



DEFENSE INFORMATION SYSTEMS AGENCY

P. O. BOX 549
FORT MEADE, MARYLAND 20755-0549

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

5 Nov 13

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Special Interoperability Test Certification of the Alcatel Lucent Government Solutions (LGS) 7710 Service Router (SR) and 7750 Customer Edge Router (CER) with Software Release 8.0.1

References: (a) Department of Defense Directive 4630.05, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004
(b) Department of Defense Instruction 8100.04, "DoD Unified Capabilities (UC)," 9 December 2010
(c) through (f), see Enclosure 1

1. References (a) and (b) establish the Defense Information Security Agency (DISA) Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification.

2. The Alcatel Lucent Government Solutions (LGS) 7710 Service Router (SR) and 7750 Customer Edge Router (CER) with Software Release 8.0.1, hereinafter referred to as the System Under Test (SUT). The SUT meets all of its critical interoperability requirements for joint use within the Defense Information System Network (DISN) as a High Availability Customer Edge Router (CER). When a CER meets the High Availability CER requirements, it is also certified as a Medium Availability with System Quality Factors (SQF), Medium Availability without SQF, and Low Availability CER. The SUT met all four CER categories with both single and dual chassis configuration. The SUT met the critical interoperability requirements set forth in Reference (c), using test procedures derived from Reference (d). The SUT met the critical interoperability requirements for the following interfaces: Institute of Electrical and Electronics Engineers (IEEE) 802.3i (10BaseT), IEEE 802.3u (100BaseT), and IEEE 802.3ab (1000BaseT). In addition the 7710 does not support the 10 Gigabit Ethernet (GbE) interface while the 7750 supports all interfaces including the 10 GbE. Both the LGS 7710 and 7750 CERs are certified for interoperability certification with DISN, they are also certified for joint use. No other configurations, features, or functions, except those cited within this memorandum, are certified by JITC. This certification expires 8 February 2016 based upon the UC Approved Products List (APL) memorandum expiration, or upon changes that affect interoperability.

3. The extension of this certification is based upon Desktop Review (DTR) 1. The original certification, documented in Reference (e), is based on interoperability testing conducted by JITC, DISA adjudication of open test discrepancy reports, review of the vendor's Letters of Compliance (LoC), and DISA Information Assurance (IA) CA approval of the IA configuration. Interoperability testing of the SUT was conducted at JITC's Advanced Technologies Testbed

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(ATT) at Indian Head, Maryland, on 7 May 2012 through 15 Jun 2012. Review of the vendor's LoC was completed on 30 April 2012. The DISA CA provided a positive Recommendation on 11 October 2012 based on the security testing completed by DISA-led IA test teams and published in a separate report, Reference (f). This DTR was requested to include the patches for two Category II and one Category III Oracle 10g findings. JITC analysis determined these security fixes will have no negative impact on the interoperability certified features and functions. JITC determined this DTR would require an IA Verification and Validation (V&V) test. The DISA-led IA team conducted a V&V test on 2 May 2013 and validated the security fixes, documented in Reference (f). The DISA CA provided a positive recommendation on 18 September 2013 for this DTR. The security fixes are very low risk to the certified interoperability posture; therefore JITC approves this DTR without further interoperability testing.

4. The interface, Capability Requirement (CR) and Functional Requirement (FR), and component status of the SUT are listed in Tables 1 and 2. The threshold CR/FRs for CERs are established by Section 5.3.2.14 of Reference (c) and were used to evaluate the interoperability of the SUT. Enclosure 3 provides a detailed list of the interface, capability, and functional requirements.

Table 1. SUT Interface Interoperability Status

Interface	Critical	Reference (UCR 2008, Change 3)	Threshold CR/FR	Status	Remarks
ASLAN Interfaces					
10Base-X	Yes	5.3.2.4.2 5.3.2.14.9	1-3	Certified	The SUT met all critical CRs and FRs for the IEEE 802.3i (10BaseT) interface.
100Base-X	Yes	5.3.2.4.2 5.3.2.14.9	1-3	Certified	The SUT met all critical CRs and FRs for the IEEE 802.3u (100BaseT) interface.
1000Base-X	No	5.3.2.4.2 5.3.2.14.9	1-3	Certified	The SUT met all critical CRs and FRs for the IEEE 802.3ab (1000BaseT) and 802.3z (Gigabit Ethernet) interface.
WAN Interfaces					
10Base-X	Yes	5.3.2.4.2 5.3.2.14.9	1-3	Certified	The SUT met all critical CRs and FRs for the IEEE 802.3i (10BaseT) interface.
100Base-X	Yes	5.3.2.4.2 5.3.2.14.9	1-3	Certified	The SUT met all critical CRs and FRs for the IEEE 802.3u (100BaseT) interface.
1000Base-X	No	5.3.2.4.2 5.3.2.14.9	1-3	Certified	The SUT met all critical CRs and FRs for the IEEE 802.3z (Gigabit Ethernet) interface.
10GBase-X	No	5.3.2.14.9	1-3	Certified	The 7750 only supports the IEEE 802.3z (Gigabit Ethernet) interface and met all critical CRs and FRs for specified interface.
DS1	No	5.3.2.14.9	1-2	Not Tested	This interface was not tested and is not required.
DS3/T3	No	5.3.2.14.9	1-2	Not Tested	This interface was not tested and is not required.
E1	No	5.3.2.14.9	1-2	Not Tested	This interface was not tested and is not required.
E3	No	5.3.2.14.9	1-2	Not Tested	This interface was not tested and is not required.
EIA-530	No	5.3.2.14.9	1-2	Not Tested	This interface was not tested and is not required.
OC-X	No	5.3.2.14.9	1-2	Not Tested	This interface was not tested and is not required.
NM Interfaces					
1000Base-X	No	5.3.2.4.4 5.3.2.14.9	4	Certified	The SUT met all critical CRs and FRs for the IEEE 802.3ab (1000BaseT) interface. This was met by the vendor's LoC.

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Table 1. SUT Interface Interoperability Status (continued)

LEGEND:			
802.3ab	1000BaseT Gbps Ethernet over twisted pair at 1 Gbps (125 Mbps)	EIA-530	Standard for 25-position interface for DTE and DCE employing serial binary data interchange
802.3i	10BaseT Mbps over twisted pair	FR	Functional Requirement
802.3u	Standard For Carrier Sense Multiple Access With Collision Detection At 100 Mbps	G	Gigabits
802.3z	1000BASE-X Gbit/s Ethernet over Fiber-Optic at 1 Gbit/s (125 MB/s)	Gbps	Gigabits per second
ASLAN	Assured Services Local Area Network	IEEE	Institute of Electrical and Electronics Engineers
CR	Capability Requirement	LoC	Letter of Compliance
DCE	Data Circuit-Terminating Equipment	Mbps	Megabits per second
DS1	Digital Signal Level 1 (1.544 Mbps)	NM	Network Management
DS3	Digital Signal Level 3	OC	Optical Carrier
DTE	Data Terminal Equipment	SUT	System Under Test
E1	European Digital Multiplex Rate (2.048 Mbps)	T3	Trunk 3 (44.736 Mbps, 672 voice channels)
EIA	Electronic Industries Alliance	UCR	Unified Capabilities Requirements
		WAN	Wide Area Network

Table 2. SUT CRs and FRs Status

CR/FR ID	Capability/Function	Applicability (See note 1.)	Reference (UCR 2008, Change 3)	Status	Remarks
1	Product Interface Requirements				
	Internal Interface Requirements	Required	5.3.2.4.1	Met	See note 2.
	External Physical Interfaces between Network Components	Required	5.3.2.4.2	Met	See note 2.
	IP Queue Control Capabilities	Required	5.3.2.17.3.4.2.12 para 1	Met	See note 2.
	DSCP	Required	5.3.3.3.2	Met	See note 2.
	VVoIP Per-Hop Behavior Requirements	Required	5.3.3.3.3	Met	See note 2.
	Traffic Conditioning Requirements	Required	5.3.3.3.4	Met	See note 2.
2	CER Requirements				
	Traffic Conditioning	Required	5.3.2.14.1	Met	See note 2.
	Differentiated Services Support	Required	5.3.2.14.2	Met	See note 2.
	Per Hop Behavior Support	Required	5.3.2.14.3	Met	See note 2.
	Interface to the LSC/MFSS for Traffic Conditioning	Conditional	5.3.2.14.4	N/A	The SUT does not support this feature and it is not required.
	Interface to the LSC/MFSS for Bandwidth Allocation	Conditional	5.3.2.14.5	N/A	The SUT does not support this feature and it is not required.
	Availability	Required	5.3.2.14.7	Met	The SUT met all critical CRs and FRs. The SUT met High Availability CER requirements. See note 3.
	Packet Transit Time	Required	5.3.2.14.8	Met	See note 2.
	CER Interfaces and Throughput Support	Required	5.3.2.14.9	Met	See note 2.
	Assured VVoIP Latency	Required	5.3.3.4.1	Met	See notes 2 and 4.
	Assured VVoIP CE Latency	Required	5.3.3.4.3	Met	See notes 2 and 4.
	Assured VVoIP CER-to-CER Latency	Required	5.3.3.4.5	Met	See notes 2 and 4.
	Assured VVoIP CER-to-CER Jitter	Required	5.3.3.5.3	Met	See notes 2 and 4.
Assured VVoIP CE Jitter	Required	5.3.3.5.4	Met	See notes 2 and 4.	

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Table 2. SUT CRs and FRs Status (continued)

CR/FR ID	Capability/Function	Applicability (See note 1.)	Reference (UCR 2008, Change 3)	Status	Remarks
2 (cont)	CER Requirements				
	Assured VVoIP CER-to-CER Packet Loss	Required	5.3.3.6.3	Met	See notes 2 and 4.
	Assured VVoIP CE Packet Loss	Required	5.3.3.6.4	Met	See notes 2 and 4.
	End-to-End Availability	Required	5.3.3.12.1	Met	See notes 2 and 4.
	Availability Design Factors	Required	5.3.3.12.2	Met	See notes 2 and 4.
	Product Quality Factors	Required	5.3.3.12.3	Met	See notes 2 and 4.
	Layer 1 – Physical Layer	Required	5.3.3.12.4.1	Met	See notes 2 and 4.
	Layer 2 – Data Link Layer	Required	5.3.3.12.4.2	Met	See notes 2 and 4.
	Provisioning	Required	5.3.3.13	Met	See notes 2 and 4.
	IP Routing Protocols	Required	5.3.3.14	Met	The SUT met this requirement with Static Routing, BGP-4, IS-IS, OSPFv2, OSPFv3, and VRRP.
Voice Grade of Service	Required	5.3.3.15	Met	See notes 2 and 4.	
Survivability	Required	5.3.3.16	Not Tested	See note 5.	
3	IPv6 Requirements				
	IPv6	Required	5.3.3.10	Partially -Met	See notes 6 and 7.
	Product Requirements	Required	5.3.5.4	Partially -Met	The SUT met all critical CRs and FRs with the following minor exceptions: The SUT does not support or partially supports following sub-sections 5.3.5.4(1.4), 5.3.5.4.5.2(11.9), 5.3.5.4.8(15.1), and 5.3.5.4.9(22) through 5.3.5.4.9(22.21). See note 6. The SUT does not support or partially supports following RFCs. RFC2473, 2784, 4552, 5340, and 4213. See note 7.
4	NM Requirements				
	VVoIP NMS Interface Requirements	Required	5.3.2.4.4	Met	The SUT met all critical CRs and FRs for the 10/100/1000BaseT interfaces. This was met by vendor's LoC.
	NM Requirements for CERs	Required	5.3.2.18.1	Met	The SUT met all critical CRs and FRs for the 10/100/1000BaseT interfaces. This was met by vendor's LoC.
	NM	Required	5.3.2.14.6	Met	The SUT met all critical CRs and FRs for the 10/100/1000BaseT interfaces. This was met by vendor's LoC.

Table 2. SUT CRs and FRs Status (continued)

NOTES:			
1. The annotation of 'required' refers to a high-level requirement category. The applicability of each sub-requirement is provided in Enclosure 3.			
2. The SUT met all the individual Requirements for the UCR Section.			
3. If a CER meets the High Availability CER requirements, it meets all of the lesser requirements for Medium Availability with and without SQF and Low Availability. The SUT meets the High Availability with a single-chassis and dual-chassis configurations.			
4. This requirement was verified in an operational emulated environment. To meet E2E requirements, the SUT must be deployed IAW its deployment guide and the engineering guidelines provided in UCR 2008, Change 3, section 5.3.3.			
5. This is a non-testable E2E engineering requirement which states that no more than 15 percent of the B/P/C/Ss shall be affected by any outage in the network. This includes issues such as overtaxing of processing capacity, link failure, and redundancy failover glitches. However, all of the E2E voice, video, and data services performance requirements were met by the SUT when included within network structure.			
6. The sponsor submitted an IPv6 waiver request with the following noted discrepancy: The SUT does not support or partially supports following UCR sub-sections 5.3.5.4(1.4), 5.3.5.4.5.2(11.9), 5.3.5.4.8(15.1), and 5.3.5.4.9(22) through 5.3.5.4.9(22.21). DISA CIO approved the waiver on 8 February 2013 with the vendor POA&M stating this will be supported by 12 June 2014.			
7. The sponsor submitted an IPv6 waiver request with the following noted discrepancy: The SUT does not support or partially supports RFC2473, 2784, 4552, 5340, and 4213. DISA CIO approved the waiver on 8 February 2013 with the vendor POA&M stating this will be supported by 12 June 2014.			
LEGEND:			
BGP	Border Gateway Protocol	LoC	Letters of Compliance
B/P/C/S	Base/Post/Camp/Station	LSC	Local Session Controller
CE	Customer Edge	MFSS	Multifunction Softswitch
CER	Customer Edge Router	N/A	Not Applicable
CIO	Chief Information Officer	NM	Network Management
CR	Capability Requirement	NMS	Network Management System
DSCP	Differentiated Services Code Point	para	paragraph
DISA	Defense Information Systems Agency	POA&M	Plan of Actions and Milestones
E2E	End-to-End	RFC	Request for Comments
FR	Functional Requirement	OSPF	Open Shortest Path First
IAW	in accordance with	SQF	System Quality Factors
ID	Identification	SUT	System Under Test
IP	Internet Protocol	UCR	Unified Capabilities Requirements
IPv6	Internet Protocol version 6	VRRP	Virtual Router Redundancy Protocol
IS-IS	Intermediate System-Intermediate System	VVoIP	Voice and Video over Internet Protocol
JITC	Joint Interoperability Test Command		

5. In accordance with the Program Manager's request, JITC did not develop a detailed test report. JITC distributes interoperability information via the JITC Electronic Report Distribution 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, which .mil/.gov users can access 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 at <http://jit.fhu.disa.mil> (NIPRNet). Information related to Approved Products List (APL) testing is available on the DISA APL Testing and Certification website located at <http://www.disa.mil/Services/Network-Services/UCCO>. All associated test information is available on the DISA Unified Capability Certification Office APL Integrated Tracking System (APLITS) website located at <https://aplits.disa.mil>.

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6. JITC testing point of contact is Mr. Son Pham, commercial (301) 743-4258. His e-mail address is Son.m.Pham2.civ@mail.mil: mailing address: 3341 Strauss Avenue, Suite 236, Indian Head, MD 20640-5149. The UCCO Tracking Number (TN) is 1209401.

FOR THE COMMANDER:



for RICHARD A. MEADOR
Chief
Battlespace Communications Portfolio

3 Enclosures a/s

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US Marine Corps, MARCORSYSCOM, SIAT, A&CE Division

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Defense Information Systems Agency, TEMC

DIA, Office of the Acquisition Executive

NSG Interoperability Assessment Team

DOT&E, Netcentric Systems and Naval Warfare

Medical Health Systems, JMISIV&V

ADDITIONAL REFERENCES

- (c) Office of the Assistant Secretary of Defense, "Department of Defense Unified Capabilities Requirements 2008, Change 3," September 2011
- (d) Joint Interoperability Test Command, "Unified Capabilities Test Plan (UCTP)," 3 November 2011
- (e) Joint Interoperability Test Command, Memo, JTE, "Special Interoperability Test Certification of the Alcatel Lucent Government Solutions (LGS) 7710 Service Router (SR) and 7750 Customer Edge Router (CER) with Software Release 8.0.1," 18 March 2013
- (f) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of LGS 7710 and 7750 Software Release 8.0.1 (Tracking Number 1209401)," 19 September 2012