The Army xTech Program – xTechSpecial Forces Competition Announcement

I. Background and Purpose

The U.S. Army invites U.S. based small businesses to participate in the xTechSpecial Forces competition, a competition for eligible small businesses across the U.S. to engage with the Department of Defense (DoD), earn prize money, participate in a business accelerator program and submit a Phase I or 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 the **U.S. Army 1st Special Forces Command (Airborne)** to deliver the xTechSpecial Forces competition. The Army recognizes that the DoD must enhance engagements with 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; (3) providing expertise and feedback to accelerate, mature, and transition technologies of interest to the DoD; and (4) providing opportunities for small businesses to participate in experimentation events that allow their solutions to be tested in real-time by end-users.

The xTechSpecial Forces competition will consist of four rounds:
  (1) Call for concept white papers;
  (2) Final pitch event/demonstration;
  (3) Opportunity to submit a Phase I or D2PhII Army SBIR proposal; and
  (4) Opportunity to participate in an experimentation event post D2PhII/Phase II award.

The competition will award up to $470,000 in cash prizes to selected participants. **Up to 12 finalists will receive a cash prize of $10,000 each and an invitation to pitch their innovative technology solutions to a panel of Army and DoD subject matter experts during an in-person event at Fort Liberty, NC.** The Army will select up to five final winners, each eligible for a $70,000 cash prize and may submit a D2PhII SBIR proposal worth up to $2 million; and/or up to 10 final winners who will receive a cash prize of $35,000 each and may submit a Phase I SBIR proposal worth up to $250,000. Additional details on prize structure can be found in section VII.

In addition to non-dilutive cash prizes, participants will have the opportunity to engage with Army and DoD representatives through information-sharing and networking opportunities. Finalists will be entered into an optional xTech Accelerator to receive intensive mentorship, networking and education to assist in growing their companies for DoD and commercial use.

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 addressing complex challenges and enhancing national security. All winners will be eligible to submit for an Army Special Forces SBIR Phase I or D2PhII award under the provisions and requirements of 15 USC 638.

While the authority of this program is 10 U.S.C. § 4025, the xTechSpecial Forces 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 xTechSpecial Forces competition submissions are treated as privileged information, and contents are disclosed to government employees or designated support contractors only for the purpose of evaluation and program support.

The xTech Program utilizes the online evaluation and feedback tool, Valid Eval, to accept applications and streamline the evaluation and feedback process. xTech will provide a feedback report to participants during each part of the competition that will be accessible through the tool. 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 xTech Program Office.**

III.   Topic and Problem Statement

The U.S. Army 1ˢᵗ Special Forces Command plays a pivotal role in national security by executing a diverse range of missions with precision, agility, and expertise. They are often training to operate in austere and hostile environments and serve as force multipliers, extending the reach of U.S. military power and enhancing interoperability with partner forces worldwide, thereby safeguarding national interests and promoting global stability.

The U.S. Army is interested in cutting-edge technology solutions that will drive significant advancements in military capabilities while addressing complex challenges and enhancing national security. The competition seeks technology solutions that fit within one of the five topic areas:

- **Topic 1:** GPS denied ATAK Compatible Self Location Application
- **Topic 2:** SWARM Tracker Counter - UxS Warning System
- **Topic 3:** PSYOP Product Air Delivery Vehicle
- **Topic 4:** Non-Attributable Mobile Mesh Network Radio
- **Topic 5:** Distributed Electromagnetic Sensing, Automated Characterization, and Simple Reporting Systems

Topic descriptions can be found in Appendix A of this solicitation.

IV.   Program Submission

The xTechSpecial Forces 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 be different.** The registration information and submission upload must be received by **5 p.m. ET on June 12, 2024**. Submissions received after the deadline will not be considered.

Register by selecting the xTechSpecial Forces competition image at:
https://www.xtech.army.mil/

V.   xTechSpecial Forces Competition Structure

Part 1: Concept White Paper

All eligible entities shall submit a four-page concept white paper outlining their technology, problem and solution; the potential impact; Warfighter demand, technical risk, and commercial risk. Each concept white paper 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, "xTechSpecial Forces_White_Paper_Template.docx". **Any**

> **proposals submitted in a format other than the template provided will not be reviewed.**
> - Please list your company name and proposal title **<u>EXACTLY</u>** 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.

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

- Introduction – 5%
- Potential for Impact – 40%
- Warfighter Demand – 15%
- Technical Risk – 25%
- Commercial Risk – 10%
- Proposal Quality – 5%

Upon conclusion of the concept white paper evaluation period, the xTech Program will select up to 12 applicants to receive a prize of $10,000 each, an invitation to Part 2: Finals, and the opportunity to participate in the accelerator programming.

Part 2: Finals

The xTech Program will invite selected participants from Part 1 to conduct an in-person pitch demonstration of their solution to a panel of Army and DoD SMEs at Fort Liberty, NC between September 2-6, 2024.

The xTech Program will provide additional instructions, the detailed evaluation criteria, and exact dates for the finals event at a later date. ***Dates and times are subject to change.***

The xTech Program will select up to five winners who will receive an additional cash prize of $70,000 each and may submit a D2PhII Army SBIR proposal worth up to $2 million and/or up to 10 winners who will receive an additional cash prize of $35,000 each and may submit a Phase I Army SBIR proposal worth up to $250,000.

Post-Competition

Army Special Forces Phase I or a D2PhII 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 participate and submit a Phase I or D2PhII SBIR proposal under this announcement and will receive detailed instructions upon selection. All other submissions will be ineligible.

Experimentation Event

Firms selected for a D2PhII and/or Phase II SBIR award will be provided with a unique opportunity to participate in an experimentation event during or after their SBIR award,

where firms will receive direct feedback from end-users. This direct engagement will provide firms with a deeper understanding of the real-world application and operational requirements of their technology solutions and will be able to fine-tune their solutions and address any challenges.

Additional details for the experimentation event will be provided at a later date.

VI.   Proposed Schedule

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

Date	Activity
May 1 – June 12, 2024	Part 1: Concept white paper submission period
July 29, 2024	Finalist announced
July – September, 2024	xTech Accelerator Programming
September 2 – 6, 2024	Part 2: Finals Event
September 26, 2024	Final Winners announced
September 26 – October 22, 2024	Submit SBIR proposal

VII.   Prizes and Incentives

Prizes will be offered under 10 U.S.C. §4025 (Prize Competitions). The total prize pool is $470,000. **The Army SBIR contract awards will be offered under 15 U.S.C. §638 and are separate from the prize competition**; Phase I SBIR awards will be up to $250,000 each, and D2PhII SBIR awards will be up to $2 million each. Other non-monetary incentives are provided through the xTechSpecial Forces competition to help small businesses engage with the Army.

Phase	Winners	Prize	SBIR Award
Part 1: Concept White Paper	Up to 12	$10,000 each	N/A
Part 2: Finals Event	Up to 10	$70,000 each for winners eligible to submit a D2PhII proposal and $35,000 each for winners eligible to submit a Phase I SBIR proposal	N/A
SBIR Proposal Submission	Up to 10	N/A	Phase I SBIR awards up to $250,000 each and D2PhII SBIR awards up to $2M each
	Total	$470,000	Up to $10,000,000

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 intellectual property (IP) rights and management by the private sector and the DoD. For the xTechSpecial Forces competition:

- The USG may not gain an interest in IP developed by a participant without the written consent of the participant;
- Nothing in this xTechSpecial Forces 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 xTechSpecial Forces 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 xTechSpecial Forces 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.pentagon.hqda-asa-alt.mbx.xtechsearch@army.mil
Website: https://www.xtech.army.mil/

APPENDIX A – Problem Statement Descriptions

Topic 1: GPS Denied ATAK Compatible Self Location Application

The US Army 1st Special Forces Command (Airborne) is seeking a software solution to obtain self-location data in GPS-denied situations that can be integrated into the Android Team Awareness Kit (ATAK) software platform available on the Google Play Store or elsewhere. This software will enable self-location without the use of GPS, other networks, or additional hardware.

This will be a software application, without additional hardware, allowing ground operators to use their ATAK End User Device to take a picture of the sky to obtain images including celestial objects and/or passing satellites. The resulting self-location should be operationally suitable.

Minimum threshold accuracy and other attributes and requirements can be determined during demonstration, evaluation, and development based on SWAP and technical readiness.

Topic 2: SWARM Tracker - Counter- UxS Warning System

As adversaries continue to deploy increasing numbers of autonomous remotely crewed systems, US forces will be exposed to greater risk from swarmed sensors and effects. Within a sense-notify-act framework, existing deployed systems must provide multi-modal awareness and provide timely notifications to tactical units and static base defense operating centers. Specifically, ARSOF seeks to provide an early warning framework similar to the National Weather System's severe weather warning systems that provide advanced warning. Tools need to be integrated with existing and emerging systems to provide timely warning. User-centric notification systems need to be built to reduce cognitive load.

The United States Army Special Operations Command requires an automated tool that adapts open source and/or commercial technologies to provide highly available, scalable notification system for forces deployed to austere environments. ARSOF will accept proposals on Counter-UxS approaches but will prioritize submissions that address the core need areas described in the sense/notify/act framework.

- Automated tools that can integrate multiple sensor formats – e.g. radar, acoustic, visual, etc.
- Graphical User Interface displays for existing tactical end user devices.
- Automated tools that generate near-simultaneous warning channels to distributed end user devices and base defense systems.
- Integrated tools that can be used across multiple Army units from the Program Office to end users.

Topic 3: PSYOP Product Air Delivery Vehicle

The United States Army Special Operations Command has identified the requirement to deliver/disseminate Psychological Operations products via self-guided aerial delivery. Deployable individually or in large groups (via swarm technology) into hostile or denied environments. The Air Delivery Vehicle (ADV) must be interchangeable depending on payload and mission requirement with navigational capability that is resistant to electronic attack and can be employed from a multitude of military mobility vehicles and be capable of accommodating payloads no less than 8 ounces up to 50 pounds.

Proposed Specifications and Key Performance Parameters:

- Self-navigating, GPS assisted via way points able to operate in a contested environment.
- Accurate release point within 20 square meters.
- Able to travel at least 20+ km a release of 3km in zero wind.
- Able to initiate dissemination from low levels above ground level allowing the user the ability to dictate when ADV will release its payload.
- Payload minimum of 8oz and maximum weight TBD.
- Able to operate in day and night.
- Must be impermeable to water for at least 1hr.
- Broadcast Formats in line with current, traditional and future broadcast capability and communication methods

Topic 4: Non-Attributable Mobile Mesh Network Radio

1st Special Forces Command (SFC) is interested in a small form factor, non-attributable mesh network radio system for position location information (PLI), voice, sensor integration and data transmission in conjunction with android team awareness kit (ATAK).

The system must enable continuous communication outside of cellular/internet coverage The intent for this device is extreme flexibility for network creation and operational application while maintaining a low physical and RF signature at the modern edge of low probability of interception/detection (LPI/LPD) communications.

Proposed specifications:

- Low-cost per unit
- Mesh self-healing
- Power modulation (Manual-Auto)
- Data, PLI and Voice capable
- Network compartmentalization (Partner Force/Blue Force)
- Additional LPI/LPD attributes
- User friendly ATAK integration
- LAN and WAN capable

Topic 5: Distributed Electromagnetic Sensing, Automated Characterization, and Simple Reporting systems

The US Army 1st Special Forces Command (Airborne) is interested the development of Distributed Electromagnetic Sensing, Automated Characterization, and Simple Reporting systems. This initiative is poised to bolster Electronic Warfare (EW) capabilities and enhancing spectrum dominance and situational awareness. We are seeking technological solutions to meet the contemporary challenges of EW, focusing on scalable, cost-effective, software-based innovations.

We will accept proposals on any electronic support (ES) solutions, USASOC will prioritize submissions addressing the following core need areas for award:

- AI/ML-enabled edge processing
- Automated signal detection and characterization
- Operationally relevant outputs for users not trained in EW systems
- Near-real-time data availability
- Integration with tactical situational awareness systems (e.g. ATAK)
- Software-defined solutions
- Hardware-agnostic, i.e. the capability to integrate with commercial and existing software-defined radios and edge computing devices
- Operational in degraded, constrained, disconnected and/or contested environments
- Open API
- Power considerations
- Cybersecurity considerations