



## 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 June 2005

### MEMORANDUM FOR DISTRIBUTION

**SUBJECT:** Special Interoperability Test Certification of the Callware Technologies Callegra.UC™ (Unified Communications) Server with Software Release 6.13a-JITC

**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, Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification. Additional references are provided in enclosure 1.
2. The Callware Technologies Callegra.UC™ Server with Software Release 6.13a-JITC, hereinafter referred to as the system under test (SUT), meets all of the critical interoperability requirements and is certified for joint use within the Defense Switched Network (DSN). The JITC suffix was attached to the SUT commercial software release 6.13a, because it includes DSN military unique features. The SUT offers both automated attendant and voice messaging functionality which includes the following applications: CallegraVOICE™, CallegraFAX™, CallegraINBOX™, and CallegraWEB™. The SUT also offers CallegraTTS™ and Callegra.UC SDK™ applications, which were not tested and are not covered under this certification. All Callware applications run on the Callegra.UC™ Server and are administered using the Microsoft Management Console (MMC) module. CallegraADMIN™ for MMC is an integral part of the SUT. The SUT was tested with the switching systems and their respective software releases listed in table 2-2 of enclosure 2. Furthermore, JITCs analysis determined a minor risk with including all certified DSN switching systems listed on the Telecom Switched Services Interoperability (TSSI) Approved Products List that support the same SUT interfaces covered under this certification. The SUT met the critical interoperability requirements for an automated receiving device set forth in appendix 7 of reference (c). Testing was conducted using test procedures derived from reference (d). 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 conducted by JITC at the Global Information Grid Network Test Facility, Fort Huachuca, AZ, from 18 through 20 April 2005, and the review of vendor Letters of Compliance completed on 9 May 2005. The Certification Testing Summary (enclosure 2) documents the test results and describes the test configuration.

JITC Memo, JTE, Special Interoperability Test Certification of the Callware Technologies Callegra.UC™ (Unified Communications) Server with Software Release 6.13a-JITC

Users should verify interoperability before deploying the SUT in an environment that varies significantly from that described.

4. The Functional Requirements used to evaluate the interoperability of the SUT and the interoperability statuses are indicated in table 1.

**Table 1. SUT Functional Requirements and Interoperability Status**

Interfaces	Critical	Certified	Functional Requirements	Met	GSCR Paragraph
EIA-232 Serial	No	Yes	ANSI/TIA/EIA-232-F (C)	Met	A7.5
2-Wire Analog (GR-506-CORE)	No <sup>1</sup>	Yes	MLPP in accordance with GSCR, Section 3 (C)	Met	A7.5
			MLPP Precedence call alerting (C)	Not Tested <sup>3</sup>	A7.5
			FCC Part15/Part 68 (R)	Met	A7.5
			Auto answer ring interval (C)	Met	A7.5
2-Wire Digital Proprietary <sup>2</sup>	No <sup>1</sup>	Yes	DTMF outpulsing (C)	Met	A7.5, 5.4.1, 5.4.2
			DISR compliance as applicable (R)	Met	A7.5
			Network Management (C)	Not Tested <sup>3</sup>	A7.5
			Routine precedence only in accordance with GSCR, Section 3.3 (R)	Met	A7.5
			ANSI/TIA/EIA-470-B (R: Analog only)	Met	A7.5.1
			Security in accordance with DITSCAP (R)	See note 4.	A7.6.5

**LEGEND:**  
ANSI - American National Standards Institute  
BRI - Basic Rate Interface  
C - Conditional  
DISA - Defense Information Systems Agency  
DISR - DOD IT Standards Registry  
DITSCAP - DOD IT Security Certification and Accreditation Process  
DOD - Department of Defense  
DTMF - Dual Tone Multi-Frequency  
EIA - Electronic Industries Alliance  
FCC - Federal Communications Commission  
GR - Generic Requirement  
GSCR - Generic Switching Center Requirements  
IA - Information Assurance  
ISDN - Integrated Services Digital Network  
IT - Information Technology  
MLPP - Multi-Level Precedence and Preemption  
PCM-24 - Pulse Code Modulation - 24 Channels  
PCM-30 - Pulse Code Modulation - 30 Channels  
R - Required  
SUT - System Under Test  
TIA - Telecommunications Industry Association

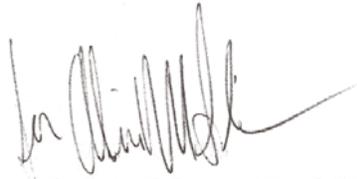
**NOTES:**  
1 The automated receiving device requirements can be met via one of the following interfaces: 2-Wire Analog, 2- or 4-Wire Digital Proprietary, ISDN BRI, PCM-24, or PCM-30. The individual interfaces are not critical, but it is critical for the SUT to meet at least one.  
2 The SUT digital proprietary interface emulates the Nortel Networks Meridian1 M2616 and the Avaya 8434D only.  
3 This is not supported by the SUT. Since this is a conditional requirement for an automated receiving device, the operational impact is minor.  
4 DITSCAP information assurance testing is accomplished via DISA-led IA test teams and published in a separate report.

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

JITC Memo, JTE, Special Interoperability Test Certification of the Callware Technologies Callegra.UC™ (Unified Communications) Server with Software Release 6.13a-JITC

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.

FOR THE COMMANDER:



RICHARD A. MEADOR  
Chief  
Networks and Transport Division

2 Enclosures a/s

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Defense Information Systems Agency, GIG-Combat Support Directorate, DSN SYSTEMS MANAGEMENT BRANCH, ATTN: GS235, Rm. 5W248A, 5275 Leesburg Pike, Falls Church, VA 22041

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Defense Intelligence Agency, ATTN: DS-CIO, Bldg 6000, Bolling AFB, Washington, DC 20340-3342

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

Commander, 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, "Department of Defense Voice Networks Generic Switching Center Requirements (GSCR), Incorporated 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.** Callware Technologies Callegra.UC™ (Unified Communications) Server, with Software Release 6.13a-JITC, 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), Ft. Huachuca, AZ.

**5. SYSTEM UNDER TEST DESCRIPTION.** The SUT offers a voice messaging and automated attendant solution that expands to include speech recognition. The SUT also offers additional unified messaging advantages such as fax services, browser-based voice and fax messaging, and e-mail integration including text-to-speech. The SUT was designed with an extensible markup language based N-tier (N denotes any number; i.e., 2, 3, 10, etc.), object-oriented, distributed architecture allowing it to scale from a full-featured four-port voice mail system up to a very large network of unified communication installations. Client applications are supported on all the current desktop versions of Microsoft Windows with additional support for Microsoft Outlook 2000, XP, Novell GroupWise, IBM Notes, and Internet Explorer browser-based access. The SUT utilizes an intuitive graphical interface for system setup and administration. The JITC suffix was attached to the SUT commercial software release 6.13a, because it includes Defense Switched Network (DSN) military unique features. The SUT offers both automated attendant and voice messaging functionality, which includes the following applications CallegraVOICE™, Callegra FAX™, CallegraINBOX™, and CallegraWEB™. The SUT also offers CallegraTTS™ and Callegra .UC SDK™ applications, which were not tested and are not covered under this certification. All Callware applications run on the Callegra.UC™ Server and are administered using the Microsoft Management Console (MMC) module. CallegraADMIN™ for MMC is an integral part of the SUT. The following are descriptions of the applications covered by this certification.

**Callegra.UC™ Server.** The Callegra.UC™ Server offers a voice mail and Auto Attendant solution that expands to include speech recognition. The following features are supported by this application:

- Multiple Private Branch Exchange (PBX) integration methods across multiple PBX manufacturers
- Diagnostic tracing
- Multi-tenanting
- Multi-site networking
- On-line help and documentation
- Fax tone auto-transfer
- Box alias table (inbound routing)

- Dial string translation (outbound routing)

### **CallegraADMIN™ for MMC®**

- Local or remote access for Callegra administrators
- Real time dynamic box administration
- Global distribution lists
- System utilities

**CallegraVOICE™**. CallegraVOICE™ brings speech-enabled call routing and auto attendant functionality to the SUT through the use of speech recognition technology. The following features are supported by this application:

- Voice activated call routing
- Speech enabled employee directory
- Speech enabled directory for box owners

The auto attendant can be used as the primary reception, answering all incoming calls, or it can be set up to provide overflow or secondary support for a live receptionist. The following features are supported by this application:

- "0" for operator or another extension
- Multiple call routing options. Audiotext boxes within Callegra systems can offer up to 250 distinct call routing options per box.
- Direct to voice mail transfer
- Directory look-up
- Scheduled greetings
- Holiday greetings
- Message edit and delivery options
- Auto transfers

**Callegra FAX™**. The FAX services module allows incoming faxes to be delivered to the SUT. The following features are supported by this application:

- Message waiting indicator
- Pager notification
- Telephone notification
- Directory look-up
- Email notification including Short Message Service (SMS) paging to compatible devices.

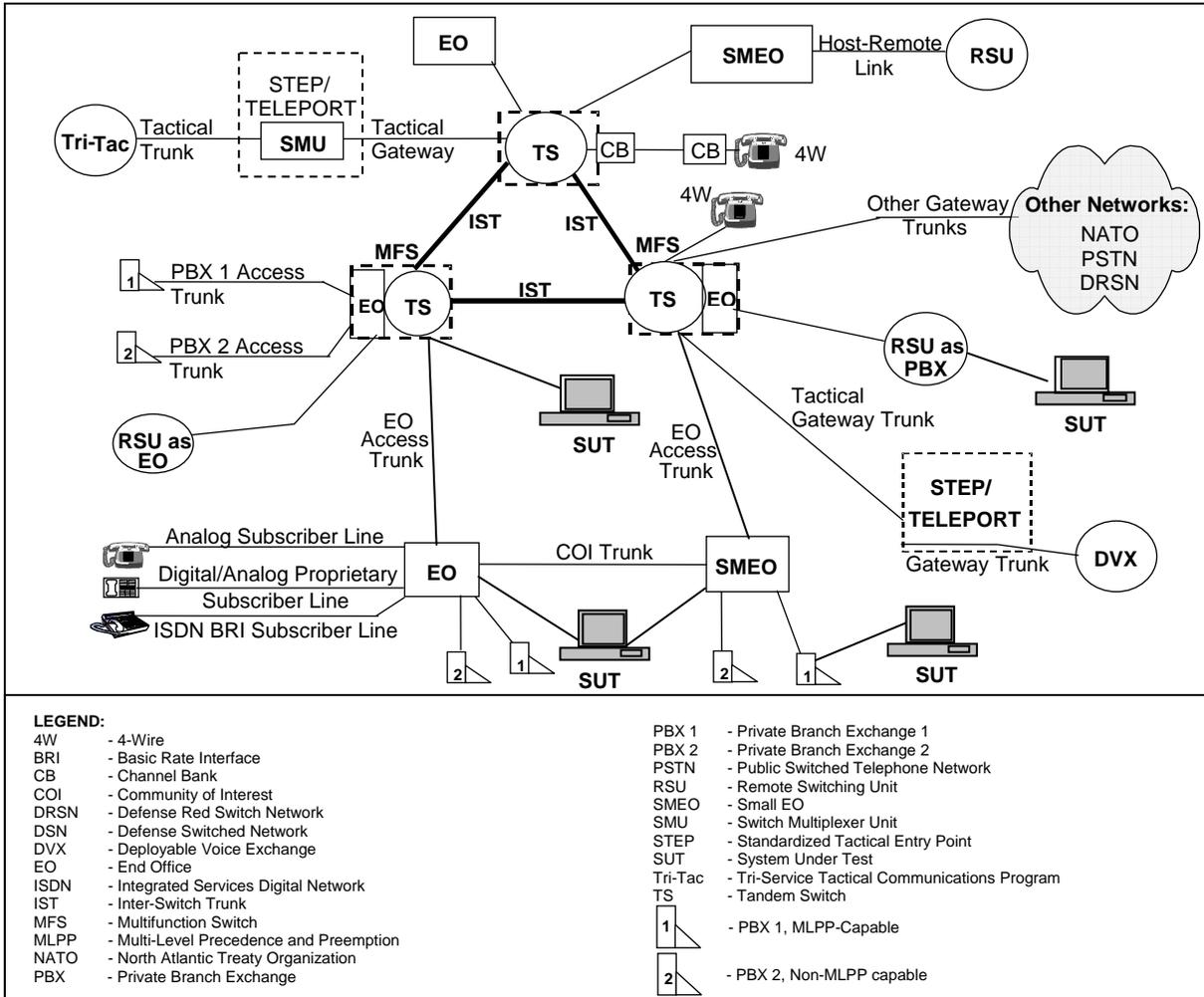
**CallegraWEB™ for Internet Explorer®**. CallegraWEB is a browser-based Internet client giving the SUT the ability to access and control voice and fax messages over the Internet. The following features are supported by this application:

- Accessing voice messages via the internet
- Accessing faxes via the internet
- Sending voice messages via the internet
- Sending faxes via the internet

### **CallegraINBOX™ for Microsoft Outlook®**

- Microsoft Outlook 2000 and XP
- Windows 98, ME, NT4.0, 2000, XP
- Mail server independent
- Callegra options menu
- Passcode protected
- Telephone and multimedia support
- Intuitive visual message control
- Send and forward as e-mail
- Confidential and urgent messaging
- Integrated Callegra address book
- Fax print driver
- Fax viewers
- Xerox TextBridge Optical Character Recognition
- Sent fax log
- Message store controls
- Personal greeting controls
- Remote Internet Protocol access
- Notification control

**6. OPERATIONAL ARCHITECTURE.** The Generic Switching Center Requirements (GSCR) DSN architecture in figure 2-1 depicts the relationship of the SUT to the DSN switches.



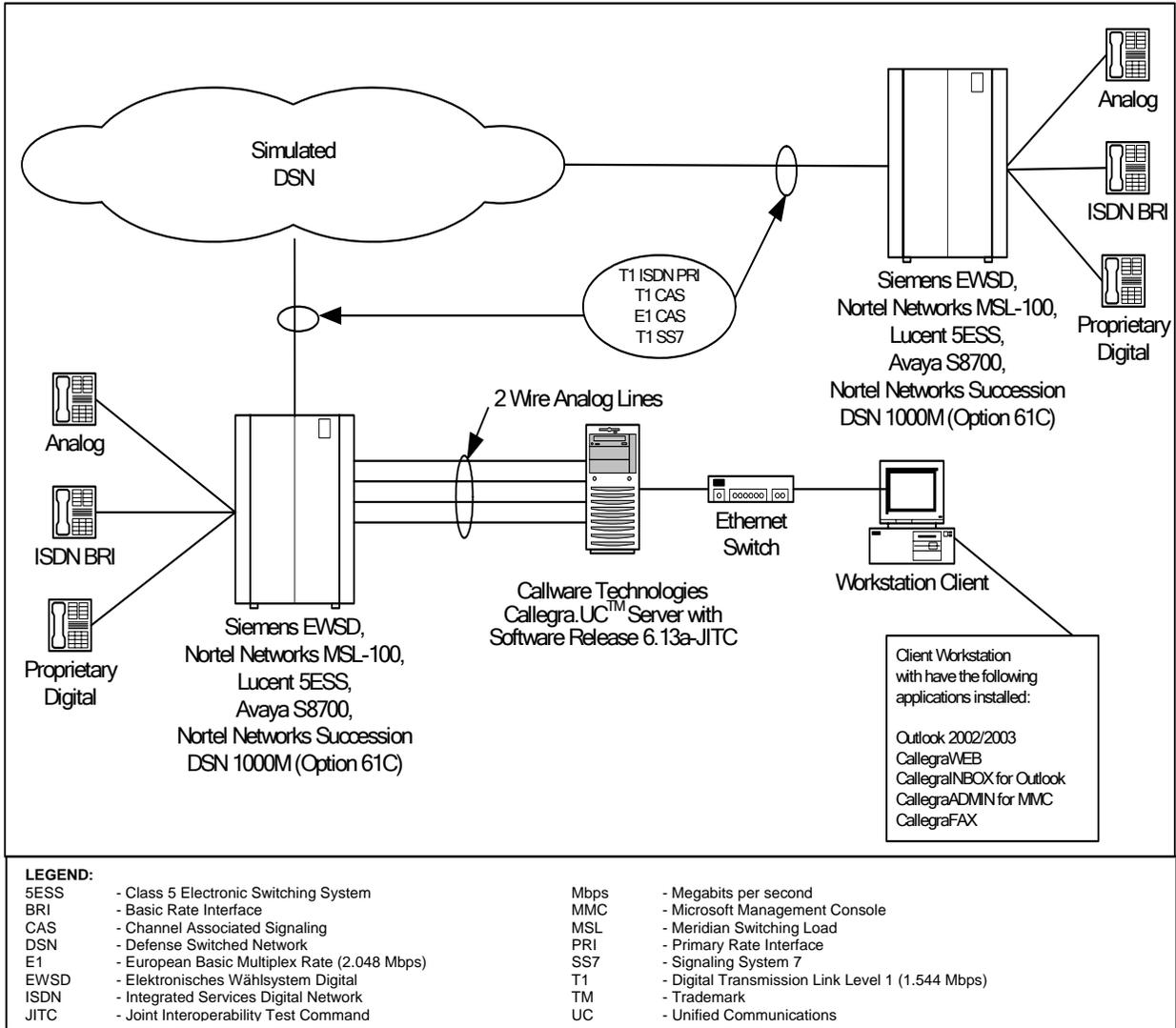
**Figure 2-1. DSN Architecture**

**7. REQUIRED SYSTEM INTERFACES.** Requirements specific to the SUT and interoperability results are listed in table 2-1. These requirements are derived from GSCR Interface and Functional Requirements verified through JITC testing and/or vendor submission of Letters of Compliance.

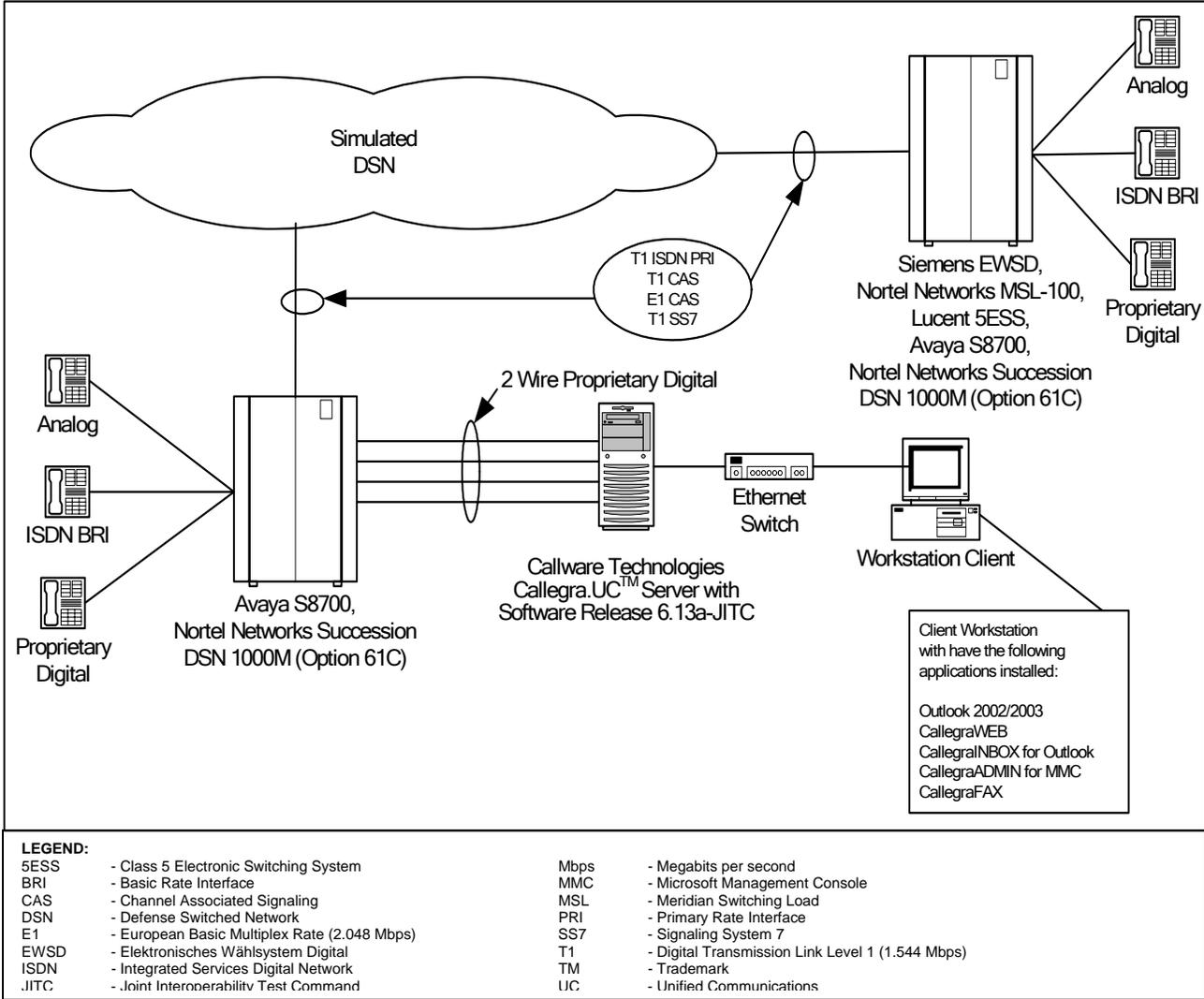
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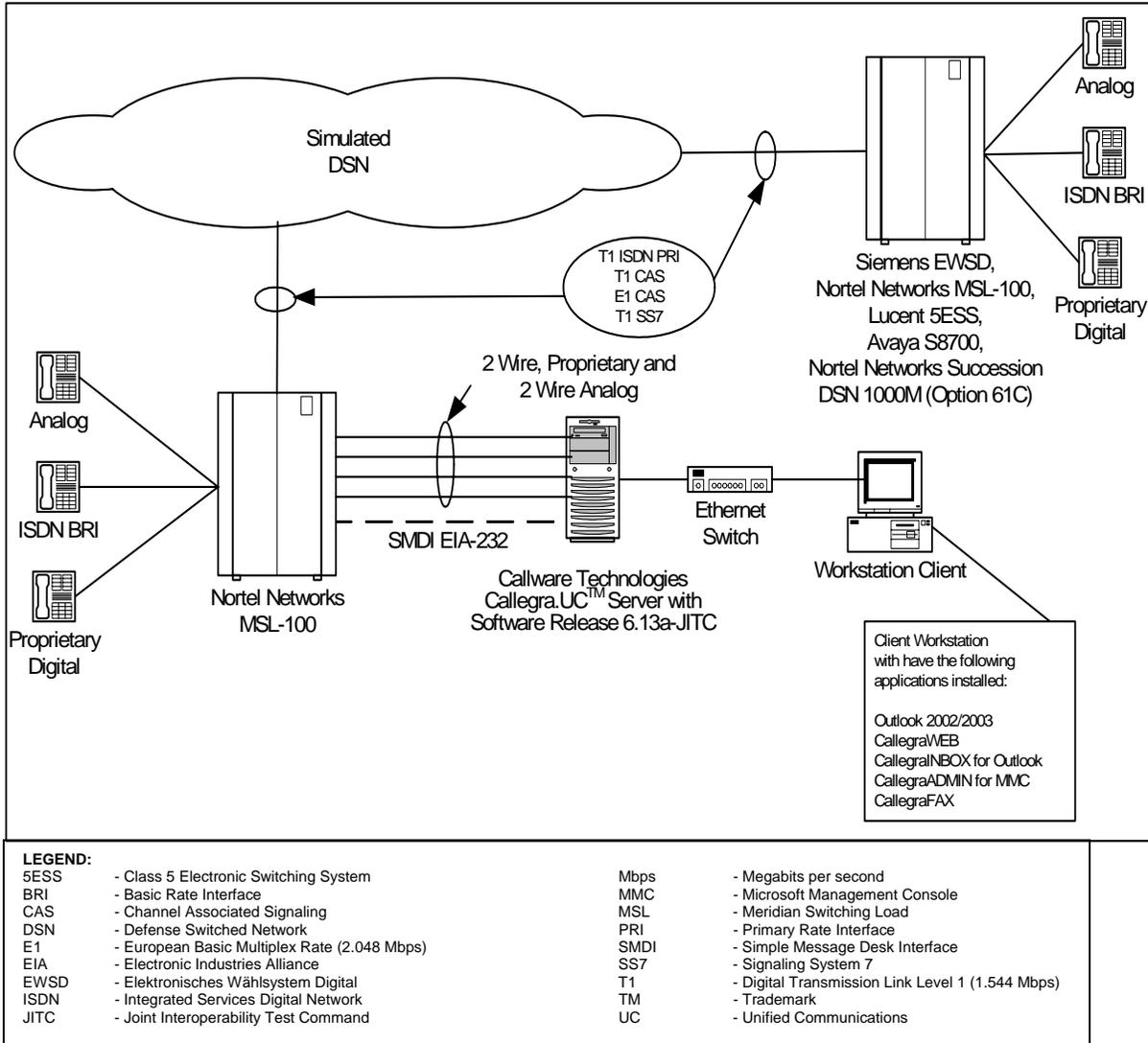
**8. TEST NETWORK DESCRIPTION.** The SUT was tested at JITC's Global Information Grid Network Test Facility in a manner and configuration similar to that of the DSN operational environment. The test configuration depicted in figure 2-2 was used to test the system's required analog functions and features. Figure 2-3 depicts the configuration used to test the system's proprietary digital interface. The test configuration depicted in figure 2-4 was used to test voice mail.



**Figure 2-2. Analog Test Configuration**



**Figure 2-3. Proprietary Digital Test Configuration**



**Figure 2-4. MSL-100 SMDI Voice Mail Test Configuration**

**9. SYSTEM CONFIGURATIONS.** Table 2-2 provides the system configurations used in the test. The SUT was tested with the switching systems and their respective software releases listed in table 2-2. However, JITCs analysis determined a minor risk with including all certified DSN switching systems listed on the Telecom Switched Services Interoperability (TSSI) Approved Products List that support the same SUT interfaces covered under this certification.

**Table 2-2. Tested System Configurations**

System Name		Hardware/Software Release	
Siemens EWSD		19d with Patch Set 44	
Nortel Networks MSL-100		SE06	
Nortel Networks DSN 1000M		Succession 3.0	
Avaya S8700		CM 3.0 (R012x.01.0.411.7-7216)	
Lucent 5ESS		5E16.2 SU05-0002	
SUT	Application Software Release	Hardware	Firmware/Software
Callware Technologies Callegra.UC™ Server	6.13a-JITC	Analog: Intel Dialogic 12-Port (D/120JCT-LS)	FW SR 5.1.1 SP 1
		Digital (Proprietary): Intel-Dialogic 8-Port D/82JCTU (emulates Nortel Networks Option 11/61 M2616 and Avaya 8434D)	
		Tower PC with Pentium IV, 1.7 GHz, 512 Mb RAM	Windows 2000
<b>LEGEND:</b>			
5ESS	- Class 5 Electronic Switching System	PC	- Personal Computer
CM	- Communication Manager	RAM	- Random Access Memory
DSN	- Defense Switched Network	SE	- Succession Enterprise
EWSD	- Elektronisches Wählsystem Digital	SP	- Service Pack
FW	- Firmware	SR	- Software Release
GHz	- Gigahertz	SU	- Software Update
JITC	- Joint Interoperability Test Command	SUT	- System Under Test
LS	- Loop Start	TM	- Trademark
Mb	- Megabyte	UC	- Unified Communications
MSL	- Meridian Switching Load		

**10. TEST LIMITATIONS.** None.

**11. TEST RESULTS**

**a. Discussion.** The SUT applications Callegra.UC™ Server, Auto-Attendant, and CallegraVOICE™, CallegraFAX™, CallegraWEB™, and CallegraINBOX™ were tested by placing multiple ROUTINE precedence calls via the test configurations as shown in figures 2-2 through 2-4. According to the GSCR, switching systems are required to route only ROUTINE calls to automated receiving devices such as the SUT. After calls were completed to the SUT, simulated automated directory assistance, voice activated call routing, automatic transfer, scheduled greetings, were extended, and completed to verify interoperability between various switching systems shown in figures 2-2 through 2-4. The CallegraINBOX™, CallegraFAX™, and CallegraWEB™ application's basic functionality was tested to insure that they had no negative impact on interoperability.

All tests were successful and when completed, properly disconnected the analog or digital circuits. In addition, completed calls to the SUT were preempted within the simulated DSN as shown in figures 2-2 through 2-4 to ensure that the proper preemption action occurred as required by the GSCR, section 3. All preempted calls received the proper preemption notification tone, were released, and returned to an idle state ready for the subsequent caller.

**b. Test Summary.** The SUT met the critical interoperability requirements for an automated receiving device for the interfaces shown in table 2-1 as set forth in reference (c) and is certified for joint use within the DSN.

**12. TESTS 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>.