DEPARTMENT OF THE ARMY
PROGRAM EXECUTIVE OFFICE
INTELLIGENCE, ELECTRONIC WARFARE AND SENSORS
BUILDING 6002, 6585 SURVEILLANCE LOOP
ABERDEEN PROVING GROUND, MD 21005-1845

SFAE-IEW-EW 05 January 2021

DOCUMENT – (U) Project Manager Electronic Warfare & Cyber (PM EW&C), Technical Management Division (TMD), Electronic Warfare & Cyber C4ISR/EW Modular Open Suite of Standards (EW&C CMOSS) Definition

1. (U) The following description defines the parameters for compliance with EW&C CMOSS:

a. **Vehicular Integration for C4ISR/EW Interoperability (VICTORY)**
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. Implementation of VICTORY allows tactical wheeled vehicles and ground combat systems to recover lost space while reducing weight and saving power. Additionally, implementation allows platform systems to share information and provide an integrated picture to the crews. Finally, implementation provides an open architecture that will allow platforms to accept future technologies without the need for significant re-design. Under the initiative, a framework for integration of C4ISR/EW and other electronic mission equipment on ground platforms continues to be developed

i. System shall consume VICTORY services for Position, Time Synchronization, Orientation, and Direction of Travel.
ii. The System, when in a vehicle mounted configuration, shall support a minimum 10/100 Base-T Ethernet interface as specified in VICTORY <VT52303-V1.2>.
iii. The System shall consume VICTORY timing (A1) services for Precision Time Protocol (PTP) per VICTORY <VT50001.T2-V1.7>
iv. The System shall consume VICTORY position (A2) services for position data per VICTORY <VT50101-V1.6>

b. **Modular Open RF Architecture (MORA)**
Background: MORA extends Vehicular Integration for C4ISR/EW Interoperability (VICTORY) to support radio frequency (RF) systems. MORA decomposes monolithic radio systems into high-level devices with well-defined functions and interfaces. Devices include Software Defined Radios (SDRs), RF Conditioning and Distribution (RCD), and Radioheads (RHDs). Additional information is available on the VICTORY Portal (https://portal.victory-standards.org/) under MORA Shared Documents.

i. System shall comply with the MORA functional decomposition and interfaces.
ii. Devices containing signal resources such as but not limited to amplifiers, antennas, filters and switches shall implement the MORA Device <MT92010-V2.2>, MORA Signal Resources Manager <MT92013-V2.2>, and MORA Signal Port Manager <MT92014-V2.2> interfaces as specified in the MORA Specification. MORA interfaces shall include all required specifications as well as any optional specifications that correspond to functionality provided by the component.
iii. Processing resources shall interface with signal resources using MORA standard interfaces. Signal resources shall be discovered and allocated over the VICTORY Data

Bus (VDB). Signal resources shall be controlled over the MORA Low Latency Bus (ML2B).

c. **Open VPX**

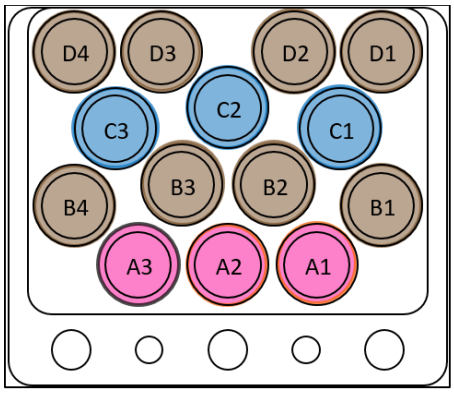
Background: OpenVPX is a Backplane standard that uses serial fabrics with a high density connector, coupled with a systems level approach that defines standard profiles for pins, protocols, and interconnections. Additional information is available at http://www.vita.com/.

i. System shall contain a 3U OpenVPX chassis with modular hardware resources that complies with the slot and module profiles as defined by the Government to facilitate interoperability with cards developed by third-party vendors.

ii. Payload cards such as RF transceivers shall comply with a slot profile of SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11-4 and a module profile of MOD3p-PAY-1F1U1S1S1U1U2F1H-16.6.11-9 as defined in ANSI/VITA 65.0 and ANSI/VITA 65.1. Connections on the front of payload cards shall only be used for maintenance.

iii. All cards shall be Type 1, 1.00 in. pitch conduction cooled plug-in units per ANSI/VITA 48.2 to support 2 Level Maintenance.

iv. Payload cards shall comply with the following coaxial pin assignment:



Payload 14 Position SMPM looking at front side of backplane

Module Type	Channel 67.3C SMPM Designation							
	1	2	3	4	5	6	7	8
1 Channel Module	B1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2 Channel Module	B1	B4	N/A	N/A	N/A	N/A	N/A	N/A
3 Channel Module	B1	B4	D1	N/A	N/A	N/A	N/A	N/A
4 Channel Module	B1	B4	D1	D4	N/A	N/A	N/A	N/A
5 Channel Module	B1	B4	D1	D4	B2	N/A	N/A	N/A
6 Channel Module	B1	B4	D1	D4	B2	B3	N/A	N/A
7 Channel Module	B1	B4	D1	D4	B2	B3	D2	N/A
8 Channel Module	B1	B4	D1	D4	B2	B3	D2	D3

Six (6) User Defined pins (A1, A2, A3, C1, C2, C3) for coherent operation across payloads (e.g., local oscillator distribution)

d. Software Frameworks

i. System shall implement applications within existing Government frameworks such as REDHAWK/TOA, SALVAGE, X-Midas and Photon when suitable to maximize portability of applications between hardware platforms.

ii. 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.

iii. 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.

(U) The POC for this document is Mr. Fran Orzech, TMD Chief, (410) 278-1958, francis.t.orzech.civ@mail.mil