



DEFENSE INFORMATION SYSTEMS AGENCY

JOINT INTEROPERABILITY TEST COMMAND

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FORT HUACHUCA, ARIZONA 85670-2798

IN REPLY
REFER TO:

Networks and Transport Division (JTE)

6 February 2006

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Special Interoperability Test Certification of the Nortel Networks BroadBand Signal Transfer Point (BBSTP) with Software Release Universal Signaling Point (USP) 8.0.12.16E

References: (a) DOD Directive 4630.5, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 04
(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, Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification. Additional references are provided in enclosure 1.
2. The Nortel Networks BBSTP with Software Release USP 8.0.12.16E, hereinafter referred to as the System Under Test (SUT), meets all of the critical interoperability requirements and is certified for joint use in the Defense Switched Network (DSN). Testing of the SUT software, function processor cards, and related equipment was carried out in accordance with reference (c) using test procedures in reference (d). This certification expires upon system changes that affect interoperability, but no later than three years from the date of this memorandum.
3. These findings are based on interoperability testing conducted at JITC. Testing was conducted by JITC's Global Information Grid Network Test Facility, Fort Huachuca, Arizona, from 12 through 30 September 2005 and final review of test data completed on 05 October 2005. Enclosure 2 documents the test results, tested network and systems configurations. Users should verify interoperability before deploying the SUT in an operational environment that varies significantly from the test environment.
4. Interoperability certification testing of the SUT consisted of two areas: the SUT's conformance to Signaling System 7 (SS7) standards and the ability to support required interfaces with associated Capability Requirements (CRs) specified in reference (c). Table 1 lists the SUT conformance requirements status and table 2 lists the interface and CR interoperability status.

JITC Memo, JTE, Special Interoperability Test Certification of the Nortel Networks BroadBand Signal Transfer Point (BBSTP) with Software Release Universal Signaling Point (USP)
8.0.12.16E

Table 1. SUT Conformance Requirements Status

| Conformance Requirement | Reference | Critical | Status |
|---|-------------------------------|----------|---------------------------|
| CCS7 Network Structure | GSCR Para 5.6.1 | Yes | Met |
| Signaling Link Characteristics | GSCR Para 5.6.2 | Yes | Met |
| Signaling Message Handling, Formats, and Codes | GSCR Paras 5.6.3-5, 5.6.10-11 | Yes | Met |
| Signaling Network Management | GSCR Paras 5.6.7-8 | Yes | Met |
| Error Detection and Recovery | GSCR Para 5.6.2.1.2 | Yes | Met |
| Signaling Link Congestion | GSCR Para 5.6.3.2 | No | Not tested (See note.) |
| LEGEND: CCS7 - Common Channel Signaling 7 DSN - Defense Switched Network GSCR - Generic Switching Center Requirements JITC - Joint Interoperability Test Command kbps - kilobits per second Para - paragraph SS7 - Signaling System 7 SUT - System Under Test | | | |
| NOTE: 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). This limitation will have a low risk of a significant operational impact within the DSN. This conclusion was based on SUT call traffic comparisons between a significantly larger commercial SS7 network and the DSN both utilizing a single 56 kbps signaling link. | | | |

Table 2. SUT Interface & Capability Requirements Interoperability Status

| Interface | Capability Requirement | Critical | Status | Remarks |
|--|---|-----------------|---------------|-----------------------|
| ITU-T V.35 ¹ | SS7 A, B & C-Links in accordance with GSCR Para 5.6 | No ² | Certified | All critical CRs met. |
| OCU-DP | SS7 A, B & C-Links in accordance with GSCR Para 5.6 | No ² | Not Supported | See note 3. |
| DS0A | SS7 A, B & C-Links in accordance with GSCR Para 5.6 | No ² | Not Supported | See note 3. |
| DS1 | SS7 A, B & C-Links in accordance with GSCR Para 5.6 | No ² | Certified | All critical CRs met. |
| E1 | SS7 A, B & C-Links in accordance with GSCR Para 5.6 | No ² | Certified | All critical CRs met. |
| LEGEND: A-Link - Access Link (SS7) BBSTP - BroadBand STP C-Link - Cross Link (SS7) CR - Capability Requirement DS0 - Digital Signal Level Zero: One 64-kbps channel DS0A - A process where a sub-rate signal is repeated 20, 10, or 5 times to make a 64-kbps DS0 channel DS1 - Digital Signal Level One: 1.544-Mbps North American Transmission DSN - Defense Switched Network E1 - European Basic Multiplex Rate (2.048 Mbps) GSCR - Generic Switching Center Requirements ITU-T - International Telecommunication Union - Telecommunication Standardization Sector kbps - kilobits per second KHz - KiloHertz Mbps - Megabits per second OCU-DP - Office Channel Unit-Data Port Para - Paragraph SS7 - Signaling System 7 STP - Signal Transfer Point V.35 - Standard for data transmission at 48 kbps using 60-108 KHz group band circuits V.36 - Modems for synchronous data transmission using 60-108 KHz group band circuits V.37 - Synchronous data transmission at a data signaling rate higher than 72 kbps using 60-108 KHz group band circuits | | | | |
| NOTES: 1 The electrical physical interface tested was ITU-T V.35 in accordance with ITU-T V.36/V.37. 2 In accordance with the GSCR, only one of the four STP interfaces is required for certification (ITU-T V.35, DS0A, DS1, or OCU-DP). 3 This interface is not supported by the SUT. The risk of not supporting the interface is minor because only one of the four STP interfaces is required for certification. | | | | |

5. 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 Nortel Networks BroadBand Signal Transfer Point (BBSTP) with Software Release Universal Signaling Point (USP)
8.0.12.16E

6. The JITC point of contact is John Hooper, DSN 879-5041, commercial (520) 538-5041, FAX DSN 879-4347, or e-mail to john.hooper@disa.mil.

FOR THE COMMANDER:



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Chief
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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

CERTIFICATION TESTING SUMMARY

- 1. SYSTEM TITLE.** The Nortel Networks BroadBand Signal Transfer Point (BBSTP) with Software Release Universal Signaling Point (USP) 8.0.12.16E, hereinafter referred to as the System Under Test (SUT).
- 2. PROPONENT.** Defense Information Systems Agency (DISA).
- 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.** Signal Transfer Points (STPs) are deployed in the Defense Switched Network (DSN) to route Signaling System 7 (SS7) signaling messages between Service Switching Points (SSPs). The Nortel Networks BBSTP is a standalone STP capable of routing call setup, call control, network management, user-to-network, and user-to-user signaling messages throughout SS7 networks. The STPs also support a broad range of intelligent network services such as Local Number Portability and Calling Name Delivery, however these services were not tested and are not covered under this certification.
- 6. OPERATIONAL ARCHITECTURE.** The SUT was tested at the JITC Global Information Grid Network Test Facility (GNTF) over a configuration similar to the DSN architecture defined in the Generic Switching Center Requirements (GSCR). The GSCR operational DSN Architecture is depicted in figure 2-1. The SUT is currently operating within the DSN in Europe.

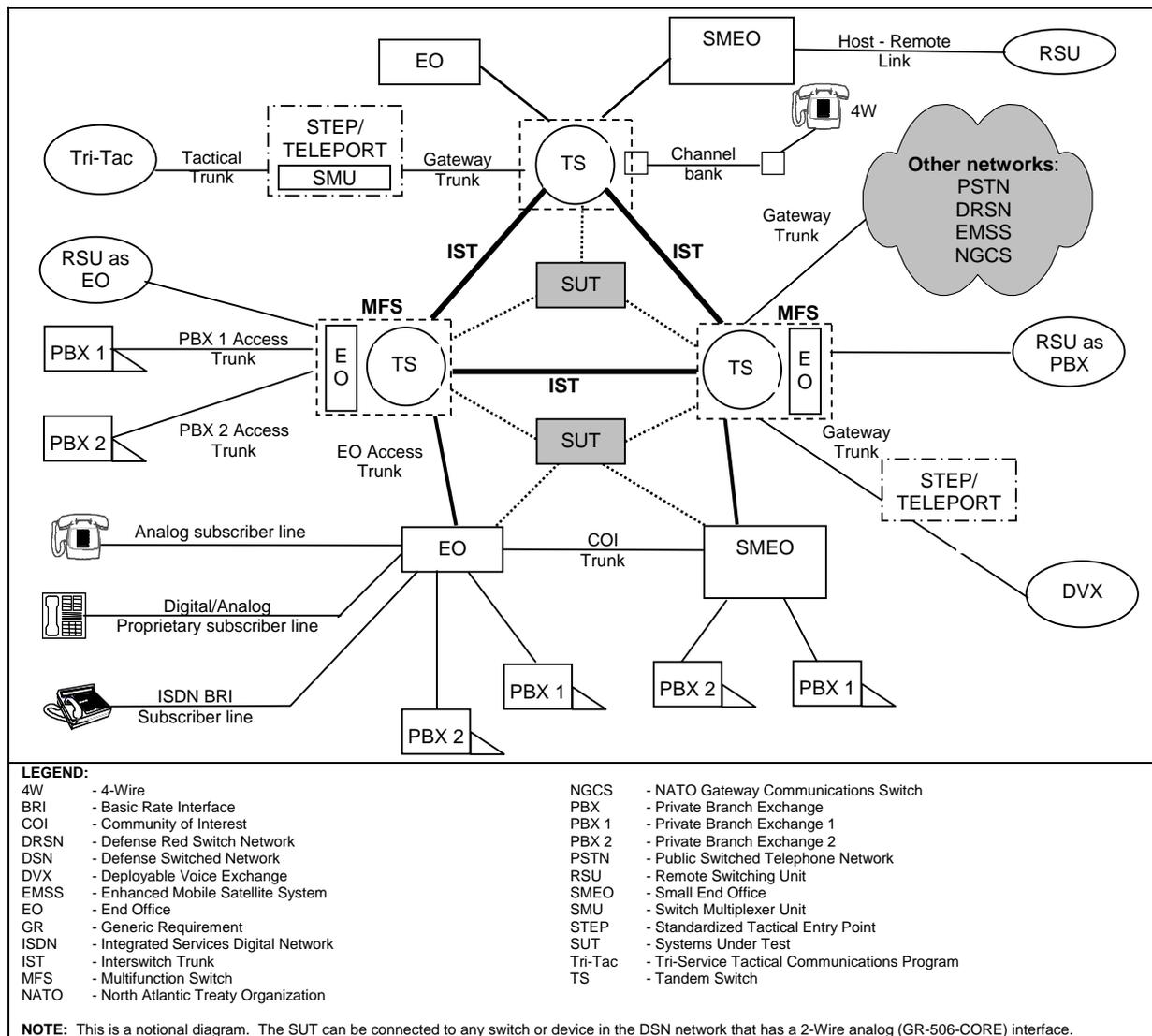


Figure 2-1. DSN Architecture

7. REQUIRED SYSTEM INTERFACES. Table 2-1 lists the SUT's SS7 conformance requirements status and table 2-2 lists the SUT interoperability status for each interface along with associated Capability Requirements. The GSCR requires that STPs support at least one of the following data link interfaces: International Telecommunication Union - Telecommunication Standardization Sector (ITU-T) V.35, Office Channel Unit-Data Port (OCU-DP), Digital Signal Level One (DS1), or Digital Signal Level Zero A (DS0A). The SUT supports three of the above interfaces (ITU-T V.35, DS0A, and DS1) plus the European basic multiplex rate (E1) interface. The ITU-T V.35, DS1, and E1 interfaces were tested and are certified. The OCU-DP and DS0A interfaces are not supported by the SUT and are not covered under this certification.

Table 2-1. SUT Conformance Requirements Status

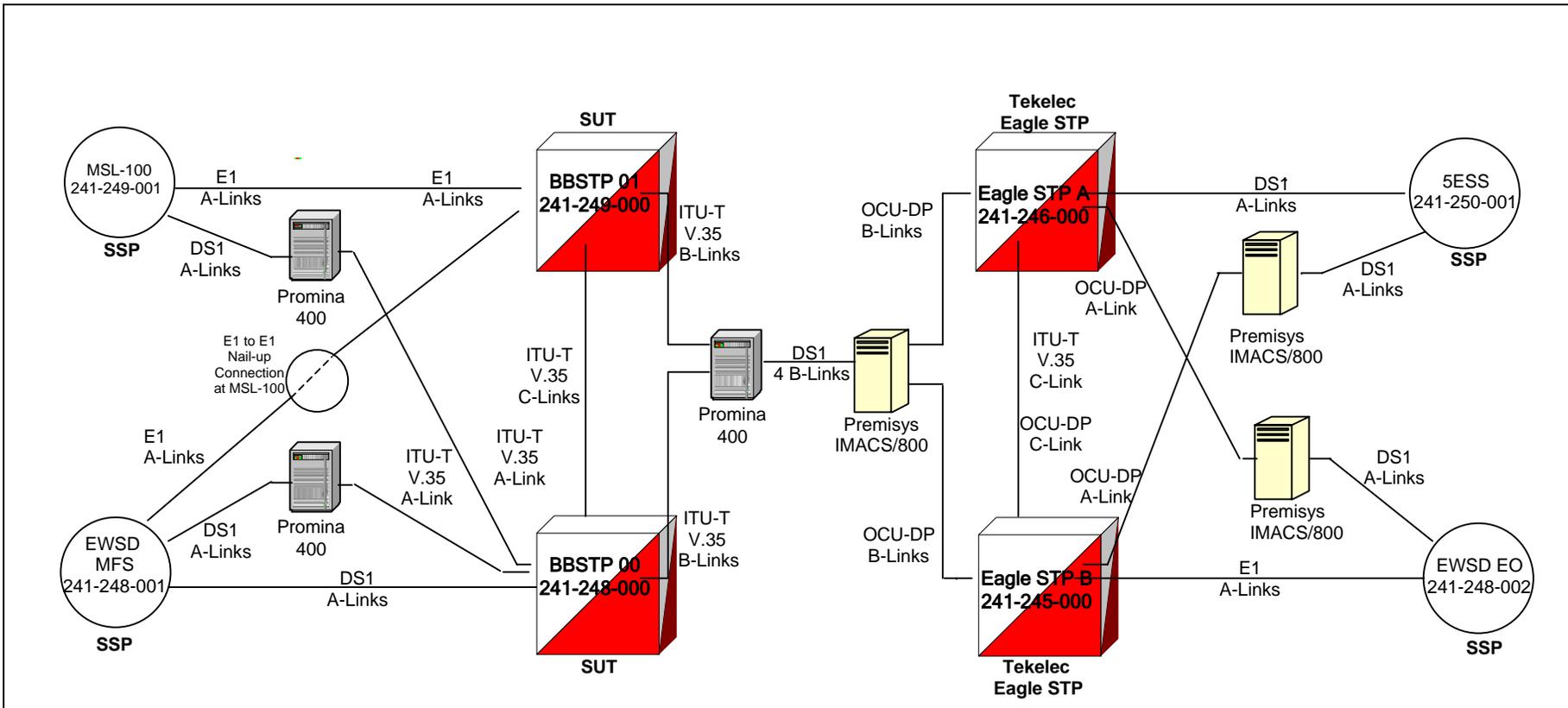
| Conformance Requirement | Reference | Critical | Status |
|--|-------------------------------|----------|------------------------|
| CCS7 Network Structure | GSCR Para 5.6.1 | Yes | Met |
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| Error Detection and Recovery | GSCR Para 5.6.2.1.2 | Yes | Met |
| Signaling Link Congestion | GSCR Para 5.6.3.2 | No | Not tested (See note.) |
| LEGEND: CCS7 - Common Channel Signaling 7 DSN - Defense Switched Network GSCR - Generic Switching Center Requirements JITC - Joint Interoperability Test Command kbps - kilobits per second Para - paragraph SS7 - Signaling System 7 SUT - System Under Test | | | |
| NOTE: 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). This limitation will have a low risk of a significant operational impact within the DSN. This conclusion was based on SUT call traffic comparisons between a significantly larger commercial SS7 network and the DSN both utilizing a single 56 kbps signaling link. | | | |

Table 2-2. SUT Interface & Capability Requirements Interoperability Status

| Interface | Capability Requirement | Critical | Status | Remarks |
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| OCU-DP | SS7 A, B & C-Links in accordance with GSCR Para 5.6 | No ² | Not Supported | See note 3. |
| DS0A | SS7 A, B & C-Links in accordance with GSCR Para 5.6 | No ² | Not Supported | See note 3. |
| DS1 | SS7 A, B & C-Links in accordance with GSCR Para 5.6 | No ² | Certified | All critical CRs met. |
| E1 | SS7 A, B & C-Links in accordance with GSCR Para 5.6 | No ² | Certified | All critical CRs met. |
| LEGEND: A-Link - Access Link (SS7) B-Link - Bridge Link (SS7) BBSTP - BroadBand STP C-Link - Cross Link (SS7) CR - Capability Requirement DS0 - Digital Signal Level Zero: One 64-kbps channel DS0A - A process where a sub-rate signal is repeated 20, 10, or 5 times to make a 64-kbps DS0 channel DS1 - Digital Signal Level One: 1.544-Mbps North American Transmission DSN - Defense Switched Network E1 - European Basic Multiplex Rate (2.048 Mbps) GSCR - Generic Switching Center Requirements ITU-T - International Telecommunication Union - Telecommunication Standardization Sector kbps - kilobits per second KHz - KiloHertz Mbps - Megabits per second OCU-DP - Office Channel Unit-Data Port Para - Paragraph SS7 - Signaling System 7 STP - Signal Transfer Point V.35 - Standard for data transmission at 48 kbps using 60-108 KHz group band circuits V.36 - Modems for synchronous data transmission using 60-108 KHz group band circuits V.37 - Synchronous data transmission at a data signaling rate higher than 72 kbps using 60-108 KHz group band circuits | | | | |
| NOTES: 1 The electrical physical interface tested was ITU-T V.35 in accordance with ITU-T V.36/V.37. 2 In accordance with the GSCR, only one of the four STP interfaces is required for certification (ITU-T V.35, DS0A, DS1, or OCU-DP). 3 This interface is not supported by the SUT. The risk of not supporting the interface is minor because only one of the four STP interfaces is required for certification. | | | | |

8. TEST NETWORK DESCRIPTION. The test network configuration depicted in figure 2-2 accurately emulates the DSN SS7 operational environment. The Nortel Networks BBSTPs were configured as mated pairs and connected to the Nortel Networks Meridian Switching Load (MSL)-100 and Siemens Elektronisches Wählsystem Digital (EWSD) SSPs by A-Links. Three different interfaces were used for the A-Links: DS1, E1, and ITU-T V.35. The DS1 and E1 links were routed directly from the SSPs to the respective DS1 and E1 interface ports at the STPs. The ITU-T V.35 links provided by the STPs were converted to DS1 by the N.E.T. Promina 400 channel banks before connecting to the respective SSPs. Signaling link connectivity to the adjacent STPs and

the Lucent Class 5 Electronic Switching System (5ESS) SSP was provided by B-Links. The ITU-T V.35 interfaces were used at the SUT for the B-Links. The N.E.T Promina 400 channel bank was used to convert ITU-T V.35 to DS1 and the Premisys IMACS/800 channel bank was used to convert from DS1 to OCU-DP at the distant end. The C-Links were configured as ITU-T V.35 links and directly connected between the mated STP pairs.



LEGEND:

- 5ESS - Class 5 Electronic Switching System (Lucent Switch)
- A-Link - Access Link (SS7)
- B-Link - Bridge Link (SS7)
- BBSTP - Broadband STP
- C-Link - Cross Link (SS7)
- DS1 - Digital Signal Level 1 (1.544 Mbps)
- E1 - European Basic Multiplex Rate (2.048 Mbps)
- EO - End Office
- EWSD - Elektronisches Wählsystem Digital (Siemens switch)
- IMACS - Integrated Multiple Access Communications Server
- ITU-T - International Telecommunication Union – Telecommunication Standardization Sector
- kbps - kilobits per second

- KHz - KiloHertz
- Mbps - Megabits per second
- MFS - Multi-Function Switch
- MSL - Meridian Switching Load (Nortel Networks switch)
- OCU-DP - Office Channel Unit-Data Port
- SS7 - Signaling System 7
- SSP - Service Switching Point
- STP - Signal Transfer Point
- SUT - System Under Test
- V.35 - Standard for data transmission at 48 kbps using 60-108 KHz group band circuits
- V.36 - Modems for synchronous data transmission using 60-108 KHz group band circuits
- V.37 - Synchronous data transmission at a data signaling rate higher than 72 kbps using 60-108 KHz group band circuits

NOTES:

- 1 241-245-000 to 241-250-001 are Signaling Point Code (SS7 addresses)
- 2 The electrical physical interface tested was ITU-T V.35 in accordance with ITU-T V.36/V.37.

Figure 2-2. Test Network Configuration

9. SYSTEM CONFIGURATIONS. Table 2-3 lists the hardware and software configurations associated with the components used during the test.

Table 2-3. Tested System Configuration

| System Name | Software |
|---|-------------------------------|
| Tekelec Eagle STP | Release 31.6.11-53.46.65 |
| Nortel Networks MSL-100 SSP | SE08 |
| Siemens EWSD SSP | Release 19D with patch set 44 |
| Lucent 5ESS SSP | 5E16.2 SU 05005 |
| Promina 400 | Release 2.0.04.03 Ver 56.17 |
| Premisys IMACS/800 Channel Bank | Release 3.8.0 |
| Nortel Networks BroadBand STP (SUT) | Version USP 8.0.12.16E |
| LEGEND: 5ESS - Class 5 Electronic Switching System EWSD - Elektronisches Wählsystem Digital IMACS - Integrated Multiple Access Communications Server MSL - Meridian Switching Load SE - Succession Enterprise SSP - Service Switching Point STP - Signal Transfer Point SU - Software Update SUT - System Under Test USP - Universal Signaling Point | |

10. TESTING LIMITATIONS. All interfaces required for initial deployment of the SUT 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). The risk of not testing was determined to be minor. This conclusion was based on SUT call traffic comparisons between a significantly larger commercial SS7 network and the DSN both utilizing a single 56-kilobits per second (kbps) signaling link.

11. TEST RESULTS

a. Discussion

(1) Conformance Results. The SUT meets all the SS7 STP critical conformance requirements in accordance with reference (c) using the detailed test procedures described in reference (d). Sub-test 6.0 (Signaling Link Congestion) was not tested (refer to paragraph 10).

(2) Interoperability Results

(a) Interoperability between the SUT, Nortel Networks MSL-100, Siemens EWSD, and Lucent 5ESS SSPs was successfully tested via the following SS7 signaling link interfaces: A-Links, B-Links, and C-Links. These links were delivered to the SUT via ITU-T V.35, DS1, and E1 interfaces as shown in figure 2-1. SS7 call setup and control messages were routed to the correct destinations by the STPs and inter-switch calls were completed successfully. Signaling link management functions such as initial

alignment, changeover, change-back, and emergency alignment were executed properly by the STPs and SSPs.

(b) The SUT performed signaling network management functions in accordance with requirements specified in reference (c).

(c) Interoperability between the SUT and the Tekelec Eagle STP was also successfully tested via SS7 B-Links as shown in figure 2-1. SS7 call setup, control, and signaling network management messages were successfully routed via B-Links between the SUT and Tekelec Eagle STP.

b. Summary. The SUT meets the critical interoperability requirements for deployment in DSN and is certified for joint use in accordance with the requirements set forth in reference (c). A summary of test results is listed in table 2-4.

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 TSSI website at <http://jitc.fhu.disa.mil/tssi>.

**Table 2-4. Nortel Networks BBSTP with Software Release USP 8.0.4.38E
Conformance and Interoperability Status**

| Conformance Requirement | CR/Criteria | Critical | Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|-----------------|----------------------------|----------------------------|------------------------------------|----------------------------|----------------------------|-----------------------|--|---------------------------|------------------|-----------------------------|--|--|--|---|--------------------------|--|-----------------------------|---|---------------------------------|----------------------------|---|--|--|--|--|----------------------------|--|-----------------|--|
| SS7 Network Structure | GSCR Para 5.6.1 | Yes | Certified | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | GSCR Para 5.6.1.1 | Yes | Certified | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Signaling Link Characteristics | GSCR Para 5.6.1, 5.6.2 | Yes | Certified | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Signaling Message Handling, Formats, and Codes | GSCR Para 5.6.3, 5.6.4, 5.6.10 | Yes | Certified | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | GSCR Para 5.6.2, 5.6.4 | Yes | Certified | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | GSCR Para 5.6.10, 5.6.11 | Yes | Certified | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | GSCR Para 5.6.3 | Yes | Certified | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | GSCR Para 5.6.4 | Yes | Certified | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | GSCR Para 5.6.3.5 | Yes | Certified | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Signaling Network Management | GSCR Para 5.6.7 | Yes | Certified | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | GSCR Para 5.6.8 | Yes | Certified | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Error Detection and Recovery | GSCR Para 5.6.2.1.2 | Yes | Certified | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | GSCR Para 5.6.2.1.2 | Yes | Certified | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Signaling Link Congestion | GSCR Para 5.6.3.2 | No | Not Tested ¹ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ITU-T V.35 ² , DS1, and E1 | GSCR Para 5.6 | No ³ | Certified | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | GSCR Para 5.6 | No ³ | Certified | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | GSCR Para 5.6 | No ³ | Certified | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OCU-DP | GSCR Para 5.6 | No | Not Supported ⁴ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DS0A | GSCR Para 5.6 | No | Not Supported ⁴ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>LEGEND:</p> <table border="0"> <tr> <td>A-Link - Access Link (SS7)</td> <td>LSSU - Link Status Signaling Units</td> </tr> <tr> <td>B-Link - Bridge Link (SS7)</td> <td>Mbps - Megabits per second</td> </tr> <tr> <td>BBSTP - BroadBand STP</td> <td>OCU-DP - Office Channel Unit-Data Port</td> </tr> <tr> <td>C-Link - Cross Link (SS7)</td> <td>Para - Paragraph</td> </tr> <tr> <td>CR - Capability Requirement</td> <td>PCR - Preventive Cyclic Retransmission</td> </tr> <tr> <td>DS0 - Digital Signal Level Zero: One 64-kbps channel</td> <td>SCCP - Signaling Connection Control Part</td> </tr> <tr> <td>DS0A - A process where a sub-rate signal is repeated 20, 10, or 5 times to make a 64-kbps DS0 channel</td> <td>SS7 - Signaling System 7</td> </tr> <tr> <td>DS1 - Digital Signal Level One: 1.544-Mbps North American Transmission</td> <td>STP - Signal Transfer Point</td> </tr> <tr> <td>E1 - European Basic Multiplex Rate (2.048 Mbps)</td> <td>USP - Universal Signaling Point</td> </tr> <tr> <td>ER - Exchange Requirements</td> <td>V.35 - Standard for data transmission at 48 kbps using 60-108 KHz group band circuits</td> </tr> <tr> <td>GSCR - Generic Switching Center Requirements</td> <td>V.36 - Modems for synchronous data transmission using 60-108 KHz group band circuits</td> </tr> <tr> <td>ITU-T - International Telecommunication Union – Telecommunication Standardization Sector</td> <td>V.37 - Synchronous data transmission at a data signaling rate higher than 72 kbps using 60-108 KHz group band circuits</td> </tr> <tr> <td>kbps - kilobits per second</td> <td></td> </tr> <tr> <td>KHz - KiloHertz</td> <td></td> </tr> </table> <p>NOTES:</p> <p>1 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). This limitation will have a low risk of a significant operational impact within the DSN. This conclusion was based on SUT call traffic comparisons between a significantly larger commercial SS7 network and the DSN both utilizing a single 56 kbps signaling link</p> <p>2 The electrical physical interface tested was ITU-T V.35 in accordance with ITU-T V.36/V.37.</p> <p>3 In accordance with the GSCR, only one of the four STP interfaces is required for certification (ITU-T V.35, DS0A, DS1, or OCU-DP).</p> <p>4 This interface is not supported by the SUT. The risk of not supporting the interface is minor because only one of the four STP interfaces is required for certification.</p> | | | | A-Link - Access Link (SS7) | LSSU - Link Status Signaling Units | B-Link - Bridge Link (SS7) | Mbps - Megabits per second | BBSTP - BroadBand STP | OCU-DP - Office Channel Unit-Data Port | C-Link - Cross Link (SS7) | Para - Paragraph | CR - Capability Requirement | PCR - Preventive Cyclic Retransmission | DS0 - Digital Signal Level Zero: One 64-kbps channel | SCCP - Signaling Connection Control Part | DS0A - A process where a sub-rate signal is repeated 20, 10, or 5 times to make a 64-kbps DS0 channel | SS7 - Signaling System 7 | DS1 - Digital Signal Level One: 1.544-Mbps North American Transmission | STP - Signal Transfer Point | E1 - European Basic Multiplex Rate (2.048 Mbps) | USP - Universal Signaling Point | ER - Exchange Requirements | V.35 - Standard for data transmission at 48 kbps using 60-108 KHz group band circuits | GSCR - Generic Switching Center 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 | |
| A-Link - Access Link (SS7) | LSSU - Link Status Signaling Units | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B-Link - Bridge Link (SS7) | Mbps - Megabits per second | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BBSTP - BroadBand STP | OCU-DP - Office Channel Unit-Data Port | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C-Link - Cross Link (SS7) | Para - Paragraph | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CR - Capability Requirement | PCR - Preventive Cyclic Retransmission | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DS0 - Digital Signal Level Zero: One 64-kbps channel | SCCP - Signaling Connection Control Part | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| DS1 - Digital Signal Level One: 1.544-Mbps North American Transmission | STP - Signal Transfer Point | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| ER - Exchange Requirements | V.35 - Standard for data transmission at 48 kbps using 60-108 KHz group band circuits | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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