

The Army xTech Program – xTechDetect Competition Announcement

I. Background Information

The U.S. Army would like to invite interested entities to participate in the xTechDetect competition. xTechDetect is a forum to engage with the Army, earn prize money and provide potential funding opportunities to tackle Army challenges within the counter-improvised explosive device (C-IED) space.

The U.S. Army Combat Capabilities Development Command (DEVCOM), the DEVCOM Forward Elements (DFE Americas, Atlantic, Pacific) and the U.S. Office of Naval Research Global (ONR-G) have partnered with the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) (ASA(ALT)) to deliver the xTechDetect competition. 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) ecosystems, and (3) providing mentorship and expertise to accelerate, mature, and transition technologies of interest to the DOD.

II. Purpose

The xTechDetect competition is an opportunity for eligible entities to pitch their novel, dual-use technology solutions directly to 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 educational opportunities and direct exposure to key stakeholders.

The competition will consist of two-rounds: (1) a short concept white paper and (2) a technology pitch event. Up to 12 finalists will receive a prize of \$10,000 each and an invitation to participate in the Final Technology Pitches. Up to three (3) winners will be selected from the pitch event and awarded an additional prize of \$70,000 for 1st place, \$50,000 for 2nd place, and \$30,000 for 3rd place. Details on the prize structure are listed in this announcement. In addition to non-dilutive cash prizes, participants will have the opportunity to engage with U.S. DOD stakeholders through information sharing and networking opportunities.

The efforts described in this notice are being pursued under the authorities of 10 United States Code (USC) §2374a. While the authority of this program is 10 USC §2374a, a concept white paper submitted to the xTechDetect competition 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. Topics and Problem Statements:

Topic 1: Position Tracking on Small Unmanned Aerial Systems (sUAS)

The U.S. Army is looking for a modular, lightweight, high fidelity position tracking capability to record the location and orientation of small unmanned aerial systems (UAS). The position tracking solution must provide accuracy on the order of centimeters and must not rely on differential Global Positioning Systems (dGPS). Absolute position is not required, rather relative position can be expressed in local coordinates. The position tracking solution may be supplemented using existing capabilities of the host platform, and drift in position data must be defined, computed, and minimized to the extent possible. The use of low-SWaP (size, weight, and power) components is ideal. Tracking solutions may or may not be low-SWaP at this time but a clear path must be defined for achieving SWaP constraints.

Topic 2: Low-Cost Millimeter Wave Imager

Millimeter wave imaging is often used as a tool for detecting potential threats such as improvised explosive devices. Current millimeter wave imaging solutions are too large and expensive for wide-spread use. Therefore, the U.S. Army is looking for millimeter wave imagers that could be developed at a lower cost and with a smaller form factor than the leading commercially available systems.

Topic 3: Autonomous Sensor Orchestration

The U.S. Army is looking to develop an intelligent system where Counter Improvised Explosive Device (C-IED) sensors and systems can orchestrate autonomously to communicate and coordinate their actions. The goal of this system is to reduce latency and bandwidth while improving reliability and increasing safety. The U.S. Army is interested in novel or improved software frameworks which can automate some or all of the following tasks: process sensor data and terrain maps to recommend optimal configurations and locations for sensors, identify likely dead zones of coverage, choose and cue other available sensors based on explosive detections, and suggest potential countermeasures for the convoy or other assets to be protected during C-IED missions.

IV. Eligibility Requirements:

Eligible entities include nonprofit organizations, for-profit organizations (*i.e.*, large and small businesses), institutions of higher education and foreign organizations. Participating entities must have or be able to obtain a CAGE code if selected to advance in the competition. Instructions on how to obtain a CAGE code can be found on the xTechDetect registration page.

As a U.S. Federal Government organization, a foreign government entity or an entity that employs a U.S. Federal employee acting within the scope of their employment are not eligible.

V. Program Submission:

The xTechDetect competition is voluntary and open to all entities that meet the eligibility requirements. **There may be only one submission per eligible entity, per topic area 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 April 29, 2022.** Submissions received after the deadline will not be considered.

Register now by selecting the xTechDetect competition tile at:

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

All xTechDetect competition submissions are treated as privileged 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 3-page concept white paper outlining their technology, the potential impact on the U.S. DOD, the technology viability, and descriptions of the dual-use technology applications. Each concept white paper will be reviewed by DOD stakeholders including user, program acquisition, and research and development subject matter experts.

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, "*xTechDetect Competition_WhitePaper_Template.doc*". **Any proposals submitted in a format other than that provided by the template will not be reviewed.**
- 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 xTechDetect competition registration page):

- Introduction, Program Alignment – 20%
- Potential for Impact (Future) – 38%
- Technology Viability (Today) – 35%
- Dual Use – 2%
- Submission Quality – 5%

Upon conclusion of the concept white paper evaluation period, the government will select up to 12 finalists who will each receive a prize of \$10,000 and an invitation to Part 2: Technology Pitches, tentatively scheduled for July 2022.

Part 2: Final Technology Pitches

In Part 2, the finalists will conduct a live and/or virtual pitch to a panel of DOD subject matter experts tentatively scheduled in July 2022 (dates will be finalized with participants) and are subject to change. Participants will pitch their technology concept and team ability to a panel of technical experts across the DOD ecosystem. Each participant will have 20 minutes to pitch, followed by 10 minutes for questions and answers (Q&A) with the judges' panel.

Detailed instructions and evaluation criteria will be provided to the finalists selected for Part 2. Up to three (3) winners will be selected by the panel of judges and awarded an additional prize of 1st Place: \$70,000, 2nd Place: \$50,000, and 3rd Place: \$30,000.

Detailed feedback from the judges 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 \$270,000 and will be finalized at the close of the announcement.

Other non-monetary incentives are provided through the xTechDetect competition to help global businesses engage and stay engaged with the Army.

Phase	Number of Winners	Prize
Part 1: Concept White Paper	Up to 12	\$10,000 each
Part 2: Final Technology Pitches	Up to 3	1 st Place: \$70,000 2 nd Place: \$50,000 3 rd Place: \$30,000
	Total	\$270,000

Proposed Schedule (Subject to Adjustments):

Date	Activity
31 March – 29 April 2022	Application Part 1: Concept white paper submission period
6 June 2022	Part 1 Finalists Notified
18-29 July 2022	Final Technology Pitches
11 August 2022	Winners Announced

VII. 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.

VIII. Intellectual Property

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

For the xTechDetect Competition:

- The Federal Government may not gain an interest in IP developed by a participant without the written consent of the participant;
- Nothing in this xTechDetect 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 xTechInternational prize competition, or is entitled to, under any other Government agreement or contract, or is otherwise entitled to under law; and
- The Federal Government may negotiate a license for the use of IP developed by a registered participant in the prize competition.

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IX. 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>