



DEFENSE INFORMATION SYSTEMS AGENCY

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

20 Aug 08

MEMORANDUM FOR DISTRIBUTION

Subject: Special Interoperability Test Certification of the Amcom Software Inc., Computer Telephony Integration (CTI) Basic Operator Services System (BOSS) Workstation, Release 4.0.6

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) through (e), see enclosure 1

1. References (a) and (b) establish the Defense Information Systems Agency, Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification.
2. The Amcom Software Inc., CTI BOSS Workstation, Release 4.0.6 is hereinafter referred to as the System Under Test (SUT). The SUT emulates all the features and functions of the Nortel NT4X09 Meridian Services Attendant Console (MSAC) hard console. The SUT meets all of the critical interoperability requirements and is certified for joint use within the Defense Switched Network (DSN), specifically with the Nortel Communication Server (CS)2100 and Meridian Switching Load (MSL)-100 Digital Switching Systems on the DSN Approved Products List (APL). The SUT was tested with the Nortel CS2100 with Software Release Succession Enterprise (SE)08. The MSL-100 Digital Switching System has similar hardware and software and the same interfaces as the Nortel CS2100. The JITC analysis determined a minor risk in certifying the SUT with other Nortel CS2100 and Nortel MSL-100 digital switching systems on the DSN APL. The SUT met the critical interoperability requirements for attendant services set forth in reference (c). 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 26 March through 22 April 2007. Review of vendor's LoC was completed on 8 May 2007. This certification was on hold pending Information Assurance testing, which is published in a separate report. The SUT was tested with

the requirements set forth in reference (c). The SUT test results were reviewed to ensure they met the requirements set forth in reference (e). This review was completed on 19 August 2008. The Certification Testing Summary (enclosure 2) documents the test results and describes the test configuration.

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

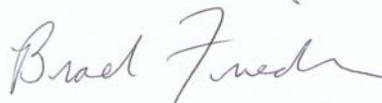
Interface	Critical	Certified	Functional Requirements	Met	UCR Paragraph
Nortel Analog Proprietary (See note)	Yes	Yes	Precedence and Preemption (R)	Yes	2.2.1
			Call Display (R)	Yes	2.2.2
			Class of Service Override (R)	Yes	2.2.3
			Busy Override and Busy Verification (R)	Yes	2.2.4
			Night Service (R)	Yes	2.2.5
			Automatic Recall of Attendant (R)	Yes	2.2.6
			Calls in Queue to the Attendant (R)	Yes	2.2.7
LEGEND: APL - Approved Products List CS - Communication Server DSN - Defense Switched Network MSAC - Meridian Services Attendant Console MSL - Meridian Switching Load R - Required SUT - System Under Test UCR - Unified Capabilities Requirements NOTE: This interface is certified with the SUT in either a single- or multiple-console configuration, with or in lieu of the MSAC console. The SUT certified for joint use within the DSN specifically with the Nortel CS2100 and MSL-100 Digital Switching Systems on the DSN APL.					

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>.

JITC Memo, JTE, Special Interoperability Test Certification of the Amcom Software Inc., Computer Telephony Integration (CTI) Basic Operator Services System (BOSS) Workstation, Release 4.0.6

6. The JITC point of contact is Mr. Steven Lesneski, DSN 879-5400, commercial (520) 538-5400, FAX DSN 879-4347, or e-mail to steven.lesneski@disa.mil. The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 0801002.

FOR THE COMMANDER:



RICHARD A. MEADOR
Chief
Battlespace Communications Portfolio

2 Enclosures a/s

Distribution (electronic mail):

Joint Staff J-6

Joint Interoperability Test Command, Liaison, TE3/JT1

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Office of Assistant Secretary of Defense (NII)/DOD CIO

U.S. Joint Forces Command, Net-Centric Integration, Communication, and Capabilities Division, J68

Defense Information Systems Agency, GS23

ADDITIONAL REFERENCES

- (c) Defense Information Systems Agency, "Department of Defense Voice Networks Generic Switching Center Requirements (GSCR), Errata Change 2," 14 December 2006
- (d) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006
- (e) Defense Information Systems Agency, "Department of Defense Networks Unified Capabilities Requirements," 21 December 2007

CERTIFICATION TESTING SUMMARY

1. SYSTEM TITLE. The Amcom Software Inc., Computer Telephony Integration (CTI) Basic Operator Services System (BOSS) Workstation, Release 4.0.6 is hereinafter referred to as the System Under Test (SUT).

2. PROPONENT. White House Communications Agency (WHCA).

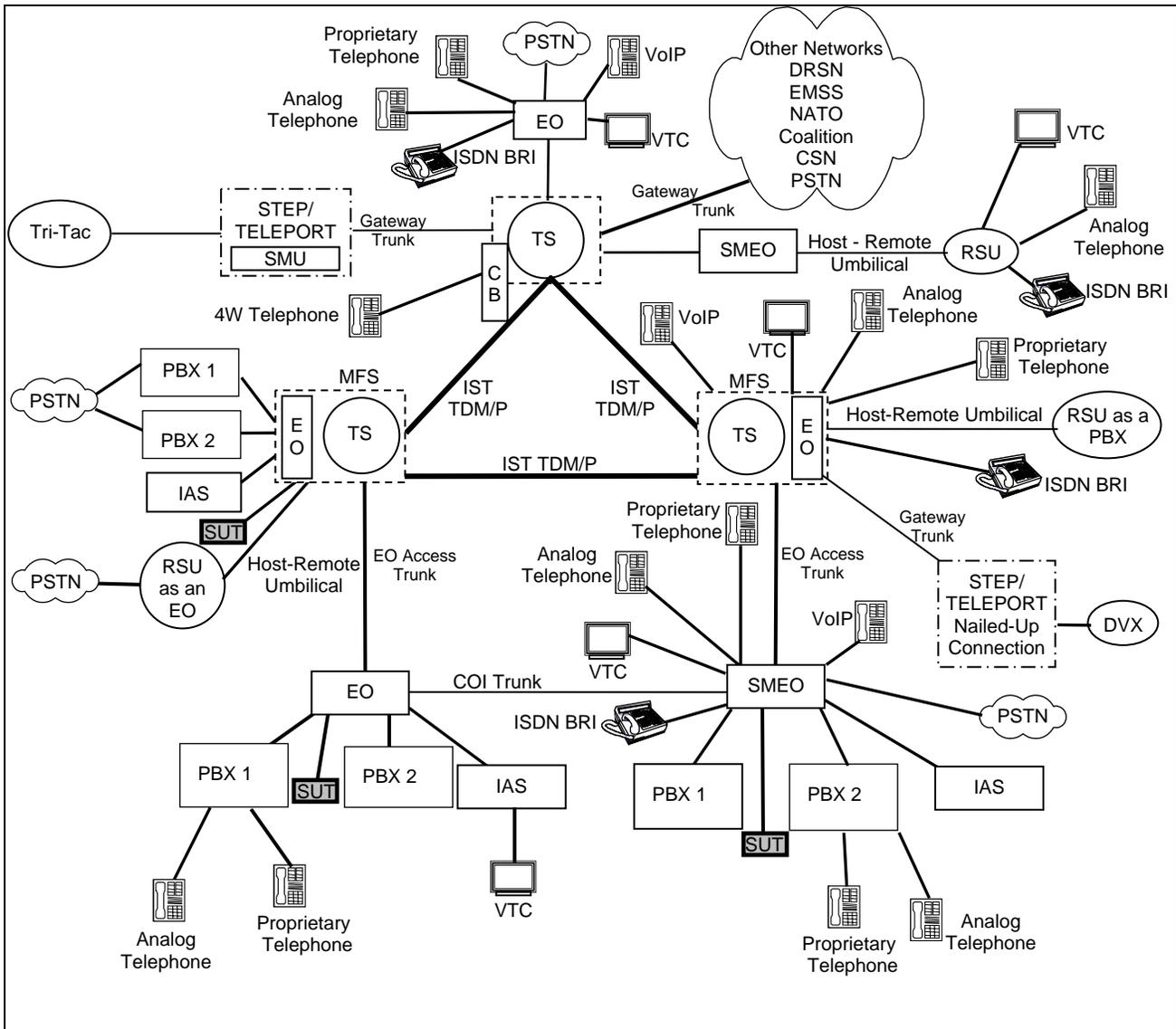
3. PROGRAM MANAGER. Lt Col Alain Jones, 2743 Defense Blvd., Anacostia Annex, DC 20373, e-mail: ALJones@whmo.mil.

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

5. SYSTEM UNDER TEST DESCRIPTION. The SUT is a Personal Computer (PC)-based platform, which emulates the NT4X09 Meridian Services Attendant Console (MSAC) hard console for the Nortel Communication Server (CS)2100 and Meridian Switching Load (MSL)-100 digital switching systems. The SUT can be used in either a single- or multiple-console configuration, with or in lieu of the MSAC console. The SUT PC includes the BOSS software and phone server software running on the Windows XP Professional Operating System. The SUT also includes an adjunct component called the BOSS Console, which connects the switch, an operator headset, and the operator PC. The SUT features include:

- answering, parking, holding, and transferring calls.
- position busy, end-to-end signaling, busy verification, and display of queued calls.
- call forwarding, do not disturb, serial calls, trouble key, and trunk access control.
- call-handling, control, and security features.
- set of screen and web-based applications including directory services, paging, messaging, and on-call scheduling.

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



LEGEND:

4W	- 4-Wire	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	SMEO	- Small End Office
DSN	- Defense Switched Network	SMU	- Switched Multiplex Unit
DVX	- Deployable Voice Exchange	STEP	- Standardized Tactical Entry Point
EMSS	- Enhanced Mobile Satellite System	SUT	- System Under Test
EO	- End Office	TDM/P	- Time Division Multiplex/Packetized
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
NATO	- North Atlantic Treaty Organization		- System Under Test

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
Nortel Analog Proprietary (See note)	Yes	Yes	Precedence and Preemption (R)	Yes	2.2.1
			Call Display (R)	Yes	2.2.2
			Class of Service Override (R)	Yes	2.2.3
			Busy Override and Busy Verification (R)	Yes	2.2.4
			Night Service (R)	Yes	2.2.5
			Automatic Recall of Attendant (R)	Yes	2.2.6
			Calls in Queue to the Attendant (R)	Yes	2.2.7
LEGEND: APL - Approved Products List CS - Communication Server DSN - Defense Switched Network MSAC - Meridian Services Attendant Console MSL - Meridian Switching Load R - Required SUT - System Under Test UCR - Unified Capabilities Requirements NOTE: This interface is certified with the SUT in either a single- or multiple-console configuration, with or in lieu of the MSAC console. The SUT certified for joint use within the DSN specifically with the Nortel CS2100 and MSL-100 Digital Switching Systems on the DSN APL.					

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 configuration depicted in figure 2-2.

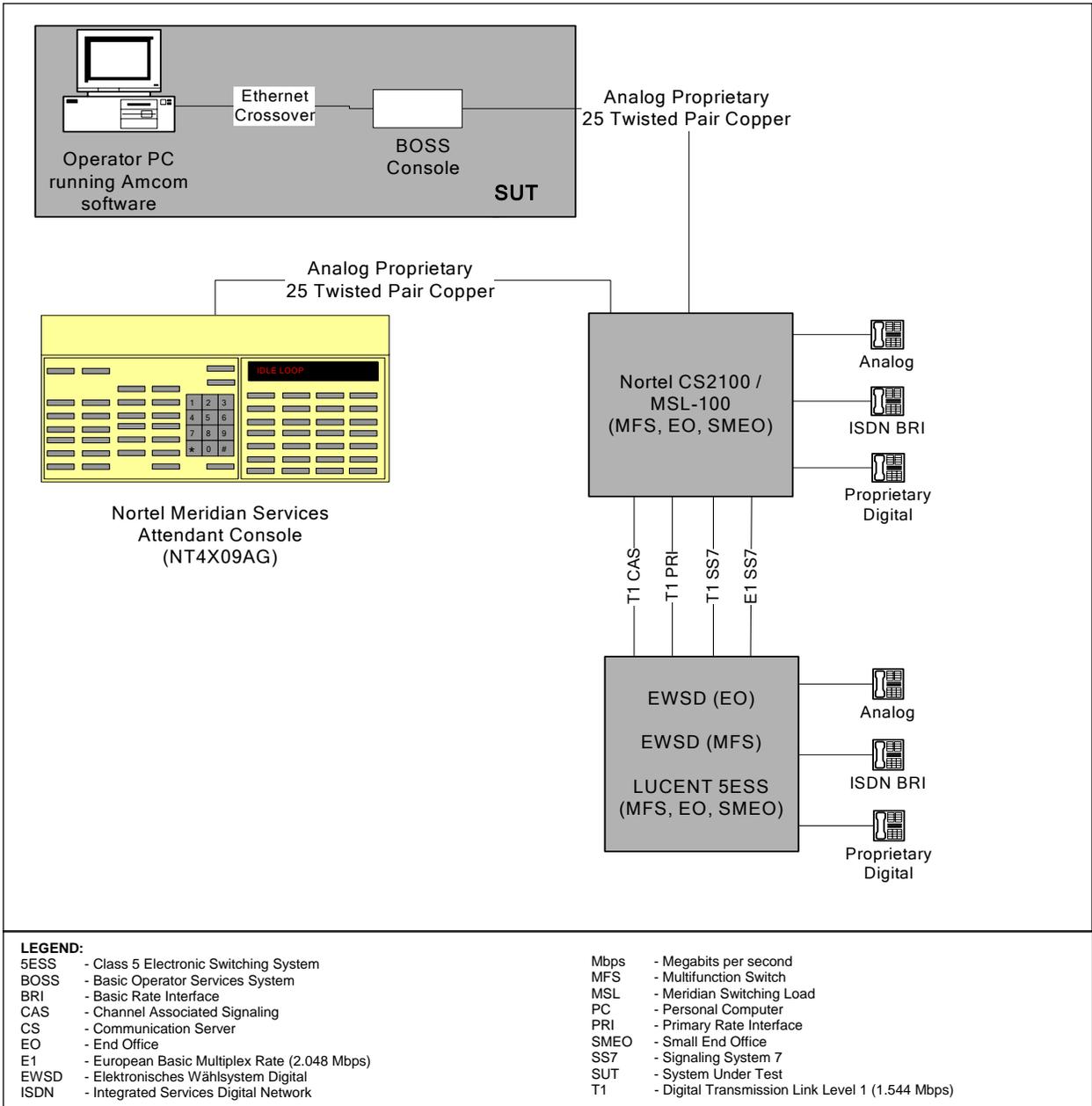


Figure 2-2. Test Configuration

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. Table 2-2 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 the Nortel CS2100 and MSL-100 switching systems listed on the DSN Approved Products List (APL) that offer the same certified interfaces.

Table 2-2. Tested System Configurations

System Name	Hardware/Software Release		
Nortel CS2100	SE08		
Siemens EWSD	Version 19d with Patch Set 46		
Lucent 5ESS	5E16.2, Software Update 06-0002		
Nortel Meridian Services Attendant Console	NT4X09AG		
SUT Release 4.0.6	Component	Application/Software	
	Hewlett-Packard Compaq PC: Pentium 4 Processor 2.66 Gigahertz, 256 Megabytes RAM, Microsoft Windows XP- Professional with SP 2	Amcom Software Smart Console	Product Version 4.0.0.0, File Number 4.0.5.8
		Amcom Software Phone Server	Product Version 4.0.6.10, File Number 4.1.8.7
		TAPI Service Provider (TSP)	Product Version 4.0.0.0, File Number 4.0.1.8
	BOSS Console	Version 1.0, Revision B	
LEGEND: 5ESS - Class 5 Electronic Switching System BOSS - Basic Operator Services System CS - Communication Server EWSD - Elektronisches Wählsystem Digital PC - Personal Computer RAM - Random Access Memory SE - Succession Enterprise SP - Service Pack SUT - System Under Test TAPI - Telephony Application Programming Interface			

10. TEST LIMITATIONS. None.

11. TEST RESULTS

(1) Precedence and Preemption (UCR Paragraph 2.2.1). The SUT successfully met the requirements for Multi-Level Precedence and Preemption (MLPP) as described in section 3 of reference (c).

(2) Call Display (UCR Paragraph 2.2.2). The SUT provided a visual display of the calling number, Class of Service (CoS) and precedence level for incoming direct-dialed calls and diverted calls to the attendant.

(3) CoS Override (UCR paragraph 2.2.3). The SUT provided the capability to override any CoS (calling area or precedence) of the calling party on a call-by-call basis.

(4) Busy Override and Busy Verification (UCR paragraph 2.2.4). The SUT meets the following Functional Requirements for busy override and busy verification:

(a) The SUT successfully demonstrated the capability to override a busy line condition. If the called line being verified was busy, off-hook supervision was given to the attendant performing the busy verification.

(b) The SUT successfully demonstrated the capability to enter an existing busy line to inform the user of an incoming call. An override tone was provided to the busy line prior to the attendant entering the conversation, and the tone was repeated periodically as long as the attendant was connected.

(5) Night Service (UCR paragraph 2.2.5). The SUT successfully demonstrated the ability to route all calls normally directed to the console to a night service deflection. The night service deflection was a fixed or manually selected directory number.

(6) Automatic Recall of Attendant (UCR paragraph 2.2.6). When an attendant extended a call to a station that was busy or did not answer within a preset time, the extended party was automatically recalled to the console. If that console was busy, the recall was placed into the console queue; if the console was out of service, the recall was routed to another console.

(7) Calls in Queue to the Attendant (UCR paragraph 2.2.7). The SUT successfully demonstrated the capability to place calls in a waiting queue. Calls placed in queue to the attendant console were retrieved by the attendant in order of precedence level (FLASH-OVERRIDE first, ROUTINE last) and longest holding time. Calls in queue were not lost when a console was placed out of service or forwarded to night service deflection. When the console was placed out of service or forwarded to night service while calls were in queue, the console was capable of both of the following solutions:

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

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

b. Test Summary. The SUT emulates all the features and functions of the Nortel NT4X09 hard console. The SUT met the critical interoperability requirements for an attendant console set forth in reference (c) and is certified for joint use within the DSN specifically with the Nortel CS2100 and MSL-100 digital switching systems listed on the DSN APL.

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

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