The Army xTech Program – xTechPacific 2025 Competition Announcement

I.   Background and Purpose

The U.S. Army invites interested entities to participate in the xTechPacific 2025 competition, a competition for eligible small businesses across the U.S. to engage with the Department of Defense (DoD), earn prize money and submit a Direct to Phase II (D2PhII) Army Small Business Innovation Research (SBIR) proposal.

The Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA(ALT)) is partnering with U.S. Army Pacific (USARPAC) and the Army's Catalyst Pathfinder Program to deliver the xTechPacific 2025 competition. The Army recognizes that the DoD must enhance engagements with U.S. small businesses by (1) understanding the spectrum of world-class technologies being developed commercially that may benefit the DoD; (2) integrating the sector of non-traditional innovators into the DoD Science and Technology (S&T) ecosystem; and (3) providing expertise and feedback to accelerate, mature, and transition technologies of interest to the DoD.

The xTechPacific 2025 competition will consist of three rounds:
   (1) Call for concept white papers and technology demonstration videos;
   (2) Final experimentation and pitch event; and
   (3) Opportunity to submit a D2PhII Army SBIR proposal.

The competition will award up to $345,000 in cash prizes to selected participants. **Up to twelve (12) finalists will receive a cash prize of $20,000 each and an invitation to participate in a live experimentation event with a panel of Army and DoD subject matter experts (SMEs) in Fall 2025.** The Army intends to select up to three (3) final winners of the competition to receive an additional cash prize of $35,000 each. Final winners of the competition with technologies that demonstrate sufficient maturity for direct prototype development will have the opportunity to submit a D2PhII Army SBIR proposal worth up to $2 million, not to exceed 18-months in duration. Additional details on prize structure can be found in Section VII.

In addition to non-dilutive cash prizes, participants will have the opportunity to participate in an Army experimentation event and engage with Army and DoD representatives through information-sharing and networking opportunities.

The efforts described in this notice are being pursued under the authorities of 10 U.S.C. § 4025 to award cash prizes recognizing advanced technology achievements. Final winners will be eligible to submit for a D2PhII Army SBIR proposal under the provisions and requirements of 15 U.S.C. § 638.

While the authority of this program is 10 U.S.C. § 4025, the xTechPacific 2025 competition may generate interest by another U.S. Army, DoD or United States Government (USG) organization for a funding opportunity outside of this program (e.g., submission of a proposal under a Broad Agency Announcement). The interested organization may contact the participant to provide additional information or ask for a request for proposal in a separate solicitation. Finalists of the prize competition may be invited to submit a separate proposal for further development of their proposed technology solution based on the needs of the Army. The Army may use a contract mechanism of their choice and will notify the participants accordingly.

All xTechPacific 2025 competition submissions are treated as privileged information, and contents are disclosed to government employees or designated support contractors only for the purpose of evaluation, experimentation planning and program support.

The xTech Program will provide a feedback report to participants during each part of the competition. The purpose of providing this report is to assist in potentially accelerating transition of the technology to an Army end-user by providing insight on best applications for the technology, suggestions for product improvement for Army use and recommended next steps for development. However, the Government may not respond to questions or inquiries regarding this feedback.

II.   Eligibility Requirements

Small, for-profit, independent U.S. businesses. Restrictions exist about (1) the type of firm; (2) its ownership structure; (3) the firm's size in terms of the number of employees; and (4) prior, current, or pending support of similar proposals or awards, as follows:

(1) Type of Firm: An eligible firm must be organized as a for-profit concern and meet all the other small business requirements in 13 C.F.R. § 121.702. Non-profit entities are not eligible.

(2) Ownership and Control: A majority (more than 50%) of an eligible firm's equity (e.g., stock) must be directly owned and controlled by one of the following:

   a. One or more individuals who are citizens or permanent resident aliens of the U.S.;
   b. Other for-profit small business concerns (each of which is directly owned and controlled by individuals who are citizens or permanent resident aliens of the U.S.); or
   c. A combination of (a) and (b) above.

   Note: If an employee stock ownership plan owns all or part of the concern, each stock trustee and plan member is considered an owner. If a trust owns all or part of the concern, each trustee and trust beneficiary is considered an owner.

(3) Size: An eligible firm, together with the affiliates, must not have more than 500 employees.

(4) Prior, Current, or Pending Support with Similar Technology: Proposals submitted in response to this prize competition must not be substantially the same as another proposal that was funded, is now being funded, or is pending contract award with another federal agency. **Small businesses with any question(s) concerning prior, current, or pending support of similar proposals or awards must disclose those as early as possible to the Army xTech Program Office.**

III.   Topics and Problem Statement

The U.S. Army is interested in cutting-edge technology solutions that will drive significant advancements in military capabilities while addressing complex challenges specific to the Indo-Pacific region.

The competition seeks white papers for research and development efforts to produce ***well-defined prototype technology solutions*** that fit within one of the following topic areas:

- **Topic 1:** Detection of Buried Explosives and Unexploded Ordnance (UXO) in Complex Soils and Magnetically Complex Environments
- **Topic 2:** Advanced Defensive and Deterrent Capabilities for Army and Commercial Watercraft

- **Topic 3:** Electronic Warfare (EW) Domain Awareness and Sensing Technologies

Topic descriptions can be found in Appendix A of this solicitation. Final winners will have the opportunity to submit a D2PhII Army SBIR proposal worth up to $2 million to produce a prototype solution.

IV. Program Submission

The xTechPacific 2025 competition is voluntary and open to all entities that meet eligibility requirements listed in Section II (Eligibility Requirements). **Only one submission per topic, per eligible entity is permitted; if submitting an application to more than one topic area, the technology solution must clearly be different and be clearly aligned to the topic area selected.** If a proposal aligns to more than one topic area, select the topic area that best fits your solution.

The registration information and submission upload must be received by **5 p.m. ET on April 2, 2025**. Submissions received after the deadline will not be considered.

Register by selecting the xTechPacific 2025 competition image at:
https://www.xtech.army.mil/

V. xTechPacific 2025 Competition Structure

Part 1: Concept White Paper and Demonstration Video

All eligible entities shall submit a four-page concept white paper outlining their technology, alignment, solution's advantages and impact; technical approach; and commercial potential. In addition, applicants are required to submit a pre-recorded video not to exceed three (3) minutes in length that demonstrates the technology and its readiness to participate in a live experimentation event. Each concept white paper and demonstration video will be reviewed by DoD experts across the S&T ecosystem including Warfighter, acquisition, and research and development SMEs.

All concept white papers must adhere to the following requirements:
- All concept white papers must be submitted using the template found on the Valid Eval registration page, "Template_xTechPacific_2025_White_Paper.docx". **Any proposals submitted in a format other than the template provided will not be reviewed.**
- Please list your company name and proposal title **EXACTLY** as you would like them to appear in any contest marketing materials. Use a clear and concise proposal title to give readers and potential stakeholders an understanding of how your technology would benefit the Army.

To submit your technology demonstration video:
- Provide a URL for your video on the contest registration page. The xTech Program's systems are most compatible with videos submitted using Vimeo.
- Videos must not exceed three (3) minutes in length, **if it exceeds the three (3) minutes, you will be deemed ineligible.**

Work submitted to xTechPacific 2025 must have been substantially performed by the proposing firm. Submissions cannot be based upon any prior or ongoing federally funded Army SBIR or Small Business Technology Transfer (STTR) work. Submissions that cannot attest to this will be disqualified.

Evaluators will review and score concept white papers using the following scoring criteria (further details on each scoring dimension can be found on the xTechPacific 2025 competition website registration page):

- Introduction – 5%
- Army Benefits – 25%
- Technical Approach – 25%
- Readiness for Experimentation and SBIR D2PhII – 25%
- Commercial Potential – 15%
- Proposal Quality – 5%

Firms may be invited to participate in an Army technical safety assessment as part of the process. During this process, the Army may request additional source data and will contact applicants individually if further information is needed. Please note that a request for additional information does not indicate selection or consideration as a finalist.

Upon conclusion of the concept white paper and demonstration video evaluation period, the xTech Program will select **up to twelve (12) applicants to receive a cash prize of $20,000 each** and an invitation to Part 2: Finals.

Part 2: Finals

The xTech Program will invite selected participants from Part 1 to participate in a live experimentation event and conduct an in-person pitch of their solution to a panel of Army and DoD SMEs in Fall 2025. The xTech Program will provide additional instructions, the detailed evaluation criteria, and exact dates and location for the finals event at a later date.

Dates and times are subject to change.

Upon conclusion of the finals, the xTech Program will select **up to three (3) final winners of the competition to receive a cash prize of $35,000 each** and the opportunity to submit a D2PhII Army SBIR proposal worth up to $2 million.

Part 3: Direct to Phase II Army SBIR Proposal

The Army SBIR Program will issue a separate announcement with detailed instructions to submit the Army SBIR proposal materials.

Winners selected from Part 2: Finals will be the **only firms eligible** to submit a D2PhII Army SBIR proposal and will receive detailed instructions upon selection. All other submissions will be ineligible.

Phase II is the principal research or research and development effort and is expected to produce a well-defined deliverable prototype. In accordance with the D2PhII Army SBIR requirements, each eligible proposing small business concern shall provide documentation or demonstrate feasibility of sufficient solution maturity to be eligible for a D2PhII Army SBIR award along with the D2PhII Army SBIR proposal. Work submitted within the feasibility documentation or demonstration must have been substantially performed by the proposing small business concern and/or the principal investigator. If technology in the feasibility documentation is subject to Intellectual Property (IP), the proposing small business concern must either own the IP or must have obtained license rights to such technology prior to proposal submission, to enable it and its subcontractors to legally carry out the proposed

work.

VI.   Proposed Schedule

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

Date	Activity
March 5 – April 2, 2025	Part 1: Concept white paper and demonstration video submission period
June 2025	Finalists announced
Fall 2025	Part 2: Finals experimentation and pitch event
Fall 2025	Final winners announced
November 12 – December 17, 2025	D2PhII Army SBIR proposal submission period

VII.   Prizes and Incentives

Prizes will be offered under 10 U.S.C. §4025 (Prize Competitions). The total prize pool is $345,000. The Army SBIR contract awards will be offered under 15 U.S.C. §638 and are separate from the prize competition; D2PhII Army SBIR awards will be up to $2 million each. The total Army SBIR funding pool is $6 million. Other non-monetary incentives are provided through the xTechPacific 2025 competition to help small businesses engage with the Army.

Phase	Winners	Prize	Army SBIR Award
Part 1: Concept White Paper and Video Demonstration	Up to 12	$20,000 each	N/A
Part 2: Finals Event	Up to 3	$35,000 each	N/A
Part 3: Opportunity to Submit an Army SBIR Proposal	Up to 3	N/A	D2PhII Army SBIR awards up to $2M each
	Total	$345,000	$6,000,000

VIII.   Disclaimers

Registered participants are required to assume any and all risks and waive claims against the USG 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 IP rights and management by the private sector and the DoD. For the xTechPacific 2025 competition:
- The USG may not gain an interest in IP developed by a participant without the written consent of the participant;
- Nothing in this xTechPacific 2025 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 xTechPacific 2025 prize competition, or is entitled to, under any other government agreement or contract, or is otherwise entitled to under law; and

- The USG may negotiate a license for the use of IP developed by a registered participant in the prize competition.

Register by selecting the xTechPacific 2025 competition image at:
https://www.xtech.army.mil/

X.   Point of Contact

The Army xTech Program Office
Office of the Deputy Assistant Secretary of the Army, Research and Technology
Email: usarmy.xtech@army.mil
Website: https://www.xtech.army.mil/

APPENDIX A – Problem Statement Descriptions

Topic 1: Detection of Buried Explosives and Unexploded Ordnance (UXO) in Magnetically Complex Environments

Throughout the Indo-Pacific, volcanic islands feature iron-rich soil, which makes magnetic detection of buried metals and unexploded ordnance (UXO) extremely challenging. This environment allows threat actors to conceal munitions, improvised explosive devices (IEDs), and other hazardous materials with relative ease. Additionally, many areas, such as Papua New Guinea and the Philippines, still contain legacy UXO, further complicating detection efforts. To address these challenges, novel detection technologies must be developed that are effective in magnetically complex environments, adaptable to diverse operational conditions, and deployable across multiple platforms. Proposed detection technologies should be designed for various operational scales, from small, portable, and easy-to-use systems requiring minimal maintenance to more advanced solutions that can be integrated with Class 1 or 2 UAV systems. Prototype solutions can initially be developed for ground or aerial use cases but must have the foundational capability to scan large areas in the future, with additional funding and development. Capabilities should emphasize high detection accuracy with low probability of false alarms in environments with iron-rich soils and other geological interferences. The prototype should demonstrate a minimal viable product (MVP) capability to detect representative inert munitions/UXO surrogates in relevant environment in Hawaii. Minimum threshold accuracy p(d) and other attributes, p(fa) and requirements can be determined during demonstration, evaluation, and development based on SWAP and technical readiness.

General Requirements:

1. **Detection Performance:**
   - Solutions should detect deeply buried explosives, munitions, and UXO such as; 60-mm and 80-mm high explosive mortars, 75-mm, 105-mm, and 155-mm projectiles, 2.36-inch rocket propelled anti-tank rounds, US MK II hand grenades, Rockets, M1 anti-tank land mines, and WWII era ordnance.
   - Solutions must detect buried explosives and UXO with a minimum detection accuracy of <90% in magnetically complex environments and at a depth of at least >1 feet.
2. **Testing in High-Iron Soils:**
   - Proposed technologies must demonstrate effectiveness in representative volcanic soils. The most extensive soil type in Hawaii are Andisols, derived from volcanic ejecta followed by Histosols, formed on recent lava flows, Oxisols, and Mollisols. Solutions should demonstrate high probability of detection across several types of complex soil examples as seen in Hawaii and other representative soil samples from around the INDO-Pacific containing high iron or iron-like minerals, which can interfere with traditional magnetic-based detection.

3. **Data Processing and Analysis:**
   - Multimodal data fusion solutions are ideal and can enhance the effectiveness of identifying UXOs by integrating inputs from multiple sensors. However, solutions do not necessarily need to include data fusion to be successful.
   - AI/ML-based analytics to enhance detection accuracy and reduce false positives would strengthen proposals and improve performance, but their inclusion is not required for a successful solution.

Potential Sensor/Detection Ecosystems and Considerations:

1. **Non-Magnetic Detection Technologies**
   o Example technologies include, but are not limited to, those that leverage alternative properties (e.g., electrical, acoustic, spectroscopic, or seismic) to detect buried objects.
   o Must be able to detect threats in high iron soil with a minimum detection accuracy of >90% at a depth of >1 feet.
2. **Spectroscopic Detection Technologies**
   o The detection range should be standoff range from the target area.
   o Systems should operate effectively in environments with high humidity, high mineral content, and variable lighting conditions.
3. **Acoustic Detection Technologies**
   o Systems should function effectively in varying terrain types (e.g., coastal, jungle, and urban environments).
   o Must be capable of penetrating representative volcanic soil and detecting buried threats at a minimum depth of >1 feet.
   o Must mitigate background noise to maintain a false positive rate.
4. **Chemical Detection Technologies**
   o Must be able to identify explosive residues at trace levels (ppb).

Topic 2: Advanced Defensive and Deterrent Capabilities for Army and Commercial Watercraft

The U.S. Army seeks affordable, non-exquisite, innovative solutions to enhance the protection of Army and commercial watercraft. These solutions should add defensive and deterrent capabilities to increase survivability and help surface vessels counter modern threats, including uncrewed surface vessels (USVs) and harassing less than lethal, escalation of force effects and emerging aerial UxS threats.

The Army is interested in modular and scalable technologies that provide a range of defense options, from non-lethal deterrents to low-cost weapons that neutralize threats. Firms can propose solutions in any of the five key areas listed below—they do not need to combine multiple functions into one system. Proposed solutions should work on a variety of maritime platforms, including Army and commercial long-haul ships (such as Logistic Support Vessels – LSVs), surrogate or commercial maritime surface vessels, and be effective even on unarmored vessels.

Potential Specifications and Key Performance Parameters:

1. **Cost-Effective Interceptor Systems for Hard-Kill or Soft-Kill Defense Against UxS and USVs**
   - Able to detect, classify, and potentially engage and neutralize aerial UxS and USVs at a range sufficient to prevent fragmentation damage to the host vessel.
   - Low-cost threshold per effect, interceptor, or system kill for target system neutralization.
   - Production capacity must support a minimum production rate of 100 effects/interceptors per day.
   - Fire-and-forget capability with a COTS seeker.
   - Solutions may alternatively employ novel non-kinetic interceptors
   - Must sense and track multiple threats simultaneously and prioritize engagements.
2. **Non-Lethal Repellent and Disruption Systems for Vessel Protection**
   - Non-lethal deterrent systems must be effective at a minimum standoff range of at least 50 feet.
   - Potential non-lethal solutions may include microwave or acoustic deterrence devices, prop fouling systems, engine disruption technologies, and autonomous-targeting water cannons.
   - Non-lethal materials for degrading enemy vessel performance and mobility must be safe for operators and environmentally compliant.
3. **Ramming Protection Systems**
   - Physical countermeasures must minimize damage to friendly vessels while maximizing damage to aggressor vessels.
   - Must be applique-based and not require extensive vessel modifications or significant weight increase.
   - Solutions may include inflatable airbag systems for impact absorption and damage mitigation.
4. **Anti-Floating Barrier Technologies**
   - Must prevent propeller fouling and entanglement from floating barriers while maintaining normal propulsion performance.
   - Stopping to clear entanglements or slowing on contact is acceptable, but the system must not require diver deployment.
5. **Water Cannon Defense Systems**

- Must protect the vessel (like a shield) or degrade hostile water cannon performance by at least 50% to prevent personnel/human harm
- Countermeasures may include technologies to obstruct or redirect high-pressure water streams and protect critical vessel components and personnel.
- Solutions may include systems to block water cannon intakes or deflective shields.

6. **General Key Performance Parameters:**
   - All systems must function effectively in day and night conditions.
   - Must maintain operational performance in at least Sea State 4 conditions.
   - Systems must be modular, scalable, and capable of integration across at least three classes of Army and commercial watercraft.

Topic 3: Electronic Warfare (EW) Domain Awareness and Sensing Technologies

The U.S. Army seeks low-cost and ubiquitous Electronic Warfare (EW) domain awareness and sensing capabilities for multi-domain operations against peer and near-peer threats in the Indo-Pacific Area of Responsibility (AOR). These capabilities should provide persistent situational awareness, leveraging attritable and modular/platform-agnostic sensor payloads for terrestrial sensing. The sensors should operate unattended with extended power life or soldier carried, ensuring reliable functionality in austere environments with minimal sustainment support. Additionally, the solution must seamlessly integrate with existing ground, maritime, and aerial platforms using standardized interfaces and open architectures while being robust enough to function across the Indo-Pacific's diverse operational landscapes, including desert, tropical, and megacity environments. The proposed solutions should focus on developing modular, platform-agnostic sensor payloads designed for seamless integration with various military platforms. These payloads should feature long-duration, unattended operation capabilities, leveraging advanced battery technologies, energy harvesting, and low-power electronics to extend operational life. Solutions must be designed to be compatible with existing interface standards and open architecture(s) across multiple domains. Minimum threshold accuracy and other attributes and requirements can be determined during demonstration, evaluation, and development based on SWAP and technical readiness.

Key Requirements

1. **Modular and Attritable Sensor Payloads**: Design modular, platform-agnostic payloads that can be easily integrated with various ground, maritime, and aerial platforms.
2. **Unattended and Low-Power Operation:** Develop payloads that can operate unattended with long battery life, using energy harvesting, low-power electronics, and advanced battery technologies.
3. **Platform-Agnostic Interfaces:** Ensure payloads can communicate with various platforms using standardized interfaces, open architecture, and software-defined interfaces. Ability for software ecosystem to integrate with Android Team Awareness Kit (ATAK).
4. **Environmental Hardening**: Design payloads to operate in diverse environments, including desert, tropical, and megacity areas, with ruggedized designs, weatherproofing, and thermal management.
5. **Autonomous Operation and Edge Computing**: Enable autonomous operation using artificial intelligence (AI), machine learning (ML), and edge computing, with local data storage and processing to minimize latency and dependence on cloud connectivity.
6. **Multi-Function and Multi-Band Capabilities:** Develop payloads with multi-band antennas, multi-function capabilities, and frequency-agile designs to provide comprehensive EW domain awareness.
7. **Cybersecurity and Information Assurance:** Ensure payload security and integrity using encryption, secure communication protocols, intrusion detection and prevention systems.

To address these requirements, the following technology areas *may* be relevant, however solutions are not limited to this list:

1. **Software-Defined Radios (SDRs):** Modular, reconfigurable radios for flexible payload design, supporting multi-band and frequency-agile operations.
2. **Cognitive RF Sensing and Adaptive Filtering:** AI-driven RF signal analysis to detect, classify, and mitigate interference in congested or contested electromagnetic environments.
3. **Advanced Passive RF Sensing Technologies:** Leveraging low-power, passive RF

detection techniques to monitor electromagnetic activity without emitting detectable signals.

4. **AI-Enhanced Signal Processing:** Using machine learning algorithms to improve the identification and classification of electromagnetic signals in real-time.
5. **Low-SWaP (Size, Weight, and Power) Sensor Technologies:** Miniaturized sensor components that maintain high-performance capabilities while reducing the burden on host platforms.
6. **NDA compliant extremely low-cost sensor technologies**.
7. **Energy Harvesting and Advanced Power Management:** Technologies that extend operational endurance through energy harvesting, smart power management, and low-power design principles.
8. **Distributed and Collaborative Sensor Networks**: Swarm-based, networked sensing architectures that share and process EW data across multiple platforms for enhanced situational awareness.
9. **Secure and Resilient Communications:** Advanced encryption techniques, frequency hopping, and anti-jamming capabilities to ensure robust and secure data transmission.
10. **Miniaturized Multiband Antennas**: Compact, frequency-agile antenna solutions designed for multi-domain operations with enhanced directionality and efficiency.
11. **Hyperspectral and Multispectral RF Sensing:** Leveraging advanced spectral analysis techniques to detect and classify electromagnetic emissions with greater precision.