EXPEDITIONARY TECHNOLOGY SEARCH (XTECHSEARCH)

Draft Solicitation for FedBizOpps, Challenge.gov, Federal Register, Department of Commerce:

Background Information:

The Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA(ALT)) is announcing the Army Expeditionary Technology Search – xTechSearch – to be featured at the Association of the United States Army (AUSA) Annual Meeting in Washington, D.C., on 8 to 10 October 2018. xTechSearch will highlight opportunities for nontraditional defense partners to collaborate with the Army to tackle the most poignant Army modernization challenges.

The ASA(ALT) recognizes that the Army must enhance engagements with the entrepreneurial funded community, small businesses, and other non-traditional defense partners, by: (1) understanding the spectrum of technologies being developed commercially that may benefit the Army; (2) integrating the sector of nontraditional innovators into the Army's research and development ecosystem; and (3) providing mentorship and expertise to accelerate, mature, and transition technologies of interest to the Army.

Pursuant to Title 15, United States Code, Section 3719, the xTechSearch competition will provide prizes to select businesses for innovative technologies and ideas that can solve Army challenges. The program will also integrate these nontraditional innovators into the Army's Science and Technology (S&T) ecosystem by providing cooperative research opportunities with Army labs, including access to the Army's organic intellectual and technical capital. xTechSearch is an opportunity for small businesses to pitch technology solutions – a new application for an existing technology or a new technology concept entirely – to the Army.

xTechSearch is a novel approach for linking innovators directly with the Army labs, with a focus on lowering the entrance barriers and spurring innovation.

Eligibility Requirements:

The entities allowed to participate in this competition are small businesses as defined in 13 C.F.R. Part 121. To qualify, the participating entity must fall within the size standard by North American Industry Classification System code 541713, 541714, and 541715.

There may be only one submission per business. In addition, each entity:

- Shall provide registration information in the xTechSearch Cover Letter registration form;
- Shall be incorporated in and maintain a primary place of business in the United States;
- Shall perform the work in the United States.
- May not be a Federal entity or Federal employee acting within the scope of their employment.

Registered participants shall be required to agree 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 a prize competition, whether

the injury, death, damage, or loss arises through negligence or otherwise.

Participants shall be required to obtain liability insurance or demonstrate financial responsibility, in amounts determined by the Army, for claims by—

- Third parties for death, bodily injury, or property damage, or loss resulting from an activity carried out in connection with participation in a prize competition, with the Federal Government named as an additional insured under the registered participant's insurance policy and registered participants agreeing to indemnify the Federal Government against third party claims for damages arising from or related to prize competition activities; and
- Federal Government for damage or loss to Government property resulting from such an activity.

Intellectual property

The Army is a strong proponent of deliberate intellectual property (IP) rights and management by the private sector and the Department of Defense. A deliberate and commercially oriented IP management posture will foster greater innovation while preventing the loss of military technologies to open sources which may benefit adversaries. Enhanced IP management, coupled with modularity and open system architecture, improves our ability to deliver systems that can be readily adapted to partner needs and integrated with their existing systems while advancing interoperability.

For the xTechSearch program:

- The Federal Government may not gain an interest in IP developed by a participant without the written consent of the participant; and
- The Federal Government may negotiate a license for the use of IP developed by a registered participant in the prize competition.

Technology Focus Areas:

The Army wants the innovation community to explore the full ideation space and the art-of-the-possible. The ASA(ALT) is soliciting innovative, paradigm-breaking technologies from the nontraditional defense community to support the following Army modernization priorities:

- Long Range Precision Fires. Provide massed, mobile, operational-level kinetic and non-kinetic strike options to restore overmatch, improve deterrence, and disrupt Anti-Access/Area-Denial (A2/AD) on a complex, contested, and expanded battlefield. Potential technology areas include:
    - Propulsion for extended long-range missiles
    - Extended range cannon artillery
    - Enhanced guidance/navigation for weapon systems
    - Advanced energetics
    - Advanced warheads for cluster munitions
    - Next-generation RADARs
- Next Generation Combat Vehicle (NGCV). Develop replacements for current tanks and infantry fighting vehicles that realize weight, sustainment, and cost-per-unit savings. This will increase the capability of our existing formations and improve our ability to survive and win in the complex and densely urbanized terrain of an intensely lethal and distributed battlefield where all domains are continually contested. Potential technology areas include:
    - NGCV Design

  - Vehicle Protection against advanced threats
  - Robotics and autonomy for combat operations and logistics
  - Advanced power generation
  - Advanced materials
  - Efficient Manned-Unmanned Teaming Constructs
  - Artificial Intelligence, Machine Learning, and Autonomy
- Future Vertical Lift (FVL) to develop replacement aviation platforms that include unmanned and autonomous attack, reconnaissance, utility, and MEDEVAC with increased speed and extended range and station time to operate in complex, dense urban terrain on an intensely lethal, distributed, and expanded battlefield within contested air space. Potential technology areas include:
  - Platform development and demonstration
  - Next-generation unmanned aircraft system technologies
  - Aviation protection and aircraft survivability
  - Improved situational awareness
  - Integrated Mission Systems
  - Advanced power systems
  - Efficient Manned-Unmanned Teaming Constructs
  - Artificial Intelligence, Machine Learning, and Autonomy
- Network with hardware, software, and infrastructure to provide resilient mission command on the move to wage the maneuver ISR, joint fires, and sustainment fights to retain and exploit the initiative against a peer adversary in an inherently contested cyber and electromagnetic environment. Potential technology areas include:
  - Secure Tactical Communications
  - Interoperable hardware, software, and information systems
  - Cyber Electromagnetic Activities (CEMA)
  - Assured Position, Navigation, and Timing (PNT)
  - Persistent Intelligence, Surveillance, and Reconnaissance (ISR)
- Air and Missile Defense to reduce the cost curve of missile defense, restore overmatch, survive volley-fire attacks, and operate within sophisticated A2/AD and contested domains. Potential technology areas include:
  - Maneuver-Short Range Air Defense (SHORAD)
  - Smaller and more affordable missiles
  - High Energy Lasers
  - Gun-based counter-tactical and small unmanned air systems (UAS) capabilities
  - Advanced seekers
  - Advanced energetics and propulsion
  - Next-generation RADARs
- Soldier Lethality to improve Soldier and small unit performance, reduce surprise, increase protection, and enhance lethality in close combat on an intensely lethal and distributed battlefield and within complex, urban terrain. Potential technology areas include:
  - Advanced lethality and projection
  - Training
  - Improved Soldier protection equipment

- Improved situational awareness and communications
- Optimized and enhanced human performance
- Asymmetric Vision and Decide Faster technologies
- Prolonged field medical care

Proposal Submission

The xTechSearch program is voluntary and open to all interested traditional and nontraditional small businesses. xTechSearch is an opportunity for businesses to pitch novel technology solutions – a new application for an existing technology or a new technology concept entirely – to the Army. The Army will also provide opportunities to engage with Army laboratory assets across the United States, including establishing Cooperative Research and Development Agreements, Cooperative Research Alliances, Commercial Test Agreements, and additional engagement opportunities with Army Subject Matter Expertise.

The Phase I proposal must include a white paper describing the novel technology concept, innovative application concept and integration with the Army's modernization priorities and a completed xTechSearch registration form. Please submit a technology proposal concept white paper (no greater than 1,000 words) and the xTechSearch registration form to the ASA(ALT) at usarmy.pentagon.hqda-asa-alt.mbx.xtechsearch@mail.mil by 11 July 2018. Any proprietary information must be marked and clearly identified by respondents. When responding, please complete the xTechSearch registration form included in the FedBizOps announcement that includes a brief description of the company, any previous or on-going work with the Department of Defense, alignment to modernization priority and a company point-of-contact with a phone number and e-mail address.

Evaluation Criteria and Process

The xTechSearch proposals will be evaluated and ranked in a multi-tiered manner.

Phase I: Concept White Paper Contest

The Concept White Paper phase invites all eligible contestants to complete a concept paper outlining their knowledge, skills, capabilities and approach for this challenge. Contestants' concept papers will be reviewed by a panel of subject matter experts and judges who will select those contestants to be invited to the xTechSearch Technology Pitch Forums. Contestants selected by the panel will receive a prize of $1,000 and an invitation to *Phase II: xTechSearch Technology Pitches*.

Concept White Papers will be ranked based on the novelty of the proposed technology to revolutionizing and modernizing the Army. Each white paper must include the following:

- Proposed Army Modernization Priority that aligns to the submission
- Proposed concept and current technology maturity:
  - Basic science concept – Fundamental disruption
  - Demonstration or Prototype concept – Rapid integration and operational disruption
- Desired Technology Pitch location (Playa Vista, CA; Chicago, IL; Austin, TX; Boston, MA; or Adelphi, MD)
- Submitter Information:
  - Name, Address

- Point of Contact (Technical, Administrative)

Scoring Criteria:

- Potential for Impact/Revolutionizing the Army – 50%
- Scientific and Engineering Viability – 30%
- Team Experience and Abilities – 20%

Phase II: xTechSearch Technology Pitches

The xTechSearch Technology Pitch Contest invites all selected contestants to complete an in-person Technology pitch to a panel of Army and Department of Defense subject matter experts and judges at select locations across the United States. Contestants will pitch their proposed novel technology solution and a proof-of-concept demonstration. Finalists selected by the judging panel will receive a prize of $5,000 and an invitation to attend *Phase III: AUSA Innovators' Corner* in Washington D.C.

xTechSearch will schedule five (5) Technology Pitch outreach events at Army Open Campus locations across the country (Playa Vista, CA; Chicago, IL; Austin, TX; Boston, MA; and Adelphi, MD); up to twenty five (25) companies that submitted Concept White Paper proposals will be invited to pitch their technologies to Army Subject Matter Experts at each outreach event. Finalists will be selected based on the propensity of the technology to impact/revolutionize Army missions, viability to solve an Army capability gap, and demonstrated experience and abilities.

xTechSearch Technology Pitches will be ranked based on the novelty of the proposed technology to revolutionizing and modernizing the Army. Each technology pitch must include a proposal to demonstrate proof-of-concept for the technologies within 6 months.

Scoring Criteria:

- Potential for Impact/Revolutionizing the Army – 50%
- Scientific and Engineering Viability; Proof-of-Concept Demonstration Plan – 30%
- Team Experience and Abilities – 20%

Phase III: AUSA Innovators' Corner

The AUSA Innovators' Corner Contest will invite xTechSearch finalists (up to twenty five (25)) to be featured at the AUSA Innovators' Corner at the AUSA national meeting, 8-10 October 2018 in Washington, D.C. The finalists will leverage Army-sponsored exhibit space to engage with Department of Defense (DoD) customers, industry partners, and academia.

Up to twelve (12) Phase III prize winners scoring highest in Phase II will be announced at AUSA and provided a prize of $125,000 and 6 months to demonstrate proof-of-concept for their xTechSearch technology, to be demonstrated at the *Phase IV: xTechSearch Capstone Demonstration*.

Phase IV: xTechSearch Capstone Demonstration

The xTechSearch Capstone Demonstration will provide a final demonstration for each Phase III winner to demonstrate proof-of-concept for their technology solution to DoD, government,

and industry leadership. The winner of the xTechSearch will be provided $200,000.

Prizes & Incentives

Prizes will be offered under 15 USC §3719 (Prize competitions). The total prize pool is $1.95M.

Each prize winner will also be offered opportunities to partner with one or more of the Army laboratories across the country, with access to Army subject matter experts, laboratory equipment, and other research support assets.

Phase	***Number of Winners***	***Prize***
Phase I. Concept White Paper	125	$1,000 Selection for Phase II
Phase II. xTechSearch Pitches	25	$5,000 Selection for Phase III
Phase III. Innovators' Corner	12	$125,000 Selection for Phase IV
Phase IV. xTechSearch Capstone Demonstration	1	$200,000

Proposed Schedule (Subject to Adjustments):

- 15 June 2018. Publish Request for Information (RFI) with target technology areas and outreach events.
- 11 July 2018. Deadline for proposal submissions.
- 23 July 2018. Adelphi Regional Semifinalists invited to *Phase II: xTechSearch Technology Pitches*
- Week of 30 July. Adelphi xTechSearch panel. Venue: ARL Open Campus, Adelphi, MD.
- 30 July 2018. Austin Regional Semifinalists invited to *Phase II: xTechSearch Technology Pitches*
- Week of 6 August. Austin xTechSearch panel. Venue: ARL South Campus, Austin, TX.
- 6 August 2018. Chicago Regional Semifinalists invited to *Phase II: xTechSearch Technology Pitches*
- Week of 13 August. Chicago xTechSearch panel. Venue: ARL Central Campus, Chicago, IL.
- 13 August 2018. Boston Regional Semifinalists invited to *Phase II: xTechSearch Technology Pitches*
- Week of 20 August. Boston xTechSearch panel. Venue: ARL Northeast Campus, Boston, MA.
- 22-24 August 2018. Playa Vista Regional Semifinalists invited to *Phase II: xTechSearch Technology Pitches*
- Week of 27 August. Playa Vista xTechSearch panel. Venue: ARL West Campus, Playa Vista, CA.
- 17 September 2018. Up to Twenty five (25) Phase III finalists notified and invited to AUSA Annual Meeting.
- 8-10 October 2018. Phase IV AUSA Innovators' Corner, Washington, DC.

- April 2019. Capstone Demonstration with Senior Army Leadership.

Point of Contact

The xTechSearch Coordinators are listed below:
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