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IN REPLY REFER TO: Joint Interoperability Test Command (JTE) **18 Apr 12**

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Special Interoperability Test Certification of the Avaya Ethernet Routing Switch (ERS)8600 with Release 7.1.0.100_B068

References: (a) DoD Directive 4630.05, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004
(b) CJCSI 6212.01E, "Interoperability and Supportability of Information Technology and National Security Systems," 15 December 2008
(c) through (e), see Enclosure

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

2. The Avaya ERS8600 with Release 7.1.0.100_B068 is hereinafter referred to as the System Under Test (SUT). The SUT was originally certified as Assured Services Local Area Network (ASLAN) Core, Distribution, and Layer 2/Layer 3 Access switch (TN 1108901), Reference (c). The vendor submitted a Desktop Review (DTR) to include the 8834XG Routing Switch Module/Line Card. JITC conducted testing using product requirements derived from the Unified Capabilities Requirements (UCR), Reference (d) and test procedures, Reference (e). The SUT's certification status will be evaluated during operational deployment. Any new discrepancy noted in the operational environment will be evaluated for impact on the existing certification. These discrepancies will be adjudicated to the satisfaction of Defense Information Systems Agency (DISA) via a vendor Plan of Action & Milestones (PoAM), which will address all new critical Test Discrepancy Reports (TDRs) within 120 days of identification. JITC does not certify any other configurations, features, or functions, except those cited in this memorandum, or authorized by the Program Management Office. This certification expires upon changes that affect interoperability, but no later than three years from 13 December 2011, which is the date the DISA Certifying Authority (CA) provided a positive recommendation.

3. JITC approves the extension of this certification for DTR 1. Approval is based on comparison of the 8834XG Routing Switch Module/Line Card to the originally tested and certified 8634XGRS Routing Switch Module/Line Card. JITC analysis determined that the 8834XG is functionally identical to the 8634XGRS but replaces manufacturer-discontinued memory modules and provides a less expensive Route Switch Processor, both of which will not change the interoperability characteristics that were validated with the 8634XGRS card. Therefore, no additional testing was required. The Information Assurance (IA) posture of the SUT was not changed and, therefore, the original DISA IA CA approval applies to the extension of this certification.

4. Table 1 provides a Unified Capabilities (UC) Approved Products List (APL) product summary. Table 2 provides the SUT interface interoperability status and Table 3 provides the Capability Requirements (CR) and Functional Requirements (FR) status. The threshold CR/FRs for ASLAN components are established by Section 5.3.a of Reference (d) and were used to evaluate the interoperability of the SUT.

Table 1. UC APL Product Summary

Component	Release	Sub-Component	Certification Applicability		
			Core	Distribution	Access
Avaya ERS8600	7.1.0.100_B068	8692SF	Yes	Yes	Yes
		8648GBRS			
		8648GTRS			
		8612XLRS-J[1]			
		8612XLRS[2]			
		8634XGRS[3] / 8834XG[3]			
		8848GB[4]			
		8848GT[4]			
		8005DC			
		8005AC			
		8010			
		8010CO[5]			
		8006			

NOTES:
1. This module offers 12-10G Ethernet ports; however, to meet the Core and Distribution layers 50% non-blocking requirement it is certified with only 6 ports (odd ports only), restricted in software, and with a vendor fabricated face plate exposing only the odd ports. Furthermore, to meet the one-to-one failover requirement with this module the SUT requires dual processors/switch fabrics per 8600 chassis and two chassis at the Core or Distribution layers. This requirement is met via a chassis failover for a switch fabric or total box failure, and as such there is no requirement to deploy more than 2 chassis to meet this requirement. The dual switch configuration can either be in the same geographic location, or, if the cable plant supports it, geographically separated. Any dual switch configuration deployment is acceptable as long as the 5 second failover requirement is met.
2. This module fails to meet the Core and Distribution layers 50% non-blocking requirement but meets the Access layers 12.5% non-blocking requirement. Therefore, it is certified as an access interface only.
3. The 10G ports on this module, when configured as a SMLT IST interface, experienced excessive packet loss. Therefore, when configured in the sponsor-requested homogeneous network using SMLT, the 10G ports on this module are certified as access interfaces only. The 8834XG is included in the product summary based on this DTR.
4. The SUT was not tested with these modules; however, they were tested with the ERS8800. JITC analysis determined these cards are interoperable with both systems. Therefore, these modules are also certified with the SUT.
5. This chassis was not tested however, JITC determined that it is similar to the 8010 chassis for certification purposes and it is also certified for joint use.

LEGEND:

APL	Approved Products List	IST	Interswitch Trunk
ASIC	Application-Specific Integrated Circuit	JITC	Joint Interoperability Test Command
DTR	Desktop Review	SMLT	Split Multi-Link Trunk
ERS	Ethernet Routing Switch	SUT	System Under Test
G	Gig	UC	Unified Capabilities
Gbps	Gigabit per second		

Table 2. SUT Interface Interoperability Status

Interface	Applicability			UCR 2008, Change 2 Reference	Threshold CR/FR[1]	Status	Remarks
	Co	D	A				
10Base-X	C	C	C[2]	5.3.1.3.1	1-6	Met[3]	SUT met CRs and FRs with the following IEEE Standard: 802.3i (10BaseT)
100Base-X	R	R	C[2]	5.3.1.3.1	1-6	Met	SUT met CRs and FRs with the following IEEE Standard: 802.3u (100Base-FX, 100BaseT)
1000Base-X	R	R	C[2]	5.3.1.3.1	1-6	Met	SUT met CR and FRs with the following IEEE Standards: 802.3ab (1000BaseT), 802.3z (1000Base-SX, 1000Base-LX)
10000Base-X	C	C	C	5.3.1.3.1	1-6	Met	SUT met CRs and FRs with the following IEEE Standard: 802.3ae (10GBase-SR, 10GBase-LR)
802.11a	C	C	C	5.3.1.3.1/5.3.1.7.2	1-6	Not Tested[4]	
802.11b	C	C	C	5.3.1.3.1/5.3.1.7.2	1-6	Not Tested[4]	
802.11g	C	C	C	5.3.1.3.1/5.3.1.7.2	1-6	Not Tested[4]	
802.11n	C	C	C	5.3.1.3.1/5.3.1.7.2	1-6	Not Tested[4]	
802.16	C	C	C	5.3.1.3.1/5.3.1.7.2	1-6	Not Tested[4]	

NOTES:
1. The SUT high-level CR and FR ID numbers depicted in the Threshold CRs/FRs column can be cross-referenced in Table 3. These high-level CR/FR requirements refer to a detailed list of requirements provided in Reference (c).
2. Core and Distribution products must minimally support 100Base-X (802.3u) and 1000Base-X (802.3z). Access products must minimally support one of the following standards: 802.3i (10BaseT), 802.3j (10BaseF), 802.3u (100BaseT/F), 802.3z (1000BaseF), or 802.3ab (1000BaseT). Other rates and standards may be provided as conditional interfaces.
3. JITC tested all these interfaces with the exception of the 10BaseT interface. The JITC analysis determined the 10BaseT interface is low risk for certification based on the vendor's LoC to comply with IEEE 802.3i standard and the testing data collected at all other data rates.
4. The SUT does not support this interface. This interface is not required for a Core, distribution, or access switch.

LEGEND:

A	Access	IEEE	Institute Of Electrical And Electronics Engineers, Inc.
C	Conditional	JITC	Joint Interoperability Test Command
Co	Core	LoC	Letter of Compliance
CR	Capability Requirement	R	Required
D	Distribution	SUT	System Under Test
FR	Functional Requirement	UCR	Unified Capabilities Requirements
ID	Identification		

Table 3. SUT CRs and FR Status

CR/FR ID	Capability/Function	Applicability[1]	UCR Reference	Status	Remarks
1	**General Performance Parameters**				
	Performance Parameters	Required	5.3.1.3	Met	
	Port Interface Rates	Required	5.3.1.3.1	Met	
	Port Parameter Requirements	Required	5.3.1.3.2	Met	
	Class of Service Markings	Required	5.3.1.3.3	Partially Met[2]	
	VLAN Capabilities	Required	5.3.1.3.4	Met	
	Protocols	Required	5.3.1.3.5	Met	
	QoS Features	Required	5.3.1.3.6	Met	
	Network Monitoring	Required	5.3.1.3.7	Met	
	Security	Required	5.3.1.3.8	Met[3]	
2	**E2E Performance Requirements**				
	Voice Services	Required	5.3.1.4.1	Met[4]	
	Video services	Required	5.3.1.4.2	Met[4]	
	Data services	Required	5.3.1.4.3	Met[4]	
3	**NM Requirements**				
	Configuration Control	Required	5.3.1.6.1	Met	
	Operational Changes	Required	5.3.1.6.2	Met	
	Performance Monitoring	Required	5.3.1.6.3	Met	
	Alarms	Required	5.3.1.6.4	Met	
	Reporting	Required	5.3.1.6.5	Met	
4	**Engineering Requirements**				
	Physical Media	Required	5.3.1.7.1	Met[5]	
	Traffic Engineering	Required	5.3.1.7.3	Met[5]	Configured with four queues, each set to 25% of total bandwidth.
	Availability	Required	5.3.1.7.6	Met	100% availability during test.
	Redundancy	Required	5.3.1.7.7	Met	
5	**MPLS**				
	MPLS Requirements	Conditional	5.3.1.8.4.1	Not Tested[6]	
	MPLS VPN Augmentation to VLANs	Conditional	5.3.1.8.4.2	Not Tested[6]	
6	**IPv6 Requirements**				
	Product Requirements	Required	5.3.5.4	Partially Met[7]	

Table 3. SUT CRs and FR Status (continued)

NOTES:
1. The annotation of 'required' refers to a high-level requirement category. The applicability of each sub-requirement is provided in Reference (c). The system under test does not need to provide conditional requirements. However, if a capability is provided, it must function according to the specified requirements.
2. Met all requirements with the following exception: The SUT is unable to reassign any DSCP IPv6 marking. This discrepancy was adjudicated by DISA on 30 November 2011 as having a minor operational impact based on vendor's submission of a POA&M to fix with the next software release in December 2013.
3. Refers to IA requirements for UCR 2008, Change 2, Section 5.4. Detailed IA requirements are included in Reference (f).
4. This requirement was verified and met using simulated voice, video, and data traffic in an operational emulated environment to meet E2E requirements. The SUT must be deployed in accordance with deployment guide and engineering guidelines provided in UCR Change 2, paragraph 5.3.1.4.
5. This requirement was met with the following stipulations: It is the site's responsibility to configure the SUT in a manner which meets the engineering requirements listed in Reference (c), Enclosure 2, Section 11.2 d., and that does not create a single point of failure which could impact more than 96 C2 users.
6. MPLS was not tested and is not certified for joint use. MPLS is conditional and; therefore, not required for a Core, Distribution, or Access switch.
7. The SUT met the IPv6 requirements with the following exception: The SUT did not meet RFCs 4007 and 4552. This discrepancy was adjudicated by DISA on 30 November 2011 as having a minor operational impact with vendor's POA&M to fix by 1 April 2012.

LEGEND:

C2	Command and Control	LoC	Letter of Compliance
CR	Capability Requirement	MPLS	Multiprotocol Label Switching
DISA	Defense Information Systems Agency	NM	Network Management
DISR	Department of Defense Information Technology Standards Registry	OSPFv3	Open Shortest Path First version 3
		POA&M	Plan of Action and Milestones
DSCP	Differentiated Services Code Point	QoS	Quality of Service
E2E	End-to-End	RFC	Request For Comment
FR	Functional Requirement	SUT	System Under Test
IA	Information Assurance	UCR	Unified Capabilities Requirements
ID	Identification	VLAN	Virtual Local Area Network
IPv6	Internet Protocol version 6	VPN	Virtual Private Network

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). Information related to DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at http://jitc.fhu.disa.mil/tssi. All associated data is available on the Defense Information Systems Agency Unified Capability Coordination Office (UCCO) website located at http://www.disa.mil/ucco/.

6. The JITC point of contact is Capt Stéphane Arsenault, DSN 879-5269, commercial (520) 538-5269, FAX DSN 879-4347, or e-mail to Stephane.Arsenault@disa.mil. The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The Tracking Number for the SUT is 1108901.

FOR THE COMMANDER:

Enclosure a/s

for BRADLEY A. CLARK
Chief
Battlespace Communications Portfolio

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National Security Agency, DT
Defense Information Systems Agency, TEMC
Office of Assistant Secretary of Defense (NII)/DoD CIO
U.S. Joint Forces Command, Net-Centric Integration, Communication, and Capabilities Division, J68

ADDITIONAL REFERENCES

(c) Joint Interoperability Test Command, Memo, JTE, "Special Interoperability Test Certification of the Avaya Ethernet Routing Switch (ERS)8600 with Release 7.1.0.100_B068," 16 December 2011
(d) Office of the Assistant Secretary of Defense, "Department of Defense Unified Capabilities Requirements 2008, Change 2," 31 December 2010
(e) Joint Interoperability Test Command, "ASLAN Component Test Plan (UCTP)," November 2010
(f) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Avaya Ethernet Routing Switch (ERS) 8600 Series 7.1.0.100 (Tracking Number 1108901)," Draft