



DEFENSE INFORMATION SYSTEMS AGENCY

P. O. BOX 4502
ARLINGTON, VIRGINIA 22204-4502

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

23 Jul 08

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Special Interoperability Test Certification of the Captaris RightFax Enterprise Suite Version 9.3 FP2 SR3 with Dialogic Brooktrout Fax Boards

References: (a) DoD Directive 4630.5, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004
(b) CJCSI 6212.01D, "Interoperability and Supportability of Information Technology and National Security Systems," 8 March 2006
(c) and (d), see enclosure 1

1. References (a) and (b) establish the Defense Information Systems Agency, JITC, as the responsible organization for interoperability test certification.
2. Captaris RightFax Enterprise Suite Version 9.3 FP2 SR3 with Dialogic Brooktrout Fax Boards is hereinafter referred to as the System Under Test (SUT). The SUT meets the interface requirements and all required functional capabilities and is certified for joint use within the Defense Switched Network (DSN). The SUT met the interface and functional requirements for Customer Premise Equipment (CPE) facsimile devices set forth in appendix 7 of reference (c). The SUT analog interface is certified for use with any switching system on the DSN Approved Products List (APL) that offers a certified analog interface. The SUT Digital Transmission Link Level 1 (T1) Integrated Services Digital Network (ISDN) Primary Rate Interface (PRI) and T1 Channel Associated Signaling (CAS) interfaces are also certified for use with any switching system on the DSN Approved Products List (APL) that is certified with these digital interfaces. Although the SUT supports European interfaces, none of these interfaces were tested or certified. Testing was conducted using test procedures derived from reference (d). No other configurations, features, or functions, except those cited within this report, are certified by the JITC or authorized by the Program Management Office for use within the DSN. This certification expires upon changes that affect interoperability, but no later than three years from the date of this memorandum.
3. This certification is based on interoperability testing and review of the vendor's Letter of Compliance (LoC). Interoperability testing was conducted by JITC at the Global Information Grid Network Test Facility, Fort Huachuca, Arizona, from 10 through 13 March 2008. Review of the vendor's LoC was completed on 3 June 2008. Enclosure 2 documents the test results and describes the test configuration.

JITC Memo, JTE, Special Interoperability Test Certification of Captaris RightFax Enterprise Suite Version 9.3 FP2 SR3 with Dialogic Brooktrout Fax Boards

4. The Functional Requirements used to evaluate the interoperability of the SUT and the interoperability statuses are indicated in table 1. This interoperability test status is based on the SUT's ability to meet:

- a. CPE facsimile device requirements specified in reference (c) verified through JITC testing and/or vendor submission of LoC.
- b. The overall system interoperability performance derived from test procedures listed in reference (d).

Table 1. SUT Functional Requirements and Interoperability Status

Interface	Critical	Certified	Functional Requirements	Met	UCR Paragraph																																				
T1 ISDN PRI NI-2 (ANSI T1.607)	No ¹	Yes	FCC Part 15/Part 68 and ACTA (R)	Met	A7.5																																				
			ITU-T T.4 and ITU-T T.22 (C)	Met	A7.5																																				
			DISR compliance as applicable (R)	Met	A7.5																																				
			PCM-24 (C)	Met	A7.5.5																																				
T1 CAS D4/AMI DTMF	No ¹	Yes	FCC Part 15/Part 68 and ACTA (R)	Met	A7.5																																				
			DTMF Outpulsing in accordance with GR-506-CORE (C)	Met	A7.5, 5.4.1, 5.4.2																																				
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			PCM-24 (C)	Met	A7.5.5																																				
2-Wire Analog (GR-506-CORE)	No ¹	Yes	MLPP in accordance with UCR, Section 3 (C)	Met	A7.5																																				
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			DISR compliance as applicable (R)	Met	A7.5																																				
			Conformance to TIA/EIA-470-B (R)	Met	A7.5.1																																				
Security	Yes	See note 2.	Security (R)	See note 2.	A7.6																																				
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NOTES: 1 The ARD requirements can be met via one of the following interfaces: 2-Wire Analog, 2-Wire Digital, 4-Wire Digital, PCM-24, or PCM-30. 2 Security is tested by DISA-led Information Assurance test teams and published in a separate report.																																									

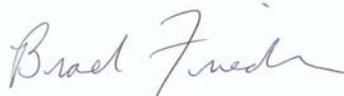
JITC Memo, JTE, Special Interoperability Test Certification of Captaris RightFax Enterprise Suite Version 9.3 FP2 SR3 with Dialogic Brooktrout Fax Boards

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>.

6. The JITC point of contact is Mr. Michael Napier, DSN 879-6787, commercial (520) 538-6787, FAX DSN 879-4347, or e-mail to michael.napier@disa.mil. The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 0728506.

FOR THE COMMANDER:

2 Enclosures a/s



RICHARD A. MEADOR
Chief
Battlespace Communications Portfolio

JITC Memo, JTE, Special Interoperability Test Certification of Captaris RightFax Enterprise Suite Version 9.3 FP2 SR3 with Dialogic Brooktrout Fax Boards

Distribution:

Joint Staff J6I, Room 1E596, Pentagon, Washington, DC 20318-6000

Joint Interoperability Test Command, Liaison, ATTN: TED/JT1, 2W24-8C, P.O. Box 4502, Falls Church, VA 22204-4502

Defense Information Systems Agency, Net-Centricity Requirements and Assessment Branch, ATTN: GE333, Room 244, P.O. Box 4502, Falls Church, VA 22204-4502

Office of Chief of Naval Operations (N71CC2), CNO N6/N7, 2000 Navy Pentagon, Washington, DC 20350

Headquarters U.S. Air Force, AF/XICF, 1800 Pentagon, Washington, DC 20330-1800

Department of the Army, Office of the Secretary of the Army, CIO/G6, ATTN: SAIS-IOQ, 107 Army Pentagon, Washington, DC 20310-0107

U.S. Marine Corps (C4ISR), MARCORSYSCOM, 2200 Lester St., Quantico, VA 22134-5010

DOT&E, Net-Centric Systems and Naval Warfare, 1700 Defense Pentagon, Washington, DC 20301-1700

U.S. Coast Guard, CG-64, 2100 2nd St. SW, Washington, DC 20593

Defense Intelligence Agency, 2000 MacDill Blvd., Bldg 6000, Bolling AFB, Washington, DC 20340-3342

National Security Agency, ATTN: DT, Suite 6496, 9800 Savage Road, Fort Meade, MD 20755-6496

Director, Defense Information Systems Agency, ATTN: GS235, Room 5W24-8A, P.O. Box 4502, Falls Church, VA 22204-4502

Office of Assistant Secretary of Defense (NII)/DoD CIO, Crystal Mall 3, 7th Floor, Suite 7000, 1851 S. Bell St., Arlington, VA 22202

Office of Under Secretary of Defense, AT&L, Room 3E144, 3070 Defense Pentagon, Washington, DC 20301

U.S. Joint Forces Command, J68, Net-Centric Integration, Communications, and Capabilities Division, 1562 Mitscher Ave., Norfolk, VA 23551-2488

Defense Information Systems Agency (DISA), ATTN: GS23 (Mr. McLaughlin), Room 5W23, 5275 Leesburg Pike (RTE 7), Falls Church, VA 22041

ADDITIONAL REFERENCES

- (c) Defense Information Systems Agency, "Department of Defense Networks Unified Capabilities Requirements," 21 December 2007
- (d) Joint Interoperability Test Command, "Generic Switch Test Plan (GST), Change 2," 2 October 2006

CERTIFICATION TESTING SUMMARY

1. SYSTEM TITLE. Captaris RightFax Enterprise Suite Version 9.3 FP2 SR3 with Dialogic Brooktrout Fax Boards; hereinafter referred to as the System Under Test (SUT).

2. PROPONENT. Defense Finance and Accounting Service (DFAS).

3. SPONSOR. Ms. Angie Fimreite, DFAS, 8899 East 56th Street, Indianapolis, Indiana, 46249, email: angie.fimreite@dfas.mil.

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

5. SYSTEM UNDER TEST DESCRIPTION. The SUT provides a common operational, management, and distribution interface, centralizing all fax activities. The SUT may be configured with three cards: 8-port analog, 24-channel Digital Transmission Link Level 1 (T1), or 24-channel T1 compliant with the Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment 2002/95/EC (commonly referred to as the Restriction of Hazardous Substances Directive or RoHS). The SUT features include:

- Remote clients (on the same Local Area Network or across geographical boundaries) utilize either a thick client or a Microsoft Outlook plug-in to send and receive their fax messages.
- Fax images are stored on locally- or windows-mapped drives on the fax server.
- Incoming/outgoing calls in tandem
- Fax-to-e-mail and e-mail-to-fax conversion is handled by a Microsoft Exchange connector
- Remote call-out activation/termination and simultaneous running of multiple call-out scenarios
- The RightFax system connects to the Public Switched Telephone Network (PSTN) or Defense Switched Network (DSN) infrastructure over analog lines, T1 Channel Associated Signaling (CAS) or Integrated Services Digital Network (ISDN) spans to provide bidirectional fax send and receive functionality.
- The SUT receives faxes and archives them in a common SQL database. Information from the Direct Inward Dial (DID) is used to route the fax to the appropriate email address. The system utilizes group and private fax inboxes for inbound fax traffic.

6. OPERATIONAL ARCHITECTURE. The Unified Capabilities Requirements (UCR) DSN architecture in figure 2-1 depicts the relationship of the SUT to the DSN switches.

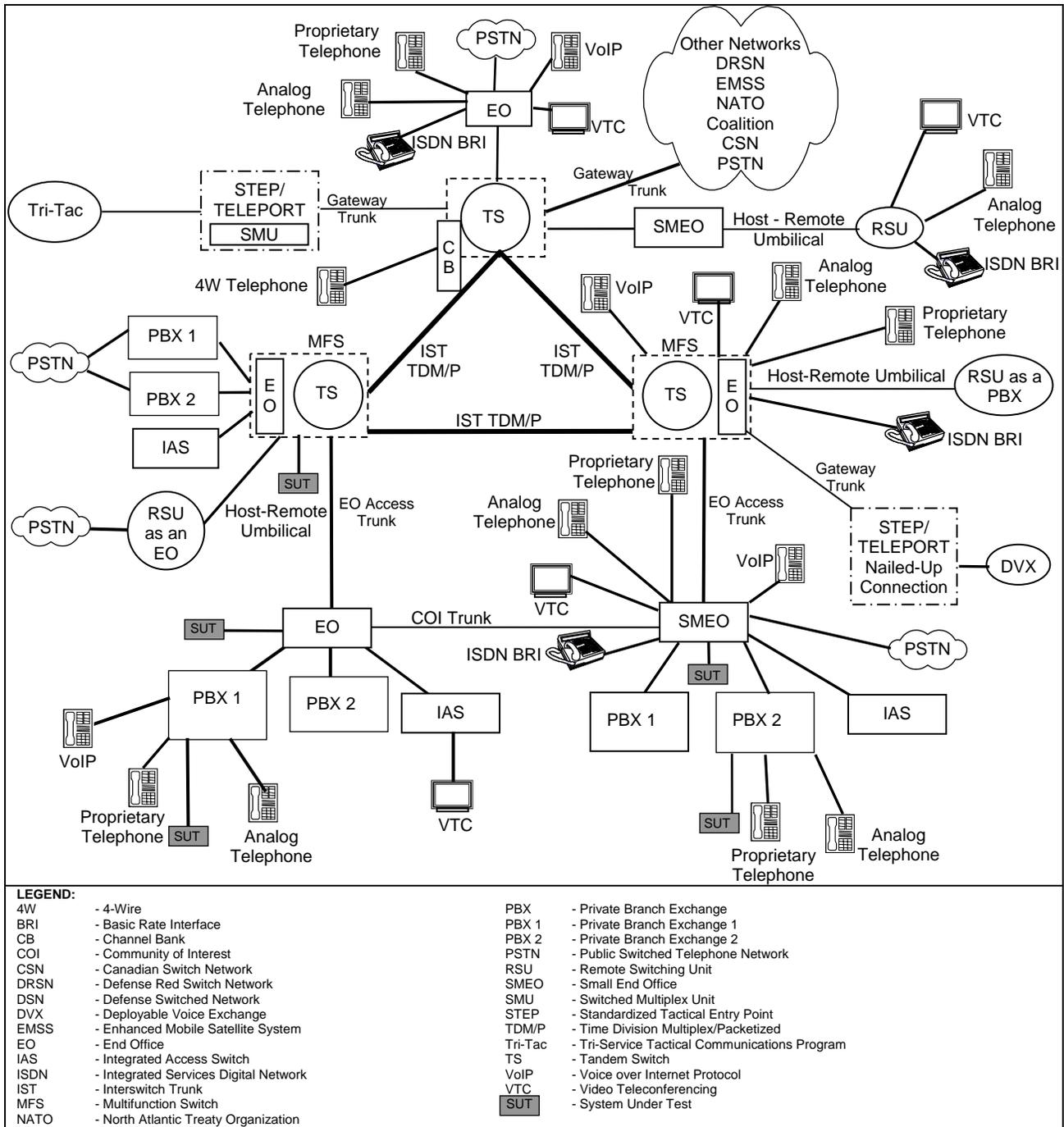


Figure 2-1. DSN Architecture

7. REQUIRED SYSTEM INTERFACES. Requirements specific to the SUT and interoperability results are listed in table 2-1. These requirements are derived from the UCR Interface and Functional Requirements and were verified through JITC testing.

Table 2-1. SUT Functional Requirements and Interoperability Status

Interface	Critical	Certified	Functional Requirements	Met	UCR Paragraph
T1 ISDN PRI NI-2 (ANSI T1.607)	No ¹	Yes	FCC Part 15/Part 68 and ACTA (R)	Met	A7.5
			ITU-T T.4 and ITU-T T.22 (C)	Met	A7.5
			DISR compliance as applicable (R)	Met	A7.5
			PCM-24 (C)	Met	A7.5.5
T1 CAS D4/AMI DTMF	No ¹	Yes	FCC Part 15/Part 68 and ACTA (R)	Met	A7.5
			DTMF Outpulsing in accordance with GR-506-CORE (C)	Met	A7.5, 5.4.1, 5.4.2
			ITU-T T.4 and ITU-T T.22 (C)	Met	A7.5
			DISR compliance as applicable (R)	Met	A7.5
			PCM-24 (C)	Met	A7.5.5
2-Wire Analog (GR-506-CORE)	No ¹	Yes	MLPP in accordance with UCR, Section 3 (C)	Met	A7.5
			FCC Part 15/Part 68 and ACTA (R)	Met	A7.5
			Auto Answer mode settable to more than the equivalency of 4 ROUTINE rings (C)	Met	A7.5
			DTMF Outpulsing in accordance with GR-506-CORE (C)	Met	A7.5, 5.4.1, 5.4.2
			ITU-T T.4 and ITU-T T.22 (C)	Met	A7.5
			DISR compliance as applicable (R)	Met	A7.5
			Conformance to TIA/EIA-470-B (R)	Met	A7.5.1
Security	Yes	See note 2.	Security (R)	See note 2.	A7.6
LEGEND: A - Appendix ACTA - Administrative Council for Terminal Attachments AMI - Alternate Mark Inversion ANSI - American National Standards Institute ARD - Automated Receiving Device C - Conditional CAS - Channel Associated Signaling D4 - 4 th generation channel bank DISA - Defense Information Systems Agency DISR - Department of Defense Information Technology Standards Registry DSS1 - Digital Subscriber Signaling 1 DTMF - Dual Tone Multi-Frequency EIA - Electronic Industries Alliance FCC - Federal Communications Commission GR - Generic Requirement GR-506-CORE - LSSGR: Signaling for Analog Interfaces ISDN - Integrated Services Digital Network ITU-T - International Telecommunication Union – Telecommunication Standardization Sector ITU-T T.4 - Standardization of Group 3 facsimile terminals for document transmission ITU-T T.22 - Standardized test charts for document facsimile transmissions LSSGR - Local Access and Transport Area (LATA) Switching Systems Generic Requirements Mbps - Megabits per second MLPP - Multi-Level Precedence and Preemption NI-2 - National ISDN Standard 2 PCM-24 - Pulse Code Modulation - 24 Channels PCM-30 - Pulse Code Modulation - 30 Channels PRI - Primary Rate Interface R - Required SUT - System Under Test T1 - Digital Transmission Link Level 1 (1.544 Mbps) T1.607 - ISDN – Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1 TIA - Telecommunications Industry Association TIA/EIA-470-B - Performance and Compatibility Requirements for Telephone Sets with Loop Signaling UCR - Unified Capabilities Requirements					
NOTES: 1 The ARD requirements can be met via one of the following interfaces: 2-Wire Analog, 2-Wire Digital, 4-Wire Digital, PCM-24, or PCM-30. 2 Security is tested by DISA-led Information Assurance test teams and published in a separate report.					

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. Testing the system’s required functions and features was conducted using the test configurations depicted in figures 2-2 and 2-3. Figure 2-2 depicts the analog test configuration. Figure 2-3 depicts the T1 interface test configuration.

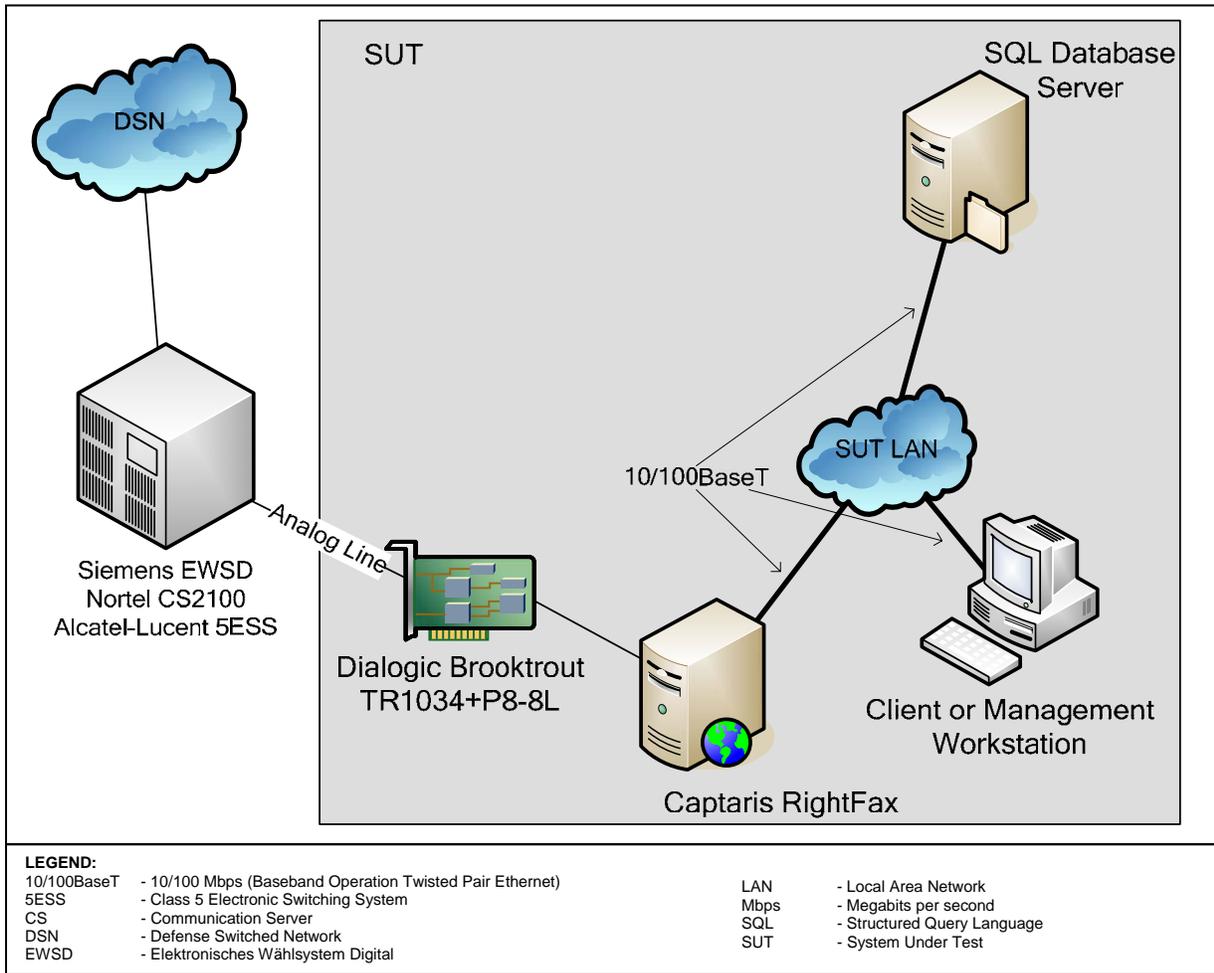


Figure 2-2. SUT Test Configuration (2-Wire Analog)

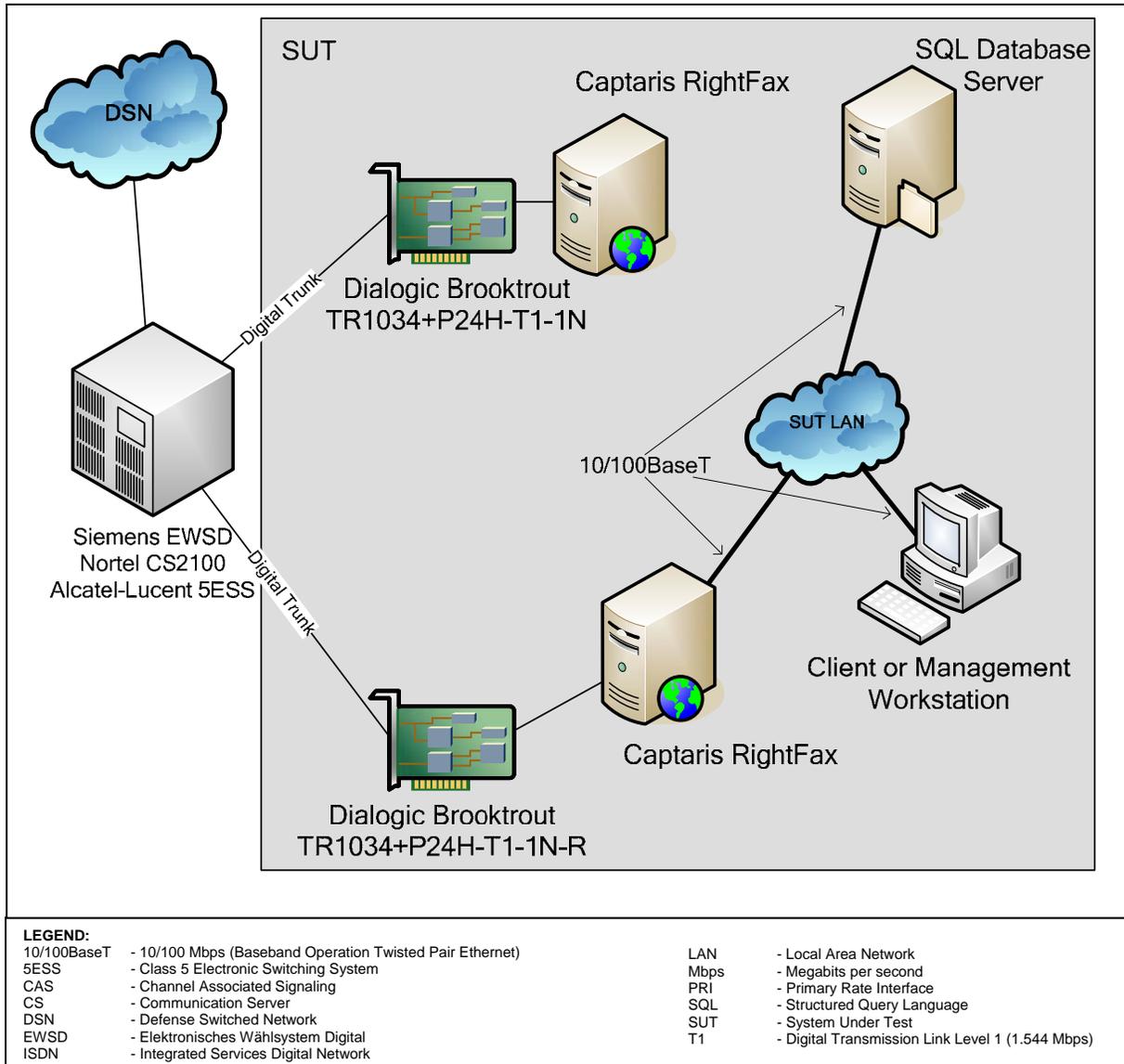


Figure 2-3. SUT Test Configuration (T1 ISDN PRI, T1 CAS)

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

Table 2-2. Tested System Configurations

System Name	Software Release	
Siemens EWSD	19d with Patch Set 46	
Nortel CS2100	Succession Enterprise (SE) 09.1	
Alcatel-Lucent 5ESS	5E16.2 Broadcast Warning Message (BWM) 07-0003	
SUT		
Captaris RightFax Enterprise Rel. 9.3 w/ Dialogic Brooktrout Fax Boards		
System	Hardware	Software/Firmware
RightFax Fax Server	HP Proliant DL380	Microsoft Windows Server 2003 SP1 RightFax Enterprise Suite Version 9.3 FP2 SR3
	Dialogic Brooktrout Facsimile Card T1 Card: TR1034+P24H-T1-1N-R (RoHS)	Software version V3.1.1 build 50 firmware version 1.7.1 build 1
RightFax Board Server	HP Proliant DL380	Microsoft Windows Server 2003 SP1 RightFax Enterprise Suite Version 9.3 FP2 SR3
	Dialogic Brooktrout Facsimile Card T1 Card:TR1034+P24H-T1-1N	Software version V3.1.1 build 50 firmware version 1.7.1 build 1
	Dialogic Brooktrout Facsimile Card Analog Card: TR1034+P8-8L	Software version V3.1.1 build 50 firmware version 1.7.1 build 1
SQL Database Server	HP Proliant DL380	Microsoft Windows Server 2003 SP1 Microsoft SQL Server 2000 SP4
Management & Client Workstation	Dell Optiplex	Microsoft Windows XP Pro SP2
LEGEND:		
5ESS - Class 5 Electronic Switching System	RoHS - Restriction of Hazardous Substances Directive	
CS - Communication Server	SP - Service Pack	
ESWD - Elektronisches Wähler-System Digital	SR - Service Release	
FP - Feature Pack	SQL - Structured Query Language	
HP - Hewlett Packard	SUT - System Under Test	
Mbps - Megabits per second	T1 - Digital Transmission Link Level 1 (1.544 Mbps)	

10. TEST LIMITATIONS. None.

11. TEST RESULTS

a. Discussion. The UCR, appendix 7, paragraph 7.5.5, states that all Customer Premise Equipment (CPE) devices interfacing to the DSN shall provide at least one of the following interface types: 2-wire, 4-wire, Pulse Code Modulation (PCM)-24, or PCM-30. The SUT supports 2-wire analog, PCM-24 (T1) interfaces, and PCM-30 (E1) interfaces. The E1 interface was not tested and is not certified. There is no operational impact because this is not a required interface. The SUT met all the critical interoperability requirements as described below:

(1) The UCR, appendix 7, paragraph A7.5, states that all CPE devices that support Multi-Level Precedence and Preemption (MLPP) shall do so in accordance with the requirements as listed in UCR, section 3, and shall not affect the DSN interface features and functions associated with line supervision and control. The SUT analog interface supports MLPP in accordance with the UCR, section 3, when configured to wait for the fifth ring to answer which will result in sending calls above ROUTINE destined to the SUT to the global default diversion. The T1 interfaces do not support MLPP and, in accordance with the UCR, is not required to do so for a CPE facsimile device. The SUT met this requirement through testing in a configuration that accurately depicts DSN architecture and the vendor's LoC.

(2) The UCR, appendix 7, paragraph A7.5, states that all DSN CPE, as a minimum, must meet the requirements of Part 15 and Part 68 of the Federal Communications Commission (FCC) Rules and Regulations and the Administrative Council for Terminal Attachments (ACTA). The SUT met this requirement with their LoC.

(3) The UCR, appendix 7, paragraph A7.5, states that device(s) that support auto-answer shall have a "Auto-Answer" mode settable have the feature to set the auto-answer mode to a "time" more than the equivalency of four (4) ROUTINE precedence ring intervals in accordance with UCR, section 5.5.1 before "answer" supervision is provided. Handling of the precedence calls will be in accordance with Section 3.2.4.2.1.0. The SUT supports this requirement on the analog interface. The T1 interfaces do not support Auto-Answer and, in accordance with the UCR, is not required to do so for a CPE facsimile device. The SUT met this requirement through testing in a configuration that accurately depicts DSN architecture and the vendor's LoC.

(4) The UCR, appendix 7, paragraph A7.5, states that device(s) that can "out-dial" Dual Tone Multi-Frequency (DTMF) and/or Dial Pulse (DP) digits (automatic and/or manual) shall comply to the requirements as stated in UCR, sections 5.4.1 and 5.4.2, respectively, for its address digit generating capabilities and shall be capable of outpulsing DTMF digits specified in Telcordia Technologies GR-506-CORE. The SUT does not support out-dialing of DP digits, but is capable of out-dialing DTMF digits to an external facsimile device via T1 CAS and 2-wire analog interfaces. The SUT met this requirement through testing in a configuration that accurately depicts DSN architecture and the vendor's LoC.

(5) The UCR, appendix 7, paragraph A7.5, states that modems and facsimile machines shall be compatible with International Telecommunication Union - Telecommunication Standardization Sector (ITU-T) and Telcordia standards, as applicable. The SUT was tested in accordance with ITU-T T.4 and ITU-T T.22. The SUT met this requirement through testing in a configuration that accurately depicts DSN architecture and the vendor's LoC.

(6) The UCR, appendix 7, paragraph A7.5, states that facsimile devices, as a minimum, shall meet the requirements in accordance with the Department of Defense

(DoD) Information Technology Standards Registry (DISR). The SUT met this requirement through testing in a configuration that accurately depicts DSN architecture and the vendor's LoC.

(7) The UCR, appendix 7, paragraph A7.5.1, states that all 2-wire analog devices shall conform to the requirements of TIA/EIA-470-B. The SUT met this requirement for the 2-wire analog interface. The SUT met this requirement through testing in a configuration that accurately depicts DSN architecture and the vendor's LoC.

(8) Security is tested by DISA-led Information Assurance test teams and published in a separate report.

b. Test Conduct. Simulated intra-switch and inter-switch facsimile calls were placed over analog, T1 CAS, and T1 ISDN Primary Rate Interface (PRI) circuits using the test configurations shown in figures 2-2 and 2-3. Incoming calls were successful and, when completed, properly disconnected. The SUT software applications that reside on the host server collected the caller information entered during the caller's session. The call was then routed to an email address based on their specific role as established by local management via a client application that resides on the agent's desktop or was properly transferred to designated directory number within the DSN.

c. Test Summary. The SUT met the critical interoperability requirements for a CPE facsimile device with the interfaces shown in table 2-1, as set forth in reference (c), and is certified for joint use within the DSN. The SUT analog interface is certified for use with any switching system on the DSN APL that offers a certified analog interface. The SUT T1 interface is certified specifically with for use with any switching system on the DSN APL that offers a certified digital T1 CAS (DTMF signaling) or T1 ISDN PRI interface.

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>.