CMOSS Interoperability Requirements Specification v 1.1

APPROVED FOR PUBLIC RELEASE

C5ISR/EW Modular Open Suite of Standards (CMOSS) Interoperability Requirements Specification

Version 1.1

10 March 2022

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ParentID	UID	Portion Marking	Content	Type	Strength
	CMOSS0001	(U)	.C5ISR/EW Modular Open Suite of Standards (CMOSS) Interoperability Requirements Specification (IRS)	Information	
	CMOSS0002	(U)	Version 1.1	Information	
	CMOSS0003	(U)	Dated 20220310	Information	
	CMOSS0004	(U)	[Change Log Table.png]	Information	
	CMOSS0005	(U)	Table 1 - Change Log	Information	
	CMOSS0006	(U)	.Purpose	Information	
	CMOSS0007	(U)	The purpose of the CMOSS Interoperability Requirements Specification is to provide a common, configuration-controlled, Science, Technology, Engineering, Experimentation, Test & Evaluation and Acquisition minimum baseline technical requirements document. This allows US Army (T), and Joint, Interagency, Intergovernmental, Multinational (JIIM) (O), materiel developers and integrators to ensure CMOSS compliant/conformant solutions are over-the-interface(s)-interoperable with other components/systems developed to the same "shalls". This document also addresses the need for the US Army (T), and JIIM (O), to have a mechanism to codify critical, Government interoperability design choices at the 'speed of relevance', in the event that public-private consortium governance processes/timelines would negatively impact Army Modernization. It also allows the Government to add additional specificity above and beyond consortium-based standards in order to achieve the portability and reuse objectives of the US Army. Although there are significant benefits from leveraging Public-Private consortium-based open standards approaches, the Government must always maintain the ability to make and coordinate inherently Governmental decisions in the best interests of the Warfighter. The requirements within this document should be incorporated by reference in contracts, citing the document title, revision number, and effective date of publication. 'CMOSS#####' Unique Identifiers (UID) will typically be linked as 'parent requirements' from which materiel system, subsystem, component, etc. 'child requirements' are derived. This CMOSS Interoperability Requirements Specification is under the configuration control of the chartered C5ISR Center MOSA Management Office (MMO).	Information	
	CMOSS0008	(U)	.Background	Information	

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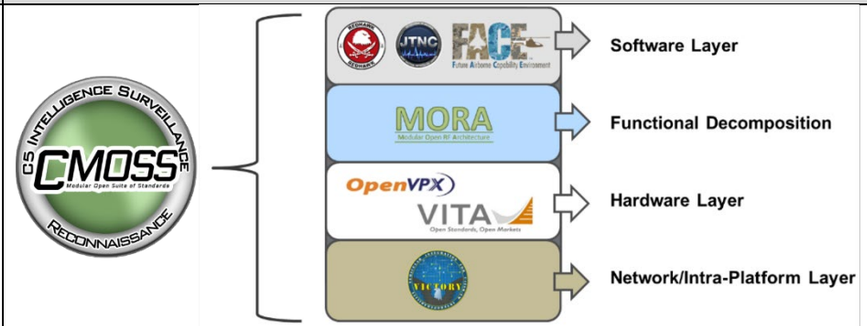
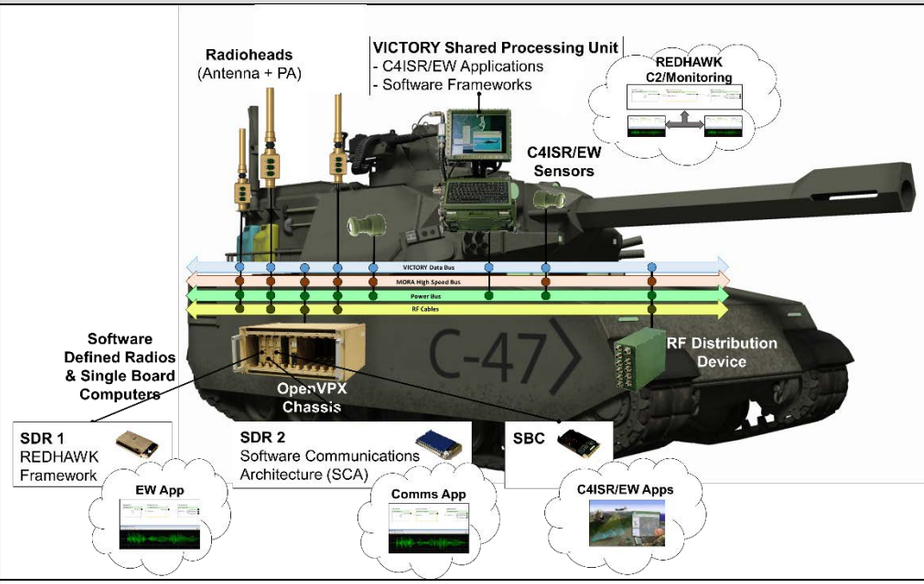
	CMOSS0009	(U)	In January 2019, the secretaries of the Army, Navy, and Air Force signed a memo entitled, “Modular Open Systems Approaches (MOSA) for our Weapon Systems is a Warfighting Imperative,” directing MOSA standards to be included in all requirements, programming, and development activities for future weapon system modifications and new-start development. This direction was reinforced by the House Armed Services Committee report for the FY21 National Defense Authorization Act, which recommended that “CMOSS and SOSA military electronics standards be more tightly connected to use the same hardware pinout standards and, more importantly, the same software data transport protocols, such as the Modular Open RF Architecture (MORA), to further solidify a common Department of Defense-wide technical approach to create an open systems architecture standard by which small businesses and large primes can compete”.	Information	
	CMOSS0010	(U)	Capability Overview and Benefits	Information	
	CMOSS0011	(U)	The Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center-developed and managed C5ISR/Electronic Warfare Modular Open Suite of Standards (CMOSS) delivers on that intent. This MOSA approach:	Information	
CMOSS0011	CMOSS0012	(U)	•Reduces the size, weight and power (SWaP) footprint of C5ISR systems by enabling integration and hardware sharing for communications, position, navigation and timing (PNT), mission command, and electronic warfare (EW) capabilities.	Information	
CMOSS0011	CMOSS0013	(U)	•Allows for rapid technology insertion to keep pace with emerging needs, permitting capabilities that are innovative, yet unanticipated, to be quickly implemented using well-defined components with open interfaces. The components are commonly referred to as “cards” and “radioheads”.	Information	
	CMOSS0014	(U)	CMOSS consists of the following suite of layered standards that are individually useful and can be combined to form a holistic converged architecture:	Information	
CMOSS0014	CMOSS0015	(U)	•Network-based interoperability to enable sharing of services, such as time and position.	Information	
CMOSS0014	CMOSS0016	(U)	•Hardware form factor to enable capability fielding using cards in a common chassis.	Information	
CMOSS0014	CMOSS0017	(U)	•Functional decomposition to allow for sharing of resources, such as antennas and amplifiers.	Information	
CMOSS0014	CMOSS0018	(U)	•Software frameworks to enable portability of software applications.	Information	

ParentID	UID	Portion Marking	Content	Type	Strength
	CMOSS0019	(U)		Information	
	CMOSS0020	(U)	Figure 1 - Layered Standards	Information	
	CMOSS0021	(U)	The overall approach has been referred to as the "Universal A-Kit," where platforms come with one or more standard chassis and are already plumbed for power, networks, and radio frequency (RF) distribution. Hardware for capabilities such as communications, PNT, mission command, and EW can then be fielded in the form of cards physically inserted in a common chassis and radioheads bolted to standard mount points.	Information	
	CMOSS0022	(U)	CMOSS has the potential to significantly reduce costs over the lifecycle of a system.	Information	
	CMOSS0023	(U)	Logistics tails can be smaller due to common spares.	Information	
	CMOSS0024	(U)	Unit costs can be reduced due to greater competition among vendors and economies of scale.	Information	
	CMOSS0025	(U)	Sustainment organizations can avoid purchasing spares intended to last 30+ years and instead perform modernization by upgrading to the latest hardware as components are replaced.	Information	

ParentID	UID	Portion Marking	Content	Type	Strength
	CMOSS0026	(U)		Information	
	CMOSS0027	(U)	Figure 2 - The image above represents a notional portrayal of a Next Generation Optionally Manned Fighting Vehicle featuring a CMOSS-based chassis and capability cards.	Information	
	CMOSS0028	(U)	.CMOSS Requirements	Information	
	CMOSS0029	(U)	The following describes the CMOSS requirements for systems and associated components.	Information	
	CMOSS0030	(U)	CMOSS supports systems ranging in scale from a fully integrated platform to a dismounted manpack chassis.	Information	
	CMOSS0031	(U)	Examples of components within systems include chassis, transceiver cards, single board computers, timing cards, radioheads, and C5ISR applications.	Information	
	CMOSS0032	(U)	.Vehicular Integration for C4ISR/EW Interoperability (VICTORY)	Information	
	CMOSS0033	(U)	Background: The Vehicular Integration for C4ISR/EW Interoperability (VICTORY) initiative was started as a way to correct the problems created by the "bolt-on" approach to fielding equipment on US Army vehicles.	Information	
	CMOSS0034	(U)	Implementation of VICTORY allows tactical platforms and systems to recover lost space while reducing weight and saving power.	Information	
	CMOSS0035	(U)	Additionally, implementation allows platform systems to share information and provide an integrated picture to the crews.	Information	

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	CMOSS0036	(U)	Finally, implementation provides an open architecture that will allow platforms to accept future technologies without the need for significant re-design.	Information	
	CMOSS0037	(U)	Under the initiative, a framework for integration of C4ISR/EW and other electronic mission equipment on tactical platforms continues to be developed.	Information	
	CMOSS0038	(U)	Additional information is available at DI2E (https://di2e.net/).	Information	
	CMOSS0039	(U)	Systems, when in a vehicle mounted configuration, shall implement a VICTORY Data Bus that complies with the following VICTORY specifications:	Threshold	shall
CMOSS0039	CMOSS0040	(U)	a. Switch <VT50900-V1.9> to provide core network transport.	Threshold	shall
CMOSS0039	CMOSS0041	(U)	b. Shared Processing Unit <VT51900-V1.9> to host portable software.	Threshold	shall
CMOSS0039	CMOSS0042	(U)	c. VDB Management Service <VT52200-V1.9> to enable basic network management functions.	Threshold	shall
CMOSS0039	CMOSS0043	(U)	d. Support a minimum 10/100 Base-T Ethernet interface as specified in VICTORY <VT52303-V1.2> and <VT52101-V1.9>.	Threshold	shall
	CMOSS0044	(U)	All systems and components shall implement services to receive/consume external PNT data from authorized source such as PNT Mounted system.	Threshold	shall
CMOSS0044	CMOSS0045	(U)	All systems and components shall comply with the following VICTORY specifications:	Threshold	shall
CMOSS0045	CMOSS0046	(U)	a. Position Service (POS) <VT50100-V1.9> whenever position data is required.	Threshold	shall
CMOSS0045	CMOSS0047	(U)	b. Time Synchronization Service <VT50000-V1.7> with Precision Time Protocol (PTP) per VICTORY <VT50001.T2-V1.7> or Network Time Protocol (NTP) per VICTORY <VT50001.T1-V1.4> whenever time synchronization is required.	Threshold	shall
CMOSS0045	CMOSS0048	(U)	c. Orientation Service <VT50200-V1.9> whenever orientation data is required.	Threshold	shall
CMOSS0045	CMOSS0049	(U)	d. Direction of Travel Service <VT50300-V1.9> whenever direction of travel (heading) data is required.	Threshold	shall
	CMOSS0050	(U)	Position, Navigation, and Timing (PNT) systems shall implement services to distribute PNT data for other client systems' consumption:	Threshold	shall
CMOSS0050	CMOSS0051	(U)	a. Position Service (POS) <VT50100-V1.9>	Threshold	shall
CMOSS0050	CMOSS0052	(U)	b. Time Synchronization Service <VT50000-V1.7>	Threshold	shall
CMOSS0050	CMOSS0053	(U)	c. Orientation Service <VT50200-V1.9>	Threshold	shall
CMOSS0050	CMOSS0054	(U)	d. Direction of Travel Service <VT50300-V1.9>	Threshold	shall
	CMOSS0055	(U)	PNT systems shall implement the following services to enable remote management & control functions:	Threshold	shall
CMOSS0055	CMOSS0056	(U)	a. Global Positioning Service (GPS) Receiver < VT61000-V1.9>	Threshold	shall
CMOSS0055	CMOSS0057	(U)	b. Assured PNT <VT61600-V1.9>	Threshold	shall
	CMOSS0058	(U)	Tactical radios shall implement Data Radio <VT60800-V1.9> and Legacy Radio <VT60200-V1.9> to enable remote management & control functions.	Threshold	shall

ParentID	UID	Portion Marking	Content	Type	Strength
	CMOSS0059	(U)	Electronic Warfare (EW) and Signals Intelligence (SIGINT) systems shall implement Electronic Warfare Device <VT60900-V1.9> to enable remote management & control functions.	Threshold	shall
CMOSS0059	CMOSS0060		Note that the Electronic Warfare Device component type will be deprecated in the future as the corresponding functionality will be provided by additional MORA Processing Resource component types.	Information	
	CMOSS0061	(U)	.Modular Open RF Architecture (MORA)	Information	
	CMOSS0062	(U)	Background: MORA extends VICTORY to support radio frequency (RF) systems.	Information	
	CMOSS0063	(U)	MORA decomposes monolithic radio systems into high-level devices with well-defined functions and interfaces.	Information	
	CMOSS0064	(U)	Devices include Software Defined Radios (SDRs), RF Conditioning and Distribution (RCD), and Radioheads (RHDs).	Information	
	CMOSS0065	(U)	Additional information is available at DI2E (https://di2e.net/).	Information	
	CMOSS0066	(U)	Please refer to “MORA DI2E Instructions” to request access to the MORA project on DI2E.	Information	
	CMOSS0067	(U)	Systems shall comply with the MORA functional decomposition and interfaces.	Threshold	shall
	CMOSS0068	(U)	Components containing signal resources such as but not limited to amplifiers, antennas, filters and switches shall implement the MORA Device <MT92010-V2.4> interfaces as specified in the MORA Specification.	Threshold	shall
	CMOSS0069	(U)	Components containing signal resources such as but not limited to amplifiers, antennas, filters and switches shall implement the MORA Signal Resource Manager <MT92013-V2.4> interfaces as specified in the MORA Specification.	Threshold	shall
	CMOSS0070	(U)	Components containing signal resources such as but not limited to amplifiers, antennas, filters and switches shall implement the MORA Signal Port Manager <MT92016-V2.4> interfaces as specified in the MORA Specification.	Threshold	shall
	CMOSS0071	(U)	MORA interfaces shall include all required specifications as well as any optional specifications that correspond to functionality provided by the component.	Threshold	shall
	CMOSS0072	(U)	Cascaded signal resources on different components shall communicate exclusively using MORA standard interfaces.	Threshold	shall
CMOSS0072	CMOSS0073	(U)	Signal resources shall be discovered and allocated over the VICTORY Data Bus (VDB).	Threshold	shall
CMOSS0072	CMOSS0074	(U)	Signal resources shall be controlled over the MORA Low Latency Bus (ML2B).	Threshold	shall
	CMOSS0075	(U)	Applications and processing resources shall interface with signal resources exclusively using MORA standard interfaces.	Threshold	shall
CMOSS0075	CMOSS0076	(U)	Signal resources shall be discovered and allocated over the VDB.	Threshold	shall
CMOSS0075	CMOSS0077	(U)	Signal resources shall be controlled over the ML2B.	Threshold	shall
	CMOSS0078	(U)	Systems and components should implement separate domains where the VDB is Domain 1 and the ML2B is Domain 2.	Objective	should
	CMOSS0079	(U)	.OpenVPX	Information	
	CMOSS0080	(U)	Background: OpenVPX is a Backplane standard that uses serial fabrics with a high density connector, coupled with a systems level approach that defines standard profiles for pins, protocols, and interconnections.	Information	
	CMOSS0081	(U)	Additional information is available at http://www.vita.com/ and http://www.opengroup.org/sosa	Information	

ParentID	UID	Portion Marking	Content	Type	Strength
	CMOSS0082	(U)	Systems shall contain an OpenVPX chassis with modular hardware resources that complies with the slot and module profiles in this specification to facilitate interoperability with cards developed by third-party vendors.	Threshold	shall
CMOSS0082	CMOSS0083	(U)	System should use 3U OpenVPX whenever possible.	Objective	should
	CMOSS0084	(U)	Systems and components shall use the Control Plane for the VICTORY Data Bus (VDB) and the Data Plane for the MORA Low Latency Bus (ML2B).	Threshold	shall
	CMOSS0085	(U)	Systems and components should implement separate domains on the backplane and plug-in cards where the Control Plane and Expansion Plane are Domain 1, while the Data Plane and Utility Plane are Domain 2.	Objective	should
	CMOSS0086	(U)	3U payload cards such as RF transceivers that require RF connections shall comply with a slot profile of SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11-4 as defined in ANSI/VITA 65.0, and shall have an Alternate Module Profile Scheme (AMPS) string that conforms to Table 2.	Threshold	shall
CMOSS0086	CMOSS0087	(U)	Connections on the front of these payload cards shall only be used for key fill and maintenance.	Threshold	shall
CMOSS0086	CMOSS0088	(U)	RF connections shall comply with the coaxial pin assignment in Figure 3.	Threshold	shall
	CMOSS0089	(U)	3U payload cards such as single board computers (SBCs) and general-purpose graphics processing units (GPGPUs) that don't require RF connections shall comply with a slot profile of SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11-0 as defined in ANSI/VITA 65.0, and shall have an AMPS string that conforms to Table 2.	Threshold	shall
CMOSS0089	CMOSS0090	(U)	Connections on the front of these payload cards shall only be used for key fill and maintenance.	Threshold	shall
	CMOSS0091	(U)	3U payload cards that require standard I/O such as USB, DisplayPort, and serial ports or are intended to be used for system-specified interfaces shall comply with a slot profile of SLT3-PAY-1F1F2U1TU1T1U1T-14.2.16 as defined in ANSI/VITA 65.0, and shall have an Alternate Module Profile Scheme (AMPS) string that conforms to Table 2.	Threshold	shall
CMOSS0091	CMOSS0092	(U)	Connections on the front of these payload cards shall only be used for key fill and maintenance.	Threshold	shall
	CMOSS0093	(U)	Systems that require more system-specific interfaces than can be accommodated by 14.2.16 may use a dedicated external I/O card. This card shall comply with a slot profile of SLT3-PAY-2U2U-14.2.17 as defined in ANSI/VITA 65.0, and shall have an Alternate Module Profile Scheme (AMPS) string that conforms to Table 2.	Threshold	shall
CMOSS0093	CMOSS0094	(U)	Connections on the front of these payload cards shall only be used for maintenance.	Threshold	shall
	CMOSS0095	(U)	3U Ethernet switch cards shall comply with a slot profile of SLT3-SWH-6F1U7U-14.4.14 or SLT3-SWH-4F1U7U1J-14.8.7-n as defined in ANSI/VITA 65.0, and shall have an AMPS string that conforms to Table 3.	Threshold	shall
CMOSS0095	CMOSS0096	(U)	Connections on the front of Ethernet switch cards shall only be used for external Ethernet connections, key fill, and maintenance.	Threshold	shall
	CMOSS0097	(U)	3U PCIe/Ethernet switch cards shall comply with a slot profile of SLT3-SWH-6F8U-14.4.15 as defined in ANSI/VITA 65.0, and shall have an AMPS string that conforms to Table 3.	Threshold	shall
CMOSS0097	CMOSS0098	(U)	Connections on the front of PCIe/Ethernet switch cards shall only be used for maintenance.	Threshold	shall

ParentID	UID	Portion Marking	Content	Type	Strength
	CMOSS0099	(U)	6U payload cards such as RF transceivers that require RF connections shall comply with a slot profile of SLT6-PAY-4F2Q1H4U1T1S1S1TU2U2T1H-10.6.4-2 as defined in ANSI/VITA 65.0, and shall have an AMPS string that conforms to Table 13.3.4-2 in SOSA Technical Standard Edition 1.0.	Threshold	shall
CMOSS0099	CMOSS0100	(U)	Connections on the front of these payload cards shall only be used for key fill and maintenance.	Threshold	shall
CMOSS0099	CMOSS0101	(U)	RF connections shall comply with the coaxial pin assignment in Figure 3.	Threshold	shall
	CMOSS0102	(U)	6U payload cards such as SBCs and GPGPUs that don't require RF connections shall comply with a slot profile of SLT6-PAY-4F2Q1H4U1T1S1S1TU2U2T1H-10.6.4-0 as defined in ANSI/VITA 65.0, and shall have an AMPS string that conforms to Table 13.3.4-2 in SOSA Technical Standard Edition 1.0.	Threshold	shall
CMOSS0102	CMOSS0103	(U)	Connections on the front of payload cards shall only be used for key fill and maintenance.	Threshold	shall
	CMOSS0104	(U)	6U Ethernet switch cards shall comply with a slot profile of SLT6-SWH-14F16U1U15U1J-10.8.1-n as defined in ANSI/VITA 65.0, and shall have an AMPS string that conforms to Table 13.3.5-1 in SOSA Technical Standard Edition 1.0.	Threshold	shall
CMOSS0104	CMOSS0105	(U)	Connections on the front of Ethernet switch cards shall only be used for external Ethernet connections, key fill, and maintenance.	Threshold	shall
	CMOSS0106	(U)	Timing cards shall comply with a slot profile of SLT3x-TIM-2S1U22S1U2U1H-14.9.2-1 as defined in ANSI/VITA 65.0, and shall have an AMPS string that conforms to Table 2.	Threshold	shall
CMOSS0106	CMOSS0107	(U)	Connections on the front of timing cards shall only be used for key fill and maintenance.	Threshold	shall
	CMOSS0108	(U)	Switch cards shall support auto-negotiation and fixed rates.	Threshold	shall
	CMOSS0109	(U)	Non-switch cards should support auto-negotiation and fixed rates.	Objective	should
	CMOSS0110	(U)	All cards shall only use the following power inputs from the backplane: 12 VDC (Vs1), 3.3V_AUX, and VBAT.	Threshold	shall
	CMOSS0111	(U)	Payload cards and timing cards shall support a 100 MHz REF_CLK and 1 PPS AUX_CLK that are distributed radially over the backplane.	Threshold	shall
	CMOSS0112	(U)	All cards shall zeroize when GDiscrete1 is asserted.	Threshold	shall
	CMOSS0113	(U)	All cards shall be Type 1, 1.0 in. pitch conduction cooled plug-in units per ANSI/VITA 48.2 or Type 1, 1.5 in. pitch air flow through plug-in units per ANSI/VITA 48.8 to support 2 Level Maintenance.	Threshold	shall
CMOSS0113	CMOSS0114	(U)	Cards should use ANSI/VITA 48.2 whenever possible.	Objective	should
	CMOSS0115	(U)	Systems should conform to the Out-of-Band Hardware Management Definitions within the Sensor Open Systems Architecture (SOSA ™) Technical Standard whenever possible.	Objective	should
CMOSS0115	CMOSS0116	(U)	These requirements can be found in Section 6.4 (Out-of-Band Hardware Management Definitions) of SOSA Technical Standard Edition 1.0 and are based on the Hardware Open Systems Technology (HOST) and ANSI/VITA 46.11 standards.	Information	
	CMOSS0117	(U)	All cards shall conform to the plug-in card specifications within the Sensor Open Systems Architecture (SOSA ™) Technical Standard that don't conflict with requirements within this document.	Threshold	shall
CMOSS0117	CMOSS0118	(U)	These requirements can be found in Section 13 (Hardware Element) of SOSA Technical Standard Edition 1.0.	Information	

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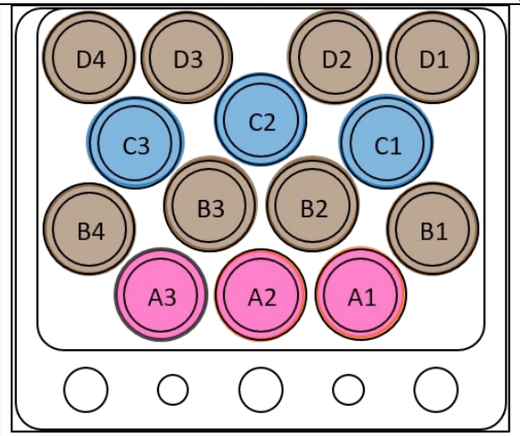
<tr><th>ParentID</th><th>UID</th><th>Portion Marking</th><th>Content</th><th>Type</th><th>Strength</th></tr>
<tr><td></td><td>CMOSS0119</td><td>(U)</td><td>In the case of a conflict, this document shall supersede the SOSA ™ Technical Standard.</td><td>Threshold</td><td>shall</td></tr>
<tr><td></td><td>CMOSS0120</td><td>(U)</td><td>


Payload 14 Position SMPM looking at front side of backplane
<table>
<tr><th rowspan="2">Module Type</th><th colspan="8">Channel 67.3C SMPM Designation</th></tr>
<tr><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th></tr>
<tr><td>1 Channel Module</td><td>B1</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>2 Channel Module</td><td>B1</td><td>B4</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>3 Channel Module</td><td>B1</td><td>B4</td><td>D1</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>4 Channel Module</td><td>B1</td><td>B4</td><td>D1</td><td>D4</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>5 Channel Module</td><td>B1</td><td>B4</td><td>D1</td><td>D4</td><td>B2</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>6 Channel Module</td><td>B1</td><td>B4</td><td>D1</td><td>D4</td><td>B2</td><td>B3</td><td>N/A</td><td>N/A</td></tr>
<tr><td>7 Channel Module</td><td>B1</td><td>B4</td><td>D1</td><td>D4</td><td>B2</td><td>B3</td><td>D2</td><td>N/A</td></tr>
<tr><td>8 Channel Module</td><td>B1</td><td>B4</td><td>D1</td><td>D4</td><td>B2</td><td>B3</td><td>D2</td><td>D3</td></tr>
</table>
Six (6) User Defined pins (A1, A2, A3, C1, C2, C3) for coherent operation across payloads (e.g., local oscillator distribution)
</td><td>Threshold</td><td>shall</td></tr>
<tr><td></td><td>CMOSS0121</td><td>(U)</td><td>Figure 3 - 3U Payload Card Coaxial Pin Assignment</td><td>Information</td><td></td></tr>
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ParentID	UID	Portion Marking	Content	Type	Strength
	CMOSS0123	(U)	Table 2 - AMPS Strings for 3U Payload Plug-In Card Profiles (adapted from Table 13.3.4-1 in SOSA Technical Standard Edition 1.0)	Information	
	CMOSS0124			Threshold	shall

Payload Card Type		Physical Definition: VITA 65 Slot Profile		Physical Definition: VITA 65 Alternate Naming Structure	Physical Definition: Depth, Cooling, Pitch	Backplane Copper: Data Plane FP	Backplane Copper: Data Plane UTP	Backplane Copper: Data Plane TP	Backplane Copper: Exp. Plane EP	Backplane Copper: Control Plane CP	Backplane Copper: Control Plane TP	Backplane Copper: Control Plane EXT	VITA 66 FP (MT)	Front Panel Optical SOSA ONLY: Data Plane FP (MPO)	Front Panel Optical SOSA ONLY: Data Plane UTP (LC)	Front Panel Optical SOSA ONLY: Control Plane FP (MPO)	Front Panel Optical SOSA ONLY: Control Plane UTP (LC)
3U	DP Switch DP: 6 FP/Ethernet CP: 7 UTP/Ethernet	14.4.14	-	16.4.15-1	F2C	E5	E1*	X	X	E1*	X	X	X	E12	E11	E12	E11
					~~F4C~~	E8	E2	X	X	E2	X	X	X	E19	E17	E19	E17
					~~F8H~~	E18	E7	X	X	E7	X	X	X	N	N	N	N
					~~S2E~~	N	E15	X	X	E15	X	X	X	X	X	X	X
					X	X	N	X	X	N	X	X	X	X	X	X	X
	EP Switch EP: 6 FP/PCIe CP: 8 UTP/Ethernet	14.4.15	-	16.4.16-1	F2C	X	X	X	P2F	E1*	E3	X	X	X	X	X	X
					~~F4C~~	X	X	X	P3F	E2	N	X	X	X	X	X	X
					~~F8H~~	X	X	X	P4F	E7	X	X	X	X	X	X	X
					~~S2E~~	X	X	X	N	E15	X	X	X	X	X	X	X
					X	X	X	X		N	X	X	X	X	X	X	X
	DP Switch/V66 DP: 4 FP/Ethernet CP: 7 UTP/Ethernet	14.8.7	-0-	16.8.7-1	F2C	E5	E1*	X	X	E1*	X	X	E12	E12	E11	E12	E11
			-4-		~~F4C~~	E8	E2	X	X	E2	X	X	E19	E19	E17	E19	E17
			-5-		~~F8H~~	E18	E7	X	X	E7	X	X	N	N	N	N	N
			X		~~S2E~~	N	E15	X	X	E15	X	X	X	X	X	X	X
			X		X	X	N	X	X	N	X	X	X	X	X	X	X

	CMOSS0125	(U)	Table 3 - AMPS Strings for 3U Switch Plug-In Card Profiles (adapted from Table 13.3.5-1 in SOSA Technical Standard Edition 1.0)	Information	
	CMOSS0126	(U)	Software Frameworks	Information	
	CMOSS0127	(U)	Background: Software frameworks enable portability of applications between hardware platforms.	Information	
	CMOSS0128	(U)	CMOSS leverages prominent software frameworks within each mission area to maximize reuse of existing software capabilities.	Information	
	CMOSS0129	(U)	Software frameworks can be integrated with underlying specifications such as VICTORY and MORA which provide standard interfaces to sensors and services on the platform.	Information	
	CMOSS0130	(U)	Additional information is available at https://redhawksdr.github.io/Documentation/, http://www.public.navy.mil/jtnc/, and http://www.opengroup.org/face/.	Information	
	CMOSS0131	(U)	Systems shall implement applications within REDHAWK/TOA, SALVAGE, X-Midas, Photon, Software Communications Architecture (SCA), and/or Future Airborne Capability Environment (FACE) when appropriate.	Threshold	shall
	CMOSS0132	(U)	Where existing Government frameworks are determined to be insufficient for a required application, such as in cases where hardware acceleration is used, the contractor shall document the design choices and provide the explanation to the Government for their concurrence.	Threshold	shall

ParentID	UID	Portion Marking	Content	Type	Strength
	CMOSS0133	(U)	The contractor shall deliver a Software Development Kit (SDK) or Integrated Development Environment (IDE) to facilitate development and deployment of applications for lower level processing hardware, such as hardware accelerators, that may not be covered by existing Government frameworks.	Threshold	shall
	CMOSS0134	(U)	Mechanical and Electrical Interfaces	Information	
	CMOSS0135	(U)	Background: The Sensor Open Systems Architecture (SOSA ™) Technical Standard defines standard mounts and connectors in order to facilitate platform integration and maximize cable reuse.	Information	
	CMOSS0136	(U)	Additional information is available at http://www.opengroup.org/sosa/.	Information	
	CMOSS0137	(U)	Systems should conform to the mechanical and electrical specifications within the SOSA ™ Technical Standard whenever possible.	Objective	should
	CMOSS0138	(U)	These requirements can be found in Section 13.5 (SOSA Aperture and Chassis Electrical and Mechanical Interface Standard) of SOSA Technical Standard Edition 1.0.	Information	
	CMOSS0139	(U)	Reserved	Information	
	CMOSS0140	(U)	Reserved	Information	
	CMOSS0141	(U)	Reserved	Information	
	CMOSS0142	(U)	Reserved	Information	
	CMOSS0143	(U)	Reserved	Information	
	CMOSS0144	(U)	Reserved	Information	

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