

# The Army FUZE xTech Program – xTech|Kinetic Reach Competition Announcement

## I. Background and Purpose

The U.S. Army is seeking innovative agile sustainment solutions from eligible small and large businesses across the U.S. and allied foreign countries through the xTech|Kinetic Reach competition. This platform offers participants the opportunity to engage with the U.S. Department of War (DoW), earn prize money and potentially receive a contract award or agreement.

The U.S. Army FUZE xTech Program, in partnership with the U.S. Army Europe and Africa (USAREUR-AF) and Global Tactical Edge Acquisition Directorate (G-TEAD) is executing the xTech|Kinetic Reach competition as part of the G-TEAD Accelerated Capability Event (ACE) series.

This initiative supports the U.S. Army's broader effort to (1) identify and understand the spectrum of 'world-class' technologies being developed commercially that benefit the U.S. military; (2) integrate non-traditional innovators into the U.S. DoW Science and Technology (S&T) ecosystem; (3) provide expertise and feedback to accelerate, mature, and transition technologies to support operational forces; and (4) deliver attritable, scalable capabilities.

The xTech|Kinetic Reach competition will consist of three (3) phases:

- (1) Application, including the following:
  - a. Four (4)-page white paper;
  - b. Required five (5)-minute video;
  - c. Self-certification of minimum requirements; and
  - d. Information on prior demonstrations with DoW or allied/partner nations
- (2) Soldier exercise; and
- (3) Opportunity to submit follow-on contract proposal.

The U.S. Army intends to **award up to \$1,500,000 in cash prizes** throughout the competition. **Up to 15 finalists will be selected at the conclusion of the Part 1 evaluation period** and will be provided the opportunity to participate in the Part 2 live Soldier exercise, anticipated to occur in November 2026. **Finalists who attend the Soldier exercise will receive a cash prize of \$25,000 each, following the event. Finalists who also participate and have their technology integrated in the exercise will receive an additional \$25,000 each, following the event.** Following completion of the exercise, up to five (5) final winners will be selected to receive an additional cash prize of \$150,000 each and may be considered for potential follow-on agreements and contracting opportunities. Additional details on prize structure can be found in Section VII.

At the Government's discretion, participants that do not win a prize may also be considered for opportunities to demonstrate their capability.

Finalists and final winners that qualify as a U.S. Small Business will have the opportunity to submit a Direct to Phase II (DP2) Army Small Business Innovation Research (SBIR) proposal worth up to \$2,000,000, not to exceed 18 months in duration. Finalists and final winners selected from the xTech|Kinetic Reach competition that do not meet the U.S. Small Business eligibility requirements will be eligible to submit proposals for other follow-on opportunities. Eligibility to submit does not guarantee award.

Any follow-on agreements are at the Government's sole discretion and are subject to availability

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of funds and applicable laws and regulations. Nothing in this solicitation shall be construed as a commitment to issue a request for proposal (RFP) or award any contract or agreement.

Finalists and final winners must have a CAGE/NCAGE code to receive a cash prize and contract award. Firms may be requested to sign a Master Business Agreement (MBA) as a condition of eligibility for certain G-TEAD ACE follow-on opportunities. The execution of an MBA is not required for Army SBIR follow-on opportunities or for any other follow-on opportunities pursued outside of G-TEAD ACEs.

A CAGE/NCAGE code is not required at the time of application; however, applicants that do not possess one (1) are strongly encouraged to initiate the registration process in advance if they intend to participate.

The xTech|Kinetic Reach competition 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. Requirements for competition under 10 U.S.C. § 3201 are satisfied upon completion of the challenge and use of prize authority. As such, this competition serves as a competitive down select mechanism that enables government organizations to engage with finalists and 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)
- 10 U.S.C. § 3458 – Authority to acquire innovative commercial products and commercial services using general solicitation competitive procedures
- 15 U.S.C. § 3703 – Technology innovation partnerships
- 15 U.S.C. § 638 – SBIR and Small Business Technology Transfer (STTR) Programs

Government organizations may 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.

While the authority of this program is 10 U.S.C. § 4025, the xTech|Kinetic Reach competition may generate interest by other U.S. Army, DoW or U.S. Government (USG) organizations for a funding opportunity outside of this event. 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 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.

**All xTech|Kinetic Reach competition submissions are treated as privileged information and contents may be disclosed to employees of the USG, allied nations, designated support contractors at the USG's discretion for the purposes including, but not limited to, evaluation, program administration and support, potential inclusion in Army or DoW marketplaces, and consideration for potential follow-on opportunities. The Government will use reasonable efforts to protect proprietary information; however, participants are**

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**responsible for clearly identifying any proprietary or restricted information within their submissions.**

The Army FUZE xTech Program intends to provide feedback from evaluators to participants during each part of the competition. The purpose of providing this feedback is to help accelerate the transition of the technology to a U.S. Army end-user by providing insight into the best applications for the technology, suggestions for product improvement for U.S. Army use and recommended next steps for development. However, the Government will not respond to inquiries regarding this feedback.

### **II. Eligibility Requirements**

#### **General Eligibility (All Applicants)**

Eligible entities include nonprofit organizations, for-profit organizations (i.e., large and small businesses) both domestic and foreign.

Each eligible entity:

- Must be able to obtain a CAGE code (U.S. businesses) or NCAGE code (international businesses) to process payments and receive follow-on awards;
- Shall be incorporated in, and maintain, a primary place of business in the U.S. or an allied foreign country;
- Shall not be a U.S. Federal Government entity, foreign government entity or employ a U.S. Federal Employee acting within the scope of their employment;
- Shall not be currently under contract, agreement or other providing similar capabilities in the region under the same use case to the Government for work described in the problem statement; and
- Must not be based in a Foreign Country of Concern (FCOC), directly funded by an FCOC government or government-subsidized guidance fund, or under the influence of an FCOC government in any form.

#### **U.S. Small Business Eligibility (for potential Army SBIR Opportunity)**

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 (1) of the following:
  - a. One (1) or more individuals who are citizens or permanent resident aliens of the U.S.;
  - b. Other for-profit small business concerns (SBCs) (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.

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- (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 questions concerning prior, current, or pending support for similar proposals or awards must disclose those as early as possible to the Army FUZE xTech Program Office.**

### Other Eligible Entities

Eligible entities not qualifying as a U.S. Small Business may include domestic and foreign for-profit organizations, non-profit organizations, and large businesses, provided they meet all general eligibility requirements listed above.

Failure to meet any of the above requirements will result in ineligibility for award. The USG reserves the right to verify eligibility and make all final determinations at its sole discretion.

### III. Topics and Problem Statement

In largescale combat operations, U.S. Army forces must sustain dispersed, continuously moving formations while operating inside highly contested environments characterized by persistent observation, long range fires, electromagnetic interference, degraded mobility corridors, and severely constrained logistics. Current sustainment and recovery methods rely heavily on manned systems that are increasingly vulnerable, slow to adapt, and unable to meet the demands of operations conducted near or within the Autonomous Zone. The Army requires a suite of interoperable, autonomous or minimally manned capabilities - spanning ground and air distribution, power generation, forward arming and refueling, and vehicle recovery - that can operate with minimal oversight, low signatures, reduced logistical burden, and seamless command and control (C2) integration through GOAT-Net which is the Government's open-architecture tactical data fabric and the designated backbone for data exchange among fielded systems. These capabilities must sustain tempo, reduce soldier exposure, and ensure survivability and mission continuity across the entire sustainment and recovery enterprise in high-threat, GPS and communications degraded environments where traditional methods are no longer feasible or survivable.

The Army is seeking to evaluate capabilities that demonstrate performance in one (1) of five (5) capability areas, and meet the following criteria for its capability area:

- **Capability 1:** [Autonomous Container Handling/Movement System](#)
- **Capability 2:** [Future Power Generation](#)
- **Capability 3:** [Autonomous UAV/UGV Forward Refueling/Recharge System](#)
- **Capability 4:** [Uncrewed Aerial Payload Transportation](#)
- **Capability 5:** [Uncrewed, Automated, Ground Recovery System](#)

For details on the full capability areas, see [Appendix A](#). For details on GOAT-Net, see [Appendix B](#).

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Capabilities submitted for evaluation **shall meet** the following criteria, as applicable:

- TRL 6 or higher;
- Clear linkages to resolving the problem statement and meeting the desired characteristics for the capability gap in which technology will compete;
- Demonstrate viability to field solutions within 180 days of contract award;
- Technical interoperability with Global Command & Control System-Army (GCCS-A) for situational awareness (SA), force tracking, and system tasking; Global Combat Support System-Army (GCSS-A) for tactical logistics; as current Army systems are replaced, the system will need to support data flows for future SA, force tracking, and system tasking capabilities;
- Demonstrate successful data exchange with GOAT-Net by enrollment as a peer in the Government's peer-to-peer WireGuard mesh network via the Government-designated mesh control plane (Netbird) and applicable event driven or non-event driven system configuration, detailed in Appendix B;
- Modular in nature (hardware) and utilize open architecture (software) that facilitates 'plug and play' interoperability with existing sensors and communications architectures most commonly utilized by the U.S. and multi-national partners;
- Capable of operating in a denied, degraded, intermittent and limited GPS and communications environment;
- Demonstrate cyber resilience and compliance;
- Demonstrate assured control in contested environments;
- Provide safe, predictable behavior around personnel and other unmanned systems, including failsafe mechanisms, obstacle detection / avoidance, and emergency stop behaviors in all modes of operation (remote, tele-operated, autonomous, etc.); and
- Provide on-board diagnostics with operator notification of degraded state (software or sensor failure).

#### IV. Program Submission

The xTech|Kinetic Reach competition is voluntary and open to all entities that meet the eligibility requirements listed in Section II (Eligibility Requirements). Entities are encouraged to submit integrated solutions. **Only one (1) submission per eligible company, per capability area is permitted. If submitting to one (1) or more capability areas, the technology solutions must be different, unless submitting an integrated solution. If submitting an integrated solution, companies must indicate that their solution is integrated when they submit their white paper on the Valid Eval registration page. All submissions must be in English.**

**NOTE:** U.S. Small Business's Eligible for potential Army SBIR Opportunities will only be permitted one SBIR DP2 proposal if selected as a winner of this competition. If selected as a winner in more than one Capability area, the company may choose one proposal to be considered for a SBIR DP2 award, and the other winning submission may be considered for other follow-on funding opportunities.

The registration information and submission upload must be received by **5:00 PM ET on Wednesday, June 24, 2026**. Submissions received after the deadline will not be considered.

**Register now by selecting the xTech|Kinetic Reach competition image at:**  
<https://www.xtech.army.mil/>

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## V. xTech|Kinetic Reach Competition Structure

### Part 1: Concept White Paper

All eligible entities shall submit a **four (4)-page concept white paper and pre-recorded video of up to five (5) minutes** that demonstrates the technology and its suitability for participation in a live exercise. The white paper should outline the solution’s capability alignment, capability value, system integration, contested readiness, system deployability, ability to field product, and company viability. Submissions will be evaluated by subject matter experts (SMEs) across the U.S. DoW. Any submissions provided above the four (4)-page limit and the five (5)-minute video will not be evaluated.

All concept white papers and videos must adhere to the following requirements:

- Concept white papers **must be submitted using the template found on the [Valid Eval](#) registration page, “Template\_ xTech\_Kinetic\_Reach\_White\_Paper.docx”. **Any proposals submitted in a format other than that provided by the template will not be reviewed.****
- For the required video, provide a URL on the contest registration linking to the video (preferably hosted on Vimeo). Video production quality will not influence evaluation scores. Videos should serve to clarify or illustrate concepts from the white paper and must not exceed five (5) minutes in length.
- List your company name, country name and proposal title **EXACTLY** how 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 U.S. Army.
- Proposals by offerors should describe their approach to accomplishment of the expectations using concise narratives.

Evaluators will review and score concept submissions using the following scoring criteria (further details on each scoring dimension can be found on the xTech|Kinetic Reach competition registration page):

<b>Criterion</b>	<b>Weight</b>
Introduction & Capability Alignment	15%
Capability Value	25%
System Integration & Contested Readiness	20%
System Deployability	15%
Ability to Field Product	10%
Company Viability	10%
Submission Quality	5%

Upon conclusion of the submission evaluation period, the Army FUZE xTech Program will select **up to 15 finalists who will advance to Part 2: Soldier Exercise.**

Applicants not selected in Part 1 may, at the Government’s discretion, be invited to participate in the live exercise event; however, they will not receive a cash prize or be eligible to receive subsequent prize awards under the xTech|Kinetic Reach competition.

### Part 2: Soldier Exercise

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Selected finalists from Part 1 will participate in a live exercise and pitch event, with a panel of U.S. Army, DoW, and NATO SMEs and end-users. The event is currently expected to be held in November 2026, in Grafenwöhr, Germany.

Participation in the Soldier exercise is subject to all applicable safety, security, base access, host-nation, export control, customs, transportation, spectrum, airspace, cybersecurity, and operational requirements. The Government may restrict, modify, suspend, or terminate a participant's exercise activities if necessary to protect personnel, property, networks, mission operations, or compliance with applicable law or policy.

In accordance with the DP2 Army SBIR requirements, each eligible proposing SBC shall provide documentation or demonstrate feasibility of sufficient solution maturity to be eligible for a DP2 Army SBIR award along with the DP2 proposal. Work submitted within the feasibility documentation or demonstration must have been substantially performed by the proposing SBC and/or the principal investigator. If technology in the feasibility documentation is subject to Intellectual Property (IP), the proposing small business concern must either own the IP or must have obtained license rights to such technology prior to proposal submission, to enable it and its subcontractors to legally carry out the proposed work.

**Finalists will be required to submit additional documentation prior to the exercise event. These materials are necessary to meet specific safety protocols for Soldiers, export control requirements, network security, and spectrum approval requirements. and to ensure the event is executed successfully.** All documentation must be submitted by the stated deadlines. Failure to provide the required materials or meet the deadlines may result in disqualification from the xTech|Kinetic Reach competition.

Participating firms must commit to full participation for the entire duration of the exercise event and must **be on-site** from day one (1) of the exercise event to support Soldier training and meet operational objectives. Non-compliance with event requirements or failure to meet performance standards during the exercise may result in disqualification from the competition.

The Army FUZE xTech Program will provide additional instructions, detailed evaluation criteria, and exact dates and location for the event at a later date.

Prior to the exercise event, finalists will have the opportunity to engage with U.S. Army and DoW personnel to prepare and discuss event expectations.

***Dates and times are subject to change.***

Upon conclusion of the exercise, the Army FUZE xTech Program will select **up to five (5) final winners of the competition to receive a cash prize of \$150,000 each**, and a potential opportunity to submit for a follow-on contract or agreement. Additionally, finalists may have an opportunity and are encouraged to leave their kits behind to receive additional end-user engagement/feedback with the solutions and enable further opportunities for follow-on contracts or agreements with end-user organizations. Final competition winners may be eligible for an immediate follow-on contract(s) or agreement(s), subject to the availability of funds and technical needs.

Finalists who attend the exercise will receive a cash prize of \$25,000 each and finalists who are able to actively participate and complete all required exercise activities will receive an additional \$25,000 each.

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## Potential Follow-on Funding Opportunities

**All finalists and final winners selected from the xTech|Kinetic Reach competition will be eligible to submit proposals for follow-on opportunities**, including but not limited to SBIR, OTA or other procurement or non-procurement instruments, as determined appropriate by the Government.

The Army SBIR|STTR Program will issue eligible U.S. Small Businesses a separate announcement with detailed instructions to submit the DP2 Army SBIR proposal materials.

Finalists and final winners selected from the xTech|Kinetic Reach competition, that meet the U.S. Small Business eligibility requirements, will be the **only firms eligible** to submit a DP2 Army SBIR proposal under this topic. All other submissions will be deemed ineligible. Eligible firms will only be permitted one SBIR DP2 proposal if selected as a winner of this competition. If selected as a winner in more than one Capability area, the company may choose one proposal to be considered for a SBIR DP2 award, and the other winning submission may be considered for other follow-on funding opportunities.

Eligible finalists will be provided detailed instructions to submit the Army SBIR proposal materials under **Army SBIR Topic “ARM26BX03-DP007”** for a potential follow-on award of up to a maximum of \$2,000,000 and a 18-month period-of-performance. This topic can be found on the [Defense SBIR|STTR Innovation Portal \(DSIP\)](#) and will remain in pre-release for the duration of the competition. Upon selecting competition winners, the open submission window for DP2 Army SBIR proposals will be made available.

Other follow-on opportunities, if pursued, may be executed under applicable statutory authorities, . Any such opportunities may be subject to separate evaluation criteria, independent selection processes, availability of funds, and all applicable statutory, regulatory, and approval requirements.

Follow-on funding opportunities may require delivery of initial prototypes for evaluation within 90-days of contract or agreement award that will be used as the initial articles for further experimentation and testing.

## **VI. Proposed Schedule**

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

<b>Date</b>	<b>Activity</b>
June 3-24, 2026	Part 1: Concept white paper submission period
August 11, 2026	Finalists announced
November 2026	Part 2: Soldier exercise event
November 2026	Final winners announced
December 2-18, 2026	DP2 Army SBIR proposal submission period

## **VII. Prizes and Incentives**

Prizes will be offered under 10 U.S.C. § 4025 (Prize competitions). The total prize pool is \$1,500,000. **Follow-on contract award/agreements, if issued, will be separate from the**

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**prize competition.** Other non-monetary incentives are provided through the xTech|Kinetic Reach competition to help industry engage with the U.S. Army.

<b>Phase</b>	<b>Winners</b>	<b>Prize</b>	<b>Contract Award</b>
<b>Part 1: Concept White Paper</b>	Up to 15	Invitation to Part 2: Soldier exercise event	N/A
<b>Part 2: Soldier Exercise</b>	Up to 5	\$150,000 each  Finalists who attend the exercise receive \$25,000 each and finalists who participate in the exercise will receive an additional \$25,000 each	
<b>Opportunity to Submit an Army SBIR Proposal</b>	Up to 5		Total funding pool of up to \$10,000,000
<b>Opportunity to Submit for an OTA</b>	Up to 15		Total funding pool of up to \$2,700,000
	<b>Total</b>	<b>Up to \$1,500,000</b>	<b>Up to \$12,700,000</b>

### VIII. 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.

### IX. Intellectual Property

The Army is a strong proponent of deliberate IP rights and management by the private sector and DoW.

For the xTech|Kinetic Reach competition:

- The Federal Government may not gain an interest in IP developed by a participant without the written consent of the participant;
- Nothing in this xTech|Kinetic Reach 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 xTech|Kinetic Reach prize competition, 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.

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### **X. Point of Contact**

The U.S. Army FUZE xTech Program Office  
Office of the Deputy Assistant Secretary of the Army, Research and Technology  
Email: [usarmy.xtech@army.mil](mailto:usarmy.xtech@army.mil)  
Website: <https://www.xtech.army.mil/>

## APPENDIX A – xTech|Kinetic Reach Problem Statements

### Capability 1: Autonomous Container Handling & Movement System

Problem Statement: In large-scale combat operations, logistics units must rapidly load, distribute, and unload containerized sustainment packages or systems while operating from dispersed, frequently displaced nodes. The Army requires a means to conduct continuous operations (identify, move, and manage containers) in a degraded communications environment utilizing minimal manpower and without sacrificing distribution tempo or survivability.

Desired Characteristics:

- **STANAG Compliance:** Demonstrates full interoperability with all STANAG-specified 20ft/40ft ISO containers (STANAG 2828) and is transportable by standard NATO assets.
  
- **Mission Enhancing Autonomy:**
  - Load, Unload, move 20foot ISO containers – weighing more than 22,000lbs based solely on a digital tasking input.
  - Operate with increased levels of autonomy in increasingly ‘clean’ environments (i.e. teleoperation in remote/complex terrain and yards, full autonomy in hard-surface, defined yards).
  - Reliably identify and select the correct container using multiple identification modalities, including digital manifests, visual markings, and electronic tags
  - Operate independently in austere conditions characterized by low / no lighting, precipitation, and other environmental stressors
  - Mission-appropriate levels of autonomy (e.g., fully autonomous on-road, Man -in the loop-limited-supervision off-road, tele-operation fallback) with  $\geq 85\%$  reliability in connectivity and route completion in GPS and communications Denied, Degraded, Intermittent, and Limited (DDIL) environments through the use of onboard sensing and computing, alternative navigation methods, and resilient control pathways
  - Operate as part of a coordinated team of uncrewed ground platforms, maintaining safe separation, shared situational awareness, and synchronized movement while executing mission tasks
  
- **Mission Enhancing Capabilities:** Load and distribute containers from the ground in a storage yard to support locations, and unload containers back into yards or other pre-programmed/designated points. Transport across all-terrain for more than 250km without refueling.
  - Minimum: 22,000lbs
  - Preferred: > 40,000lbs
  - Minimum: 20 ft ISO, Tricons
  - Preferred 40ft, Quadcons, and other ISO standard containers.
  - Place at designated location within 1m of accuracy

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- Self-identify and then share container unloading location within a defined area, considering other operations, traffic flow, safety and storage efficacy
- **Network Integration:** Integrates with Mounted Mission Command Software (MMC-S) to provide real-time tactical visibility on the battlefield. Additionally, connect to Global Combat Support System-Army (GCSS-A) to record operational mileage, maintenance records, and update inventory records.

### Capability 2: Future Power Generation

**Problem Statement:** In large-scale combat operations, dispersed formations depend on continuous and reliable power to sustain mission command systems, sensors, and uncrewed platforms while operating in contested areas with constrained fuel distribution. Current power generation solutions rely heavily on routine fuel resupply and create highly detectable signatures, while restricting mobility of forward elements. The Army requires a low-signature power solution that supports extended, distributed operations in an environment that limits resupply frequency and logistical footprints.

#### **Desired Characteristics:**

- **STANAG Compliance:** Demonstrates the system's outputs are 100% compliant with NATO standard power (e.g., STANAG 4007) via common electrical connections and is fully transportable by standard NATO assets.
- **Mission Enhancing Capabilities:**
  - Measurable reduction in acoustic, thermal, and electromagnetic signatures of >50% relative to existing generators of comparable power rating while performing identical mission tasks.
  - Measurable reduction in fuel-related logistical burden of >50% relative to existing power generation methods while performing identical mission tasks over the same period through the use of alternate, zero-fuel, combination generation-storage, or high efficiency generation solutions.
  - Safely connect to and supply power through civilian electrical infrastructure, while also retaining the ability to safely disconnect and provide stable, standalone power to supported loads when necessary.
  - Autonomous power management and load balancing with a preference for continuous, unmonitored operation for ≥24 hours (at 60% rated load) without the need for refueling or human intervention.
  - AC power production (primary) with preference for high-voltage DC 'fact-charging'
  - Stable, clean' power option for use in systems with sensitive components
- **Network Integration:** Integrates with Mounted Mission Command Software (MMC-S) to provide real-time tactical visibility on the battlefield. Additionally, connect to Global Combat Support System-Army (GCSS-A), including the ability to provide remote monitoring, real-time status, and fault-status without proprietary or closed architecture.

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### Capability 3: Autonomous UAV/UGV Forward Refueling/Recharge System

Problem Statement: In large-scale combat operations, uncrewed aerial and ground systems will require frequent refueling close to the point of need to maintain operational tempo. Traditional FARPs depend on significant personnel, equipment, and static setups that are highly vulnerable to detection and attack. The Army requires a method to sustain forward operations for uncrewed platforms when human presence is untenable, the threat prevents establishing conventional FARPs, and forces must rapidly project combat power inside the Autonomous Zone.

Desired Characteristics:

- **STANAG Compliance:** Demonstrates the system's container (ISO) and power interfaces are compliant, and can safely handle and dispense STANAG-compliant CL III (Fuel)
- **Mission Enhancing Autonomy:**
  - Autonomously refuel Group 3/4 UAV, "hot swap" batteries, and/or electrically recharge for a Group 1/2 sUAS or a range of UGVs
  - Error detection and reporting
- **Mission Enhancing Capabilities:**
  - Configurable to support UAS or UGV prior to deployment
  - Full system (to include fuel sources) deployable in a single, air-droppable or PLS-transportable container
  - Appropriate survivability measures for a contested environment – hardening, redundancy, and safe-shutdown behaviors
  - Interoperability with UAS / UGV systems for digital handshakes and status updates on systems being refueled
- **Network Integration:** Integrates with Mounted Mission Command Software (MMC-S) to provide real-time tactical visibility on the battlefield. Additionally, connect to Global Combat Support System-Army (GCSS-A) including the ability to provide remote monitoring, real-time status, and fault-status without proprietary or closed architectures.

### Capability 4: Uncrewed Aerial Payload Transportation

Problem Statement: In large-scale combat operations, dispersed forces require rapid delivery of critical supplies across contested terrain where ground movement is slow, predictable, or not survivable. Current aerial distribution relies on manned aircraft that are limited by availability, risk to aircrews, air corridor control, and competing operational priorities. The Army requires a means to deliver sustainment directly to point-of-need locations when airspace is contested, timelines are compressed, and resupply must occur without depending on manned aviation or secure ground lines of communication.

Desired Characteristics:

- **STANAG Compliance:** Demonstrates the UAV (and its C2 system) adheres to relevant STANAGs for data links, transportability, and consumable fuels/power.

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- **Mission Enhancing Autonomy:**
  - Fully autonomous mission execution, including route selection, launch, navigation, payload drop site selection, and recovery in a highly contested EW and GPS / communications DDIL environment
- **Mission Enhancing Capabilities:**
  - Vertical Take-Off and Landing (VTOL) from unprepared sites in complex terrain (forest clearing, urban street, etc.) and in varying weather conditions
  - Handles non-standard payloads of various configurations (i.e., no proprietary payload solutions)
  - Appropriate payload delivery systems (e.g., precision landing, tether drop, controlled offload) without payload and collateral damage
  - Transport of operationally / tactically relevant, echelon-specific payloads to locations 50-70km from takeoff location with sufficient endurance to return to point of origin unladen
    - ♣ Minimum: 450lbs
    - ♣ Preferred: >600lbs
- **Network Integration:** Integrates with Mounted Mission Command Software (MMC-S) to provide real-time tactical visibility on the battlefield. Also integrates with Tactical Airspace Integration System (TAIS) and Advanced Field Artillery Tactical Data System (AFATDS) to digitally submit autonomous flight routes, enabling automated deconfliction with friendly indirect fires and manned aviation corridors. Additionally, connect to Global Combat Support System-Army (GCSS-A) including the ability to autonomously conduct and report system health without proprietary or closed architecture.

### Capability 5: Uncrewed, Automated, Ground Recovery System

**Problem Statement:** In large-scale combat operations, armored and tactical vehicles will be damaged or immobilized in areas under continuous observation and well within the range of enemy fires. While a significant portion of the future force will be consumable or attritable in nature, there will still be high-value, durable vehicles serving critical roles. Current recovery operations require manned systems and specialized personnel entering high-risk areas, slowing restoration of combat power and creating significant danger to recovery crews. The Army requires a method to retrieve disabled platforms when threat conditions prevent sending personnel forward, mobility corridors are contested, and the force must preserve combat capability without placing soldiers in this high-risk, highly contested battlespace.

#### **Desired Characteristics:**

- **STANAG Compliance:** Demonstrates the UGV adheres to STANAGs for transportability, power/data ports, consumable fuels, and standard vehicle recovery/towing interfaces.
- **Mission Enhancing Autonomy:**
  - Autonomously on pre-defined routes/improved roads and partially autonomously on tactical routes, navigate to a designated 'last-safe-point' and transition to tele-

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operation for final approach in complex terrain and in a highly contested EW and GPS / communications DDIL environment

- o Without the presence of a Soldier at the recovery site, prepare disabled vehicles for movement using standard Army recovery interfaces (e.g., tow pintles, cables, rigid bars), via autonomous or tele-operated options
- o Preferred full autonomous operations to include recovery assessment and planning, connecting to recovered vehicle, and towing of recovered vehicle through all terrain
- **Mission Enhancing Capabilities:**
  - o Extract vehicles from mired positions and tow for distances  $\geq 20$  km
    - ♣ Minimum: 20 tons recovery
    - ♣ Preferred: >35 tons
  - o Recover vehicles in in boggy terrain (~40% water/60% dirt)
    - ♣ Minimum: relatively upright position sunken to the axle (axle partially visible)
    - ♣ Preferred: recovery of overturned or significantly fouled equipment (entangled in dense, wooded vegetation, stuck on large rocks, man-made objects, within mudslides, or in deep ravines)
  - o Continuous monitoring of recovered vehicles for safety and damage during recovery and towing process
- **Network Integration:** Integrates with Mounted Mission Command Software (MMC-S) to provide real-time tactical visibility on the battlefield. Additionally, connect to Global Combat Support System-Army (GCSS-A) including the ability to provide system health without proprietary or closed architectures.

# GOAT-Net Vendor Integration — Call to Industry

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**Audience:** prospective vendors and integrators responding to this call to industry. **Purpose:** to orient a Vendor to the GOAT-Net architecture and to state, in advance of award, the interface obligations a Vendor system must satisfy to exchange data with GOAT-Net. Compliance with the requirements in Part 2 is a **condition of procurement**; a non-conforming interface is rejected at the GOAT-Net connection and ingestion boundary.

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## Defined terms

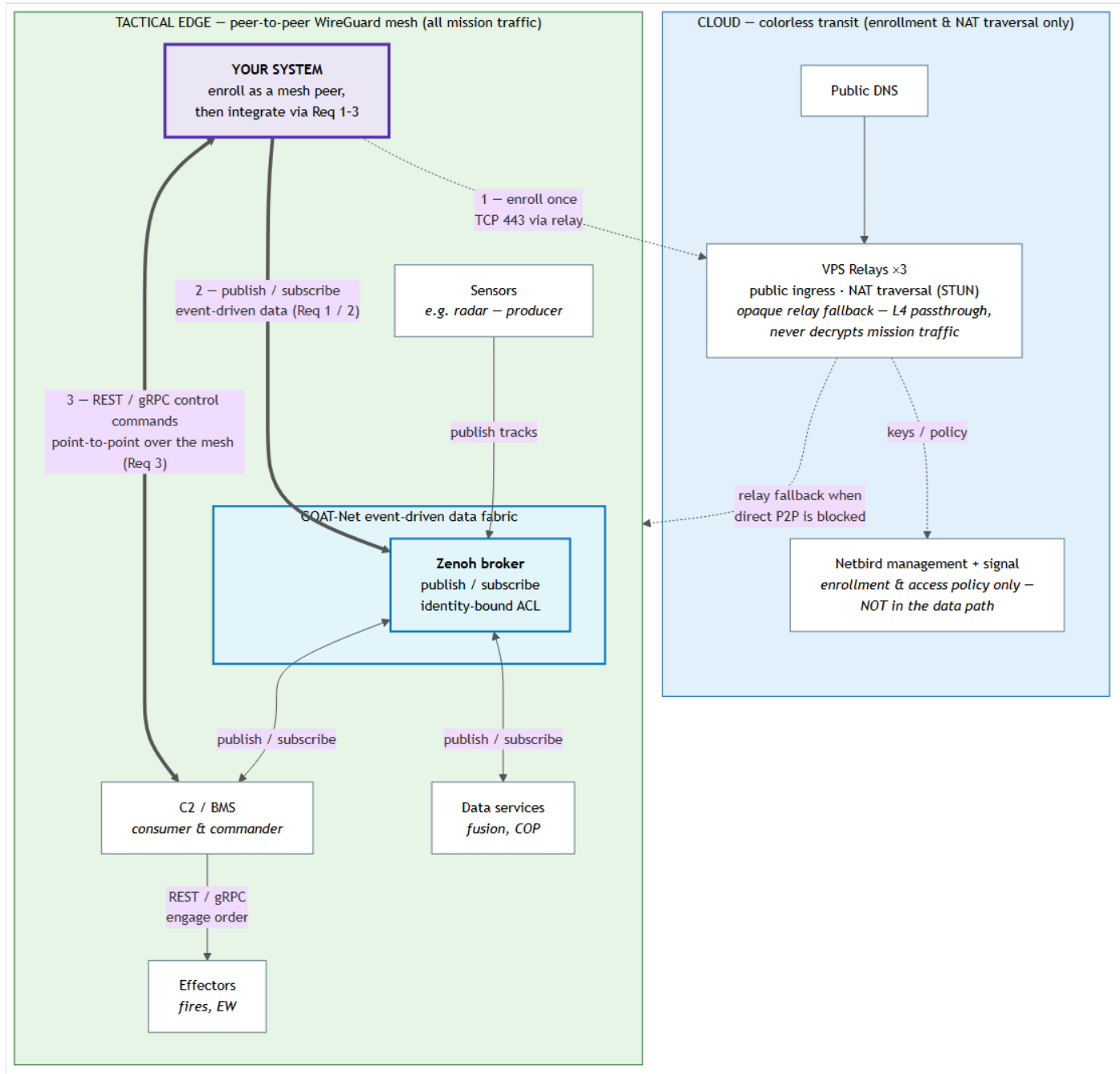
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Term	Definition
<b>GOAT-Net</b>	The Government's open-architecture tactical data fabric — the designated backbone for data exchange among fielded systems.
<b>Event-driven data</b>	Continuously or asynchronously emitted observational data — for example, radar tracks, sensor detections, and position reports.
<b>Control command</b>	A discrete, addressed, request/response action — for example, an engage order, a mode or state change, or a tasking message.
<b>Zenoh</b>	The Government-designated publish/subscribe data broker for event-driven data on GOAT-Net.
<b>Netbird</b>	The Government-designated mesh enrollment and control plane, layered over WireGuard.
<b>Colorless transport</b>	Bearer-agnostic connectivity in which the underlying link carries only opaque, encrypted packets and is indifferent to the data's classification, source, or content.

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# Part 1 — What You Are Integrating Into

This part is a one-page orientation to the GOAT-Net architecture, so a Vendor can see where its system connects before reading the interface obligations in Part 2.



## How to read this diagram

GOAT-Net runs on **two planes that are kept separate by design**:

- **Tactical edge (green) — the data plane.** All mission traffic moves **peer-to-peer over a WireGuard mesh** between systems at the edge. There is no central hub in the data path, so the network keeps operating through cloud or transit outages, and two systems on the same local network keep talking with no internet at all.
- **Cloud (blue) — colorless transit, used only for enrollment and NAT traversal.** A small set of VPS relays provides public ingress so a new peer can be reached, helps peers punch through NAT, and — only when a direct peer-to-peer path cannot be established — forwards the already-encrypted traffic as an **opaque L4 relay that never decrypts mission data**. The Netbird management service is contacted only at enrollment and for policy/key changes; it is **not in the data path** once a system has joined.

## Where your system connects (the three numbered paths)

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1. **Enroll as a mesh peer.** Your system enrolls once through a relay and joins the WireGuard mesh. This is the baseline precondition (Requirement 4).
2. **Exchange event-driven data through the Zenoh fabric.** If your system **produces** event-driven data (e.g., radar tracks), it **publishes** to the Zenoh broker; if it **consumes** event-driven data (e.g., a C2 system), it **subscribes**. Topic access is identity-bound (Requirements 1 and 2).
3. **Exchange control commands over REST or gRPC.** Discrete commands (e.g., an engage order or a state change) travel point-to-point between systems over the mesh using a REST or gRPC request/response interface — not through the event-driven broker (Requirement 3).

A single system commonly uses more than one path: in the example shown, a C2 system **subscribes** to tracks from the Zenoh fabric (path 2) and **issues** engage orders over REST/gRPC (path 3).

## What stays under your control

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- Your system runs **standard WireGuard** on the mesh; relays cannot read your traffic.
  - You publish/subscribe under a **Government-issued identity** scoped to your own topics.
  - Your internal implementation behind your system's edge is yours — GOAT-Net specifies the interface at the boundary, not your internals.
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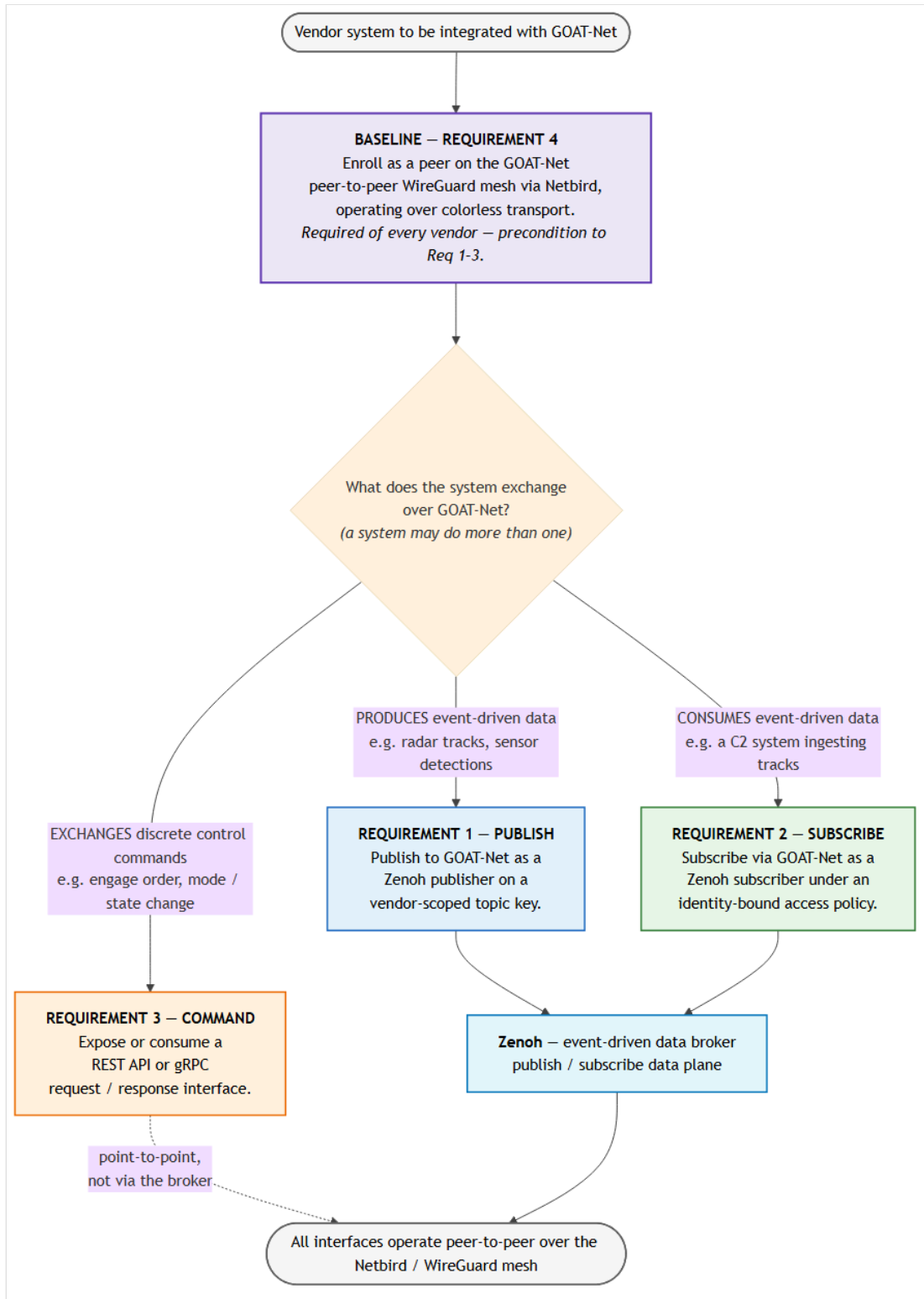
## Part 2 — Interface Requirements

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### Decision diagram

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The following diagram determines which interface obligation(s) apply to a given Vendor system. A single system may fall into more than one branch (for example, a Command-and-Control system that **consumes** event-driven tracks under Requirement 2 and also **issues** engage orders under Requirement 3).



## Interface requirements

### Requirement 4 (Baseline) — Mesh connectivity

Every Vendor system **shall** be capable of enrolling as a peer in the Government's peer-to-peer WireGuard mesh network via the Government-designated mesh control plane (**Netbird**), operating over **colorless**

**transport.** Enrollment is a precondition to Requirements 1 through 3. Mission traffic transits **peer-to-peer**; cloud relays, where used, act only as opaque (non-decrypting) forwarders and are not in the data path once a direct peer connection is established.

### Requirement 1 — Event-driven producers shall publish

Any Vendor system that **produces** event-driven data (e.g., radar tracks, sensor detections) **shall** publish that data to GOAT-Net using the Government-designated publish/subscribe data broker (**Zenoh**), on a vendor-scoped topic key-expression, under a Government-issued identity. The Vendor **shall not** retain the canonical copy of such data in a vendor-proprietary store reachable only through a vendor-operated portal or API.

### Requirement 2 — Event-driven consumers shall subscribe

Any Vendor system that **consumes** event-driven data (e.g., a Command-and-Control system ingesting tracks) **shall** receive that data by subscribing to the applicable GOAT-Net topic(s) via the Government-designated data broker (**Zenoh**), subject to a default-deny, identity-bound access-control policy.

### Requirement 3 — Control commands shall use REST or gRPC

Any Vendor system that **issues or receives** discrete, non-event-driven control commands (e.g., engage order, mode or state change, tasking) **shall** do so over a request/response interface implemented as a **REST API** or a **gRPC** service. Publish/subscribe streaming is reserved for event-driven data under Requirements 1 and 2; synchronous command/response uses REST or gRPC and is exchanged point-to-point over the mesh rather than through the event-driven broker.

## At-a-glance mapping

If your system...	Example	Required interface	Technology
Produces event-driven data	Radar emitting tracks	Publish	Zenoh (pub/sub)
Consumes event-driven data	C2 ingesting tracks	Subscribe	Zenoh (pub/sub)
Exchanges control commands	Engage order, state change	Request/response	REST API or gRPC
Any of the above	All vendors	Mesh peer enrollment	Netbird / WireGuard

## Rationale (informative)

- **Why pub/sub for event-driven data.** Event-driven producers do not know — and should not need to know — every downstream consumer. Publishing to a named topic decouples producers from consumers and eliminates point-to-point N×N integration between systems.
- **Why REST/gRPC for control commands.** Discrete commands with a synchronous acknowledgment and a tight latency budget are a request/response interaction, not a stream. REST and gRPC are mature, widely supported, and the correct fit for command/response semantics; pub/sub is not.

- **Why a mesh baseline.** Separating the management plane (enrollment) from the data plane (peer-to-peer WireGuard) keeps the network operating through cloud or transit outages and presents no open ports or content to the bearer — the colorless-transport property.