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IN REPLY REFER TO: Joint Interoperability Test Command (JTE) **4 Sep 15**

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Joint Interoperability Certification of the Spok (Formerly Amcom) Software, Inc. Computer Telephony Integration (CTI) Basic Operator Services System (BOSS) Workstation and CTI Alcatel-Lucent 8520 and 8528T Integrated Services Digital Network (ISDN) Voice Terminal Hard Consoles with Release 4.9-0

References: (a) Department of Defense Instruction 8100.04, "DoD Unified Capabilities (UC)," 9 December 2010
(b) Office of the Department of Defense Chief Information Officer, "Department of Defense Unified Capabilities Requirements 2013, Errata 1," 1 July 2013
(c) through (f), see Enclosure

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

2. The Spok (formerly Amcom) Software, Inc. CTI BOSS Workstation and CTI Alcatel-Lucent 8520 and 8528T ISDN Voice Terminal Hard Consoles with Release 4.9-0 are hereinafter referred to as the System Under Test (SUT). The SUT meets all of its critical interoperability requirements and is therefore certified for joint use within the Defense Information System Network (DISN) as an Attendant Console. The BOSS workstation is certified for use specifically with any Avaya Communication Server (CS) 2100 that is or has been on the Unified Capabilities (UC) Approved Product List (APL). The Alcatel-Lucent 8520 and 8528T ISDN Voice Terminal Hard Consoles are certified with any Alcatel-Lucent Class 5 Electronic Switching System (5ESS) that is or has been on the UC APL. The SUT met the critical interoperability requirements set forth in Reference (c), using test procedures derived from Reference (d). No other configurations, features, or functions, except those cited within this memorandum, are certified by JITC. This certification expires upon changes that could affect interoperability, but no later than three years the specified expiration date in the UC APL memorandum.

3. The extension of this certification is based upon Desktop Review (DTR) 2. The original certification, documented in Reference (e), is based on interoperability testing conducted by JITC, review of the vendor's Letters of Compliance (LoC), and DISA Certifying Authority (CA) Recommendation of the Information Assurance (IA) configuration. Interoperability testing was conducted by JITC, Fort Huachuca, Arizona, from 10 through 20 September 2012. Review of the vendor's LoC was completed on 5 September 2012. The DISA CA provided a positive Recommendation on 20 December 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

demonstrate fixes for the IA Plan of Action and Milestones (POA&Ms). This DTR was requested to extend the interoperability certification for an additional three years. JITC reviewed the system documentation and UCR requirements. JITC analysis determined there was no change to the existing certified hardware and software. There are no open test discrepancy reports for the SUT. In addition, there are no changes to the requirements in UCR 2013 Errata 1 from UCR 2008 Change 3, which include the original SUT certification requirements. Table 1 depicts the UC APL product summary. The IA posture has not changed. Therefore, JITC approves this DTR.

Table 1. Tested System Configurations

Amcom Software, Inc. CTI BOSS Workstation and CTI Alcatel-Lucent 8520 and 8528T ISDN Voice Terminal Hard Consoles, Release 5.2-0 (SUT) (See note 1.)	
Hardware	**Software Release**
Vormetric Hardware Security Manager	Linux CentOS5 based closed system
AmcomDB Primary Database & e.Notify Phone Lines Server (Dell R710)	RedHat Linux Enterprise Linux Server Release 5.8 Oracle Enterprise Database 11gR2, Oracle Enterprise Application Server
AmcomSB Secondary Database Server (Dell R710)	RedHat Linux Enterprise Linux Server Release 5.8 Oracle Enterprise Database 11gR2, Oracle Enterprise Application Server
Amcom CTI Workstation PC (Site-provided Dell OptiPlex 760) (See note.)	Windows 7 Oracle Client 11gR2 11.2.0.3.0 CTI version 4.9-0
BOSS Console	Version 1.0, Revision B
Management Workstation (site-provided)	See note 2.

NOTES:
1. The SUT was updated from software from Release 4.9-0 to 5.2-0 with this DTR to fix IA POA&Ms.
2. The minimum requirements for a management workstation are a STIG-compliant, CAC-enabled computer with Microsoft Vista or Windows 7 operating system 2GB RAM, 40GB hard drive, Pentium 4 or higher.

LEGEND:

5ESS	Class 5 Electronic Switching System	ISDN	Integrated Services Digital Network
BOSS	Basic Operator Services System	PC	Personal Computer
CAC	Common Access Card	POA&M	Plan of Action and Milestones
CTI	Computer Telephony Integration	RAM	Random Access Memory
DTR	Desktop Review	STIG	Security Technical Implementation Guide
GB	Gigabyte	SUT	System Under Test
IA	Information Assurance		

4. The interface, Capability Requirement (CR) and Functional Requirement (FR), and status of the SUT are listed in Tables 2 and 3. The threshold CR/FRs for Attendant Consoles are established by Section 5.3.2 of Reference (c) and were used to evaluate the interoperability of the SUT.

Table 2. SUT Interface Interoperability Status

Interface	Critical	UCR Reference	Threshold CR/FR (See note 1.)	Status
10Base-X	No	5.3.2.4.2	1-4	Certified (See note 2.)
100Base-X	No	5.3.2.4.2	1-4	Certified
1000Base-X	No	5.3.2.4.2	1-4	Certified
2-Wire Analog Proprietary	No	5.3.2.31.4.3.1	1, 2, 4	Not tested
T1 ISDN PRI NI 1/2	No	5.3.2.31.4.8	1, 2, 4	Not Tested
T1 Line Side Loop Start	No	(GR-506-CORE)	1, 2, 4	Not Tested

NOTES:
1. The annotation of 'required' refers to a high-level requirement category. The applicability of each sub-requirement is provided in Reference (e), Enclosure 3. The system under test does not need to provide conditional interfaces. However, if an interface is provided, it must function according to the specified requirements in order to be certified.
2. The SUT was tested with 10Base-X, but the vendor does not recommend its use due to the speed limitations. This is noted in the SUT deployment guide.

LEGEND:

CR	Capability Requirement	Mbps	Megabits per second
FR	Functional Requirement	NI 1/2	National ISDN Standard 1 or 2
GR	Generic Requirement	PRI	Primary Rate Interface
GR-506	LSSGR: Signaling for Analog Interfaces	SUT	System Under Test
IP	Internet Protocol	T1	Digital Transmission Link Level 1 (1.544 Mbps)
ISDN	Integrated Services Digital Network	UCR	Unified Capabilities Requirements
LSSGR	Local Access and Transport Area (LATA) Switching Systems Generic Requirements		

Table 3. SUT CRs and FRs Status

CR/FR ID	Capability/Function	Applicability (See note 1.)	UCR Reference	Status
1	**Product Interface Requirements**			
	Interfaces to LSC	Required	5.3.2.4.2	Not Tested (See note 2.)
2	**Attendant Console Requirements**			
	The attendant console shall be an EI that serves other EIs on the same LSC, MFSS, or WAN SS (when the WAN SS contains an internal LSC). In the MFSS case, the attendant station shall be an EI on the IP side of the MFSS (the SS) and shall serve other EIs on the IP side of the MFSS. Note: In the MFSS case, the RTS Attendant Console is not required to serve DSN EIs that are served by the TDM side of the MFSS (i.e., are served by the DSN MFS). This means that the attendant console is not required to bridge calls between the TDM and IP sides of the MFSS. For example, the attendant console is not required to bridge a call to or from a DSN EI on the MFS with another call to or from another DSN EI on the MFS.	Required	5.3.2.26	Not Tested (See note 2.)

Table 3. SUT CRs and FRs Status (continued)

CR/FR ID	Capability/Function	Applicability (See note 1.)	UCR Reference	Status
2	**Attendant Console Requirements (continued)**			
	The RTS Attendant Console shall interoperate with PBAS/ASAC as described in • Section 5.3.2.7.2.1, PBAS/ASAC Requirements • Section 5.3.2.2.2.3, ASAC – Open Loop • Section 5.3.4.10, Precedence and Preemption The console shall be able to initiate all levels of RTS precedence calls (i.e., ROUTINE through FLASH-OVERRIDE).	Required	5.3.2.26.1	Not Tested (See note 2.)
	The attendant console shall interoperate with MLPP	Required	5.3.2.26.1	Met
	When the attendant console receives a call at Precedence A and the attendant transfers the call to a destination at Precedence B, the resulting call should have the higher precedence between A and B.	Required	5.3.2.26.1	Met
	The attendant console shall provide a visual display of each precedence level and the calling number, for incoming direct dialed calls to the attendant, and diverted calls to the attendant (e.g., calls that reach the attendant through PCD). The AS-SIP trunks and T1.619A PRI trunks support delivery of precedence level and calling number information on incoming calls to LSCs. This means that the precedence level and the calling number should be available to the attendant console, for incoming calls that originate from outside of the LSC.	Required	5.3.2.26.2	Met
	If the LSC, MFSS, or WAN SS supports assignment of a CoS to an individual EI, then the attendant console also shall provide visual display of the calling EI's CoS, for incoming direct dialed calls to the attendant and diverted calls to the attendant. The AS-SIP trunks and T1.619A PRI trunks do not support delivery of CoS information on incoming calls to LSCs. This means that CoS information will not be available to the attendant console for incoming calls that originate from outside of the LSC. The CoS information may be available to the attendant console for calls that originate within the LSC. A similar situation also occurs for : a. Calls where the EI is served by an LSC, but the attendant console is served by a DSN EO or MFS, and b. Calls where the EI is served by a DSN EO, but the attendant console is served by an LSC, MFSS, or WAN SS. Because AS-SIP and T1.619A PRI trunks do not support delivery of CoS information, this information will not be available to DSN Attendant Consoles on calls from EIs, or to attendant consoles on calls from DSN EIs.	Conditional	5.3.2.26.2	Met
	If the LSC, MFSS, or WAN SS supports assignment of a CoS to an individual EI, then this appliance and the attendant console shall give the attendant the ability to override any incoming call's calling party CoS (based on calling area or precedence) on a call-by-call basis. The appliance and the attendant console shall also give the attendant the ability to override any diverting call's calling party CoS (based on calling area or precedence) on a call-by-call basis.	Conditional	5.3.2.26.3	Not Tested (See note 2.)

Table 3. SUT CRs and FRs Status (continued)

CR/FR ID	Capability/Function	Applicability (See note 1.)	UCR Reference	Status
2	**Attendant Console Requirements (continued)**			
	The appliance and the attendant console shall give the attendant the ability to verify and override a busy line condition. In commercial VoIP networks, attendant verification of a busy line is called Busy Line Verification (BLV), and attendant override of a busy line is called Emergency Interrupt. In the network, support for these BLV and Emergency Interrupt capabilities is • Required when the "busy line" is an UC EI served by the local UC appliance. • Conditional when the "busy line" is an UC EI served by a remote UC appliance. The condition here is that the Attendant's appliance, the remote appliance, and any intermediate appliances all have to support the SIP requirements for BLV and Emergency Interrupt signaling in RFC 3603. In RFC 3603, the "P-DCS-OSPS: BLV" header indicates an attendant's request for BLV, and the "P-DCS-OSPS: EI" header indicates an attendant's request for Emergency Interrupt.	Required	5.3.2.26.4	Met
	If the attendant uses BLV on a called line, and that called line (called EI) is busy, the appliance and the attendant console shall give an audible and visual "called line busy" indication back to the attendant. The appliance and attendant console shall also allow the attendant to request the Emergency Interrupt feature in this case.	Required	5.3.2.26.4	Met
	The appliance and the attendant console shall prevent an attendant from activating BLV or Emergency Interrupt to called lines and called numbers that are located in the commercial network (the PSTN).	Required	5.3.2.26.4	Met
	The appliance and the attendant console shall give the attendant the ability to use Emergency Interrupt to interrupt an existing call on a busy line, and inform the busy user of a new incoming call. The appliance shall provide an override tone to the busy user before the attendant enters the conversation, and they shall repeat the tone periodically for as long as the attendant is connected to the busy user.	Required	5.3.2.26.4	Met
	The appliance shall give selected destination EIs the ability to be exempt from Emergency Interrupt and attendant break-in. In particular, it shall be possible for the appliance to preclude the BLV and Emergency Interrupt services from being applied to selected destination EIs (e.g., EIs that provide secure voice service).	Required	5.3.2.26.4	Met
	The appliance and the attendant console shall have the ability to route all calls that are normally directed to the console to a separate night service deflection number. The night service deflection number shall be a fixed (preconfigured) or manually-selected DN.	Required	5.3.2.26.5	Met
	When an attendant redirects an incoming call to a destination station, and that station is either busy or does not answer the call within a preset time, the appliance and the attendant console shall ensure that calling party on the redirected call is recalled automatically to the console.	Required	5.3.2.26.6	Met
	In this case, the appliance shall ensure that that the "recalled" call is returned to the console that originally processed the call. If that console is busy, the appliance shall ensure that the "recalled" calls are placed into the queue for that console. But if that console is out of service, then the appliance shall ensure that the "recalled" call is routed to another console on that appliance, if another console is available.	Required	5.3.2.26.6	Met
	The appliance and the attendant console shall have the ability to place calls (both directed to the attendant and diverted to the attendant) into a waiting queue. The appliance and the attendant console shall ensure that calls placed in queue to the attendant are retrieved by the attendant in order of their precedence level (i.e., FLASHOVERRIDE first, ROUTINE last) and the longest holding time within that precedence level.	Required	5.3.2.26.7	Met

Table 3. SUT CRs and FRs Status (continued)

CR/FR ID	Capability/Function	Applicability (See note 1.)	UCR Reference	Status
	Attendant Console Requirements (continued)			
2	The appliance and the attendant console shall ensure that calls in the attendant queue are not lost when a console is placed out of service or has its calls forwarded to a night service deflection number. When the console is placed out of service or forwarded to night service while calls are in queue, the appliance and the console shall be capable of one of the following solutions to ensure that calls are not lost: 1. All the existing calls in the queue shall be forwarded first to a separate DN for the centralized attendant (i.e., a different attendant at a different attendant console), and then on to the night service DN (if the centralized attendant activated night service deflection). 2. All subsequent calls placed to the attendant console shall be forwarded first to the separate DN for the centralized attendant, and then on to the night service DN (if the centralized attendant activated night service deflection). For the existing calls in the queue, the attendant remains at the console and answers all these remaining calls (even though the attendant placed the console out of service or forwarded the console to night service deflection), thereby preventing any of the calls from being lost.	Required	5.3.2.26.7	Met
3	**IPv6 Requirements**			
	If the Attendant Console has an IP interface, the Attendant Console must be IPv6 capable. Use guidance in Table 5.3.5-4 for NA/SS	Required	5.3.5	Met (See note 3.)
4	**Information Assurance**			
	Security	Required	5.4	Met (See note 4.)

NOTES:
1. The annotation of 'required' refers to a high-level requirement category. The applicability of each sub-requirement is provided in Reference (e), Enclosure 3. The system under test does not need to provide features or capabilities defined by conditional requirements. However, if a capability is provided, it must function according to the specified requirements in order to be certified for that capability.
2. The SUT was tested and is certified with legacy Avaya CS2100 and Alcatel-Lucent 5ESS switches only; therefore, those requirements for LSC, WAN SS and MFSS do not apply.
3. Due to limitations in the test architecture IPv6 was unable to be tested across the network; however testing was conducted intra-enclave and compliance with IPv6 specifications was verified with vendor's LoC.
4. Information assurance testing is accomplished via DISA-led Information Assurance test teams and published in a separate report, Reference (f).

Table 3. SUT CRs and FRs Status (continued)

LEGEND:

5ESS	Class 5 Electronic Switching System	MFSS	Multifunction Soft Switch
ASAC	Assured Services Admission Control	MLPP	Multi-Level Precedence and Preemption
AS-SIP	Assured Services-Session Initiation Protocol	NA/SS	Network Appliances and Simple Servers
BLV	Busy Line Verification	PBAS	Precedence Based Assured Service
CoS	Class of Service	PCD	Precedence Call Diversion
CR	Capability Requirement	PRI	Primary Rate Interface
CS	Communication Server	PSTN	Public Switched Telephone Network
DN	Directory Number	RFC	Request for Comments
DSN	Defense Switched Network	RTS	Real Time Services
EI	End Instrument	SS	Soft Switch
EO	End Office	SS7	Signaling System 7
FR	Functional Requirement	SUT	System Under Test
ID	Identification	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
IP	Internet Protocol	TDM	Time Division Multiplexing
IPv6	Internet Protocol version 6	UC	Unified Capabilities
ISDN	Integrated Services Digital Network	UCR	Unified Capabilities Requirements
LSC	Local Session Controller	VoIP	Voice over Internet Protocol
MFS	Multifunction Switch	WAN SS	Wide Area Network Soft Switch

5. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Sensitive but Unclassified IP Data (formerly known as NIPRNet) e-mail. Interoperability status information is available via the JITC System Tracking Program (STP). STP is accessible by .mil/.gov users 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 https://jit.fhu.disa.mil/. Due to the sensitivity of the information, the Information Assurance Accreditation Package (IAAP) that contains the approved configuration and deployment guide must be requested directly from the Unified Capabilities Certification Office (UCCO), e-mail: disa.meade.ns.list.unified-capabilities-certification-office@mail.mil. All associated information is available on the DISA UCCO website located at http://www.disa.mil/Services/Network-Services/UCCO.

6. The JITC point of contact is Ms. Sibylle Gonzales, commercial telephone (520) 538-5483, DSN telephone 879-5483, FAX DSN 879-4347; e-mail address sibylle.j.gonzales.civ@mail.mil; mailing address Joint Interoperability Test Command, ATTN: JTE (Ms. Sibylle Gonzales) P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The UCCO tracking number for the SUT is 1216501.

FOR THE COMMANDER:

Enclosure a/s

for RIC HARRISON
Chief
Networks/Communications and UC Portfolio

JITC Memo, JTE, Extension of the Joint Interoperability Certification of the Spok (Formerly Amcom) Software, Inc. Computer Telephony Integration (CTI) Basic Operator Services System (BOSS) Workstation and CTI Alcatel-Lucent's 8520 and 8528T Integrated Services Digital Network (ISDN) Voice Terminal Hard Consoles with Release 4.9-0

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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, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006
(e) Joint Interoperability Test Command, JTE, Memo, "Joint Interoperability Certification of the Amcom Software, Inc. Computer Telephony Integration (CTI) Basic Operator Services System (BOSS) Workstation and CTI Alcatel-Lucent 8520 and 8528T Integrated Services Digital Network (ISDN) Voice Terminal Hard Consoles with Release 4.9-0," 10 January 2013
(f) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Amcom Smart Suite - Smart Console Basic Operator Services System (BOSS)/Class 5 Electronic Switching System (5ESS) Release (Rel.) 4.9-0 (Tracking Number 1216501)," Draft