
870-0773-4	MDAL (Maintenance Disk and Alarm Module)	Revision B			
LEGEND:					
5ESS - Class 5 Electronic Switching System		Mbps - Megabits per second			
CS - Communication Server		MSL - Meridian Switching Load			
DRM - Distinctive Remote Module		PuTTY - a terminal emulator application			
E1 - European Basic Multiplex Rate (2.048 Mbps)		RAM - Random Access Memory			
EWSD - Elektronisches Wählsystem Digital		SSH - Secure Shell			
GB - Gigabyte		STP - Signal Transfer Point			
GHz - Gigahertz		SUT - System Under Test			
GPSPM - General Purpose Service Module					

10. TESTING LIMITATIONS. All interfaces required for initial deployment of the Tekelec Eagle® STPs were successfully tested in an operationally realistic environment; however, JITC did not have available test equipment capable of generating enough voice and signaling traffic to demonstrate compliance with the signaling link congestion control requirements specified in reference (c). However, this requirement was adequately satisfied with review of the vendor's congestion test results from independent testing by Telcordia Technologies (Features, Functions, and Performance Analysis of the Tekelec EAGLE® STP Release 35.0, Telcordia Distributable Technical Analysis Report, DA-357, Volume 17 Issue 1, February 2007)..

11. TEST RESULTS

a. Discussion The UCR, section 5.2.4.6 and subparagraphs depict the requirements for the CCS7 Network. The SUT, as an STP, is part of the CCS7 network. The requirements listed in the GSCR, section 5.6 subparagraphs are for the overall CCS7 network. There are no separate requirements for STPs. The SUT was tested for interoperability as part of the CCS7 network. The SUT was configured in an SS7 test network as a mated pair connected by C-Links. MFS, EO, and SMEO switches were connected as SSPs with A-Links. B-Links, D-Links and E-Links were not tested; however, JITC analysis determined that they are functionally the same as C-Links. F-Links are links between SSPs and are not applicable to an STP. The SUT offers only the following interfaces with the current software and hardware: T1 and E1. The SUT met all the critical interoperability requirements for an STP as described below:

(1) CCS7 Network Structure. The UCR, paragraph 5.2.4.6.1 states that the CCS7 network shall serve as a separate call control and management network that is overlaid on the DSN. The SS7 network structure is a one-level hierarchy composed of multiple mated pairs of STPs and their associated SSP and signaling links in accordance with ANSI T1.110. The SUT met this requirement through testing in a configuration that accurately depicts DSN architecture and the vendor's LoC.

(2) Signaling System Message Transfer Point (MTP) Functions and Structure. The UCR, paragraph 5.2.4.6.2 states that the SS7 MTP shall be as specified in ANSI T1.111-1996, chapters 1-8. This requirement was met through testing and the vendor's LoC. During testing, the SUT successfully passed the MTP functions and structure transmitted by the SSPs. The SUT supports both 56 kilobits per second (kbps) and 64 kbps signaling links. This requirement also requires that the SUT support the following two types of error correction methods specified in SS7: the basic error correction method for use on terrestrial signaling data links and the preventive cyclic retransmission method for use on satellite signaling data links. Both of these methods were tested and met by the SUT.

(3) Signaling Network Functions and Messages

(a) Routing Label. UCR, paragraph 5.2.4.6.3.1 states that all routing

labels shall comply with the routing label structure for the United States (U.S.) networks as shown in figures 3A and 3B of ANSI T1.111.4. All of the SUT's routing labels were verified by protocol analyzers and are in compliance with the U.S. National routing label structure as specified in ANSI T1.111.4.

(b) Handling Messages under Signaling Link Congestion. UCR, paragraph 5.2.4.6.3.2 states that the signaling congestion status shall be as specified by ANSI T1.111.4, section 3.8 for U.S. networks. JITC did not have available test equipment capable of generating enough voice and signaling traffic to demonstrate compliance with the signaling link congestion control requirements, however, this requirement was adequately satisfied with review of the vendor's congestion test results from independent testing by Telcordia Technologies (Features, Functions, and Performance Analysis of the Tekelec EAGLE® STP Release 35.0, Telcordia Distributable Technical Analysis Report, DA-357, Volume 17 Issue 1, February 2007). The SUT properly handled messages with various assigned priority messages, to include the Initial Address Messages (IAM) carrying FLASH or FLASH OVERRIDE calls with assigned priority level 3, IMMEDIATE calls with assigned priority level 2, PRIORITY calls with assigned priority level 1, and ROUTINE calls with assigned priority level 0.

(c) Message Discrimination and Functions. UCR, paragraph 5.2.4.6.3.3 states that the message discrimination function will examine the Destination Point Code (DPC) of a received signaling message to determine whether or not it is destined to the receiving SP. Message distribution determines to which user of the MTP a received signaling message will be directed. Protocol analyzers were connected to A-Links and C-Links to verify that messages were properly routed by the SUT to the appropriate DPCs. In addition to testing, this requirement was also verified with the vendor's LoC.

(d) Signaling Network Management. UCR, paragraph 5.2.4.6.3.4 states that DSN switching systems shall meet the Signaling Network Management requirements in the Telcordia Technologies GR-606-CORE, Common Channel Signaling Section 6.5, December 2000, paragraph 4. This requirement is not applicable to an STP.

(e) Changeback. UCR, paragraph 5.2.4.6.3.4.1 states the time-controlled diversion procedure shall be used instead of the sequence control procedure to perform changeback as specified in the Telcordia Technologies GR-606-CORE, December 2000, paragraph 4.3. The SUT was verified as using the time-controlled diversion procedure by monitoring links with protocol analyzers. Bulk call loaders were used to load the network with messages while errors were introduced forcing routing changes and signaling link changeovers and changebacks. The SUT properly performed changeovers and changebacks in accordance with the reference. In addition to testing, this requirement was also verified with the vendor's LoC.

(4) Non-circuit-Related Information Exchange-Signaling Connection Control Part (SCCP). UCR, paragraph 5.2.4.6.4 states that DSN switching systems shall meet the SCCP requirements in the Telcordia Technologies GR-606-CORE,

December 2000, paragraph 5 and its subparagraphs. SCCP messaging is an SSP requirement and is not a function of the STP; however, the SUT demonstrated the ability to properly route SCCP messages. Additionally, Gateway Screening (GWS) was implemented and tested in the SUT to block SCCP messages per the sponsor's request. The SUT successfully passes SCCP messages without any affect when GWS is turned off, but recognizes these messages and blocks them when GWS is turned on.

(5) Message Transfer Part (MTP Restart). UCR, paragraph 5.2.4.6.6 states the MTP Restart procedure shall be as specified in ANSI T1.111-1996, paragraph 9 and its subparagraphs. Link and node recovery procedures were tested and the SUT was compliant with ANSI T1.111-1996, paragraph 9 and its subparagraphs. In addition to testing, this requirement was also verified with the vendor's LoC.

(6) Signaling Link Management. UCR, paragraph 5.2.4.6.7 states the automatic allocation of signaling data links and signaling terminals shall be the method implemented in the SS7 network as specified in ANSI T1.111.4. The SUT automatically allocate signaling links and terminals specified in ANSI T1.111.4. This requirement was met through testing and vendor's LoC.

(7) Signaling Route Management. UCR, paragraph 5.2.4.6.8 states that STP nodes shall be capable of responding appropriately to the receipt of signaling route management messages. Using a bulk call loader to generate SSP traffic and an analyzer to monitor the signaling it was verified that the SUT is capable of responding appropriately to the receipt of signaling route management messages.

(8) Common Characteristics of MSU

(a) UCR, paragraph 5.2.4.6.9.1 states the Service Indicator Codings shall be as specified in ANSI T1.111-1996, paragraph 14.2.1. A protocol analyzer was used to determine that the SUT Service Indicator Codings are in accordance with the reference. In addition to testing, this requirement was also verified with the vendor's LoC.

(b) UCR, paragraph 5.2.4.6.2 states the SS7 network shall use the network code (10) as specified in ANSI T1.111.4. Messages originating and terminating within the SS7 network shall also be coded with the national network code (10). Requirements for the Subservice Field shall be as specified in ANSI T1.111-1996, paragraph 14.2.2. Protocol messages were analyzed to verify that the SUT SS7 messaging is coded with the National network code (10) as specified in ANSI T1.111.4 (GSCR, paragraph 5.6.9.2). In addition to testing, this requirement was also verified with the vendor's LoC.

(9) Formats and Codes of Signaling Network Management Messages. UCR, paragraph 5.2.4.6.10 states requirements for the Signal Link Codes (SLC). SUT SLCs were verified to be in accordance with the reference. This requirement was met through testing and vendor's LoC.

(10) Numbering of Signaling Point Codes (SPCs). UCR, paragraph 5.2.4.6.11 states the numbering of SPCs shall be as specified in ANSI T1.111.8. The DSN meets the ANSI requirements for a large network and has been granted a network code value of 241. The SUT is able to route the SPC format as specified in the reference.

(11) Functional Descriptions of ISDN User Part (ISUP). UCR, paragraph 5.2.4.6.12 states the requirements for ISUP. ISUP specifies the signaling functions, codes, messages, and procedures needed to provide services for circuit-switched voice and data services in the SS7 network. Furthermore, the SUT is required to transport End-to-End ISUP signaling methods to include pass along messages and SCCP messages in accordance ANSI T1.111, and ANSI T1.112. The SUT met this requirement through testing and vendor's LoC.

(12) Formats and Codes ISUP Parameters. UCR, paragraph 5.2.4.6.13 states the requirements for ISUP. ISUP specifies the signaling functions, codes, messages, and procedures needed to provide services for circuit-switched voice and data services in the SS7 network as required by Telcordia Technologies, GR-317-CORE, Switching System Generic Requirements for Call Control Using the Integrated Services Digital Network User Part, November 2000, ANSI T1.113.2 and ANSI T1.619a. This requirement was met by the SUT through testing and vendor's LoC.

b. Summary. The Tekelec Eagle® STP with Software Release 42.0 meets the critical interoperability requirements for an STP in accordance with the requirements set forth in reference (c) and is certified for joint use within the DSN.

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). 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: ucco@disa.mil.