



DEFENSE INFORMATION SYSTEMS AGENCY

JOINT INTEROPERABILITY TEST COMMAND
2001 BRAINARD ROAD
FORT HUACHUCA, ARIZONA 85613-7051

IN REPLY
REFER TO: Networks and Transport Division (JTE)

17 June 2004

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Special Interoperability Test Certification of the T-Metrics PhoneGroups® Personal Computer-Based Console with Software Release 7102081953

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

- 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.
- The T-Metrics PhoneGroups® Personal Computer-based Console with Software Release 7102081953, 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 SUT meets the critical interoperability requirements for attendant services set forth in reference (c) and testing was conducted using test procedures derived from reference (d). Table 1 is a list of switches and their respective hard attendant consoles emulated by the SUT. This certification expires upon changes that affect interoperability, but no later than three years from the date of this memorandum.

Table 1. SUT Emulated Attendant Consoles

Switch	Hard Attendant Console
Nortel Networks MSL-100	NT4X09
Nortel Networks Meridian 1 Options 51C, 61C, and 81C	M2250 NT6G00AF35, and PC Interface Console NTAG588A
Legend: MSL – Meridian Switching Load PC – Personal Computer SUT – System Under Test	

3. This certification is based on interoperability testing conducted from 8 through 13 August 2002 and 23 through 27 December 2003 by JITC at the Global Information Grid Network Test Facility, Fort Huachuca, AZ. The Certification Testing Summary (enclosure 2) documents the test results and describes the test network. Users should verify interoperability before deploying the SUT in an environment that varies significantly from that described.

4. The Functional Requirements used to evaluate the interoperability of the SUT, and the interoperability status, are indicated in table 2.

Table 2. SUT Functional Requirements and Interoperability Status

Interface	Critical	Certified	Critical Functional Requirements	Met	GSCR Paragraph
Analog Proprietary Twisted Pair Copper (MSL-100)	No ¹	Yes	Precedence and Preemption	Yes	2.2.1
			Call Display	Yes	2.2.2
			Class of Service Override	Yes	2.2.3
			Busy Override and Busy Verification	Yes	2.2.4
Digital Proprietary Twisted Pair Copper (Meridian 1)			Night Service	Yes	2.2.5
			Automatic Recall of Attendant	No ²	2.2.6
			Calls in Queue to the Attendant	Yes	2.2.7
			Release to Pivot for Operator Services	Yes	2.2.8

Legend:
 BRI - Basic Rate Interface
 DSN - Defense Switched Network
 EIA - Electronic Industries Alliance
 GSCR - Generic Switching Center Requirements
 ISDN - Integrated Services Digital Network
 MSL - Meridian Switching Load
 SUT - System Under Test
 TCP/IP - Transmission Control Protocol/Internet Protocol
 TPC - Twisted Pair Copper

Notes:
 1 The interface for the DSN attendant console can be met with one of the following interfaces: ISDN BRI, Analog TPC, Digital TPC, Ethernet, or Serial (EIA-232, EIA-449, EIA-530).
 2 The SUT, when connected to the Meridian 1 switches, does not have the ability to recall a busy or unanswered party after a preset time. This is a limitation associated with the Meridian 1 switches only, and not the SUT. The operational impact is minor.

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 T-Metrics PhoneGroups@
Personal Computer-Based Console with Software Release 7102081953

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

FOR THE COMMANDER:

2 Enclosures a/s

LESLIE CLAUDIO
Chief
Networks and Transport Division

Distribution:

Joint Staff J6I, Room-1E565, Pentagon, Washington, DC 20318-6000

Joint Interoperability Test Command, Washington Operations Division, NSWC, ATTN: JT1,
Building 900, 101 Strauss Avenue, Indian Head, MD 20640-5035

Defense Information Systems Agency, GIG Enterprise Services Engineering Directorate,
NETCENTRICITY, REQUIREMENTS, ANALYSIS & ASSESSMENTS BRANCH, ATTN:
GE333, Rm. 244, 5600 Columbia Pike, Falls Church, VA 22041-2770

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

Office of Chief of Naval Operations (N61C22), CNON6/7, 2000 Navy Pentagon, Washington,
DC 20350

Headquarters US Air Force, AF/XICC, 1250 Pentagon, Washington, DC 20330-1250

Department of the Army, Office of the Secretary of the Army, G-6/ASA (ALT), ATTN:
ASAALT (SAAL-SSI), 103 Army Pentagon, Washington, DC 20310-0103

US Marine Corp (C4ISR), MARCORSSYSCOM, 2200 Lester Street, Quantico, VA 22134

DOT&E, Strategic and C3I Systems, 1700 Defense Pentagon, Washington, DC 20301-1700

US Coast Guard, COMDT/G-SCE (C4), 2100 2nd Street SW, Washington, DC 20593

Office of Assistant Secretary of Defense, OASD(NII)/DoD CIO, Crystal Mall 3, 7th Floor, Suite
700, 1931 Jefferson-Davis Hwy, Arlington, VA 22202

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

US Joint Forces Command, J6I, C4 Plans and Policy, 1562 Mitscher Ave, Norfolk, VA 23551-
2488

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 (DISA), "Department of Defense Voice Networks Generic Switching Center Requirements (GSCR)," 8 September 2003
- (d) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP)," 17 June 1999

CERTIFICATION TESTING SUMMARY

- 1. SYSTEM TITLE.** The T-Metrics PhoneGroups® Personal Computer (PC)-based Console with Software Release 7102081953, hereinafter referred to as System Under test (SUT).
- 2. PROPONENT.** Defense Information Systems Agency (DISA).
- 3. PROGRAM MANAGERS.** Mr. Howard Osman, GS23, Room 5W23, 5275 Leesburg Pike, Falls Church, VA 22041, E-mail: Osmanh@ncr.disa.mil.
- 4. TESTERS.** Joint Interoperability Test Command (JITC), Ft. Huachuca, AZ.
- 5. SYSTEM UNDER TEST DESCRIPTION.** The SUT integrates the console features provided by the telephone switch/Private Branch Exchange with the automation of a PC. Most of the repetitive functions that an operator/attendant must perform are automated and all organizational databases, as well as other information not contained in databases, can be integrated into the console's operations. The SUT offers the following PC-based consoles which are covered by this certification: PhoneGroups® Meridian Services Attendant Console (MSAC) which emulates the Nortel Networks MSL-100 MSAC NT4X09 and the PhoneGroups® Meridian 1 Console which emulates the Meridian 1 M2250 NT6G00AF35, and the Meridian 1 PC Interface NTAG588A consoles.
- 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.
- 7. REQUIRED SYSTEM INTERFACES.** Requirements specific to the SUT and interoperability results are listed in table 2-1. These requirements are derived from:
 - a. GSCR (reference (c)) Interface and Functional Requirements (FRs).
 - b. The overall system interoperability performance is derived from test procedures listed in reference (d).

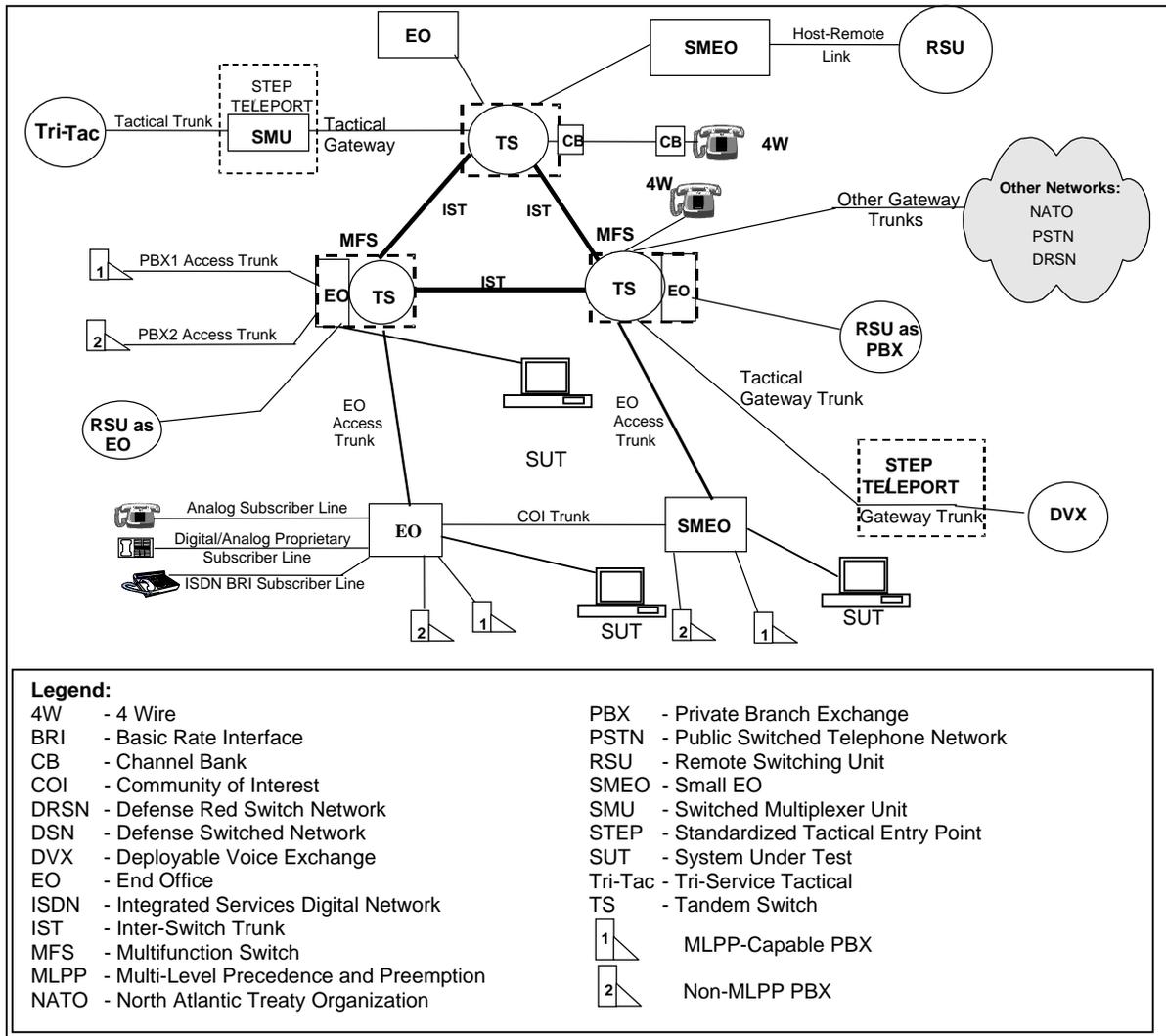


Figure 2-1. DSN Architecture

Table 2-1. SUT Functional Requirements and Interoperability Status

Interface	Critical	Certified	Critical Functional Requirements	Met	GSCR Paragraph
Analog Proprietary Twisted Pair Copper (MSL-100)	No ¹	Yes	Precedence and Preemption	Yes	2.2.1
			Call Display	Yes	2.2.2
			Class of Service Override	Yes	2.2.3
			Busy Override and Busy Verification	Yes	2.2.4
Digital Proprietary Twisted Pair Copper (Meridian 1)			Night Service	Yes	2.2.5
			Automatic Recall of Attendant	No ²	2.2.6
			Calls in Queue to the Attendant	Yes	2.2.7
			Release to Pivot for Operator Services	Yes	2.2.8
<p>Legend: BRI - Basic Rate Interface DSN - Defense Switched Network EIA - Electronic Industries Alliance GSCR - Generic Switching Center Requirements ISDN - Integrated Services Digital Network MSL - Meridian Switching Load SUT - System Under Test TCP/IP - Transmission Control Protocol/Internet Protocol TPC - Twisted Pair Copper</p> <p>Notes: 1 The interface for the DSN attendant console can be met with one of the following interfaces: ISDN BRI, Analog TPC, Digital TPC, Ethernet, or Serial (EIA-232, EIA-449, EIA-530). 2 The SUT, when connected to the Meridian 1 switches, does not have the ability to recall a busy or unanswered party after a preset time. This is a limitation associated with the Meridian 1 switches only, and not the SUT. The operational impact is minor.</p>					

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 of the system's required functions and features was conducted using the test configuration depicted in figure 2-3.

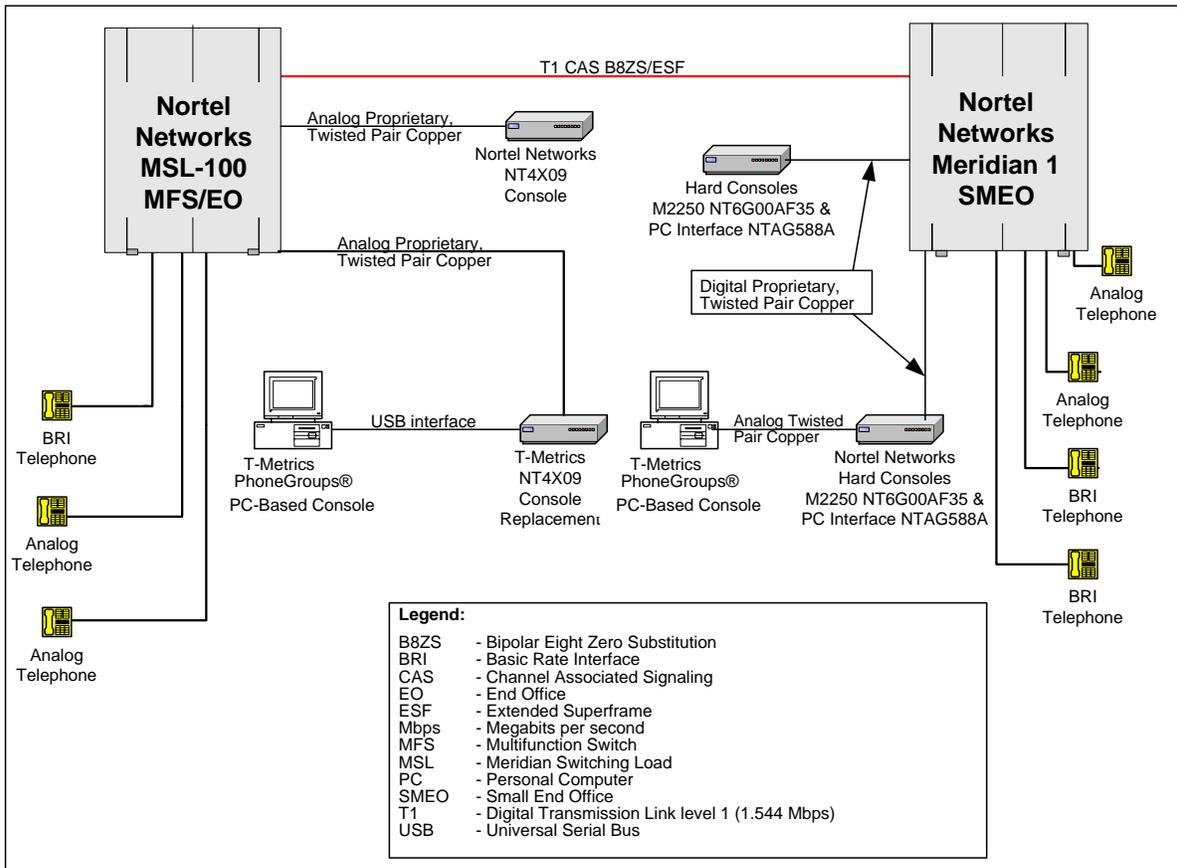


Figure 2-3. Test Configuration

9. SYSTEM CONFIGURATIONS. Table 2-2 provides the system configurations and their respective software used in the test.

Table 2-2. Tested System Configurations

System Name	Hardware/Software Release
Nortel Networks MSL-100	MSL17 and SE06
Meridian 1 Option 61C	25.47
MSL-100 MSAC	NT4X09AG and NT4X09AB
Meridian 1 Consoles	M2250 NT6G00AF35, and PC Interface Console NTAG588A
Legend:	
MSL - Meridian Switching Load	
PC - Personal Computer	

10. TEST LIMITATIONS. None.

11. TEST RESULTS

a. Discussion

(1) Precedence and Preemption (GSCR Paragraph 2.2.1). The SUT meets the following FR for precedence and preemption:

The attendant console operates with Multi-Level Precedence and Preemption as described in section 3 of reference (c).

(2) Call Display (GSCR Paragraph 2.2.2). The SUT meets the following FR for Call Display:

The attendant console provides a visual display of the calling number, class of service and precedence level for incoming direct dialed calls and diverted calls to the attendant.

(3) Class of Service Override (GSCR paragraph 2.2.3). The SUT meets the following FR for Class of Service Override:

The attendant provides the capability to override any class of service (calling area or precedence) of the calling party on a call-by-call basis.

(4) Busy Override and Busy Verification (GSCR paragraph 2.2.4). The SUT meets the following FRs for Busy Override and Busy Verification:

The attendant has the capability to override a busy line condition. If the called line being verified is busy, off-hook supervision is given to the attendant performing the busy verification.

The attendant has the capability to enter an existing busy line to inform the user of an incoming call. An override tone is provided to the busy line prior to the attendant entering the conversation, and the tone is repeated periodically as long as the attendant is connected.

(5) Night Service (GSCR paragraph 2.2.5). The SUT meets the following FR for Night Service:

The attendant console has the ability to route all calls normally directed to the console to a night service deflection. The night service deflection is a fixed or manually selected directory number.

(6) Automatic Recall of Attendant (GSCR paragraph 2.2.6). The SUT, when connected to the Meridian 1 switches, does not have the ability to recall a busy or unanswered party after a preset time. This is a limitation associated with the

Meridian 1 switches and not the SUT. The operational impact is minor. The SUT does not meet the following FR for Automatic Recall of Attendant:

When an attendant extends a call to a station that is busy or does not answer within a preset time, the extended party is automatically recalled to the console. If that console is busy, the recall shall be placed into the console queue; if the console is out of service, the recall is routed to another console.

(7) Calls in Queue to the Attendant (GSCR paragraph 2.2.7). The SUT meets the following FRs for Calls in Queue to the Attendant:

The attendant console has the capability to place calls in a waiting queue. Calls placed in queue to the attendant console are retrieved by the attendant in order of precedence level (FLASH-OVERRIDE first, ROUTINE last) and longest holding time. Calls in queue are not lost when a console is placed out of service or forwarded to night service deflection. When the console is placed out of service or forwarded to night service while calls are in queue, the console is capable of both of the following solutions:

(a) All calls in queue are forwarded to first the centralized attendant, then night service.

(b) All subsequent calls placed to the attendant console are forwarded to first the centralized attendant, then night service. The attendant console is able to answer all remaining calls in queue preventing any calls from being lost.

b. Test Summary. The T-Metrics PhoneGroups® PC-based Console with Software Release 7102081953 meets all of the critical interoperability requirements for attendant console and is certified for joint use within the DSN to provide attendant services, in accordance with the requirements set forth in reference (c).

12. TEST AND ANALYSIS REPORT. 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>.