

The Army xTech Program –xTechInternational Announcement

I. Background and Purpose

The U.S. Army would like to invite interested international entities to participate in the 2024 xTechInternational competition with a focus on AI for Intelligence and Decision-Making Applications, Quantum Sensing and Indigenous Materials Forward. The xTechInternational competition is a forum for eligible international small to medium businesses and international academic and research institutions to engage with the U.S. Department of Defense while pitching their novel technology solutions, earning prize money, and potentially participating in an accelerator program.

The U.S. Army Futures Command (AFC), U.S. Army Combat Capabilities Development Command (DEVCOM) and the U.S. Office of Naval Research Global (ONR-G), have partnered with the Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology) (ASA(ALT)), to deliver the xTechInternational competition. The Army recognizes that the DoD must enhance engagements with international businesses and academic and research institutions, by: (1) understanding the spectrum of international world-class technologies being developed commercially that may benefit the DoD; (2) integrating the sector of non-traditional international innovators into the DoD Science and Technology (S&T) ecosystem; and (3) providing mentorship and expertise to accelerate, mature, and transition technologies of interest to the DoD.

The xTechInternational competition will consist of three rounds with an optional accelerator for the finalists:

- (1) Call for concept white papers;
- (2) Virtual technology pitch event; and
- (3) Final pitch event.

The competition will award up to \$500,000 in cash prizes to selected participants. Up to 24 semi-finalists from round one will receive a cash prize of \$5,000 each and invitation to participate in the virtual technology pitch event in May 2024. Up to 12 participants will be selected as finalists and will receive an additional cash prize of \$10,000 each and invited to participate in the finals event that will take place in Madrid, Spain, tentatively scheduled from August 19 – 23, 2024. The xTechInternational competition will select up to five final winners of the competition, receiving the following prizes: 1st place: \$95,000; 2nd place: \$70,000; 3rd place: \$50,000; 4th place: \$30,000 and 5th place: \$15,000.

In addition to non-dilutive cash prizes, participants will have the opportunity to engage with U.S. DoD and other international partners through information sharing and networking opportunities. Finalists will be entered into the xTech Accelerator to receive intensive mentorship and access to networking events to help grow their companies for DoD and commercial use. Details on the prize structure are listed in the announcement below.

The efforts described in this notice are being pursued under the authorities of 10 U.S.C. § 4025 to award cash prizes as described in this announcement and 10 U.S.C. § 4003 (Prototype Projects). While the authority of this program is 10 U.S.C. § 4025, the xTechInternational competition may generate interest by another U.S. Army, DoD or U.S. government organization for a funding opportunity outside of this event. The interested organization may contact the participant to provide additional information, which may or may not result in partnership opportunities.

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The competition may identify technology solutions from participating international small to medium businesses and academic and research institutions, that meet the criteria for award of a follow-on contract for additional proof-of-concept or prototype development. Finalists of the prize competition may be invited to submit a proposal for further development of their proposed technology innovation based on the needs of the Army, DoD or other U.S. government agency. The Army may use a contract mechanism of its choice and will notify the participants accordingly. The efforts described in this notice are being pursued under the authorities of 10 U.S.C. §4025.

All xTechInternational competition submissions are treated as privileged information and contents are disclosed to U.S. and International defense civilian and military employees who are part of their host-nation's Ministry/Department of Defense (MOD/DOD) or designated support contractors only for the purpose of evaluation and program support.

The xTech Program will provide detailed feedback from evaluators to participants during each part of the competition. The purpose of providing this feedback is to accelerate transition of the technology to an DoD end-user by providing insight on best applications for the technology, suggestions for product improvement for DoD use and recommended next steps for development. However, the government will not respond to questions or inquiries regarding this feedback.

II. Eligibility Requirements

The entities eligible to participate in this competition must be international, non-U.S. based small to medium businesses or international academic and research institutions. A small to medium business is defined as those with <1,500 staff headcount. An academic or research institution, is not limited on overall staff headcount. Participating entities must have or be able to obtain a NCAGE code if selected to advance in the competition. Instructions on how to obtain a NCAGE code can be found on the xTechInternational registration page. U.S. entities are eligible to participate only if they are partnering with an international business and the international business is the lead, identified as the point of contact and submitter.

Each eligible entity:

- Shall be incorporated in, and maintain, a primary place of business in a foreign country;
- May not be a U.S. federal or foreign government entity or employ a U.S. federal employee acting within the scope of their employment;
- Must be able to obtain a NCAGE code to process payments; and
- May not be a U.S. business or U.S. academic or research institution.

III. Topics and Problem Statements

xTechInternational is seeking novel capabilities and technology solutions within AI for Intelligence and Decision-Making Applications, Quantum Sensing and Indigenous Materials Forward that can assist in tackling the Army's current and future needs, enabling new capabilities, improved performance, faster production, or cost savings for Army systems.

AI for Intelligence and Decision-Making Applications (Swarm Algorithms, Autonomous systems, UAS and c-UAS, etc.): The U.S. Army is actively seeking AI technologies that augment the intelligence and decision-making capabilities of military systems while protecting key strategic and operational data. Examples include but are not limited to:

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- Swarm algorithms: AI technology used to enhance the collective intelligence of decentralized, self-organized systems. These systems can be both human-based and/or artificial.
- Autonomous systems: Technology that can orchestrate different tasks across various AI algorithms to enhance algorithm synergies and military decision-making.
- Unmanned aerial systems (UAS): Increased machine learning capabilities to be incorporated into future systems.
- Counter-unmanned aerial systems (c-UAS): Technology used to detect, identify and track unmanned aerial vehicles.
- Data curation: Technology that can aid in data collection, generation and labeling. These can be for real, synthetic, or hybrid training and include multi spectral.

Quantum Sensing and Materials: The U.S. Army is interested in enabling technologies to accelerate research, development and adoption of quantum capabilities. Examples of these technologies may include but are not limited to:

- Novel sensor applications: Single, coherent ensembles, entangled ensembles and distributed qubits; special emphasis on sensing in noisy environments.
- Signal processing algorithms and error correction methods for quantum sensors.
- Quantum position, navigation, and timing (PNT) systems.
- Size, Weight, Power, and Cost (SWaP-c) optimization. This optimization could focus on quantum components or their enabling technologies.
- Innovative approaches to enhance efficacy, such as electric, magnetic, or radiological shielding.
- Innovative subcomponent design such as cooling, vacuum system or on-chip optics.
- Manufacturability of critical quantum components or enabling technologies.
- Application of AI/ML techniques to quantum technology.

Indigenous Materials Forward: The U.S. Army is seeking unique technologies and methods to integrate indigenous materials and systems to support supply-chain resiliency for sustainment. Examples include:

- Novel technologies for food manufacturing: Examples include but are not limited to food additive manufacturing, biomanufactured food products and ingredients, mobile systems for food production at point of need, methods to detect and mitigate contaminants or adulterants in indigenous foods, unique methods to reduce size and weight of shelf-stable products with high nutritional value, etc.
- Low-logistics indigenous materials utilization: This may include organic/inorganic materials naturally occurring or salvaged from local area.
- Novel methods to reduce life-cycle burden of locally generated waste: Examples include but are not limited to edible packaging materials for food/utensils, readily compostable/biodegradable materials, technologies that turn waste streams into value-added products, rational design of materials for circular use, etc.
- Portable systems for in-theater additive manufacturing.

IV. Program Submission

The xTechInternational competition is voluntary and open to all entities that meet the eligibility requirements listed in Section II. **You may only submit one application per topic area. All submissions must be submitted in English.** The registration information and submission upload must be received by **13:00 GMT on March 7, 2024**. Submissions received after the deadline will not be considered.

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Register now by selecting the xTechInternational competition image at:

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

V. xTechInternational Competition Structure

Part 1: Concept White Paper

All eligible entities shall submit a short three-page concept white paper and an optional accompanying three-minute video outlining their potential impact/revolutionary vision for DoD, the technology and concept viability, and commercialization potential. DoD and international (as described in Section I) stakeholders including Warfighter, acquisition programs, and research and development technical experts, will review each concept white paper and accompanying video, if included.

All concept white papers and videos must adhere to the following requirements:

- All concept white papers must be submitted using the template found on the registration page, "xTechInternational_White_Paper_Template.docx." **Any proposals submitted in a format other than that provided will not be reviewed.**
- Please list your company name/academic or research institution name, country 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 DoD.
- For the optional video, provide a URL on the contest registration page to a video supporting your application; the xTech Program prefers videos submitted using Vimeo. Video production value is not weighed in the evaluation scores. Rather, the video can explain the concept white paper or otherwise demonstrate the technology concept proposed. Videos must not exceed three minutes **MAXIMUM**.

Concept white papers, will be evaluated and ranked using the following scoring criteria (further details on each scoring dimension can be found on the xTechInternational registration page):

- Introduction, Program Alignment – 20%
- Potential for Impact/Revolutionary for DoD – 35%
- Technology and Concept Viability – 20%
- Commercialization and Potential – 15%
- Submission Quality – 10%

Upon conclusion of the concept white paper evaluation period, the xTech Program will select up to 24 semifinalists, who will receive a cash prize of \$5,000 each and invitation to Part 2: Virtual Technology Pitches.

Part 2: Virtual Technology Pitches

The xTech Program will invite selected participants from Part 1 to conduct a virtual technology pitch of their technology solution and team ability to a panel of DoD and international SMEs (as described in Section I), tentatively scheduled to occur between May 20-31, 2024.

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Detailed instructions and evaluation criteria will be provided to the semifinalists selected for Part 2. The xTech Program will select up to 12 participants, who will be awarded a prize of \$10,000 each and an invitation to participate in the Part 3 Finals.

Exact dates and times will be provided to selected participants. Dates and times are subject to change.

Part 3: Finals

The xTech Program will invite selected participants from Part 2 to conduct an in-person pitch on their technology concept and team ability to a panel of DoD and international SMEs (as described in Section I), tentatively scheduled from August 19 -23, 2024. The final pitches will be held in Madrid, Spain the exact dates and location will be provided at a later date.

Detailed instructions and evaluation criteria will be provided to the participants selected for Part 3 of the competition. Upon conclusion of the finals event, the xTech Program will select up to five participants as final winners of the competition, receiving the following prizes: 1st place: \$95,000; 2nd place: \$70,000; 3rd place: \$50,000; 4th place: \$30,000; and 5th place: \$15,000.

The exact location and final dates of the event will be sent out to the finalists closer to the event. Dates, times and location are subject to change.

xTech Accelerator

In addition to the prize money and invitation to the finals, selected participants from Part 2 will have the opportunity to participate in the xTech Accelerator, a cohort-based program designed to help develop the finalists through educational programming, diverse mentorship, venture-building consulting, community building and strategic exposure. Additional details on the xTech Accelerator will be provided to the selected participants, and participation in the xTech Accelerator is at no additional cost to the business.

VI. Prizes and Incentives

Prizes will be offered under 10 U.S.C. §4025 (Prize Competitions). The total prize pool is \$500,000.

Phase	Winners	Prize
Part 1: Concept White Paper	Up to 24	\$5,000 each
Part 2: Virtual Technology Pitches	Up to 12	\$10,000 each
Part 3: Finals	Up to 5	1 st place: \$95,000; 2 nd place: \$70,000; 3 rd place: \$50,000; 4 th place: \$30,000; and 5 th place: \$15,000
	Total	\$500,000

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VII. Proposed Schedule

The proposed schedule is outlined below and subject to change without notice.

Date	Activity
Jan. 31 – March 7, 2024	Application Part 1: Concept white paper submission period
April 26, 2024	Part 1: Winners announced
May 20 – 31, 2024	Part 2: Virtual Technology Pitches
June 14, 2024	Part 2 Winners announced
June 17 – August 12, 2024	xTech Accelerator
Aug. 19 – 23, 2024	Part 3: Finals
Aug. 23, 2024	Winners announced

VIII. Disclaimers

Registered participants shall be required to assume any and all risks and waive claims against the U.S. 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.

IX. 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 xTechInternational 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 xTechInternational prize competition shall diminish the U.S. 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.

Register now by selecting the xTechInternational competition image at:

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

X. Point of Contact

The U.S. Army 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.xtech.army.mil>