The Army xTech Program – xTech Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) / Electronic Warfare (EW) Modular Open Suite of Standards (CMOSS) Mounted Form Factor (CMFF) Integration Fest Announcement

I.   Background Information

The U.S. Army would like to invite interested entities to participate in the xTech CMFF Integration Fest. xTechCMFF Integration Fest is a forum to engage with the Army, earn prize money and provide an opportunity to test out CMFF aligned systems in a tactically relevant environment.

Program Manager Mission Command (PM MC), the U.S. Army Combat Capabilities Development Command (DEVCOM) Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance and Reconnaissance/Electronic Warfare (DEVCOM C5ISR/EW), C5ISR Prototype Integration Facility, (PIF), Product Manager (PM) Interoperability Integration and Services (PM I2S), PM Tactical Radios (TR), PM Position Navigation and Timing (PNT), C5ISR MOSA Management Office (MMO), Program Executive Office (PEO) C3T, PEO Aviation, PEO Ground Combat Systems (GCS), and the Network Cross Function Team have partnered with the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) (ASA(ALT)) to deliver the xTechCMFF Integration Fest.

The Army recognizes that the U.S. Department of Defense (DOD) must enhance engagements with eligible businesses by (1) understanding the spectrum of 'world-class' technologies being developed commercially that may benefit the DOD, (2) integrating the sector of commercial innovators into the DOD Science and Technology (S&T) ecosystem, and (3) providing strategic exposure to key stakeholders to accelerate, mature, and transition technologies of interest to the DOD.

II.   Purpose

The xTechCMFF Integration Fest is an opportunity for eligible entities to pitch their novel, dual-use technology solutions directly to the U.S. DOD. The competition will provide operationally-relevant and technical feedback from Army experts on proposed ideas submitted to this competition and offer cash prizes to selected finalists, along with direct exposure to key stakeholders, and the opportunity to test out their products in tactically relevant environments.

The U.S. Army's PM MC is working on developing and refining a CMFF reference Architecture (RA) that provides industry with constraints to assist them in focusing their Internal Research and Development (IRAD) spending to meet Army needs. Some of the biggest challenges currently anticipated for existing CMOSS Participants are heat dissipation in tactically relevant vehicles' environments, vibration and shock profiles of those vehicles, and vehicular Size, Weight, Power, and Cooling (SWAP-C) constraints that currently exist in the vehicles. This competition is focused on providing Army input on current products to industry partners for improving their products, so they are prepared for a planned FY24 OTA Contract release.

The competition will consist of two-rounds: (1) a short concept white paper and (2) a technology pitch / test event at the PIF in Aberdeen Proving Ground, Maryland. Based on the white papers received, up to four (4) finalists will be selected and receive an invitation to participate in the technology pitch / test event. Up to four (4) winners will be selected from the pitch event and awarded a prize of $25,000 each. Details on the prize structure are listed in this announcement. In addition to cash prizes, participants will have the opportunity to engage with U.S. DOD stakeholders through information sharing and networking opportunities and receive a written test report from the PIF on their product performance in its intended environment.

The efforts described in this notice are being pursued under the authorities of 10 United States Code (USC) §4025. While the authority of this program is 10 USC §4025, a concept white paper submitted to the xTechCMFF Integration Fest may generate interest by another DOD organization for a funding opportunity outside of this program (*e.g.,* submission of a proposal under a Broad Agency Announcement). The interested DOD organization may contact the participant to provide additional information or ask for a request for proposal in a separate solicitation.

III.   Problem Statement

Mounted ground and air platforms are full of radios, computers, video displays, sensors, electronic warfare tools, antennas and other vital communication technologies --each with its own power draw, space claim, and proprietary design. The Army has defined a suite of open architecture industry and Army standards to enable the reduction of C5ISR system size, weight and power - cooling (SWaP-C). These standards will also serve to ensure commonality across multiple platforms by enabling the standardization and sharing of hardware and software components.

The C5ISR/Electronic Warfare (C5ISR/EW) Modular Open Suite of Standards (CMOSS) Mounted Form Factor (CMFF) A-CDD establishes desired capabilities for a prototype that can be integrated into an operational platform environment, and survive those operationally deployed use cases, as further defined within the CMFF Reference Architecture (RA). The CMFF IntegrationFest competition intends to evaluate a complete CMFF Block 1 (B1) aligned systems, against the space claim and environmental tests specified in the CMFF RA, and Standardized A-kit Vehicle Envelope (SAVE).

A "complete CMFF B1 aligned system" is defined as a CMFF compliant Chassis, an APNT Card to include M-code/encryption/sensor fusion (Radial Clock profile), an IO Intensive SBC Card (MMC not required to be ported), an SDR Card (supporting TSM and or SINCGARS waveforms), a switch (card or embedded), and a power supply (card or embedded).

IV.   Eligibility Requirements

Eligible entities include large and small U.S. If selected, participating entities must have or be able to obtain a CAGE code prior to advancing in the second stage of the competition. Instructions on how to obtain a CAGE code can be found on the xTechCMFF Integration Fest registration page.

U.S. Federal Government organizations or a U.S. Federal employee acting within the scope of their employment are not eligible to participate.

To receive CMFF Technical Documentation, interested parties must supply proof of International Traffic in Arms Regulation (ITAR) compliance by submitting a copy of their Department of State, Defense Trade Controls Compliance (DDTC) registration statement with valid date (vendor may redact vendor registrant code), a signed PM Mission Command Non-Disclosure Agreement (NDA), and sign the PM Mission Command Compliance Certification.

V.   Program Submission

The xTechCMFF Integration Fest is voluntary and open to all entities that meet the eligibility requirements listed above. **There may be only one submission per eligible entity and all submissions must be submitted in English.** The registration information and upload submission must be received by **5:00 PM EDT (21:00 GMT) on July 5, 2022**. Submissions received after the deadline will not be considered.

Register now by selecting the xTechCMFF Integration Fest tile at:

https://www.xtechsearch.army.mil/

All xTechCMFF Integration Fest submissions are treated as confidential and/or proprietary information and contents are disclosed to U.S. defense civilian and military employees or designated support contractors only for the purpose of evaluation and program support.

Part 1: Concept White Paper
All eligible entities shall submit a short 4-page concept white paper outlining their **COMPLETE** CMFF Block 1 (B1) aligned system and novel technologies, the technology viability/maturity measured against the CMFF RA, and descriptions of the dual-use technology applications for future growth. White papers should briefly describe chassis characteristics, capabilities of each CMFF card, and how they align with the CMFF RA and blocking strategy capabilities. Each concept white paper will be reviewed by DOD stakeholders including end users, program acquisition personnel, and research and development subject matter experts.

A "complete CMFF B1 aligned system" is defined as including all of the below:
1. CMFF compliant Chassis
2. APNT Card to include M-code/encryption/sensor fusion (Radial Clock profile)
3. IO Intensive SBC Card (MMC not required to be ported)
4. SDR Card (supporting TSM and or SINCGARS waveforms that can be demonstrated during phase 2 as interoperable with a GFE radio)
5. Switch (card or embedded)
6. Power supply (card or embedded).

All concept white papers must adhere to the following requirements:
- All concept white papers must be submitted using the template found on the registration page, "*xTechCMFF Integration Fest _WhitePaper_Template.doc*". **Any proposals submitted in a format other than that provided by the template will**

not be reviewed.
- All White Papers should be provided with no less than 10pt font.
- Please list your company name, and proposal title EXACTLY how you would like them to appear on any contest marketing materials. Use clear and concise proposal titles to give readers and potential stakeholders an understanding of how your technology would benefit the Army.

Concept white papers will be evaluated and ranked using the following scoring criteria (further details on each scoring dimension can be found on the xTechCMFF Integration Fest registration page):
- Introduction, Program Alignment – 3%
- Chassis/ Backplane – 15%
- Card Alignment – 20%
- Save Compliance (SWAP-C) – 20%
- MMC Environmental Spec Compliance – 20%
- Design Process – 5%
- Ability to Field Product – 15%
- Submission Quality – 2%

Upon conclusion of the concept white paper evaluation period, the government will select up to four (4) finalists to be selected and invited to participate in the Technology Pitch Event at the PIF in Aberdeen Proving Grounds, Maryland.

Part 2: Integration Fest

In Part 2, the finalists will be invited to conduct a live pitch to a panel of DOD subject matter experts tentatively scheduled from August-October 2022 (dates will be finalized with participants) and are subject to change. Each participant will be invited to the C5ISR Prototype Integration Facility (PIF) to conduct their pitch, witness in-vehicle swap analysis of each vehicle variant and have a follow-on session scheduled for environmental testing to occur. Each participant will have an opportunity to test their products in tactically relevant environments while receiving direct feedback from a panel of relevant technical experts across the DOD ecosystem on how they can improve their solutions for Army use.

Detailed instructions and evaluation criteria will be provided to the finalists selected for Part 2.

Participants need to consider the following in preparation for the integration fest:
- Come prepared for environmental testing with a chassis and cards that can be exercised utilizing pass mark burns in testing or similar software suites to ensure that the chassis and cards are running at least 50% utilization (CPU/RAM/Video/Graphics/IO/radio comms) during all testing.
- Ensure that the rated backplane throughput can be fully tested/measured during environmental testing for accurate results and to show that the rated throughput can be maintained across the operating temperature ranges.
- Bring **ALL** cabling and mounts necessary to allow their system to be fully tested/exercised and to survive all shock/vibration testing. The government will

provide fixturing to mount the Participants' provided brackets onto the vibration table.

The government will provide at least one (1) external radio for the testing to ensure that Software Defined Radio (SDR) Cards can be exercised properly (over RF cabled connections) with traffic. SDR Card/ Radio configuration plans will be provided to the participants prior to arrival to ensure a smooth transition for testing.

Up to four (4) companies will be selected as a winner of the competition and awarded $25,000 each.

Detailed feedback from the judge panel will be provided to the participants throughout each phase of the competition. The purpose of providing this feedback is to help accelerate transition of the technology to a U.S. military end-user by providing insight on best applications for the technology, suggestions for product improvement for military use and recommended next steps for development. However, the Government will not respond to questions or inquiries regarding this feedback.

VI.   Prizes and Incentives

Prizes will be offered under 10 USC §2374a (Prize competitions). The current prize pool is $100,000.

Other non-monetary incentives such as direct exposure to key stakeholders and the opportunity to test out their solutions in tactically relevant environments, are provided through the xTechCMFF Integration Fest to help global businesses engage and stay engaged with the Army.

Phase	*Number of Winners*	*Prize*
Part 1: Concept White Paper	Up to 4	N/A
Part 2: Integration Fest	Up to 4	$25,000
	Total	$100,000

Proposed Schedule (Subject to Adjustments):

Date	Activity
1 June – 5 July 2022	Application Part 1: Concept white paper submission period
27 July 2022	Part 1 Finalists Notified *subject to change*
August – October 2022	Technology Pitch Event
7 November 2022	Winners Announced

VII.   Standards

Additional information about the standards can be referenced at the following links:

- OpenVPX (http://www.vita.com)

- SOSA (http://www.opengroup.org/sosa)

- CMOSS, VICTORY, and MORA
  (https://sam.gov/opp/889a0f920a5f4e8db99b9ee5d35d329c/view)

- SAVE, and FACE (https://apntoil.army.mil/standards-and-specifications)

VIII.   Disclaimers

Registered participants shall be required to assume any and all risks and waive claims against the Federal Government and its related entities, except in the case of willful misconduct, for any injury, death, damage, or loss of property, revenue, or profits, whether direct, indirect, or consequential, arising from their participation in this prize competition, whether the injury, death, damage, or loss arises through negligence or otherwise.

MIL-STD-810 and ATPD-2404 Environmental testing can be extremely harsh; therefore, the government is not responsible for products being broken during standardized testing procedures and shall not be held liable for any reason.

IX.   Intellectual Property

The Army is a proponent of respecting intellectual property (IP) rights and management by the private sector and the DOD.

For the xTechCMFF Integration Fest:

- Any IP developed by a participant shall remain the sole property of the participant. The Federal Government will not obtain any interest or right to a participant's IP, except subject to the provisions herein, without the prior written consent of the participant.

- Nothing in this xTechCMFF Integration Fest prize competition shall diminish the Government's rights in patents, technical data, technical information, computer software, computer databases, and computer software documentation that the Government had prior to this xTechCMFF Integration Fest, or is entitled to, under any other Government agreement or contract, or is otherwise entitled to under law; and

- Moreover, nothing in this xTechCMFF Integration Fest prize competition shall prevent the Federal Government and a participant from negotiating a license for the Federal Government's use of IP developed by the participant in the prize competition.

X.   Reimbursement of Costs

The USG will not reimburse participants for any costs associated with preparing or participating in the xTechCMFF Integration Fest. Participation in the competition is voluntary. This announcement and/or information presented herein will not obligate the USG in any manner. The posted information is provided for planning purposes only and

does not constitute a Request for Propsoal.

Register now by selecting the xTechCMFF Integration Fest tile at:
https://www.xtechsearch.army.mil/

XI.   Point of Contact

The xTech Program Office
Office of the Deputy Assistant Secretary of the Army, Research and Technology
Email: usarmy.pentagon.hqda-asa-alt.mbx.xtechsearch@army.mil
Website: https://www.xtechsearch.army.mil