

xTech | Innovation Combine - Advanced Energy Storage Challenge Announcement

I. Background

The U.S. Army would like to invite interested entities to participate in the xTech | Innovation Combine Advanced Energy Storage Challenge (also referred to as the Innovation Combine) being tentatively held on or around 21-22 July 2021 (subject to change). The Innovation Combine aims to engage with eligible U.S.-based companies and organizations and will provide a forum to collaborate with the U.S. Army, earn prize money, and provide potential funding opportunities to tackle U.S. Army challenges in Advanced Energy Storage.

The U.S. Army Futures Command (AFC) has partnered with the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) (ASA(ALT)) to deliver this competition. The U.S. Army recognizes that it must enhance engagements with eligible U.S.-based companies and organizations by (1) understanding the spectrum of 'world-class' technologies being developed commercially that may benefit the Department of Defense (DoD), (2) integrating the sector of commercial 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 Innovation Combine is an opportunity for eligible entities (i.e., companies and organizations) to pitch novel advanced energy storage technology solutions directly to the U.S. Army. In addition to non-dilutive cash prizes, entities will have the opportunity to engage with U.S. Army and other partners through information sharing and networking opportunities. The Innovation Combine will provide operational and technical feedback from U.S. Government (USG) subject matter experts (SMEs) on proposed concept white papers submitted to this competition and offer the finalists cash prizes and opportunities to participate in the xTech | Innovation Combine Accelerator to receive education, mentorship, and networking opportunities to help grow their businesses for military and commercial users.

II. Purpose

The purpose of the Innovation Combine is provide an innovative approach for eligible entities to compete for an award in the accelerating military technology ecosystem by pitching novel advanced energy storage technology solutions directly to the U.S. Army. Topic areas and associated problem statements are listed below. The efforts described in this Announcement are being pursued under the authorities of 10 U.S.C. § 2374a (Prizes for Advanced Technology Achievements) and 10 U.S.C. § 4003 (Prototype Projects) (formerly 10 U.S.C. § 2371b).

The crosscutting topic area of advanced energy storage is important across the U.S. Army, DoD, and USG. Given the advancements and complexities of power requirements for U.S. Army Soldiers and platforms, proposals submitted to this competition will have interest to various U.S. Army research and procurement programs. A concept white paper submitted to the Innovation Combine may generate interest by another U.S. Army, DoD, or USG organization for an opportunity outside of this event. The interested organization may contact the submitting entity to provide additional information which may or may not result in partnership opportunities outside of this competition.

III. Eligibility Requirements

The Innovation Combine is voluntary and open to all U.S.-based companies or organizations that meet the eligibility requirements. Only U.S.-based entities are considered eligible to participate

in this effort. Submissions from entities that do not have a primary place of business in the U.S. will not be considered for the prize competition. Multiple submissions, i.e., more than one (1), addressing either problem statement will be accepted from eligible entities.

Each eligible entity:

- Shall be incorporated in, and maintain, a primary place of business in the U.S.
- Shall not be a U.S. Federal government entity or employ a U.S. Federal employee acting within the scope of their employment.
- Is required to register in System for Award Management (SAM) and have or obtain an active CAGE code, DUNS number, and not be on the exclusions lists (debarred or suspended). Instructions on how to obtain a CAGE code can be found on the Innovation Combine registration page.

IV. Problem Statements

The Innovation Combine aims to accelerate integration of technology prototypes for crucial U.S. Army capability gaps into military platforms. Submissions will be open to technology solutions that can considerably improve advanced energy storage by addressing either one or both of the problem statements below and shall meet the definition of a prototype project. A prototype project can generally be described as addressing a proof of concept, model, reverse engineering to address obsolescence, pilot, novel application of commercial technologies for defense purposes, agile development activity, creation, design, development, demonstration of technical or operational utility, or combinations of the foregoing. A process, including a business process, may be the subject of a prototype project.

Topic 1: Technologies for Battery Monitoring & Management.

Problem Statement: The U.S. Army seeks new technologies that can be used to provide an accurate estimate of battery system state to various systems or improve management of batteries in air, ground, and soldier platforms. As high energy batteries are integrated onto U.S. Army systems to meet increased energy demands, there is a need for technologies that can provide accurate battery parameter estimation or manage multiple batteries on a platform. Some battery parameters to consider include current, open circuit voltage (OCV), and state of charge/health.

Topic 2: Safe, Printable, Conformal Batteries.

Problem Statement: The U.S. Army is seeking printable and conformal batteries that can be integrated into parts of weapons, surveillance systems, equipment (such as a helmet, gunstock, uniform/armor), or vehicles, to power features such as night vision, tracking, and tagging. The battery must be able to support 72-hour missions and be conformable to multiple surface types while accounting for safety under different environmental conditions (such as weather and temperature). It must also enable mobility for the Soldier by avoiding the rigid and hermetic seals standard in Li-ion batteries. The proposer needs to select a platform to demonstrate the technology and capability. Upon successful demonstration of the technology at the Soldier-scale, there may be opportunities to explore further development into subsequent applications for robotics and larger platforms.

V. Program Submission Process

Register now by selecting the xTech | Innovation Combine tile at:

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

All Innovation Combine submissions are treated as company proprietary information and contents are disclosed to USG employees or designated support contractors only for the purpose of evaluation and program support. The process of this competition will consist of the following three (3) parts described in greater detail below:

1. Part 1: Concept White Papers – All eligible entities are invited to submit a Part 1: Concept White Paper by 05:00 PM PST on 14 May 2021 addressing one (1) or both of the two (2) advanced energy storage problem statements detailed above (Section IV). Eligible entities may submit one (1) or more submissions per problem statement. **The registration information and uploaded submission materials must be received by 05:00 PM PST on 14 May 2021.** Submissions received after the deadline will not be considered.
 - a) Up to six (6) participants with a selected concept white paper will receive a \$5,000 prize, be invited to participate in Part 2: Technology Pitches, and invited to participate in the xTech | Innovation Combine Accelerator.
 - b) The xTech | Innovation Combine Accelerator is a virtual 2-day optional workshop on how to transition technology to the U.S. Army, tentatively scheduled in late May 2021 or early June 2021.
2. Part 2: Technology Pitches – Up to six (6) Part 1 winners will receive an invitation to present their oral prototype project proposal live (i.e., technology pitches) at the Innovation Combine, and be invited to virtually attend and participate in the xTech | Innovation Combine Accelerator. One (1) winner from each of the two (2) topic areas will each receive an additional prize of \$25,000, be invited to Part 3: Request for Prototype Proposal, and invited to participate virtually in the xTech | Innovation Combine Accelerator Winners' Cohort. The remaining four (4) runner-ups will each receive an additional \$10,000 prize.
3. Part 3: Request for Prototype Project Proposal – The two (2) selected Part 2 winners, one (1) from each topic area, will be invited to participate in Part 3 and submit a prototype project proposal for potential award of a project agreement under the Detroit Arsenal Automotive Other Transaction Agreement (DA2 OTA), W56HZV-16-9-0001, as well as be invited to participate virtually in the xTech Innovation Combine Accelerator Winners' Cohort. The potential award value for each project agreement is up to \$500,000.

xTech | Innovation Combine Accelerator: In addition to the monetary prizes, the Innovation Combine will include an optional technology accelerator program available to the selected winners of Part 1: Concept White Papers. The xTech | Innovation Combine Accelerator is a virtual technology accelerator program that will offer personal mentoring from the xTech Accelerator program, a U.S. technology accelerator, to learn how to leverage the DoD defense market for future partnership opportunities. All participants will receive intensive mentorship and access to networking events to help grow their entities for DoD and commercial users. The two (2) Innovation Combine winners selected as a result of Part 3 will also be invited to the xTech | Innovation Combine Accelerator Winners' Cohort, an extension of the accelerator programming that will be offered to only the winners of this competition and will include more intensive guidance and access to customers within the DoD.

Feedback: Feedback will be provided to all participants at the end of each part of this competition. The purpose of providing feedback is to help the participants understand potential use cases or applications for the technology within the U.S. Army, suggestions for product improvement for U.S. Army use, and recommended next steps for development. The USG will not respond to questions or inquiries regarding the provided feedback.

Part 1: Request for Concept White Papers

All eligible entities may submit one (1) or more concept white papers to one (1) or more problem statements and an accompanying single-slide summary per associated concept white paper outlining their technology, the technical concept and scientific viability of their approach, the potential impact on the U.S. military (identify specific applications and/or specific platforms where possible), and commercial potential for both public and private dual-use applicability. The concept white paper and accompanying single-slide summary chart will be evaluated by a team of USG SMEs, including technical, acquisition, and user experts.

All concept white papers shall adhere to the following requirements:

- All concept white papers shall be submitted using the template found on the registration page, "*InnovationCombine_Advanced Energy Storage_WhitePaper_Template.doc*". **Any proposals submitted in a format other than that provided by the template will not be reviewed.**
- All single-slide summary charts shall be submitted using the template found on the registration page, "*InnovationCombine_Advanced Energy Storage_SummaryChart_Template.ppt*". **Any single-slide summary charts 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 U.S. Army.

Concept white papers and accompanying single-slide summary charts will be evaluated using the following scoring criteria (further details on each scoring dimension can be found on the Innovation Combine registration page):

- Single-Slide Summary Chart – 10%
- Technology Concept and Viability – 30%
- Potential for Impact/Revolutionizing the U.S. Army – 30%
- Commercial Potential – 20%
- Submission Quality – 10%

Part 2: Technology Pitches – Oral Prototype Project Proposal during the Innovation Combine - Advanced Energy Storage Challenge Event

In Part 2: Technology Pitches, up to six (6) selected winners from Part 1 with the highest evaluated white papers will present their technology solution at the Innovation Combine being tentatively held on or around 21-22 July 2021 (subject to change). Presentations will occur live at the

Innovation Combine to an open forum of registered attendees that may include USG, industry, venture capitalist and academia attendees. Each participant will conduct a live presentation followed by a question-and-answer session with a panel of USG SMEs and will be given the opportunity to demonstrate sufficient maturity of their approach to produce a well-defined deliverable prototype to the problem statements identified in Section IV. Detailed instructions and evaluation criteria will be provided to the selected finalists.

Upon conclusion of the Technology Pitches, the USG will select up to two (2) winners with the highest evaluated proposals, one (1) from each topic area. Each of the two (2) winners will receive an additional prize of \$25,000 and will be invited to Part 3: Request for Prototype Project Proposal. The remaining four (4) runner-ups will each receive a prize of an additional \$10,000.

Part 3: Request for Prototype Project Proposal

The two (2) winners selected from Part 2: Technology Pitches will be the only entities eligible to participate in Part 3: Request for Prototype Project Proposal to submit a proposal for their prototype solution, as well as be invited to participate virtually in the xTech | Innovation Combine Accelerator Winners' Cohort. The two (2) winners selected to submit a prototype project proposal will be notified by Defense Automotive Technologies Consortium (DATC) and Army Contracting Command – Detroit Arsenal (ACC-DTA) and will receive detailed instructions upon selection. The resulting awarded project agreements will each have a value of up to \$500,000 and awarded under the DA2 OTA, W56HZV-16-9-0001.

To be eligible for a project agreement award under the DA2 OTA award under this effort, each winner from Part 2 shall:

- Become a DATC member. Any company that is unable or unwilling to become a DATC member will not be eligible for any future awards. In the event a selected company is unable or unwilling to become a DATC member, the USG may select an alternate company from the finalists who presented in Part 2: Technology Pitches with the next highest ranking presentation; and
- Sign and execute a Memorandum of Agreement (MOA) with DATC upon becoming a winner as a result of Part 2

For information on the DATC and/or how to become a member, visit the following website:

<https://datc.sae-itc.com/>

VI. Monetary Prizes and Awards

ACTIVITY	NUMBER INVITED	NUMBER OF AWARDEES	PRIZE [10 USC 2374A]	OTA AWARD [10 USC 4003]
PART 1: CONCEPT WHITE PAPER	Open	Up to 6	\$5,000 up to 6 each	N/A
PART 2: TECHNOLOGY PITCHES	Up to 6	Up to 6	\$10,000 up to 4 each \$25,000 up to 2 each	N/A
PART 3: PROTOTYPE PROJECT PROPOSAL	Up to 2	Up to 2	N/A	Up to \$500,000 each

VII. Proposed Schedule (Subject to Adjustments)

Date	Activity
21 April 2021	Part 1: Concept White Paper submission period open
14 May 2021	Part 1: Concept White Paper submission period closed
18 June 2021	Part 1: Concept White Paper winners notified
Late May/Early June 2021	xTech Innovation Combine Accelerator (2-day Optional Workshop) (invitations for all participating entities from Part 1)
21-22 July 2021	Part 2: Technology Pitches (invitations for up to six [6] Part 1 winners)
22 July 2021	Part 2: Technology Pitches winners announced (two [2] winners)
22-23 July 2021	Part 2: Technology Pitches winners sign MOAs (two [2] winners)
26-27 July 2021	Part 2: Technology Pitches winners invited to submit to Part 3: Request for Prototype Project Proposal and join DATC (required for the two [2] winners)
May take place between August 2021-January 2022	xTech Innovation Combine Accelerator Winners' Cohort (invitations for two [2] Part 2 winners)

VIII. Disclaimers

Registered participants shall be required to assume any and all risks and waive claims against the Federal Government and its related projects, 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 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 U.S. 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 this 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 USG property resulting from such an activity.

IX. Intellectual Property

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

For the Innovation Combine:

- The Federal Government may not gain an interest in IP developed by a participant without the written consent of the participant;
- Nothing in this 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 effort, 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.

For the DA2 OTA project agreement awards:

- All data assertions submitted within the proposal as a result of Part 3: Request for Prototype Project Proposal are subject to USG negotiation of those data rights.

X. Reimbursement of Costs

The USG will not reimburse participants for any costs associated with preparing or submitting responses to any portion of Innovation Combine (Part 1, Part 2, or Part 3). Participation in the Innovation Combine is voluntary. This announcement/competition and/or the information presented herein will not obligate the USG in any manner. The posted information is provided for planning purposes only and does not constitute a Request for Proposal.

XI. Points 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@mail.mil

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

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