I. Background and Purpose

The U.S. Army is seeking agile, adaptive and lethal technology solutions from eligible small to medium business attending the Association of the United States Army (AUSA) Annual Meeting & Exposition in Washington, D.C., from October 13-15, 2025, to assist with critical Army priorities through the xTechDisrupt competition. This platform offers participants the opportunity to engage with the U.S. Department of Defense (DoD), compete for prize money and potentially participate in a post-competition accelerator program.

The U.S. Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA(ALT)) is partnering with the U.S. Army Directorate for Strategy & Transformation (DAMI-ST), U.S. Army Pacific (USARPAC), the U.S. Army 25th Infantry Division and Y Combinator (YC) to deliver the xTechDisrupt competition. Recognizing the need to reach beyond traditional defense partners, the U.S. Army is actively expanding its engagement with the commercial sector through dynamic platforms such as live pitch competitions—creating new opportunities for small and medium businesses to directly shape the future of national security. This initiative aims to (1) understand the spectrum of 'world-class' technologies being developed commercially with potential DoD applications; (2) actively integrate the sector of non-traditional innovators into the U.S. DoD Science and Technology (S&T) ecosystem; and (3) provide expertise and feedback to accelerate, mature, and transition technologies of interest to the U.S. DoD.

The xTechDisrupt competition will consist of three rounds with additional opportunities:

(1) Pre-Registration with Quad Chart submission, if selected will secure a guaranteed timeslot for the elevator pitch;
(2) On-site Registration for elevator pitch on a first-come, first-serve basis; and
(3) Live pitch event.

Additional opportunities include potential opportunities to participate in an experimentation and interview with YC.

The competition will award up to $500,000 in cash prizes to selected participants. **Up to 36 applicants will be selected on-site at the 2025 AUSA Annual Meeting & Exposition to present their technology concepts to a live panel of U.S. Army and DoD subject matter experts (SMEs) on either October 13 or 14, 2025.** The U.S. Army intends to select up to eight (8) winners to receive a cash prize of $62,500 each. In addition to the monetary award, winners will earn exclusive opportunities that extend far beyond the competition itself. These include a **direct interview with YC**—one of the world's most prestigious startup accelerators—for potential selection into a future cohort, as well as the chance to **participate in the U.S. Army Joint Pacific Multinational Readiness Center (JPMRC) experimentation event** in Hawaii, taking place from **November 7-16, 2025**. Additional details on prize structure can be found in Section VII.

There are two ways to register for xTechDisrupt:

(1) Pre-registration with Quad Chart submission to potentially secure a guaranteed timeslot for the 60-second elevator pitch; and
(2) On-site registration with no guaranteed timeslot, for the 60-second elevator pitch, on a first-come, first-serve basis.

All eligible entities, regardless of registration method, will be required to complete a registration form and deliver a **60-second elevator pitch** that clearly outlines their technology concept and how it aligns with one of the four critical focus areas identified. This is required to ensure

alignment with the U.S. Army's operational needs and priorities. Additional details on the registration options can be found in Section IV.

All presentations will be conducted in front of a public audience.

In addition to non-dilutive cash prizes, participants may have the opportunity to engage with U.S. Army and DoD experts attending the 2025 AUSA Annual Meeting & Exposition, receiving valuable feedback on their innovations. 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.

While the authority of this program is 10 U.S.C. § 4025, the xTechDisrupt 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. Winners of the prize competition may have opportunities 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.

The xTech Program is conducted in accordance with 10 U.S.C. § 4025, which authorizes the use of prize competitions to stimulate innovation and identify promising technologies for national security applications. As such, this competition serves as a competitive down select mechanism that enables government organizations to engage with winners through a variety of follow-on acquisition pathways, including but not limited to:

- 10 U.S.C. § 4114 – Selection of contractors for prototype projects
- 10 U.S.C. § 4022 – Prototype projects
- 10 U.S.C. § 4023 – Procurement for experimental purposes
- 10 U.S.C. § 4001 – Research and development
- 10 U.S.C. § 4021 – Other Transaction Authority (OTA)
- 15 U.S.C. § 3703 – Technology innovation partnerships

Government organizations are encouraged to consider leveraging these statutory authorities to pursue follow-on awards with companies identified through the xTech competition process. This approach supports rapid technology maturation, accelerates the transition of innovative capabilities to the field, and promotes collaboration with non-traditional and small business performers.

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 following the live pitch event that will be accessible through the tool. These reports are intended to support the potential acceleration of technology transition by offering insights into relevant Army applications, recommendations for refinement to better meet Army needs, and suggested next steps for further development. Please note that while this feedback is provided as a resource, the government may not respond to individual questions or inquiries related to the content of the report.

II. Eligibility Requirements

To be eligible for this competition, entities must be a small to medium business attending the

2025 AUSA Annual Meeting & Exposition in Washington, D.C. A small to medium business is defined as those with <1,500 employees.

Each eligible entity:

- Must be able to obtain a CAGE code (U.S. businesses) and/or NCAGE code (international businesses) to process payments (CAGE codes are not required during registration);
- Shall be incorporated in, and maintain, a primary place of business in the U.S. or a foreign country;
- May not be a U.S. federal or foreign government entity or employ a U.S. federal employee acting within the scope of their employment;
- May not be a company or person controlled by, funded by, or under the jurisdiction or direction of foreign adversaries; and
- Must not be based in a foreign country of concern (FCOC), directly funded by an FCOC-government or FCOC-government-subsidized guidance fund or be under the influence of an FCOC-based government in any way. Failure to meet these requirements will result in ineligibility for award.

The xTech Program will not provide travel or registration funding for eligible entities to attend the 2025 AUSA Annual Meeting & Exposition.

III. Topics and Problem Statements

The U.S. Army seeks agile, adaptive and lethal capabilities in support of it's imperative to "Win at the Pace of Change" across four critical focus areas:

- Topic 1: Electronic Warfare (EW)
- Topic 2: Power Generation / Management / Storage
- Topic 3: Unmanned Aerial Systems (UAS)
- Topic 4: Counter-Unmanned Aerial Systems (C-UAS)

These technologies must enable actionable tactical-level intelligence and operations that empower commanders to understand the environment, assess friendly and adversary systems, mitigate power challenges, optimize the deployment and defeat of UAS technologies, and act decisively.

The U.S. Army must innovate to move faster, decide sooner, and act quicker than adversaries. To meet this requirement, we are seeking technologies that are beyond the concept stage — solutions must be mature, integration-ready, and capable of being demonstrated in a realistic operational environment. Solutions should be able to operate in contested, austere, and dynamic environments, integrate with existing DoD programs of record, and be demonstrable within 30 days in exercises involving U.S. and coalition/partner forces. Technologies must be mature, interoperable, and capable of enhancing decision dominance and operational tempo.

This xTechDisrupt competition is not a venue for early-stage ideas—it's a platform for deploying near-term capabilities that can immediately support Army experimentation and operational needs.

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

IV. Program Submission and Competition Structure

The xTechDisrupt competition is voluntary and open to all entities that meet the eligibility requirements listed in Section II. **Only one submission per eligible entity is permitted.**

All entities must complete a registration form using the Valid Eval platform, which includes the following information: company address, primary contact's information, CAGE and/or NCAGE (optional), prior demonstrations with DoD or allied/partner nations, and previous U.S. Army and DoD awards—including Army Small Business Innovation Research (SBIR) contracts.
New participants must have access to a current, active email address to create an account in Valid Eval. Email verification is **required** during the registration process.

Failure to meet submission requirements may result in disqualification from participation in the pitch event.

xTechDisrupt Participation Pathways: Pre-Registration and On-site Registration

Pre-Registration
All eligible entities interested in pre-registration shall submit a quad chart outlining their technology, topic alignment, potential impact on the Army and commercialization readiness. Each quad chart will be evaluated by U.S. Army and DoD experts for the opportunity to receive a guaranteed 60-second elevator pitch time slot at the 2025 AUSA Annual Meeting & Exposition.

Pre-registration information and quad chart submission upload must be received by **5:00 PM ET on September 22, 2025.** Submissions received after the deadline will not be considered for pre-registration. Submissions that are selected for the guaranteed 60-second elevator pitch time slot will be notified by October 10, 2025.

Please note: Entities that elect to participate through the pre-registration pathway, are **not permitted** to register again on-site. Each eligible entity may only pursue **one** registration pathway.

Register now by selecting the xTechDisrupt competition image at:
https://www.xtech.army.mil/

Quad charts must be submitted using the template found on the Valid Eval registration page, "Template_xTechDisrupt_Quad_Chart.pptx." ***Any quad charts submitted in a format other than those provided by the template will not be reviewed.***

Evaluators will review and score quad charts using the following scoring criteria (further details on each scoring dimension can be found on the xTechDisrupt competition registration page):

		DEFINITION
CONCEPT OF OPERATIONS	*weight 25%*	Deliver a clear, concise description of your solution's concept of operations (CONOPS.) Briefly address what problem(s) you will solve and the advantages of your approach.
TOPIC ALIGNMENT	*weight 20%*	Argue your solution is aligned this xTechDisrupt Topics: Provides capabilities in the area of Electronic Warfare / Power Generation/Management/Storage / Unmanned Aerial Systems (UAS) / Counter-Unmanned Aerial Systems (C-UAS). Delivers specific outcomes, actionable intelligence, improved decision speed, integrates with existing DoD systems, and functions in contested environments.

FIELD DEMO READY	*weight 20%*	Could you be ready for a field demo on 9 Nov. with an Army TIC Unit? Describe your readiness for such an opportunity, both from a technology perspective and also from an Army regulatory perspective.
ARMY BENEFITS	*weight 25%*	The Army seeks higher-risk, higher-impact solutions through xTechDisrupt not engineering changes or incremental improvements. Use this section to describe your technology's impact and improvement upon the state of the art.
SUBMISSION QUALITY	*weight 10%*	Prove you write clearly and argue convincingly.

Upon conclusion of the quad chart evaluation period, the xTech Program will select **up to 32 applicants to receive a guaranteed 60-second elevator pitch time slot at the U.S. Army xTech Program booth on October 13 and 14, 2025, between 9:00 AM – 11:00 AM ET** *(dates and locations are subject to change without notice)*.

Pre-registration does not guarantee an entity will be selected to conduct a 60-second elevator pitch or live pitch presentation at the 2025 AUSA Annual Meeting & Exposition.

On-site Registration

All eligible entities that did not participate in the pre-registration option may register on-site at the Walter E. Washington Convention Center, Exhibit Hall E in the **U.S. Army xTech Program booth #8153 on October 13 and 14, 2025, from 11:00 AM – 3:30 PM ET** *(dates and locations are subject to change without notice)*. A quad chart submission is not required for on-site registration.

On-site registration will be conducted by topic area during the following dates/times:

- **October 13, 2025, 11:00 AM – 3:30 PM ET:**
  - Topic 1: Electronic Warfare (EW)
  - Topic 2: Power Generation / Management / Storage
- **October 14, 2025, 11:00 AM – 3:30 PM ET:**
  - Topic 3: Unmanned Aerial Systems (UAS)
  - Topic 4: Counter-Unmanned Aerial Systems (C-UAS)

60-Second Elevator Pitch

Selected pre-registration and on-site registration applicants are required to deliver a **timed 60-second elevator pitch** of their technology concept – addressing one of the four critical focus areas – to a panel of U.S. Army and DoD technical experts. **Follow-up questions may be asked**, and participants must be prepared to provide a **concise 30-second response.**

Please note: Selection for pitch presentations is **at the sole discretion of the U.S. Army**. While companies may believe their technology aligns with the stated topic, **final determinations will be made exclusively by the Army** based on the content and clarity of the **60-second elevator pitch** and alignment with the **Army's priorities as defined in this RFI**.

Elevator pitches will be evaluated and ranked using the following scoring criteria:

		DEFINITION
ONE-MINUTE PITCH	CONCEPT OF OPERATIONS	Deliver a clear, concise description of your solution's concept of operations (CONOPS.) Briefly address what problem(s) you will solve and the advantages of your approach.
	TOPIC	Argue your solution is aligned this xTechDisrupt Topics:

	ALIGNMENT	Provides capabilities in the area of Electronic Warfare / Power Generation/Management/Storage / Unmanned Aerial Systems (UAS) / Counter-Unmanned Aerial Systems (C-UAS). Delivers specific outcomes, actionable intelligence, improved decision speed, integrates with existing DoD systems, and functions in contested environments.
	FIELD DEMO READY	Could you be ready for a field demo on 9 Nov. with an Army TIC Unit? Describe your readiness for such an opportunity, both from a technology perspective and also from an Army regulatory perspective.
weight 100%	ARMY BENEFITS	The Army seeks higher-risk, higher-impact solutions through xTechDisrupt not engineering changes or incremental improvements. Use this section to describe your technology's impact and improvement upon the state of the art.

The xTech Program will **select up to 36 applicants on-site following the elevator pitches** to present their technology concepts to a live panel of U.S. Army and DoD SMEs. Selected participants will be scheduled for a live pitch presentation time slot on the same day they registered and/or provided an elevator pitch for the competition, with some participants being scheduled to pitch immediately following their 60-second elevator pitch.

Live Pitch Presentation

All presentations will be conducted in front of a public audience. By participating in this event, applicants consent to being photographed, recorded, and/or filmed.

Each selected participant will conduct a timed, **five-minute pitch, followed by a five-minute question and answer session with the judging panel.** Participants may bring physical prototypes and printed materials to support their presentation. No presentation software/applications may be utilized.

All xTechDisrupt competition pitches will be evaluated by government employees, designated support contractors, and select industry or venture capital representatives exclusively for the purposes of evaluation and program support.

Presentations will be evaluated and ranked using the following scoring criteria:

		DEFINITION
SOLUTION	SOLUTION DESCRIPTION	Fully describe what you are offering in your solution. Give the audience a solid technical introduction on how your innovation works and what makes it different.
weight 20%	PRODUCT MATURITY	Please give the audience a clear understanding of your innovation's technical maturity. Support that claim as best you can.
COMPETITIVE ADVANTAGE	SOLUTION'S ADVANTAGES	Prove your prospective customers will choose you given limited resources and myriad choices. Have you accounted for indirect substitute products as well as direct competitors?
weight 20%	DEGREE OF INNOVATION	Prove that your solution is truly innovative. How big a departure from existing technical and/or operational approaches is your solution?
COMMERCIAL REWARD VS. RISKS	MARKET SHARE	Define the specific commercial market segment your product addresses. Argue that your innovation will capture significant share within this market segment.

weight 10%	COMPANY'S EDGE	Why will you win? Describe your company's Competitive Edge in the marketplace: Something you do better than anyone else. This might be a intellectual property, unmatched relevant expertise, a novel business model, channel partners, network effects, etc.
POTENTIAL FOR IMPACT	*weight 20%*	This Dimension is for the Army judges to figure out. It is their job -- not yours!-- to connect the dots and determine how your innovation can impact the Army. If you have direct knowledge of your potential within DoD, please briefly make your case. Otherwise, don't spend your valuable pitch time on this one.
FIELD DEMO READY	*weight 20%*	Could you be ready for a field demo on 9 Nov. with an Army TIC Unit? Describe your readiness for such an opportunity, both from a technology perspective and also from an Army regulatory perspective.
PRESENTATION QUALITY	*weight 10%*	This is a difficult task -- presenting with little to no notice. The Army gets it! Please do you best to effectively get your message across.

The xTech Program will select **up to eight (8) participants** as the final winners of the competition.

Winners will be announced live on the **U.S. Army xTech Program booth stage at the Walter E. Washington Convention Center, Exhibit Hall E on Wednesday, October 15, 2025, time to be announced on-site** and will receive **a cash prize $62,500 each.**

All competition participants should plan to be present during the winner announcement.

Dates, times and location are subject to change.

Post-Competition

In addition to the prize money, final competition winners will have the opportunity to interview with YC for an upcoming batch. Companies that are accepted into YC will receive an additional $500,000 investment and will participate in the YC batch with a cohort of the most talented and ambitious founders in the world. **The xTech Program will not provide travel funding for eligible entities to attend this interview. Interviews with Y Combinator do not guarantee YC participation.**

Final competition winners will also have the opportunity to participate in and observe the U.S. Army JPMRC Experimentation event taking place in Hawaii, from November 7-16, 2025. **Winning companies may have an opportunity to demonstrate their technologies and/or potential to Warfighters and leadership during this event.**

V. Proposed Schedule

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

Date	Activity
September 15-22, 2025	Pre-Registration option open
October 10, 2025	Pre-registration option selectees notified
October 13, 2025	Topics 1 & 2 On-site Registration (11:00 AM – 3:30 PM ET) Topics 1 & 2 Live Technology Pitches (10:00 AM – 4:00 PM ET)

October 14, 2025	Topics 3 & 4 On-site Registration (11:00 AM – 3:30 PM ET) Topics 3 & 4 Live Technology Pitches (10:00 AM – 4:00 PM ET)
October 15, 2025	Live Winner Announcement (TBA on-site)

VI. Prizes and Incentives

Prizes will be offered under 10 U.S.C. §4025 (Prize Competitions). The total prize pool is $500,000. Other non-monetary incentives are provided through the xTechDisrupt competition to help industry engage with the U.S. Army.

Phase	Winners	Prize
Live Technology Pitches	Up to 8	$62,500 each
	Total	$500,000

VII. Disclaimers

Registered participants shall be required 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 this prize competition, whether injury, death, damage, or loss arises through negligence or otherwise.

VIII. Intellectual Property

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

- The U.S. Federal Government may not gain an interest in IP developed by a participant without the written consent of the participant;
- Nothing in this xTechDisrupt prize competition shall diminish the U.S. Government's rights in patents, technical data, technical information, computer software, computer databases, and computer software documentation that the U.S. Government had prior to this xTechDisrupt prize competition, or is entitled to, under any other U.S. Government agreement or contract, or is otherwise entitled to under law; and
- The U.S. Federal Government may negotiate a license for the use of IP developed by a registered participant in the prize competition.

IX. Point of Contact

The U.S. 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

Challenge Summary:
In support of the Army's imperative to "Win at the Pace of Change," this technology competition seeks agile, adaptive, and lethal capabilities across four critical focus areas: Electronic Warfare (EW), Power Generation/Management/Storage, Unmanned Aerial Systems (UAS), and Counter-Unmanned Aerial Systems (C-UAS). These technologies must enable actionable tactical-level intelligence and operations that empower commanders to understand the environment, assess friendly and adversary systems, mitigate power challenges, optimize the deployment and defeat of UAS technologies, and act decisively.

The Army must innovate to move faster, decide sooner, and act quicker than adversaries. Solutions must operate in contested, austere, and dynamic environments, integrate with existing DoD programs of record, and be demonstrable within 30 days in exercises involving U.S. and coalition/partner forces. Technologies must be mature, interoperable, and capable of enhancing decision dominance and operational tempo.

Problem Statement:
Modern warfare demands multi-domain, multi-functional capabilities that fuse intelligence and operations at the tactical edge. Commanders require real-time, trusted intelligence to visualize the battlespace, identify threats, and execute decisive actions. The Army must rapidly sense, understand, and act across domains using integrated platforms and sensors.

The electromagnetic spectrum is now decisive on the modern battlefield. The Army need support mapping the electromagnetic spectrum to overlay friendly, adversary, and indigenous signals as well as Identify adversarial EW activities in complex electromagnetic environments. Electromagnetic dominance is essential for mission success and force protection.

Energy resilience is equally critical. As battlefield energy demands grow, the Army must enable sustained operations with mobile, efficient, and resilient power solutions that function in off-grid, contested, and extreme environments (including humid and extreme cold). Power solutions can support both high-output for drones and robots and low-output for controls and vehicle. This includes cell management and common charging recommendations.

The proliferation of UAS by state and non-state actors presents both a threat and an opportunity. UAS must enhance situational awareness, terrain modeling, and target acquisition. Conversely, adversary UAS operations must be expected, detected, and defeated with precision and speed.

To meet these needs without prescribing specific approaches, the Army seeks small-business solutions that either introduce novel capabilities or deliver material upgrades to existing systems within the solution areas above. Proposers should clearly identify the operational gap, define the current baseline, and quantify the expected performance delta in terms of decision speed, accuracy, endurance, protection, and operator burden—translating these gains into concrete tactical advantage. Upgrades should maximize reuse of fielded assets where beneficial; novel concepts should show a credible path to operational relevance. In all cases, emphasize defensible, outcome-based improvements that sustain U.S. overmatch against adaptive adversaries.

Solution Areas:

Electronic Warfare (EW)

Objective: Achieve electromagnetic spectrum dominance through sensing, protection, and attack capabilities.

- **Electronic Warfare Support (ES):**
  - Real-time spectrum sensing and situational awareness
  - Visualization of friendly/indigenous/adversary systems
  - Characterization of abnormal EMS activities
  - Signal identification, geolocation, and characterization
  - AI/ML-enabled threat detection and classification
  - EW data fusion and visualization platforms
- **Electronic Protection (EP):**
  - Spectrum management and deconfliction tools
  - Anti-jam and resilient communications
  - Low probability of intercept/detection (LPI/LPD) systems
  - EW countermeasures and shielding solutions
- **Electronic Attack (EA):**
  - Cognitive, adaptive, and AI-driven jamming
  - Offensive cyber-electromagnetic capabilities
  - Integration of EA with kinetic and cyber operations

Power Generation / Management / Storage

Objective: Enable energy independence and resilience in austere, contested environments.

- Renewable energy sources (solar, wind, thermoelectric, kinetic)
- Fuel cells, microgenerators, and energy scavenging
- Electromagnetic and cyber-resilient systems
- Intelligent power distribution and management
- Lightweight, ruggedized, high-capacity energy storage
- Scalable solutions for individual to platform-level use
- Integration with wearable, mobile, and autonomous systems
- Operability in all-terrain and all-weather conditions
- Reduce logistical burdens and extend mission duration
- Power sources that can operate in
  - All-terrain; operate anywhere from the Arctic, urban, jungle etc.
  - All-weather conditions; extreme heat, extreme cold, humidity, frost, fog, rain etc.

Unmanned Aerial Systems (UAS)

Objective: Enhance situational awareness, asset management, targeting, and operational reach.

- **Sensing and Situational Awareness:**
  - Automated Airspace Management through data fusion –non-Automatic Dependent Surveillance-Broadcast (ADS-B) compliant
  - Multi-modal sensing (EO/IR, RF, acoustic, chemical)
  - Real-time terrain mapping and environmental modeling
  - Autonomous navigation in GPS-denied environments
- **Threat Detection and Tracking:**
  - AI/ML-enabled object recognition and classification
  - Persistent ISR with automated cueing and tracking
  - Integration with ground/aerial sensor networks

- **Swarming and Collaborative Autonomy:**
  - Scalable swarm architectures and control algorithms
  - Distributed decision-making and task allocation
  - Inter-UAS communication and coordination
- **Automatic Target Recognition (ATR):**
  - AI/ML models for real-time target identification
  - Confidence scoring and human-in-the-loop options

Counter-Unmanned Aerial Systems (C-UAS)

Objective: Detect, defeat, and destroy adversary UAS threats with precision and scalability.

- **Detection, Identification, and Tracking:**
  - Data Minimization for sensor track management
  - Multi-sensor fusion (Radio Frequency (RF), Electro-Optical (EO)/Infrared (IR), acoustic, radar) at the edge
  - AI/ML-enabled threat classification and prioritization on sensor / at edge
  - Real-time geolocation and trajectory prediction
  - Networked sensor integration into .gov recommended command and control (C2) for layered defense
- **Neutralization and Defeat:**
  - Directed energy weapons (microwave, laser)
  - EW-based defeat mechanisms (jamming, spoofing)
  - Kinetic interceptors and loitering munitions
  - Low-collateral options
  - Scalable solutions for single and swarm threats
- **Swarming and Collaborative Defense:**
  - Autonomous C-UAS swarms for area denial
  - Distributed decision-making and engagement coordination
  - Interoperability with existing command and control (C2) systems
- **Automatic Target Recognition (ATR):**
  - AI/ML models for rapid and reliable target identification
  - Confidence scoring and human-in-the-loop options