

A network diagram consisting of numerous grey dots connected by thin grey lines, forming a complex web of connections. The dots are of varying sizes and are scattered across the top half of the image.

Welcome to the xTechOverwatch Informational Session



Investing in cutting-edge technologies that solve real-world problems—advancing both commercial industries and national defense



Discovers and accelerates novel technology solutions from industry, bridging the gap between emerging technologies and critical military needs.

50%
of xTech applicants are new to DoD



Fosters collaboration between small businesses and the U.S. Army, accelerating the development of innovative technologies that address defense challenges.

\$340M
Invested in FY24



Lowering Barriers: How the Army xTech and SBIR Programs drive industry innovation to address Army needs



Friendly front door for innovators



Explores innovative S&T ideas



Awards 100% expendable cash prizes



Provides feedback, education & networking



Solicits emerging needs from Army partners



Funds research, prototyping and testing



Awards contracts to U.S. small businesses



Supports technology transition

Firms that have won an xTech competition or completed a Phase I or Phase II SBIR contract have fulfilled all competition requirements for future awards

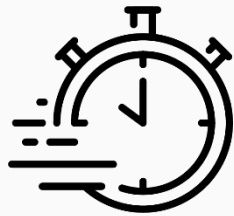
Target Audience (varies by competition)

- Academic institutions
- Startups and entrepreneurs
- Small and large businesses
- Investors
- International entities
- Anyone but federal employees

Target Audience

- U.S. based small businesses
- Research institutions

xTech Program Values: Expanding the funnel of innovative ideas into the Army Science and Technology ecosystem



TIMELINESS

Maximize initial cash-flow for participants;
Provide valuable feedback for continuous improvement.



TRANSPARENCY

Clear alignment with Army and DoD needs;
Build confidence in the system.



PARTNERSHIP

Technology alignment with Army priorities;
Integration of all stakeholders into the feedback loop.



ENGAGEMENT

Connecting nontraditional entities with Army and DoD experts in their fields.

xTech has been delivering results since 2018, here is a “by the numbers” showing the Army’s commitment to innovation

43

competitions

7,428

submissions

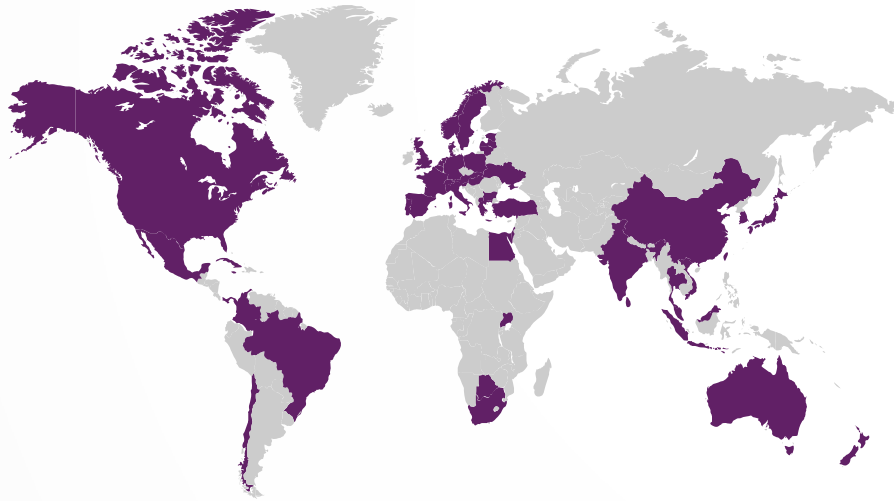
\$25.4M

in cash awards



\$235M

in follow-on contracts



Applications Received from **45 Countries**

4,037
Army/DoD
Evaluators

16,800
comments
provided

42,823
evaluations
completed

1,618
Cash awards

238
Follow-on
contracts
awarded

604
Introductions

20
accelerators

300
Army &
Business
Mentors

2,285
Mentorship hours
dedicated to
supporting participants

xTechOverwatch: Two Key Phases with DoD Stakeholder Feedback and Follow-on Opportunities

The competition is open to all U.S. based small businesses that meet the eligibility requirements outlined in the Request for Information

Part 1: Concept White Paper

April 2 – May 21, 2025

All eligible entities shall submit a **three-page concept white paper** outlining their technology, Army benefits, technical approach, programmatic potential and commercial potential.



Up to **40** semifinalists selected



\$15K cash prize

Collider Event

August 2025

Finalists will have the opportunity to participate in a Collider Event that will take place at or around Fed Supernova in Austin, TX from August 19-21, 2025.

All finalists will be eligible to participate.

Part 2: Finals Event

October 27-29, 2025

Finalists will conduct an in-person pitch of their solution to a panel of Army and DoD experts at or around the HMI Summit in Bryan, TX.



Up to **20** final winners



\$20K cash prize

Opportunity to submit a SBIR proposal

November 12-25, 2025

Winners selected from Part 2: Finals will be the eligible to submit a DP2 Army SBIR proposal.



Up to **20** firms selected



Up to **\$2M** in follow-on contract awards

The xTech Program will award up to \$1M in cash prizes, while the Army SBIR program will provide up to \$40M in follow-on contract awards.

Who Can Apply: Eligibility Criteria at a Glance

Who's eligible to submit?

- ✓ *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.*

Eligibility Requirements

- ❖ **Type of Firm:** Must be organized as a for-profit concern and meet all other small business requirements in 13 C.F.R. § 121.702. Non-profit entities are not eligible.
- ❖ **Ownership and Control:** More than 50% of firm's equity must be directly owned and controlled by one of the following:
 - One or more individuals who are U.S. citizens; and/or
 - Other for-profit small business concerns.
- ❖ **Size:** Must not have more than 500 employees.
- ❖ **Prior, Current, or Pending Support with Similar Technology:** Proposals 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.

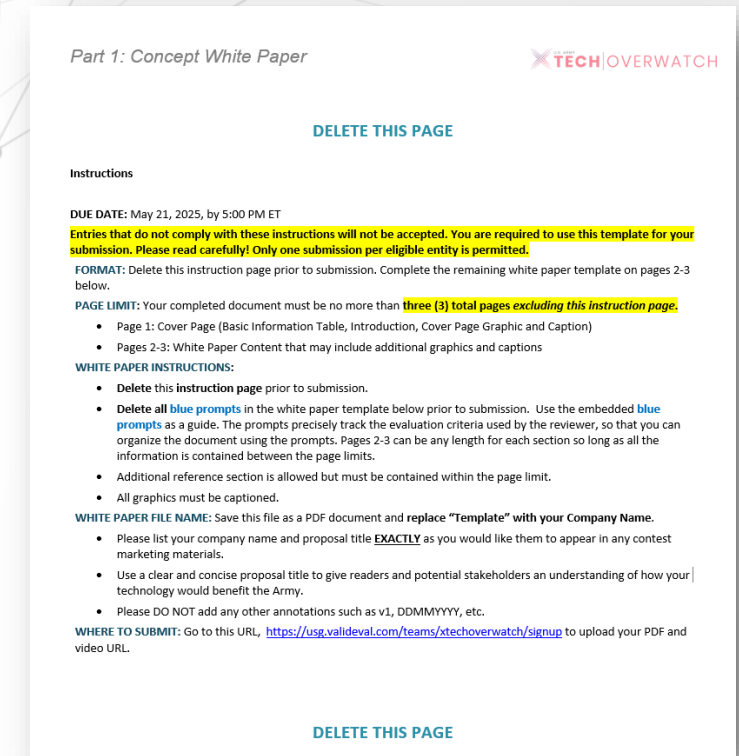
See Full RFI for list of requirements

Please follow the link on information to obtain a CAGE Code: [System for Award Management \(SAM\)](#).

All white paper submissions must adhere to the instructions on the white paper template

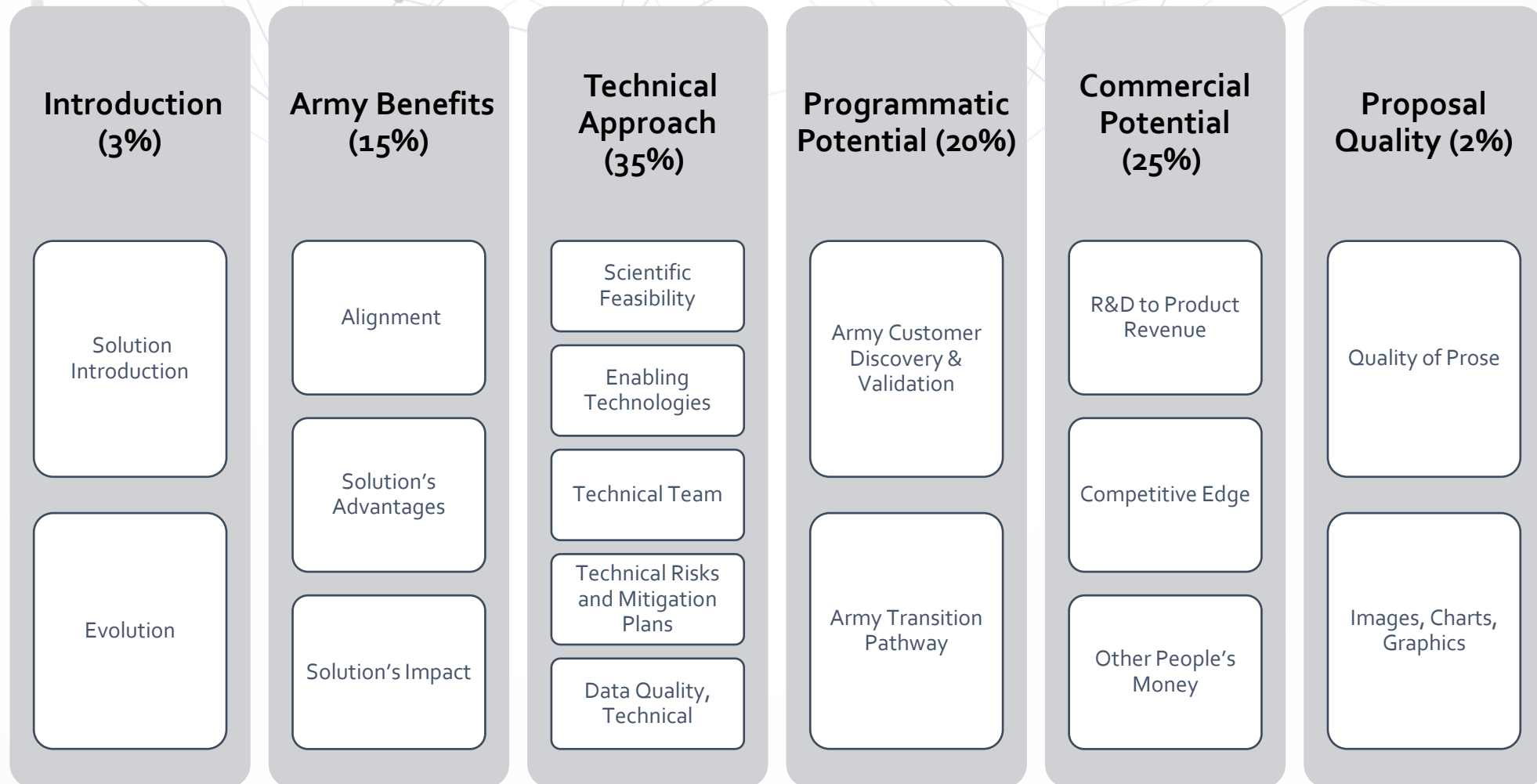
- Participants **are required to submit their applications using the white paper template** found on the Valid Eval sign up page.
- White papers **shall not exceed** the three-page limit
- You may **ONLY submit one application**
- Please list your company name and proposal title **EXACTLY** how you would like them to appear on any contest marketing materials.
- All applications are **due by 5:00 p.m. ET on Wednesday, May 21, 2025.**

Signup link: [xTechOverwatch Competition](#)



Please carefully read the instructions in the white paper.

Submissions will be evaluated and ranked using the evaluation criteria provided on the Valid Eval sign-up page



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Key Technology Areas and Problem Statements

Main Problem Statement

Overwatch tasks and terrain shaping (ability to delay, deter, or deny enemy ground forces in depth) are critical to ground combat success, allowing units to observe and cover maneuver elements while also adapting to and modifying the battlefield environment. Current methods rely on human-operated sensors and vehicles, which are limited in coverage, endurance, and adaptability. Autonomous systems can enhance these capabilities by establishing positions, detecting threats, navigating complex terrain, and dynamically adjusting to environmental conditions.

Major Greg Hjelle
Next Generation Combat Vehicles
U.S. Army Futures Command

Major Trey Leddy
Robotics Requirements Division
Maneuver Capabilities Development
Integration Directorate
U.S. Army Futures Command

To learn more about the xTechOverwatch competition topic areas, please review the xTech website – www.xtech.army.mil

Key Technical Area 1: Autonomous Unmanned Systems (UAVs, UGVs, Stationary Sensors)

- **Technology:** Autonomous aerial, ground, and fixed-position sensing systems that provide persistent situational awareness, threat detection, and environmental monitoring. This includes:
 - UGVs with self-adjusting mobility, real-time terrain navigation, and automated repositioning for optimal overwatch.
 - UAVs with adaptive flight control for ISR and dynamic mission execution.
 - Stationary sensor networks with low-power, persistent surveillance capabilities, capable of integrating with mobile platforms for distributed intelligence gathering.
- **Requirement:** The system(s) must autonomously identify, occupy, and adjust overwatch positions based on mission parameters and terrain constraints. Stationary sensors must provide long-duration situational awareness and integrate with mobile platforms for enhanced intelligence-sharing.

Key Technical Area 2: Sensor Fusion, Data Integration, and AI-Driven Target Recognition & Classification

- **Technology:** AI-powered sensor fusion systems that integrate data from sensor systems such as EO/IR, LiDAR, acoustic, and RF sensors to detect, classify and track threats in real time.
- **Requirement:** Solutions must provide robust multi-modal sensing, real-time analytics, and adaptable recognition capabilities in cluttered, low-visibility, or GPS-denied environments.

Ms. Kristin Wing
Ground Vehicle Robotics
Ground Vehicle Systems Center
U.S. Army Combat Capabilities
Development Command

Major Greg Hjelle
Next Generation Combat Vehicles
U.S. Army Futures Command

Key Technical Area 3: Secure Communications and Networking

- **Technology:** Encrypted, resilient, and scalable communication systems leveraging technologies like software-defined radios (SDRs), mesh networking, and low-power long-range protocols. Includes solutions for network redundancy and self-healing architectures.
- **Requirement:** Secure, adaptive networking solutions must enable real-time data sharing and collaboration across multiple autonomous systems without reliance on traditional infrastructure.

Mr. Juan Muralles
Network and Communications
U.S. Army Rapid Capabilities and
Critical Technologies Office

Key Technical Area 4: Human-Machine Interface (HMI) for Effective Decision-Making

- **Technology:** Advanced visualizations such as augmented reality (AR), and AI-driven decision-support systems to reduce cognitive burden on operators. Adaptive UIs can tailor information based on mission context and operator workload.
- **Requirement:** Systems must present critical data in a user-friendly format, enhancing situational awareness and rapid decision-making while minimizing distractions.

Ms. Mikella Farrell
HMI Lead
U.S. Army Combat Capabilities
Development Command HQ

Key Technical Area 5: Edge Computing for Onboard Processing

- **Technology:** High-performance, low-power embedded AI accelerators for real-time onboard processing of sensor data, AI inference, and decision-making in the absence of network connectivity.
- **Requirement:** Solutions must support onboard processing for low-latency threat detection and terrain analysis while operating in disconnected or contested environments.

Ms. Kristin Wing
Ground Vehicle Robotics
Ground Vehicle Systems Center
U.S. Army Combat Capabilities
Development Command

Key Technical Area 6: Resilient Robotics for Adaptive Terrain Navigation

- **Technology:** Mobility adaptation solutions, including variable tire inflation systems, articulated suspensions, and AI-driven path planning to navigate challenging terrain. Biomimetic robotic adaptations may also be explored.
- **Requirement:** Systems must demonstrate terrain-aware decision-making, with adaptive locomotion capable of handling obstacles, mud, snow, and unstable ground conditions.

Mr. Christopher High
Operational Science & Engineering
Construction Engineering Research Lab
U.S. Army Engineer Research and
Development Center

Key Technical Area 7: Automated Self-Recovery Mechanisms

- **Technology:** Self-righting mechanisms, robotic manipulator arms, and cooperative recovery protocols using swarm-based assistance (e.g., one UGV assisting another). AI diagnostics for predictive maintenance.
- **Requirement:** Autonomous fail-safe capabilities must allow systems to recover from rollovers, entrapment, or hardware failures, ensuring sustained operational effectiveness.

Mr. Corbin DesJardins
Ground Vehicle Robotics
Ground Vehicle Systems Center
U.S. Army Combat Capabilities
Development Command

Key Technical Area 8: Collaborative/ Mission-Focused Autonomy

- **Technology:** Decentralized AI-based mission execution using multi-agent reinforcement learning (MARL), distributed decision-making, and swarm robotics. Includes AI models that enable agents to dynamically assign tasks.
- **Requirement:** Systems must coordinate autonomously, executing mission objectives with minimal human intervention while optimizing resource allocation across platforms.

Dr. Christopher Kroninger
Emerging Overmatch Technologies
Army Research Labs
U.S. Army Combat Capabilities
Development Command

Key Technical Area 9: UGV and UAS Payloads

- **Technology:** Modular ISR payloads for real-time reconnaissance, deployable terrain-shaping tools (e.g., automated barrier placement, excavation), and electronic warfare (EW) payloads for disrupting adversary sensors and communications.
- **Requirement:** Payloads must support mission-critical functions such as target detection, threat deterrence, and terrain modification while being compatible with modular architecture frameworks.

Dr. Christopher Kroninger
Emerging Overmatch Technologies
Army Research Labs
U.S. Army Combat Capabilities
Development Command

Key Technical Area 10: Modular & Open Architecture

- **Technology:** Plug-and-play hardware/software interfaces following Army Interoperability Profile (IOP), NATO Standardization Agreement (STANAGs), and other interoperability standards to ensure future upgrades and cross-platform compatibility. Includes standardized data protocols and API-based integration.
- **Requirement:** Solutions must be modular and allow seamless integration with existing military platforms and future autonomous technologies.

Ms. Kristin Wing
Ground Vehicle Robotics
Ground Vehicle Systems Center
U.S. Army Combat Capabilities Development
Command

Any Questions?

xTech

www.xtech.army.mil

Defense SBIR/STTR Innovation Portal

www.dodsbirsttr.mil

General xTech Email

usarmy.pentagon.hqda-asa-alt.mbx.xtechsearch@army.mil

Valid Eval Support

support@valideval.com

If you have any questions about the process, you can reach out to the xTech team and one of us will be happy to assist. For any technical issues using Valid Eval, you can reach out to the Valid Eval support team.



Appendix

Competition Resources

- xTechOverwatch Competition Website:
 - <https://xtech.army.mil/competition/xtechoverwatch/>
- RFI
 - <https://xtech.army.mil/wp-content/uploads/2025/04/xTechOverwatch-RFI.pdf>
- xTechOverwatch Competition Signup Page:
 - <https://usg.valideval.com/teams/xtechoverwatch/signup>

Reminder: All applications must be submitted by 5:00 p.m. ET on Wednesday, May 21, 2025.