JOINT INTERAGENCY FIELD EXPERIMENTATION 26-2

23 – 27 February 2026

Hosted by the Naval Postgraduate School in partnership with

Naval Postgraduate School Foundation

MAC Mission Acceleration Center Southwest

FLEETWERX

JVAB

The technologies listed in the following quad charts are subject to change based on the technologists' readiness to participa te in field activities.

A-01: Wireless Power Beaming for Persistent UAS

PROJECT INFORMATION

Organization	**Reach Power**
Principal Investigator	Hunter Scott
Technology Readiness Level	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest	A) Unmanned Aerial Systems
Funding	Federally (OECIF (OUSW A&S))

PROPOSED EXPERIMENT OVERVIEW

At JIFX, Reach plans to demonstrate the wireless power technology with a UAS to allow for persistent ISR without the need to swap batteries at regular intervals. To conduct this experiment, we will provide wireless power via our transmitter to a receiver attached to a sUAS. By providing usable power to the drone wirelessly, we will be able to allow the drone to loiter in the fair for extended periods of time.

SYSTEM DESCRIPTION

Reach develops wireless power beaming systems that enable persistent operations of electronic devices. Its wireless power transfer technology (WPT) uses radio frequency (RF) energy to power numerous, moving, and hard-to-reach devices such as small unmanned aerial systems (sUAS), drones, robots, and unattended ground sensors (UGS). The system has three main components: a transmitter, a set of receivers, and a software management dashboard for user control. The transmitter, equipped with an adaptive antenna array and a microcontroller unit (MCU), handles both power transmission at 24GHz and data communication at 2.4GHz. The MCU controls RF signals and manages communication with receivers via a proprietary Bluetooth Low Energy (BLE) based protocol, optimizing power transfer even without line-of-sight. receivers, which include antennas, power control circuitry, and storage elements that communicate power measurements back to the transmitter. The software dashboard displays network status, manages receiver authorization, and allows users to optimize and schedule power transfers.

A-03: Generalized VizNav using advanced AI

PROJECT INFORMATION

Organization	**Tera AI, Inc.**
Principal Investigator	Emanuel Ramirez
Technology Readiness Level	TRL 7: System prototype demonstration in an operational environment.
Research Area of Interest	A) Unmanned Aerial Systems
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

Tera will conduct a flight experiment to test our novel vision-based navigation approach across a variety of sensor packages and lighting conditions. If successful, this test will show robust vision-based navigation performance without the use of GPS and validate limited to no performance degradation due to the use of different passive monocular sensor packages and lighting conditions. The test is intended to mature product TRL/IRL levels as it relates to performance and integration of vision navigation across various passive monocular sensor packages including EO and LWIR.

SYSTEM DESCRIPTION

Using advanced foundation models optimized to run in real-time and on-platform, Tera has built a novel approach to vision-based navigation that gives drones the ability to understand and navigate previously unseen terrain in GPS-denied environments. The system will fly a pre-defined set of waypoints that simulate a 5km to 10km ISR mission using a passive monocular sensor in either EO or LWIR based on a single pre-loaded map. For each flight, a different sensor package will be swapped in to evaluate performance degradation as a result of the different sensors. During daylight hours, EO sensor packages will be used while during dusk and night operations LWIR sensors will be used.

A-06: WeatherHive

PROJECT INFORMATION

Organization	**GreenSight**
Principal Investigator	Zach Chase
Technology Readiness Level	TRL 8: Actual system completed and qualified through test and demonstration.
Research Area of Interest	A) Unmanned Aerial Systems
Funding	Federally (AFWERX)

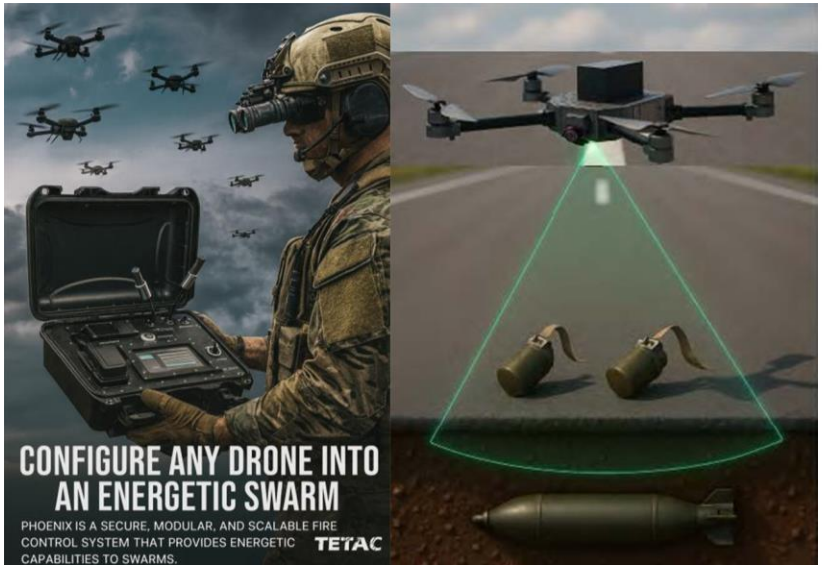
PROPOSED EXPERIMENT OVERVIEW

We plan to experiment with the weatherhive system newest prototype design which specifically addresses some internal heat and battery issues and improves weather sensing capabilities. We plan to conduct multiple flights with single and multiple UAS. Single UAS flights will attempt a 10k ft ascent and a 5.4 mile horizontal flight.

SYSTEM DESCRIPTION

The system contains four nano drones of weight 250 g that sample the atmosphere. the drones are housed and communicate with a pelican case ground station. Data is sampled and transmitted over WiFi 2.4 GHz at short range and LoRa 900 MHz at longer ranges

A-08: Remote Initiation of UAS Delivered Munitions and EOD UXO Mitigation Tools



PROJECT INFORMATION

Organization	**TETAC, Inc.**
Principal Investigator	Pete Noto
Technology Readiness Level	TRL 7: System prototype demonstration in an operational environment.
Research Area of Interest	A) Unmanned Aerial Systems
Funding	Federally (Department of Defense)

PROPOSED EXPERIMENT OVERVIEW

TETAC's planned efforts for JIFX 26-2 consist of two complementary activities. The first is a continuation of the experiments conducted during JIFX 25-4 and 26-1, focused on UAS-based UXO detection and characterization technologies. The second comprises initial field experimentation and trials of an RF-based, MIL-STD-compliant remote fire initiation system intended for UxS-deployed, leave-behind munitions and energetic UXO mitigation tools and charges in support of EOD operations.

SYSTEM DESCRIPTION

TETAC is developing a semi-autonomous Group 1 unmanned aircraft system (UAS) to support explosive ordnance disposal (EOD) operations. The system is intended to detect, localize, and classify surface and shallow subsurface unexploded ordnance (UXO), and to remotely emplace and initiate energetic mitigation tools when appropriate.

The air vehicle is designed and prototyped in-house using Blue UAS Framework-aligned components. The sensor payload integrates vector and scalar magnetometers, LiDAR, and multispectral imaging to support multi-phenomenology detection and characterization.

For JIFX 26-2 experimentation, TETAC will be flying the UAS system as well as conducting initial field trials of an RF-based remote fire initiation system derived from its maritime acoustic modem-based Poseidon system, previously evaluated by JVAB at JIFX 25-4. The system leverages NDAA-compliant Doodle Labs mesh radio architecture.

A-09: Tempest

PROJECT INFORMATION

Organization	**Firestorm Labs**
Principal Investigator	Ali Llerena
Technology Readiness Level	TRL 5: Component and/or breadboard validation in relevant environment.
Research Area of Interest	A) Unmanned Aerial Systems
Funding	Federally (DoD)

PROPOSED EXPERIMENT OVERVIEW

Firestorm Labs will conduct a series of controlled flight experiments focused on navigation, propulsion, and platform reliability. This iteration will advance testing of Rhoman Aero's ALTNAV payload from previously completed open-loop flights (JIFX 26-1) to closed-loop flight operations to evaluate navigation performance, stability, and fault tolerance without external corrections. In parallel, Firestorm will perform reliability and engine-characterization testing on the Tempest B-2 EFI variant, with specific emphasis on propulsion performance, system repeatability, and gimbal performance. Data will be collected via onboard telemetry, flight logs, propulsion sensors, camera video, and post-flight analysis to measure performance, reliability, and system behavior.

SYSTEM DESCRIPTION

Tempest is a modular, man-portable platform that can be reconfigured for different missions in under 10 minutes from case to launch.

Tempest is engineered around a truly modular open architecture, extending modularity from payloads to the airframe itself. This allows for rapid configuration and reconfiguration, enabling warfighters to tailor the aircraft's role for new mission sets in hours rather than months.

Powered by Firestorm's autonomy suite, SparkSDK, and Ignite GCS Tempest seamlessly integrates with a growing ecosystem of sensors, payloads, and mission technologies.

A-10: GPS Denied UAV Navigation and Detect & Avoid Solutions

PROJECT INFORMATION

Organization	**Rhoman Aerospace**
Principal Investigator	Thomas Youmans
Technology Readiness Level	TRL 5: Component and/or breadboard validation in relevant environment.
Research Area of Interest	A) Unmanned Aerial Systems
Funding	Internally & Federally

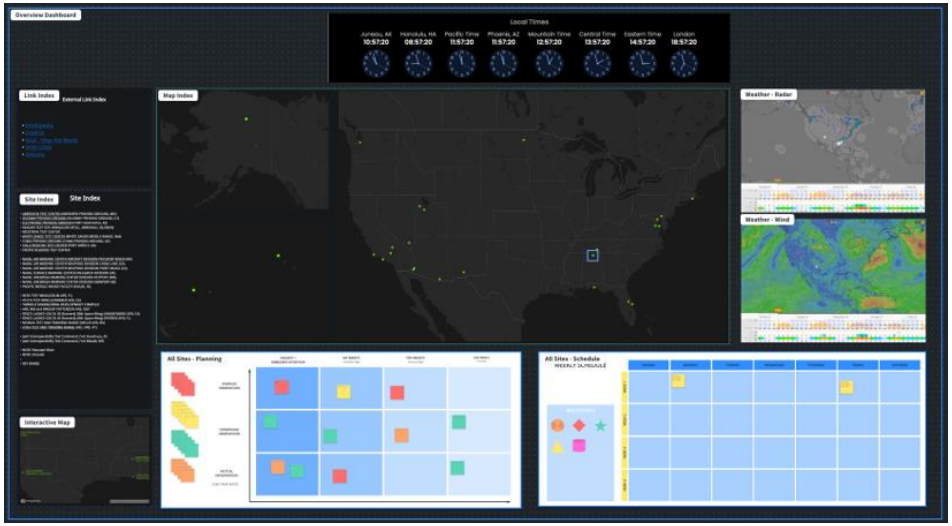
PROPOSED EXPERIMENT OVERVIEW

Rhoman Aerospace develops GPS-Denied navigation and detect-and-avoid solutions for VTOL and fixed-wing UAV in contested and GPS-Denied air-space. The experimentation plan includes testing multiple UAV systems for day-time and night-time GPS-Denied navigation Alt-PNT systems, and testing detect-and-avoid and counter-UAV trajectory estimation systems for avoidance and kinetic cUAS systems in electronically contested airspace. Proposed experimentation does not require EW on side, systems can be tested with GPS disconnected or dis-activated.

SYSTEM DESCRIPTION

Systems Under Test include optical, compute, and various sensor payloads that perceive elements of the UAV environment calculations regarding position estimation and UAV/cUAV detections, and UAV maneuver commands. Testing includes deployment of Alt-PNT systems to various UAV and testing of portability of solution to multiple UAV form factors.

B-03: Evaluating AI-Driven Workflows for Decision Advantage



PROJECT INFORMATION

Organization	**Bluescape**
Principal Investigator	Norman Litterini
Technology Readiness Level	TRL 9: Actual system proven through successful mission operations.
Research Area of Interest	B) Unmanned Systems (UxS) Design, Deployment, Operation, Networking and Control
Funding	Private Equity

PROPOSED EXPERIMENT OVERVIEW

The objective of this experiment is to validate the ability to test AI on experimentation or operational workflows in a secure, collaborative environment. NPS will select the UAS experimentation workflow and the AI, and Bluescape will create the workflow and orchestrate the AI integration. Data will come from the UAS experiment NPS designates.

SYSTEM DESCRIPTION

Bluescape is a COTS technology for collaboration and AI orchestration into workflows. Software has already been in production for DOD and the IC for 9+ years.

B-04: DUEL-V: Dynamic Unmanned Expendable Light Vehicle

PROJECT INFORMATION

Organization	**Liminal Industries**
Principal Investigator	Bradley Balzer
Technology Readiness Level	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest	B) Unmanned Systems (UxS) Design, Deployment, Operation, Networking and Control
Funding	Internally

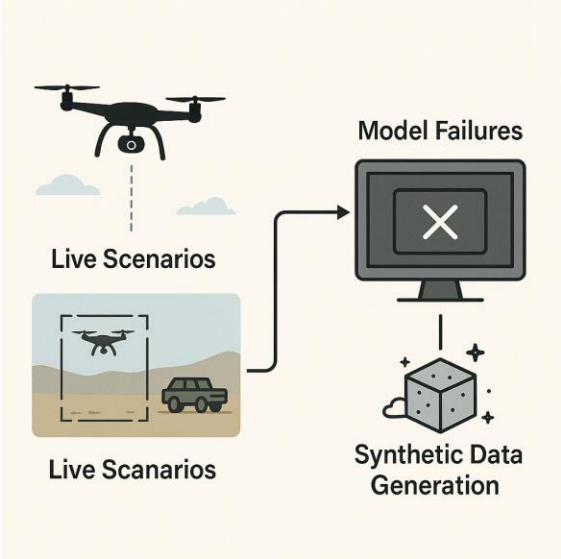
PROPOSED EXPERIMENT OVERVIEW

At JIFX, we will conduct an experiment testing the operational resilience and maneuverability of the DUEL-V unmanned ground vehicle under remote operation in dynamic, unstructured environments. The experiment will vary terrain type, obstacle density, and directional commands to evaluate how effectively the vehicle can navigate while maintaining stability and control. Key measurements include time to complete a defined course, number of operator corrections required, positional deviation from intended paths, and the vehicle's ability to recover from flips or unexpected disturbances. Data will be collected through onboard sensors—including IMUs, GPS, and cameras—with telemetry streamed in real time to the operator and recorded for post-run analysis. The experiment aims to quantify how the DUEL-V's unique flip-orientation control system impacts remote operation performance, providing actionable insights for improving human-machine interface design and field robustness.

SYSTEM DESCRIPTION

DUEL-V is a rugged, remote-operated unmanned ground vehicle built for resilience in challenging environments. Its key innovation is a flip-orientation control system, allowing intuitive operation whether upright or inverted. The robust chassis with large, soft wheels and direct-drive hub motors ensures mobility and durability over obstacles. Onboard sensors—including IMU, GPS, and cameras—stream real-time telemetry to the operator. A modular payload bay supports rapid adaptation to mission needs. DUEL-V combines robust mobility, versatile control, and real-time data, making it an ideal platform for testing remote operation performance and human-machine interface effectiveness.

B-05: Infrastructure for Training Autonomous Systems (ITAS)



PROJECT INFORMATION

Organization	**Null Labs**
Principal Investigator	Kristopher Luo
Technology Readiness Level	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest	B) Unmanned Systems (UxS) Design, Deployment, Operation, Networking and Control
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

We will evaluate a closed-loop workflow that turns JIFX sensor data into targeted synthetic data for improving autonomous perception. During live scenarios, we will run our onboard/edge vision model on EO/IR video of uncrewed systems and vehicles, logging detections, false alarms, and latencies. After each run, we will mine model failures, generate matched synthetic variants (lighting, weather, background, pose), and retrain the model on-site. We will then redeploy and re-fly/rewind scenarios to measure performance deltas. Metrics include precision/recall, false-alarm rate, and time from failure observation to improved model deployment. Data collected: raw sensor video, model outputs, synthetic samples, and operator annotations. The experiment tests whether field-driven synthetic data can reliably close real-world performance gaps within a single exercise window.

SYSTEM DESCRIPTION

Null Labs provides a synthetic data and evaluation platform for training and repairing perception models used on autonomous systems. The system ingests mission context plus sample EO/IR video, auto-generates physics-based, photo-real synthetic scenes, and produces perfectly labeled image and time-series datasets. These datasets feed into a training pipeline that outputs optimized detection/segmentation models deployable on small-form-factor edge computers. A feedback module compares live exercise performance with synthetic-evaluated behavior, highlights failure modes, and suggests targeted synthetic scenarios to correct them. The software runs on standard GPU workstations or tactical servers and can integrate with existing autonomy stacks via simple APIs, enabling sponsors to stand up rapid “test–break–fix” loops for perception without building and maintaining a large in-house simulation team.

B-06: AI at the Edge, Field Tactical Suite - Latent AI

PROJECT INFORMATION

Organization	**Latent AI**
Principal Investigator	Jon Gargano
Technology Readiness Level	TRL 7: System prototype demonstration in an operational environment.
Research Area of Interest	B) Unmanned Systems (UxS) Design, Deployment, Operation, Networking and Control
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

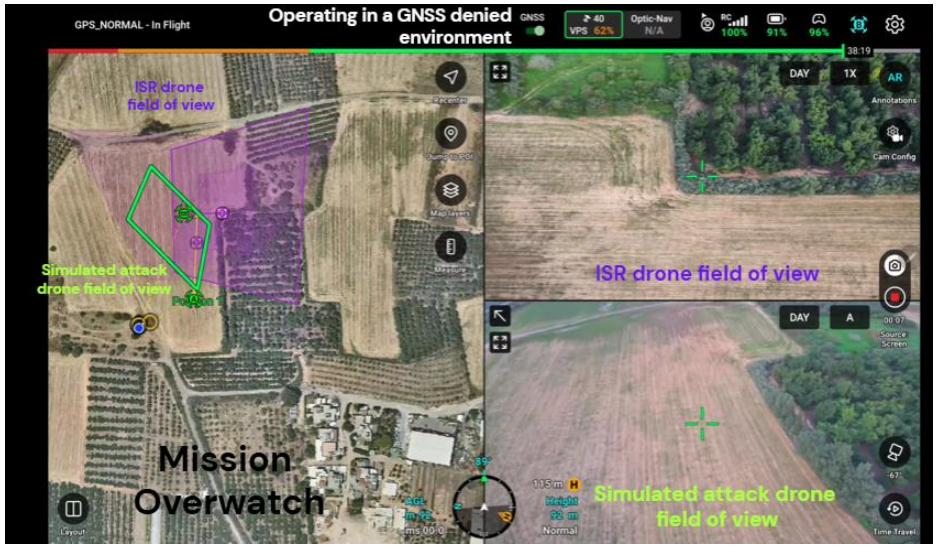
Goal: validate "see the target, strike the target" with rapid edge adaptation and DDIL-friendly updates.
Latent AI Hunter-Killer System (HKS).

Setup (Day 0): Connect 1 ISR video source (EO/IR or FPV) into HKS UI; connect 1 effector/autonomy endpoint (real or surrogate) and confirm telemetry + abort.
Baseline run: Detect/track target with baseline model; record false alarms, track stability, and end-to-end latency.
Edge adaptation drill: Operator "one-click tag & track" to collect a short clip, run fast fine-tune/quantize/compile on edge compute, and generate a mission package.
Constrained update: Push package over throttled link; measure payload size + time-to-update.
Re-run: Validate improved ID/track on target; execute human-authorized "strike" sequence (simulated if needed).
Success metrics: time-to-adapt, update size, on-effector inference latency, detection/track improvement, operator actions/time, and audit logs/AAR.

SYSTEM DESCRIPTION

Field Tactical Suite provides the operator UI for human-in-the-loop labeling (quick clicks on the target), orchestration to package short clips, and tooling to trigger rapid fine-tuning and optimization on local compute. The resulting updated model is compiled/packaged for the specific edge hardware (e.g., Jetson-class) and delivered as a compact "mission package" that can move over constrained links and be deployed without cloud dependency. FTS also enforces workflow safety gates (operator authorization), produces audit logs for AAR, and standardizes I/O so the perception output (track + confidence) can feed a downstream effector integration or a surrogate "strike" sequence. In short: FTS is the backbone that closes the loop from sensor to update to improved edge inference to authorized action.

B-07: Multi-drone orchestration with edge-AI autonomy



PROJECT INFORMATION

Organization	**EyesAtop**
Principal Investigator	Bret Hinrichs
Technology Readiness Level	TRL 7: System prototype demonstration in an operational environment.
Research Area of Interest	B) Unmanned Systems (UxS) Design, Deployment, Operation, Networking and Control
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

Objective: We intend to validate our platform's ability to integrate multiple drones, irrespective of manufacturer make/model, into an universal interface that provides commanders with real-time control and situational awareness. We intend to demonstrate an operational AI-driven multi-UxS area control system for continuous Intelligence, Surveillance, Reconnaissance (ISR) to-strike operations.

Methodology: An operator will conduct sorties over a mock training area (~1,000 yds). Leveraging the universal controller, the operator will launch and control 1 ISR drone to establish continuous area control. The operator will locate and identify 2x targets, dispatching an additional ISR drone to each target (from the same controller). These drones will autonomously move to the identified target and hover, simulating a potential strike or logistics mission.

Metrics: We will measure success via: (1) Time to detection, and (2) Time to target. Current detect-to-engage cycles are cumbersome (~15-30 min). We aim to reduce this gap.

SYSTEM DESCRIPTION

EyesAtop is an open architecture, AI-command platform built to unify every aspect of drone operations, providing commanders, operators, and developers/manufacturers with one framework for C4I – a universal user experience that connects every drone into a single, autonomous orchestration layer.

Core Technology: The system is a single, universal controller that works seamlessly across any drone via a proprietary API. The controller integrates onboard edge-AI compute to enable real-time autonomous object detection, classification, and targeting, affording commanders the ability to view, assign, and control multiple drones simultaneously, through a single interface.

Core Innovation: The core innovation lies in the platform's open architecture, which permits seamless integration with 3rd party AI modules and defense systems. For warfighters, the result is an adaptive, ever-evolving layer of drone-augmentation that drives faster coordination, clearer decisions, and shared operational understanding across the force – even in EW degraded and GNSS-denied environments.

B-08: Zephyr sUAS Simulator

PROJECT INFORMATION

Organization	**Little Arms Studios**
Principal Investigator	Kyle Bishop
Technology Readiness Level	TRL 7: System prototype demonstration in an operational environment.
Research Area of Interest	B) Unmanned Systems (UxS) Design, Deployment, Operation, Networking and Control
Funding	Internally & Federally

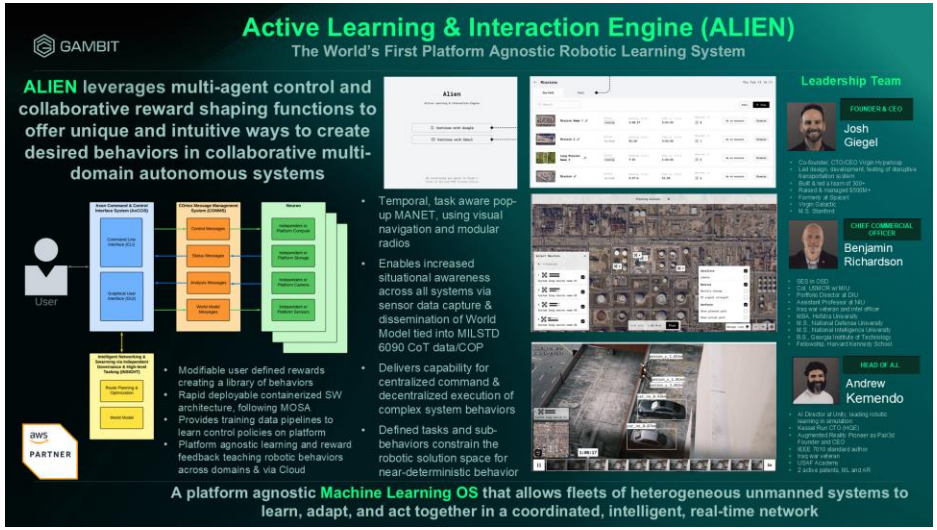
PROPOSED EXPERIMENT OVERVIEW

Personnel with a range of experience operating small Unmanned Aerial Systems (sUAS) will run through a variety of scenarios to test the fidelity of the Zephyr drone simulator. Our team will also assess the skill progression and development of the operators and the ability of Zephyr to accelerate sUAS training.

SYSTEM DESCRIPTION

Zephyr is an advanced virtual small unmanned aerial systems (sUAS) training simulator that leverages a high-fidelity physics engine, a proprietary Learning Management System (LMS), and a modular scenario library to deliver realistic, scalable, and safe pilot training. Each integrated sUAS platform has a unique physics profile, making for the most accurate flight physics of any commercially available sUAS simulator. Zephyr consists of a variety of scenarios containing fully-realized environments for the user to operate their drone in. The flight models in the simulator are also real-world accurate, so the experience directly translates to real-world application.

B-09: Active Learning and Interaction Engine (ALIEN) Target Determination



PROJECT INFORMATION

Organization	**Gambit Defense**
Principal Investigator	Ben Richardson
Technology Readiness Level	TRL 5: Component and/or breadboard validation in relevant environment.
Research Area of Interest	B) Unmanned Systems (UxS) Design, Deployment, Operation, Networking and Control
Funding	Internally & Externally (SIBR / STTRs, and B2B efforts)

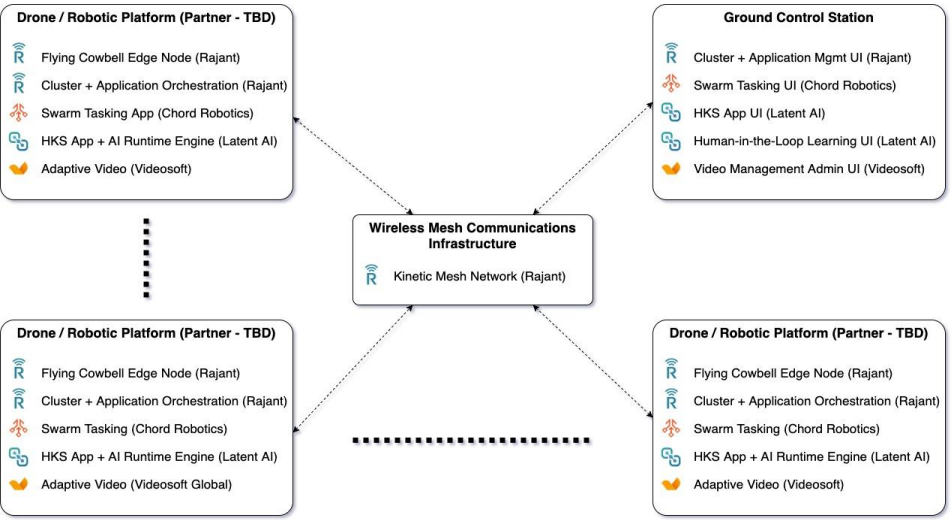
PROPOSED EXPERIMENT OVERVIEW

Join together Gambit's Active Learning and Interaction Engine (ALIEN) hardware-agnostic software suite that solves the complex one-to-many control problem with Latent AI's automatic target recognition (ATR). The experiment will consist of rapidly integrating Latent's ATR on Gambit's Modal AI Starling platforms, identifying how our software can "talk" to one another, and then flying multiple platforms with Gabmits software and having Latent AI's software cue a behavior or change in behavior.

SYSTEM DESCRIPTION

Active Learning and Interaction Engine (ALIEN) is a hardware-agnostic software suite that solves the complex one-to-many control problem by equipping heterogeneous unmanned systems with adaptive, collaborative intelligence. Using a decentralized decision-making framework rooted in advanced reinforcement learning, ALIEN allows swarms to operate as a single cohesive entity that can dynamically navigate and react to unknown environments. This moves beyond deterministic, pre-planned execution, enabling multi-domain assets to autonomously collaborate and achieve mission objectives through high-level, outcome-oriented commands. Our advanced autonomy engine enables a single Warfighter to transition from a pilot of one to a mission commander of many simultaneously to execute complex behaviors like collaborative search and coordinated terminal guidance.

B-10: Adaptive Edge-Native Distributed Hunter-Killer-style Swarm ISR with Mission-time AI Learning and Dynamic Tasking



PROJECT INFORMATION

Organization	**Rajant Corporation**
Principal Investigator	Muthukumaran Chandrasekaran
Technology Readiness Level	TRL 4: Component and/or breadboard validation in laboratory environment.
Research Area of Interest	B) Unmanned Systems (UxS) Design, Deployment, Operation, Networking and Control
Funding	Internally

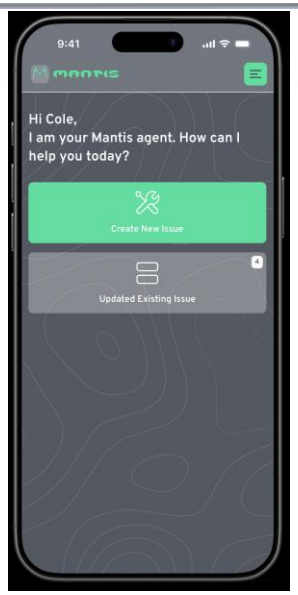
PROPOSED EXPERIMENT OVERVIEW

We propose an experiment to evaluate whether a heterogeneous drone/robot swarm can maintain mission-useful ISR and dynamic tasking over a mobile, bandwidth-constrained mesh while adapting edge AI models during execution. A swarm tasking application will allocate and re-task “observer” and “hunter” roles based on ISR events and AI confidence. Video streams will be adaptively compressed and prioritized to a single ground control station, while on-platform inference generates detections and confidence scores. When a scripted “novel target” condition produces degraded detection, an operator will initiate a rapid model-adaptation workflow (zero-shot auto-labeling + fast fine-tuning) and redeploy the updated model to selected nodes. We will measure metrics such as task reallocation latency, end-to-end cueing latency, detection performance (precision/recall proxy via ground-truth clips), video utility vs. bitrate, and network health (throughput/latency/packet loss). Data collection includes synchronized logs of task events, inference outputs, video bitrate/quality telemetry, mesh link statistics, and operator actions/timestamps.

SYSTEM DESCRIPTION

The system is a distributed, edge-native swarm ISR platform that integrates autonomous tasking, adaptive video streaming, and mission-time AI learning over a mobile mesh network. Each aerial or ground platform hosts a compact edge compute and networking node that runs onboard video inference, participates in peer-to-peer communications, and executes swarm tasking commands. A swarm coordination layer dynamically assigns and re-tasks roles (e.g., observer, hunter, relay) based on ISR events and AI confidence. Video from onboard sensors is compressed and prioritized in real time to maintain mission utility under bandwidth-constrained conditions and is aggregated at a single ground control station. Edge AI models perform local inference and can be adapted during the mission using operator-initiated zero-shot labeling and fast fine-tuning, with updated models redeployed across selected nodes without cloud dependency. The system is hardware-agnostic, resilient to node loss, and designed for disconnected, contested environments requiring human-in-the-loop oversight.

B-12: An Agentic Logistics Platform for Unmanned Systems



PROJECT INFORMATION

Organization	**Mantis AI**
Principal Investigator	Gaylan Greenawalt
Technology Readiness Level	TRL 2: Technology concept and/or application formulated.
Research Area of Interest	B) Unmanned Systems (UxS) Design, Deployment, Operation, Networking and Control
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

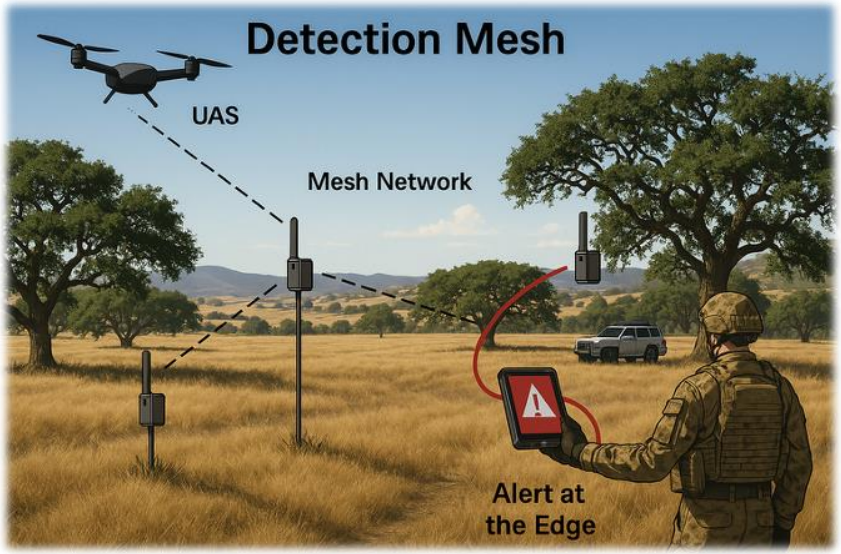
This experiment aims to demonstrate that Mantis AI delivers actionable reports and insights through a user-centered interface tailored for unmanned systems logistics. The specific objectives are:

1. Evaluate Feature Relevance and Utility: Assess which features, workflows, and operational narratives provide the most value to users in real-world contexts, identifying those that can be prioritized, refined, or deprioritized.
2. Validate User Experience and Workflow Integration: Analyze user interactions with the edge data capture workflow to identify pain points and optimize integration into existing unmanned systems maintenance processes.
3. Identify Operational Gaps and Enhancements: Determine missing capabilities, from edge data processing to upstream reporting, required to ensure Mantis AI's full operational effectiveness.
4. Co-Develop Use Cases and Narratives: Collaborate with end users to refine operator and technician workflows, ensuring alignment with mission-critical requirements.

SYSTEM DESCRIPTION

Mantis AI is a web-based Software as a Service (SaaS) platform designed for unmanned systems operators and technicians. The system is designed to be a "one-stop-shop" logistics and MRO solution for units/organizations fielding multiple unmanned systems from multiple vendors. It leverages generative AI and machine learning to enable multi-modal edge data capture from operators and technicians, transforming unstructured data into structured, actionable outputs. Edge users automate their report writing and submission; managers visualize UxS readiness across an organization in real-time. Mantis AI's mission is to enhance operational readiness by removing barriers for operators and their organizations. We envision a future where Mantis AI drives seamless, efficient logistics, empowering stakeholders across the unmanned systems ecosystem..

C-02: WavWhispr C-UAS Alerting System



PROJECT INFORMATION

Organization	Balboa A.L.S.
Principal Investigator	Tony Frissore
Technology Readiness Level	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest	C) Countering Unmanned Systems
Funding	Internally

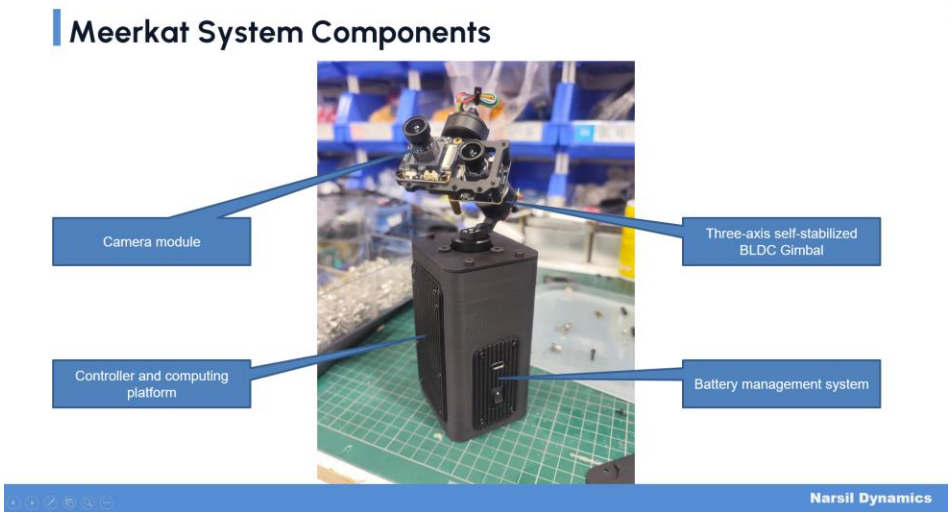
PROPOSED EXPERIMENT OVERVIEW

Employ WavWhispr's RF detection model specifically for UAV/drone RF control and video signal detection, collection, and analysis from multiple edge nodes simultaneously. Test exfil of analyzed edge node data and collection at hub / gateway node for structuring, second tier analysis, and backhaul to collection servers. Test translation / export / distribution of system data in TAC/ ATAC compliant XML. Test improved node ruggedization in field environment.

SYSTEM DESCRIPTION

WavWhispr is a distributed, low-size, weight, and power (SWaP) RF sensing and resilient communications capability designed to close these gaps. The system consists of autonomous nodes that passively detect and characterize RF activity, perform edge-based signal processing, and exchange prioritized data over a self-forming, self-healing mesh network. By operating passively and transmitting only mission-relevant metadata, WavWhispr minimizes electromagnetic signature while enabling persistent situational awareness and data exfiltration in denied environments.

C-03: AI Drone Detector



PROJECT INFORMATION

Organization	**Narsil Dynamics**
Principal Investigator	Simon Lee
Technology Readiness Level	TRL 7: System prototype demonstration in an operational environment.
Research Area of Interest	C) Countering Unmanned Systems
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

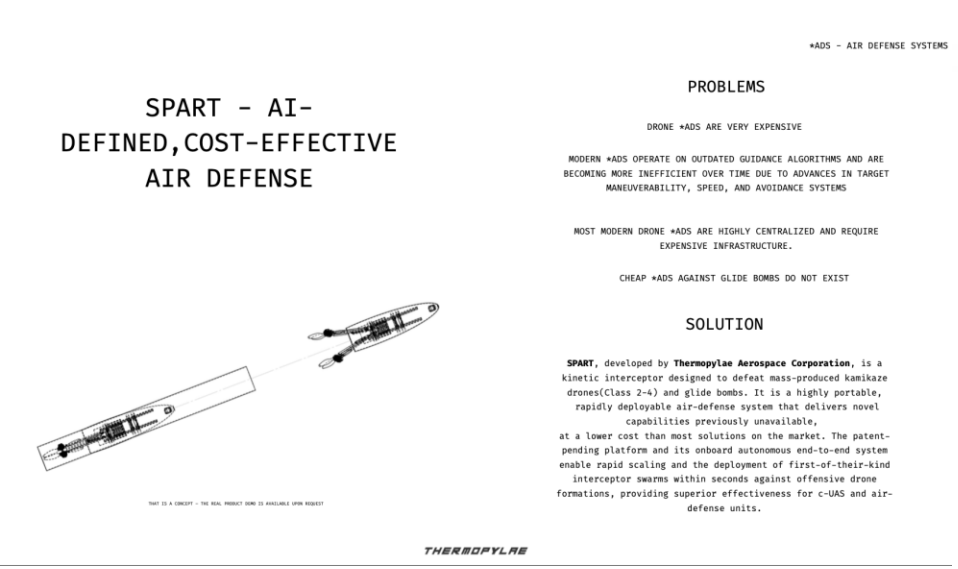
Test Setup and Execution in the controlled environment (conference room)
Preparation: Secure the Meerkat unit on a stable surface. Power on the camera, Hailo-8 AI accelerator, and speaker.
Target Simulation: Display high-resolution drone imagery or video on a tablet to simulate aerial threats safely indoors.
Detection Workflow: Move the screen across the camera's field of view. The system captures the 4K feed, applies Scan ROI cropping, and uses a custom YOLO model to identify the drone.
Verification: Ensure the Thresholding module classifies the target as a "High-Confidence" detection.
Output: Confirm the system triggers a localized voice alarm and accurately calculates the azimuth using the simulated LOS vector and MAVLink-based transformations.

SYSTEM DESCRIPTION

Meerkat is a passive, AI-driven vision system designed for autonomous aerial threat detection. The system utilizes a 4K camera feed processed through a Scan ROI (Region of Interest) module, which systematically tiles the wide-angle view into sub-sections to maintain high resolution for small-object detection.

At its hardware heart, the Hailo-8 AI processor runs a custom-optimized YOLO model to identify drones in real-time. To ensure high reliability, a Thresholding module filters detections to suppress false positives caused by birds or clouds. Once a high-confidence target is identified, the system integrates MAVLink telemetry from a gimbal to transform image-space coordinates into a precise Line-of-Sight (LOS) vector and azimuth. The process concludes with an immediate localized voice alert and remote data reporting via a network interface, providing a low-cost, high-accuracy alternative to traditional radar.

C-04: SPART — a man-portable, modular, autonomous interceptor platform for Class 2–3 UAVs.



PROJECT INFORMATION

Organization	**Thermopylae Aerospace Corporation (TAC)**
Principal Investigator	Yehor Balytskyi
Technology Readiness Level	TRL 7: System prototype demonstration in an operational environment.
Research Area of Interest	C) Countering Unmanned Systems
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

SPART V2 Experimentation Plan

Test the core platform specifications: maximum speed, maximum flight time, and maximum altitude achieved.

Test sub-ranges of 5, 10, and 15 km to validate effectiveness and operational capability.

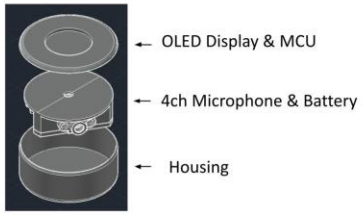
Intercept at least 2–3 targets to test our proprietary autonomous software and GNC.

Validate reliable pneumatic tube deployment and post-deployment stabilization.

SYSTEM DESCRIPTION

SPART is a kinetic interceptor against Class 2–3 UAVs. It uses a novel deployment and structural architecture, allowing it to be launched from a pneumatic round tube into the sky within milliseconds. Multiple launchers can be deployed in the same location to launch a swarm of interceptors. SPART is developed with proprietary autonomous software and algorithms, providing last-mile interception autonomy and simplifying operations for soldiers, enabling a single soldier to operate multiple interceptors simultaneously.

C-05: Hand-hold Acoustic DOA (Direction of Arrival) Device



PROJECT INFORMATION

Organization	**Narsil Dynamics**
Principal Investigator	Simon Lee
Technology Readiness Level	TRL 7: System prototype demonstration in an operational environment.
Research Area of Interest	C) Countering Unmanned Systems
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

Setup: Deployment: Place two or more devices 20m apart on tripods.
Acoustic Target: Use a drone (if available) or a high-fidelity directional speaker mounted on a stand at a height of 1.5m.
Signal: Play a pre-recorded drone motor frequency (4 kHz~8 kHz)
Procedure:
Grid Test: Position the speaker at known coordinates. Record the DOA from both devices. Verify if the overlapping bearings correctly localize the source.

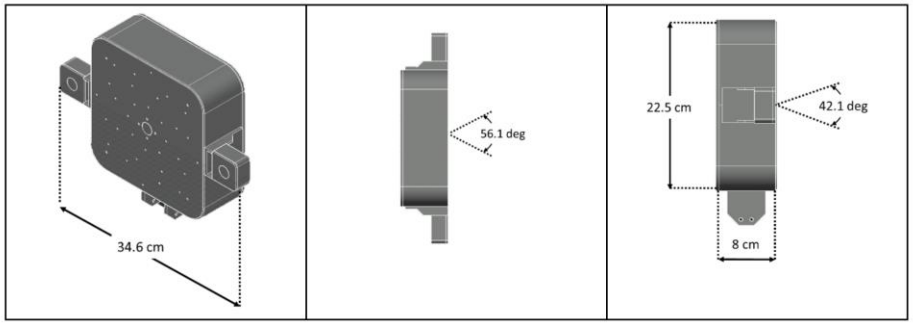
SYSTEM DESCRIPTION

The system is a handheld acoustic direction-finder. It utilizes a four-microphone array (one omnidirectional, three directional) to detect and classify threats like drones, and gunfire.

Apply more than one units to enhance the accuracy. By employing phase-difference and energy-ratio methods, the MCU provides real-time Direction-of-Arrival (DOA) estimates. Distance is approximated via propagation loss models based on assumed source sound pressure levels.

Key Specifications
Sensor Array: 4 microphones with a 30 dB to 110 dB dynamic range.
Form Factor: Compact cylindrical design (15 cm x 6 cm).
Efficiency: Low power consumption (<1 W) supporting 24-hour endurance.

C-06: Acoustic-Optical Detecting System (AODS)



PROJECT INFORMATION

Organization	**Narsil Dynamics**
Principal Investigator	Simon Lee
Technology Readiness Level	TRL 5: Component and/or breadboard validation in relevant environment.
Research Area of Interest	C) Countering Unmanned Systems
Funding	Internally

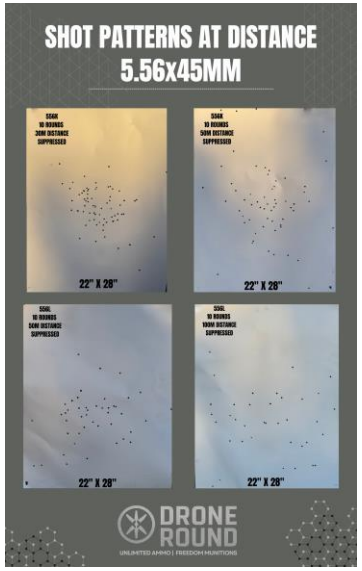
PROPOSED EXPERIMENT OVERVIEW

Deployment: Place the device on tripods.
Acoustic Target: Use a drone (if available) or a high-fidelity directional speaker mounted on a stand at a height of 1.5m.
Signal: Play a pre-recorded drone motor frequency (4-8) to trigger the "UAV" classification mode.
Procedure:
Grid Test: Position the speaker at known coordinates. Verify if the device localize the source.

SYSTEM DESCRIPTION

This system is a multi-modal Acoustic-Optical Tracker designed for high-precision Counter-UAV targeting.
It integrates a synchronous directional microphone array with a dual high-resolution 12MP camera assembly to achieve accurate 3D localization.
The core technology utilizes an acoustic beamformer to calculate the Direction-of-Arrival (DOA) of drone signatures (500Hz–2kHz). This bearing data triggers the optical subsystem to perform stereo-vision range estimation. With a 15dB array gain and 0.3m baseline, the system detects targets up to 407m and provides precise coordinates to a hard-kill subsystem.
Technical Capabilities:
Acoustic Precision: Employs a 30dB–110dB dynamic range for robust detection in 50dB background noise.
Optical Accuracy: Dual lenses (4mm/8mm) reduce positioning error to 0.5m at short ranges.
Operational Resilience: Industrial-grade computing (12VDC/40W)
Size: 13.8 x 9.1 x 3.1 in

C-08: Drone Round



PROJECT INFORMATION

Organization	**Drone Round LLC**
Principal Investigator	Jordan Zumwalt
Technology Readiness Level	TRL 8: Actual system completed and qualified through test and demonstration.
Research Area of Interest	C) Countering Unmanned Systems
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

This experiment will evaluate the effectiveness of engaging and neutralizing hostile small unmanned aerial systems using standard-issue battle rifles under realistic operational conditions. The focus is on high-speed, close-range drone threats representative of modern attack and reconnaissance platforms. Testing will be conducted using standard infantry weapons configured with both suppressed and unsuppressed setups, firing in semi-automatic, burst, and fully automatic modes. The objective is to assess engagement feasibility, hit probability, and overall effectiveness against fast-moving aerial targets without the need for specialized counter-UAS equipment.

Approximately four to five drones will be flown through controlled flight profiles at varying speeds and trajectories to simulate real-world attack scenarios. Data collected will inform weapon configuration effectiveness, firing mode performance, and practical limitations of small-arms-based counter-UAS solutions.

This experiment aims to explore a low-cost, readily deployable kinetic option for countering emerging drone threats using equipment already fielded by maneuver forces.

SYSTEM DESCRIPTION

The system evaluated in this experiment is a small-arms, kinetic counter-UAS solution that leverages standard-issue battle rifles and conventional infantry equipment to engage and neutralize hostile small unmanned aerial systems. Rather than relying on specialized counter-drone platforms, the system uses existing service weapons configured with optional suppressors and selectable firing modes, including semi-automatic, burst, and fully automatic.

The approach is designed to defeat fast-moving, low-altitude aerial threats by increasing projectile density and engagement probability within short engagement windows. The system requires no additional attachments, sensors, or fire-control electronics beyond what is already fielded, enabling rapid adoption with minimal training burden.

During testing, multiple attack-profile drones will be engaged to evaluate system effectiveness, firing mode performance, and practical limitations. The system represents a low-cost, immediately deployable kinetic option for countering emerging sUAS threats in contested environments.

C-09: Testing Lightweight Low-Visibility Materials for FPV Drone Intercept

PROJECT INFORMATION

Organization	**OPRNT**
Principal Investigator	Ronnie Trevino
Technology Readiness Level	TRL 2: Technology concept and/or application formulated.
Research Area of Interest	C) Countering Unmanned Systems
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

This experiment will evaluate lightweight, low-visibility materials for use in passive interception systems intended to counter FPV drone threats through entanglement and deflection. The objective is to identify material characteristics that maximize interception effectiveness while minimizing added mass and visual signature. Test articles will be mounted on representative frames and exposed to controlled FPV drone engagements under standardized conditions.

Performance will be measured using quantitative metrics including interception outcome (entanglement, deflection, or penetration), damage location, material failure modes, and residual structural integrity. High-speed and standard video, onboard drone telemetry (when available), and post-test physical inspection will be used for data collection. Each configuration will be tested across multiple trials to assess repeatability and variability.

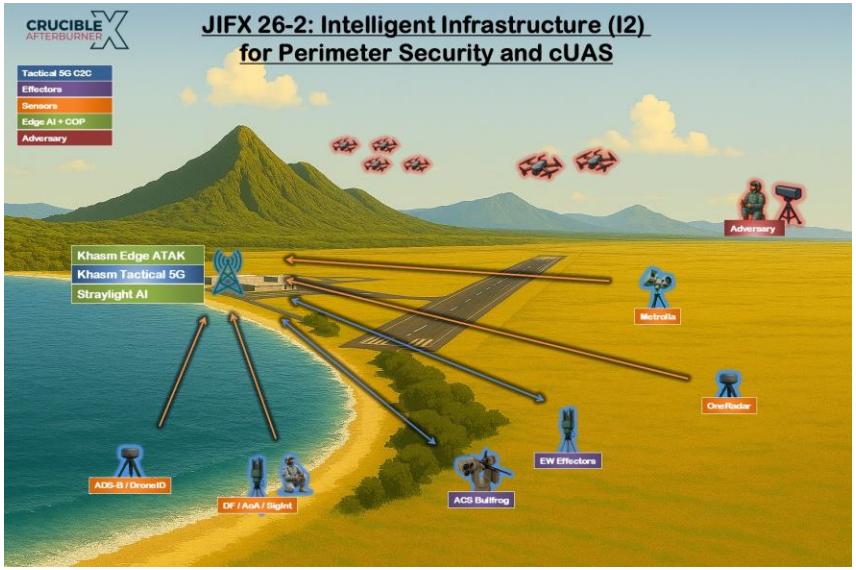
Collected data will support comparative analysis of material efficiency (performance per unit mass) and inform down-selection for future experimentation phases focused on durability and survivability under more stressing conditions.

SYSTEM DESCRIPTION

The system under evaluation is a passive defensive assembly incorporating lightweight, low-visibility materials intended to mitigate FPV drone threats through entanglement and deflection. The system consists of a modular frame fitted with interchangeable material samples (e.g., filaments, fibers, or netting) that can be rapidly reconfigured to compare candidate materials under identical test conditions. The design emphasizes minimal added mass, low visual observability, and mechanical interaction with drone propellers and airframes rather than active sensing or electronic effects.

The assembly is not a finalized defensive solution but a test platform used to isolate and evaluate material performance characteristics, including strength-to-weight ratio, flexibility, energy absorption, and failure behavior during drone impact. Data collected from this system will inform material selection and structural design for future passive drone protection concepts and subsequent experimentation phases.

C-10: Intelligent Infrastructure (I2) for Perimeter Security and cUAS



PROJECT INFORMATION

Organization	**Khasm Labs - Crucible Afterburner Cohort**
Principal Investigator	Scott Waller
Technology Readiness Level	TRL 7: System prototype demonstration in an operational environment.
Research Area of Interest	C) Countering Unmanned Systems
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

The Crucible Afterburner cohort will conduct an integration and measurement experiment to quantify how a secure OpenRAN tactical 5G network and edge AI fusion improve multi-sensor counter-UAS track formation when observing UAS activity from other concurrent JIFX experiments. Distributed sensors (e.g., passive radar, wireless LiDAR, EO/IR video) will publish time-stamped detections over tactical 5G to an edge node where fusion services correlate detections into tracks and publish alerts/tracks to an ATAK Common Operating Picture. We will not fly UAS and will not employ effectors. Success will be measured by: (1) sensor→fused-alert latency, (2) track continuity/ID consistency across sensors, (3) classification confidence where available, and (4) false-positive rate during defined observation windows. Data collection includes raw sensor messages (as permitted), fused-track outputs, ATAK event logs, and synchronized timing/health telemetry for after-action analysis.

SYSTEM DESCRIPTION

The Crucible Afterburner cohort is an integrated, open counter-UAS platform that connects multi-phenomenology sensors to edge AI fusion over a secure OpenRAN tactical 5G backbone, publishing results to a COP such as ATAK. The architecture ingests detections from sensors like passive radar, wireless LiDAR, and EO/IR, transports them over resilient tactical 5G, and fuses them at the edge to produce correlated tracks, alerts, and decision-support layers for operators. The design is vendor-neutral and COP-first, enabling scalable deployments from base defense to expeditionary force protection and providing a clean interface for downstream response orchestration (though effectors are outside the scope of this JIFX experiment).

D-01: LiFi (Data transfer)

PROJECT INFORMATION

Organization	**Stucan Solutions Corp**
Principal Investigator	Stuart Taylor
Technology Readiness Level	TRL 9: Actual system proven through successful mission operations.
Research Area of Interest	D) Communication and Networking
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

We are planning to experiment with Kitefin XE and Back Haul Relay (BHR) from pureLiFi to evaluate their potential in operational environments. The goal is to test Kitefin XE within a mobile command setting, assessing its ability to deliver secure, high-speed connectivity under dynamic conditions. By integrating BHR, we aim to extend communication reach, enabling the reliable transfer of video data and voice traffic across distance without degradation. This trial will simulate real-world scenarios where mobile units require resilient, low-latency links to maintain situational awareness and command effectiveness. The combination of Kitefin XE and BHR offers a unique opportunity to demonstrate how LiFi technology can enhance mobility, security, and bandwidth in mission-critical operations. Successful testing will validate the feasibility of deploying these systems to support distributed teams, ensuring that commanders and operators remain connected, informed, and capable of rapid decision-making in complex environments.

SYSTEM DESCRIPTION

Kitefin XE from pureLiFi is a next-generation LiFi system delivering secure, high-speed wireless communication through invisible light rather than radio frequencies. Purpose-built for defense, government, and enterprise sectors, it provides gigabit-level capacity, ultra-low latency, and room-wide coverage exceeding 80 square meters. Because LiFi signals do not penetrate walls, Kitefin XE ensures natural spatial containment, making it inherently resistant to jamming, interception, and RF congestion. It integrates seamlessly with existing 802.11 infrastructure, offering plug-and-play deployment while meeting strict security standards such as WPA3-Enterprise and FIPS 140-3.

D-02: Multipath Backhaul for Autonomy

PROJECT INFORMATION

Organization	**Hoplynk, Inc.**
Principal Investigator	Andrew Paulmeno
Technology Readiness Level	TRL 5: Component and/or breadboard validation in relevant environment.
Research Area of Interest	D) Communication and Networking
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

This experiment evaluates Hydra's ability to sustain command, control, and telemetry for autonomous systems operating in denied, degraded, intermittent, and limited (DDIL) communications environments. At JIFX, Hydra will be deployed as a network control plane bonding heterogeneous transports including SATCOM, LTE, Wi-Fi, and military radios to support humanoid-representative payload traffic. The experiment will stress the system with mobility, link degradation, and interference while comparing Hydra-enabled multipath networking against single-path baseline configurations. Performance will be measured using quantitative metrics collected from Hydra's onboard telemetry, including packet delivery rate, end-to-end latency, failover time, and continuity duration under disruption. Additional qualitative feedback will be collected from operators on usability and workload. All data will be logged locally and analyzed post-event to assess Hydra's effectiveness in maintaining operational connectivity and advancing readiness toward TRL 7.

SYSTEM DESCRIPTION

Hydra is an embedded, AI-enabled network control plane that unifies multiple communication transports into a single adaptive fabric. It operates at the packet level to split, duplicate, and dynamically route traffic across available links, maintaining connectivity when individual paths degrade or fail. Hydra continuously measures latency, loss, and congestion and uses predictive algorithms to reweight traffic before performance collapses. The system is hardware-agnostic and deployable on low-SWaP embedded devices, routers, or virtual machines, with open APIs for integration with autonomy stacks, radios, and command-and-control systems. For this experiment, Hydra serves as the communications backbone for distributed autonomous nodes, enabling persistent command, telemetry, and data flows under contested RF and network conditions.

D-03: Integrated Mission AI Network for Tactical Decision Dominance

PROJECT INFORMATION

Organization	**CI-PHER**
Principal Investigator	Ryan Cross
Technology Readiness Level	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest	D) Communication and Networking
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

At JIFX, CI-PHER will run a field experiment with JVAB to quantify how TACNODE mesh formations exploit terrain masking and multipath propagation to sustain communications under red cell jamming. Building on terrain-masking success demonstrated at JIFX 26-1, our hypothesis is that elevation-aware, properly spaced node geometries will maintain higher throughput and recover faster than conventional line-of-sight layouts during jammer effects.

We will test multiple radio formations (ridge-line relays, offset hop chains, distributed clusters, and mobile-to-static hybrids) across varied terrain while JVAB conducts jammer-on and jammer-off runs. Success criteria include sustained connectivity, reduced packet loss, bounded latency, and rapid self-healing and reroute behavior. We will capture time-synchronized link metrics and topology changes to produce repeatable DDIL deployment guidance.

In parallel, we will validate ALCHEMIS C2 upgrades for mission planning, automated telemetry capture, database integration, and one-click export of AI-ready mission datasets for next-generation AI-enabled C2.

SYSTEM DESCRIPTION

The core technology is CI-PHER's TACNODE system, a modular, encrypted mesh networking family designed for denied, degraded, intermittent, and limited (D-DIL) environments. TACNODE nodes form a self-healing, multi-hop network that leverages terrain masking and multipath propagation to move mission data without reliance on fixed infrastructure. Each node provides long-range relay, time-synchronized telemetry, and optional edge sensing, enabling resilient data transport from personnel, vehicles, UxVs, and static assets even when line-of-sight is disrupted or jamming is present.

The experiment is orchestrated through ALCHEMIS, CI-PHER's C2 GUI, which provides mission and network planning, live network status, automated collection of link and topology metrics, database integration, and one-click export of structured, AI-ready mission datasets. Together, TACNODE and ALCHEMIS deliver an end-to-end "edge data nervous system" that generates, transports, and packages mission data for downstream analytics and AI-enabled C2.

D-04: Autonomous Tactical Network Orchestrator (AutoNet) - Enabling cognitive data transport with agentic AI

PROJECT INFORMATION

Organization	**Tyto Athene - Technology Accelerator Lab for Operational Needs (TALON)**
Principal Investigator	Rob Albritton
Technology Readiness Level	TRL 4: Component and/or breadboard validation in laboratory environment.
Research Area of Interest	D) Communication and Networking
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

The Tyto Athene TALON team will test AutoNet agentic AI models' ability to 1) monitor tactical comms networking devices for jamming/EW attacks 2) smart blending of streaming data sources across heterogenous local network carriers (AT&T, T Mobile, Verizon) 3) Zero touch/comply to connect heterogeneous networking devices.

SYSTEM DESCRIPTION

Autonomous Network Orchestrator (AutoNet) is a low SWaP deployable networking software solution that leverages AI to enable a cognitive data transport layer and provide self-aware, self-managing tactical transport layer properties: Self-configuration, optimization, and healing. AutoNet software enables the data transport layer (network) to autonomously respond to network degradation, EW/Cyber attacks, and environmental variables.

D-06: Kestrel: Organic, Low-SWaP Tracker for Vehicles and Assets

PROJECT INFORMATION

Organization	**KalScott Engineering Inc.**
Principal Investigator	Suman Saripalli
Technology Readiness Level	TRL 8: Actual system completed and qualified through test and demonstration.
Research Area of Interest	D) Communication and Networking
Funding	Federally: NASA and DoD SBIR (Phase I, II and III)

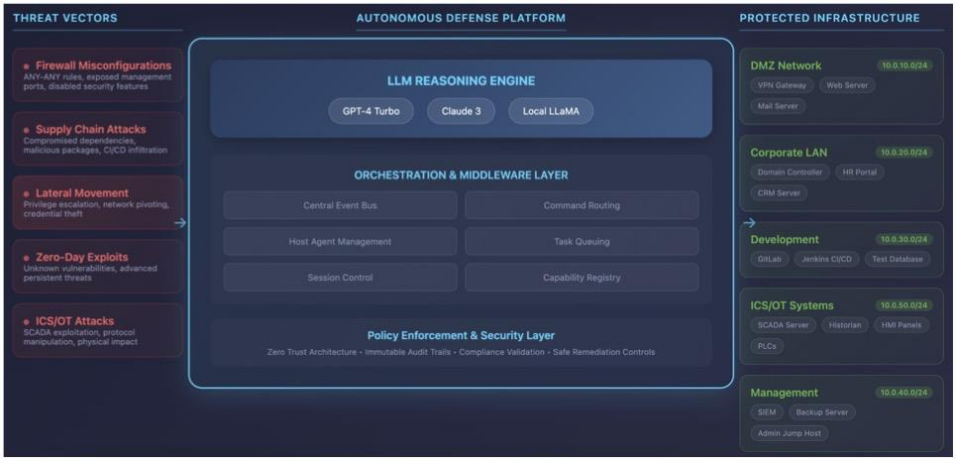
PROPOSED EXPERIMENT OVERVIEW

The Kestrel is a small (2"x2"x0.75", 2 oz) device that can be attached to any mobile asset, and reports the ID, position, and speed/bearing information in Cursor on Target format, which is readily viewable in situational awareness viewers like ATAK. The Kestrel can be mounted on anything that moves to report its ID and track information. This can include manned and unmanned air, ground, and sea craft, personnel, equipment, etc. The Kestrel also has two-way SATCOM capability which allows remote operators to send data from different locations to the host vehicle. For example, a drone pilot could trigger a payload release mechanism on a drone flying beyond line of sight using SATCOM connectivity. For JIFX we propose the demonstration of two specific functionalities of the Kestrel: 1. the tracking of moving assets and 2. the control of a payload mechanism via SATCOM.

SYSTEM DESCRIPTION

The Kestrel can be attached to any mobile asset, and reports the ID, GPS position, and speed/bearing information in Cursor on Target format, which is viewable in ATAK. (In addition to TAK, we can integrate with other data users, aggregators and distributors.) The Kestrel uses commercial or military cell service to send this data to a server from where the data is sent to ATAK, which can then be distributed to end-users over the ATAK service. The Kestrel's two-way SATCOM capability allows remote users and operators to send data (for example, a triggering command, or updated mission parameters) from different locations to the host vehicle in BVLOS scenarios. The Kestrel can run on an internal battery or draw power (5V DC, 0.1A) from it's host.

E-01: LLM-Powered Detection and Remediation of Cyber Threats



PROJECT INFORMATION

Organization	Spotlight Security
Principal Investigator	Alex Leader
Technology Readiness Level	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest	E) Cyber, Cyber Security, and Electronic Warfare
Funding	Private Grant

PROPOSED EXPERIMENT OVERVIEW

We will conduct controlled experiments measuring large language model (LLM) effectiveness in agentically detecting and remediating cybersecurity threats across simulated IT and OT networks. The experiment involves deploying our proprietary middleware and orchestration platform with LLM agents against three progressive scenarios: firewall misconfigurations, supply chain attacks, and data exfiltration/infiltration detection.

We'll measure: (1) Detection accuracy rate; (2) Time-to-remediation; (3) False positive/negative rates; (4) Remediation safety scores. Data collection includes telemetry logs, LLM decision chains, remediation actions, and performance metrics. Testing progresses from simple single-device misconfigurations to complex multi-vector attacks across 15-20 simulated devices (firewalls, SCADA, domain controllers) in segregated VLANs.

Success criteria include: detection accuracy, remediation time, critical false remediations. Results will validate autonomous cyber defense feasibility for resource-constrained military and critical infrastructure environments.

SYSTEM DESCRIPTION

Our system integrates large language models (LLMs) with Spotlight Security's proprietary cyber operations platform to enable agentic security response. Our core components include: (1) Middleware and orchestration engine providing secure command execution across heterogeneous infrastructure: (2) LLM reasoning engine (GPT-4/Claude) for threat analysis and decision-making; (3) Policy enforcement layer ensuring safe remediation actions; (4) Virtual environment simulating enterprise networks with Windows/Linux endpoints, pfSense firewalls, and ICS/OT systems. The platform ingests network configurations, analyzes security postures, identifies misconfigurations and anomalies, generates remediation strategies, and executes fixes autonomously.

Our key innovation is: LLMs interpret complex, vendor-specific configurations in natural language, reason about security implications, and generate appropriate responses without human intervention. The system maintains comprehensive audit trails and can operate in advisory or agentic modes based on confidence thresholds.

E-03: Visual-Layer Data Protection for Resilient C2 and Edge Operations

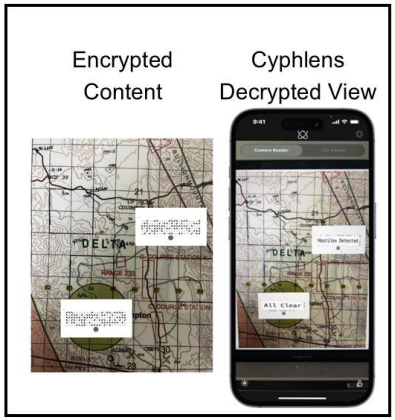
USING MOBILE DEVICES AS POWERFUL ENCRYPTION/ DECRYPTION DEVICES

Decryption keys assigned to mobile device

Point-to-Decrypt User Experience

Encrypted Content

Cyphlens Decrypted View



PROJECT INFORMATION

Organization	**Cyphlens**
Principal Investigator	Rocky Motwani
Technology Readiness Level	TRL 5: Component and/or breadboard validation in relevant environment.
Research Area of Interest	E) Cyber, Cyber Security, and Electronic Warfare
Funding	Internally & through capital-raise

PROPOSED EXPERIMENT OVERVIEW

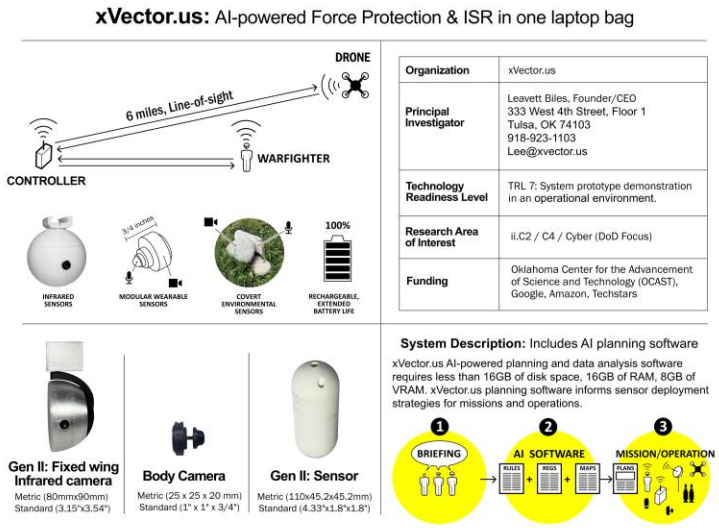
Using EUDs, burner cellphones, and desktop PC's, show users how to encrypt/decrypt (create, share, view) various types of ISR/mission data with the enhanced capability (compared to past JIFX's) of offering a) full-file encryption in addition to object-encryption, b) fully-integrated into Teams/GovSlack, c) SCIF-compatibe using Desktop viewer and d) show using existing objects (ie. real QR codes) as Cyphlens cipher objects, which allows for very good/high LPI/LPD.

SYSTEM DESCRIPTION

Cyphlens provides a visual-layer data protection capability designed to preserve command effectiveness, decision integrity, and sensitive data control in degraded, contested, and expeditionary environments. While military systems routinely encrypt data at rest and in transit, sensitive information is exposed once it is decrypted and displayed for use. This “data-in-view” exposure creates a persistent vulnerability during operations, enabling capture through compromised endpoints, insider misuse, screen scraping, AI-enabled collection, and adversary cyber effects across SOF, joint, and coalition missions.

Cyphlens closes this gap by maintaining cryptographic control during data use and viewing. Mission content is distributed as encrypted visual artifacts and rendered only through Cyphlens software running on authorized devices, bound to operator identity and mission context. Access enforcement executes locally within the software, ensuring that if a device is not authorized, the content remains unreadable and non-extractable. Protection does not rely on continuous connectivity, centralized identity services, or application-layer controls.

F-01: AI-powered Force Protection and ISR on land, air and sea.



PROJECT INFORMATION

Organization	**xVector.us**
Principal Investigator	Leavett Biles
Technology Readiness Level	TRL 7: System prototype demonstration in an operational environment.
Research Area of Interest	F) Intelligence, Surveillance, and Reconnaissance (ISR)
Funding	State of Oklahoma Science and Technology grant

PROPOSED EXPERIMENT OVERVIEW

With a current range of 36-square miles and components that fit into a laptop bag, xVector.us is experimenting with an infinite range of force protection and ISR using AI-powered, low-voltage, network agnostic devices.

SYSTEM DESCRIPTION

xVector.us is AI-powered sensor technology providing force protection and ISR technology that streams audio, video and data in real time on land, in the air and on water.

G-01: Ally Identification Experiment (Preventing Friendly Fire)

PROJECT INFORMATION

Organization	**BlueForce LTD**
Principal Investigator	Alexander Lisyansky
Technology Readiness Level	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest	G) Situational Awareness
Funding	Current funding sources include the Israeli Innovation Authority, the Ministry of Defense DDR&D (Directorate of Defense Research & Development) through two contracts, and internal self-funding. Additional capital investment is anticipated in the upcoming quarter.

PROPOSED EXPERIMENT OVERVIEW

Relevant end users will first receive hands-on familiarization with the system, followed by controlled force-on-force and live field activities. The system will be installed as a weapon-mounted Interrogator and helmet-mounted Responder and exercised under dynamic movement, and GPS-denied conditions.

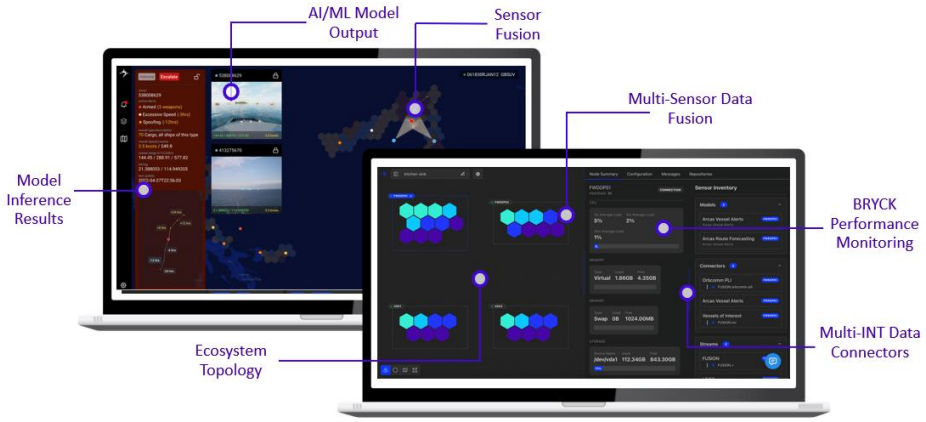
Scenarios will include high-risk “blue-on-blue” engagements and C2 challenges such as multi-directional building operations. The experiment will assess detection range, alert latency, user response, and overall usability under realistic operational pressure. Post-exercise debriefs will capture user feedback, performance observations, and recommendations to inform system refinement and support progression toward higher TRL.

SYSTEM DESCRIPTION

SPOT is a stand-alone plug-and-play add-on system for situational awareness and positive identification at the individual soldier level. It enables reliable identification of friendly forces in complex, degraded, and GPS-denied environments, reducing fratricide risk and supporting informed decision-making. It operates independently, without interfacing with weapon firing or fire-control mechanisms and is intended for rapid deployment.

SPOT is implemented as a low-SWaP kit with a weapon-mounted Interrogator and a helmet- or drone-mounted Responder. It provides automatic in-sight and in-hand alerts using secured real-time IR and short-range RF communications.

G-02: Intelligent Edge Maritime Domain Awareness (IEMDA)



PROJECT INFORMATION

Organization	**BigBear.ai Federal LLC, TSecond Inc.**
Principal Investigator	Brad Zogopoulos
Technology Readiness Level	TRL 8: Actual system completed and qualified through test and demonstration.
Research Area of Interest	G) Situational Awareness
Funding	Both internal IR&D funds and federal funds

PROPOSED EXPERIMENT OVERVIEW

The team will demonstrate IEMDA using Tsecond's BRYCK petabyte-scale density and low SWaP edge AI infrastructure running BigBear.ai's Arcas and ConductorOS capabilities to integrate advanced maritime domain awareness, intelligence fusion, and operational decision-making seamlessly into the Navy's Fleet Minotaur environment. The system will have the capability to rapidly integrate existing data sources and retrofit any land, sea, or air platform with the BRYCK to conduct AI/ML on the edge and share insights throughout the fleet. This simplified yet resilient design ensures interoperability across customer-controlled clouds, adaptability across platforms, and continuity of operations even under constrained or unreliable network conditions. It establishes a foundation that is both mission-ready today and scalable for additional sensors, platforms, and analytic modules in future phases.

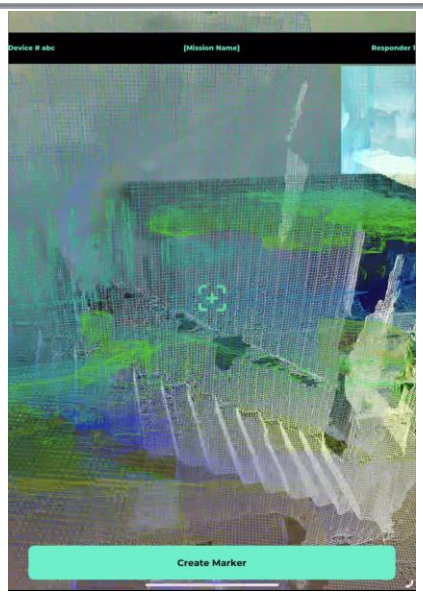
SYSTEM DESCRIPTION

"IEMDA delivers advanced maritime domain awareness through both cloud-based and edge-deployed capabilities. The analytics provide operators with powerful decision-support tools that fuse multiple sources of data into actionable insights. Key capabilities include:

- Pattern of Life (PoL): Identifies vessel behavior over time to detect anomalies, potential threats, or deviations from normal operating areas.
- Grid Risk Analysis: Produces risk-based heat maps that allow operators to visualize areas of elevated activity, illicit behavior, or threat concentration across the maritime domain.
- Route Forecasting: Projects likely vessel trajectories based on current behavior and historical patterns, enabling proactive monitoring and interdiction planning.

These analytics feed directly into Fleet Minotaur, allowing operators to overlay insights with other intelligence sources and make faster, more informed decisions. IEMDA operates across both electro-optical (EO) and infrared (IR) modalities, providing continuous monitoring day or night and in a wide range of conditions.

G-03: LAMA: Localization and Mapping Artificial Intelligence Application



PROJECT INFORMATION

Organization	**Holochip Corporation**
Principal Investigator	Samuel Robinson
Technology Readiness Level	TRL 5: Component and/or breadboard validation in relevant environment.
Research Area of Interest	G) Situational Awareness
Funding	Federally (Environmental Protection Agency)

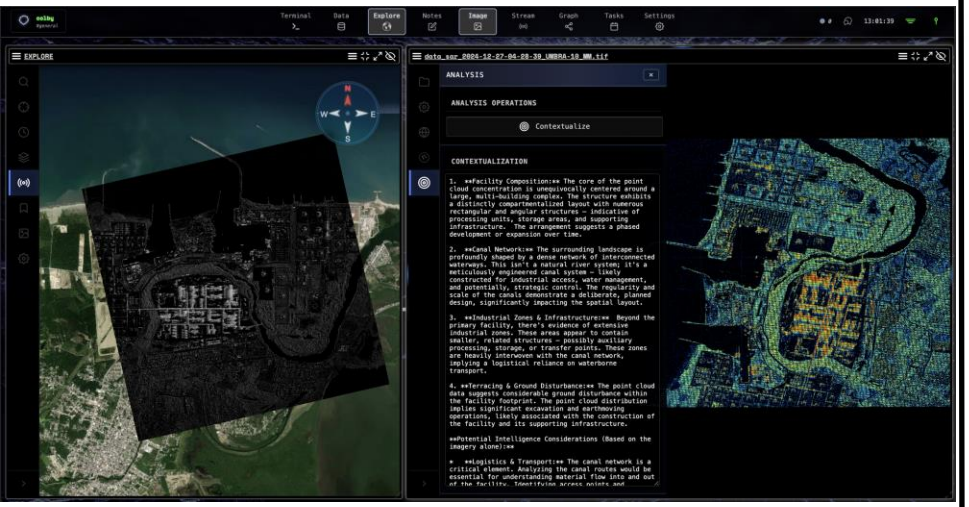
PROPOSED EXPERIMENT OVERVIEW

Two+ users in the roles of disaster response team members ("Responders") employ LAMA to validate new LAMA features in disaster response operations. The Responders each carry an Apple iPad while another team member, the On-Scene-Coordinator, (OSC) coordinates the response operation from a laptop. Responders use LAMA on their iPad to i) map the CACTF site; ii) place markers/notes at relevant locations; iii) receive an updated map from OSC, including areas explored by other responders. LAMA enables the OSC to i) view and interact with the map and markers received from Responders' iPads; ii) communicate with Responders through their iPads in real time; iii) generate a map which is visually representative of the CACTF using gaussian splat computed in near real-time; and iv) broadcast this data as a ROS topic to be ingested by drones. Performance data on these functionalities is measured and collected on the iPad and laptop.

SYSTEM DESCRIPTION

System includes a laptop running the LAMA application (LAMA:OSC), and two or more iPads running the LAMA app (LAMA:Responder). The iPads communicate with the laptop via WiFi network created by a wireless router. When LAMA:OSC starts on the laptop, it connects to any iPads on the network running LAMA:Responder. iPad users map the area of interest using the Simultaneous Localization and Mapping (SLAM) capabilities of LAMA:Responder. These maps are periodically sent to the laptop where LAMA:OSC combines the maps from all iPads into a single map. LAMA:OSC sends the combined map to the iPads. iPad users see the combined map and can leave markers in relevant locations. LAMA:OSC displays the locations of iPad users on the map and enables the creation of AI-generated navigation instructions to route the iPad users to any location on the map. LAMA:Responder displays navigation instructions as an AR overlay.

G-04: Larx: The Decision Intelligence Platform



PROJECT INFORMATION

Organization	**Larx Inc.**
Principal Investigator	Colter Carambio
Technology Readiness Level	TRL 8: Actual system completed and qualified through test and demonstration.
Research Area of Interest	G) Situational Awareness
Funding	Venture Capital

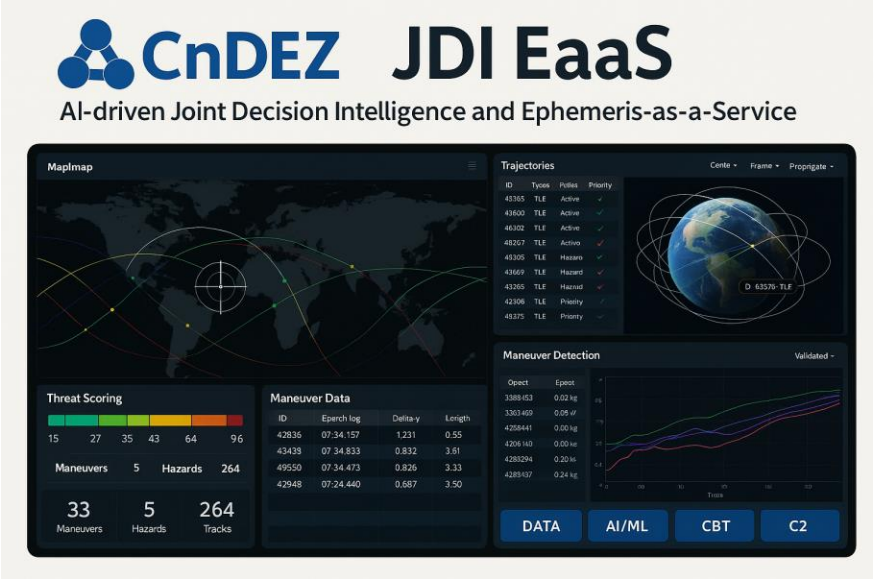
PROPOSED EXPERIMENT OVERVIEW

The experiment will evaluate Larx's ability to perform real-time multi-INT data fusion, automated anomaly detection, and AI-assisted decision support in a dynamic operational environment. We will inject mixed data types—UAV imagery, UUV sonar outputs, AIS/ADS-B tracks, sensor feeds, and open-source signals—at varying volumes and latencies to assess Larx's capacity to automatically correlate and surface actionable insights. Participants will conduct mission tasks (target identification, pattern-of-life reconstruction, and threat cueing) with and without Larx to measure improvements in speed, accuracy, and cognitive load. Data collection will include timing metrics, analyst workload scoring, false-positive/false-negative rates, system logs, and qualitative user feedback. Experimental variables include data density, level of environmental ambiguity, and degree of disconnected operations. The goal is to quantify how Larx enhances decision cycles and information coherence across interagency participants in realistic field conditions.

SYSTEM DESCRIPTION

Larx is a decision-intelligence platform that fuses multi-domain data—satellite, radar, UAS, SIGINT, AIS/ADS-B, sensors, reports, and open-source information—into one unified operational picture. Built for operators, analysts, and decision-makers, Larx ingests and correlates visual and non-visual data in real time, automates analytic workflows, and generates mission-ready products with minimal user input. The platform includes an AI Co-Pilot for rapid querying, pattern discovery, and automated target/object detection, and supports 3D terrain, constellation tracking, temporal simulation, and edge/offline deployments. Larx is fully containerized, runs on existing hardware, and allows agencies to plug in their own algorithms and models. Already employed in Ukraine, Syria, and Burma and validated by the U.S. Army, Larx dramatically accelerates sense-making, reduces analyst burden, and enhances situational awareness for interagency operations.

G-05: JDI EaaS



PROJECT INFORMATION

Organization	**CnDEZ LLC**
Principal Investigator	Sandesh Mohan
Technology Readiness Level	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest	G) Situational Awareness
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

CnDEZ delivers an AI-driven Joint Decision Intelligence and Ephemeris-as-a-Service capability aligned to SPARX and Army experimentation calling messages. The platform fuses SDA and multi-domain sensor data to generate predictive trajectories, threat scoring, and real-time fusion. It is suitable for multiple experimentation events, with primary alignment to Project Convergence Capstone 6 (PC-C6) and GIDE-6, and supports Next-Gen C2 and JADC2 decision superiority.

SYSTEM DESCRIPTION

The CnDEZ platform integrates advanced AI/ML models, memory-centric computation, and orbital mechanics engines to maintain high-accuracy ephemeris and maneuver detection for space and missile defense objects. It ingests joint/coalition sensor tracks, fuses them in near-real time, and provides predictive analytics, hazard scoring, and decision aids. The capability supports SDA, tactical and operational artillery fire control, and Next-Gen C2 by enabling brigade/division echelons to shorten the sensor-to-shooter kill chain in multi-domain environments. Supports Army Modernization Priorities in Network, Air and Missile Defense, and Long-Range Precision Fires by improving SDA, and feeding Next-Gen C2 data services. Directly supports MDO and JADC2 by providing trusted, sharable trajectories and analytics for PC-C6 division-level experimentation and GIDE-6 edge mesh architectures

G-06: H50 Ruggedized XR Goggles

PROJECT INFORMATION

Organization	**Holochip Corporation**
Principal Investigator	Sam Robinson
Technology Readiness Level	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest	G) Situational Awareness
Funding	Federally (Department of Navy)

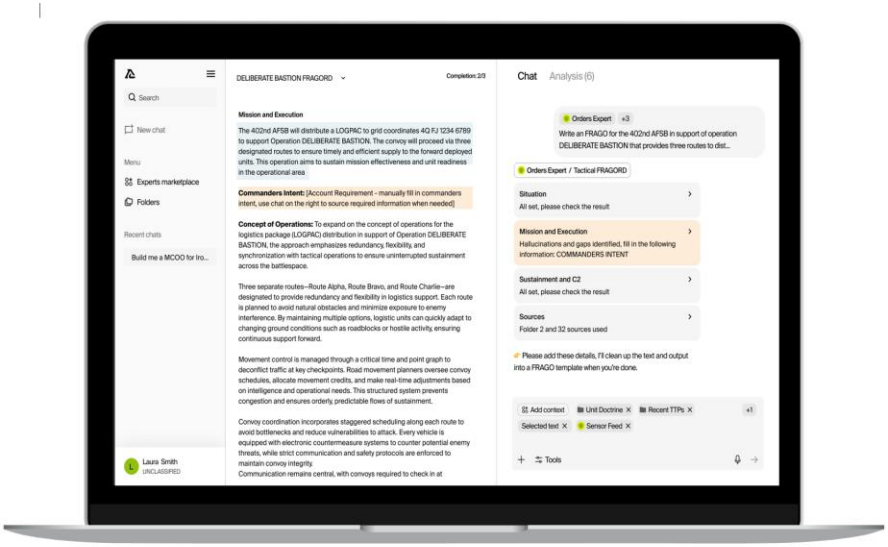
PROPOSED EXPERIMENT OVERVIEW

Holochip will work with Navy stakeholders, engineers, and commercial partners to evaluate the performance and user experience of its H50 Ruggedized XR Goggles (H50 Goggles). Users in the experiment will use a diagnostic application running on the H50 Goggles to assess Google performance in the following areas: i) XR imagery under varied indoor/outdoor lighting conditions; ii) ergonomic comfort; iii) hand-tracking accuracy and precision, and gesture-based interaction; and iv) headset position tracking including accuracy and precision, relocalization stability, and end-to-end latency. Users will interact with virtual objects anchored to the real-world environment while Holochip engineers record headset performance during operation. Operation will include typical movement, occlusions, and rapid head motion in a selected environment at Camp Roberts. Feedback will be collected through user participant surveys and recorded data. Results will inform if the H50 Goggles are ready for larger scale Naval experimentation events.

SYSTEM DESCRIPTION

The Holochip H50 Ruggedized XR Goggles (H50 Goggles) are rugged and cybersecure, optical see-through XR goggles-style headset designed for outdoor field use, featuring high-brightness displays, integrated inside-out tracking. The headset includes stereo cameras for simultaneous localization and mapping (SLAM), hand-tracking, and gesture-based interaction. No external markers or base stations are required. The H50 Goggles will be tethered to a laptop or microcomputer during the experiment. Virtual content remains spatially anchored to the real world as participants donning the H50 Goggles move throughout the environment, supporting operational evaluation of localization accuracy and latency. System software (a custom diagnostic application) allows participants to inspect and interact with mission-relevant virtual objects while recording session data for analysis.

G-07: WARMIND Warfighter Planning Process Acceleration



PROJECT INFORMATION

Organization	**Dunedain Systems**
Principal Investigator	Mack Ohlinger
Technology Readiness Level	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest	G) Situational Awareness
Funding	Internally & Federally

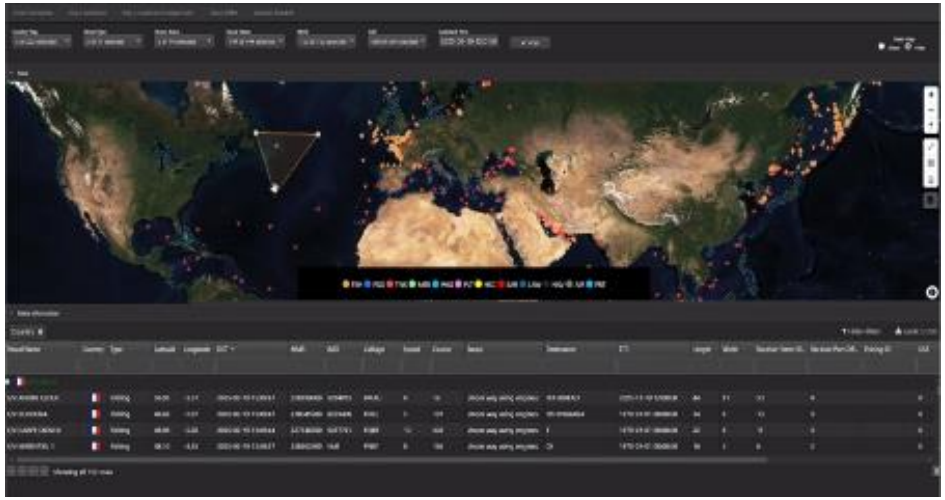
PROPOSED EXPERIMENT OVERVIEW

We propose to evaluate Warmind, an AI-enabled mission planning assistant, in a live or semi-live environment simulating distributed operational planning. Warmind ingests fragmented and unstructured data such as SPOTREPs, ISR summaries, commander's intent, doctrine, and AARs, and produces structured outputs including commander's guidance, initial COPs, WARNOs, and timelines. The experiment will assess Warmind's ability to generate MDMP-ready products across functional staff roles and support real-time adaptation to new injects (for example, updated orders or sensor reports). Participants will refine outputs conversationally, testing Warmind's capacity for dynamic planning and cross-functional synchronization. The goal is to validate machine-speed generation of operational artifacts that preserve human oversight and doctrinal alignment while enabling faster planning cycles and improved horizontal and vertical coordination.

SYSTEM DESCRIPTION

Warmind is an AI-enabled mission planning system designed to accelerate the generation of operational artifacts while maintaining doctrinal structure and human oversight. It ingests fragmented, unstructured inputs—including orders, SPOTREPs, ISR summaries, AARs, SOPs, and doctrinal references—and converts them into structured, machine-readable objects. From this, Warmind generates products such as commander's guidance, COPs, WARNOs, resource assessments, and planning timelines. The system supports real-time refinement through a conversational interface, allowing users to update guidance, inject constraints, and align outputs to evolving mission requirements. Warmind is not a black box—it highlights assumptions, flags unverifiable claims, and prompts users to validate changes before committing. It integrates horizontally across staff elements and vertically across echelons, creating shared context and enabling faster, synchronized planning. The system is deployable as a secure web application, with no custom prompt engineering or scripting required by users.

G-08: test



PROJECT INFORMATION

Organization	**KX**
Principal Investigator	Mack Ohlinger
Technology Readiness Level	TRL 8: Actual system completed and qualified through test and demonstration.
Research Area of Interest	G) Situational Awareness
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

KX will conduct field experimentation validating real-time processing capabilities for maritime domain awareness utilizing Automatic Identification System (AIS) data streams. The experiment will demonstrate platform ability to ingest, process, and visualize global maritime vessel tracking data supporting operational situational awareness requirements.

The system will establish streaming data pipelines capturing live AIS feeds, enabling real-time analytics and historical vessel track reconstruction. Sailors will interact with visualization interfaces displaying current vessel positions and time-based replays to assess utility for maritime common operating picture generation.

Performance metrics will be collected on data ingest rates and query response times under operationally-relevant scenarios to optimize database architecture for naval applications. End-user feedback will inform system refinement, including natural language query interface development and dashboard optimization for time-sensitive maritime operations. This collaborative experimentation enables rapid iteration while identifying integration requirements and capability gaps to inform future development decisions.

SYSTEM DESCRIPTION

KX provides a high-performance streaming analytical database engineered to process, fuse, and analyze multi-source maritime ISR data streams in real-time across contested and austere operational environments. The platform unifies streaming and historical data processing, enabling low latency queries for domain awareness and creating a common operating picture.

The system scales from cloud to tactical edge deployments, supporting parallel data ingestion from sensors including UxS platforms, maritime C4ISR systems, and distributed assets. KX's data fusion architecture integrates diverse data sources through standard protocols and APIs, creating a unified maritime common operating picture accessible to sailors through intuitive dashboards.

The integrated vector database capability enables seamless fusion of structured sensor data with unstructured data. Field experimentation will validate user experience and test natural language capabilities with real end-users to refine capability gaps and inform future development.

G-09: DNT – Accelerating Warfighting Capabilities with Defense Innovation Navigation Assistant (DINA)

PROJECT INFORMATION

Organization	**Husmann Technologies**
Principal Investigator	Darrin Husmann
Technology Readiness Level	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest	G) Situational Awareness
Funding	State of Oklahoma

PROPOSED EXPERIMENT OVERVIEW

Research to support paper at NPS Symposium, Accelerating Warfighting Capabilities – produce material to support the paper, “A review of the Naval Postgraduate Schools Defense Innovation Navigation Assistant (DINA) and its impact on the Navy's Innovation Adoption Strategy”

SYSTEM DESCRIPTION

Core Experiment: We examine School (NPS) uses the Defense Innovation Navigation Assistant (DINA), an AI-enabled evaluation and navigation platform, to help DON, the Joint Force and OSD improve acquisition outcomes.

Continuous feedback loops, standardizing data capture, automating requirements synthesis, aligning evaluators with operators, visualization tools/dashboards and offering clear transition pathways similar to the structured SOFCIDS model used within U.S. Special Operations.

G-10: Validating a Scalable GNSS Spoofer Geolocation Architecture for DoW Operations using Already-Deployed Devices

PROJECT INFORMATION

Organization	**Tip & Cue Inc.**
Principal Investigator	Avner Bendheim
Technology Readiness Level	TRL 7: System prototype demonstration in an operational environment.
Research Area of Interest	G) Situational Awareness
Funding	Federally (US Army)

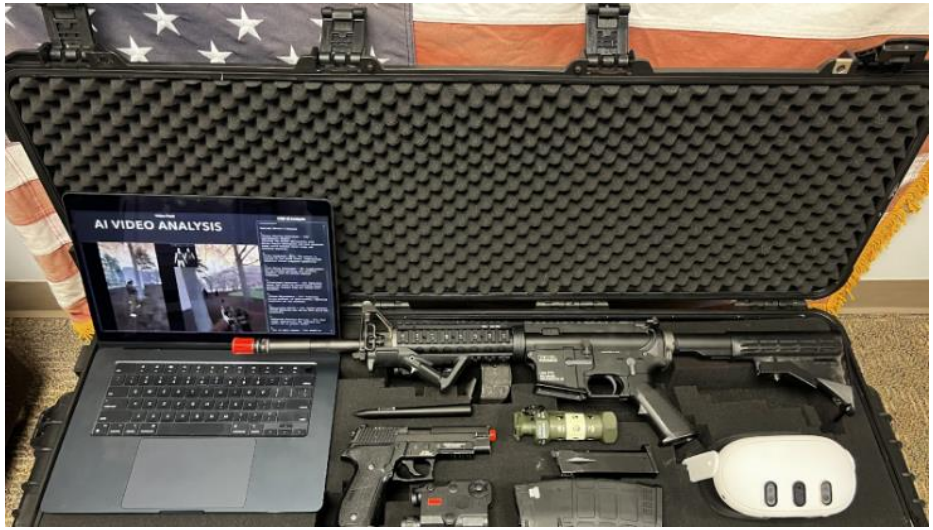
PROPOSED EXPERIMENT OVERVIEW

Tip & Cue aims to utilize the available testing grounds and spoofer deployment capabilities to validate its spoofer detection system in a real-world environment with the goal of attaining spoofing geolocation accuracy of 30m CEP in near real-time. To do this, Tip & Cue has created a three-increment plan to test its capabilities at scales of four devices to 64 devices, across several differently sized Areas of Interest (AoI) with varying conditions and time constraints. Tip & Cue has chosen to scale up to test to 64 devices to reflect true operational scale, representing the size of a real operational team in the field. However, sizes can be adjusted based on DoW-provided constraints. At project completion, Tip & Cue will deliver a thoroughly characterized Capability Report containing performance metrics, validated processing architectures, and proven operational procedures.

SYSTEM DESCRIPTION

Tip & Cue's platform detects and geolocates the precise location of GNSS spoofing using already-deployed COTS receivers. Tip & Cue currently offers Scout, an advanced signal mapping solution, which utilizes already-deployed receivers to offer real-time, global signal mapping and forecasting, and can be scaled rapidly across the DoW. Building upon Scout's capabilities, Tip & Cue is utilizing its network of already-deployed GNSS receivers to help operators pinpoint the precise location of all GNSS spoofing emitters, globally. The system operates with as little as a single mobile receiver (e.g., from an aircraft, UAV, smartphone) to detect and geolocate GNSS interference; however, when expanded to a crowdsourced network of GNSS receivers, this approach delivers real-time, highly accurate geolocation intel, enabling rapid threat mitigation. Unlike current multi-sensor constellations that require complex synchronization and multimillion-dollar hardware, Tip & Cue leverages the pseudorange data from standard, already-deployed GNSS receivers to achieve scalable, low-cost awareness.

G-11: Orama: Mixed-Reality Combat Simulator



PROJECT INFORMATION

Organization	**Orama Technologies**
Principal Investigator	Artemiy Shlyaptsev
Technology Readiness Level	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest	G) Situational Awareness
Funding	Internally & Federally

PROPOSED EXPERIMENT OVERVIEW

We plan to test our Mixed-Reality Combat Simulator with teams at Camp Roberts to integrate it with real terrain, physical movement, and synthetic adversary forces. Participants will conduct squad level tactical scenarios that combine visual overlays, dynamic threat injection, and real time feedback. The experiment will assess training realism, user cognitive load, reaction time, and decision quality under stress. Data collection will include after action performance metrics, participant surveys, and observer assessments. The goal is to determine whether mixed reality training improves tactical awareness, coordination, and adaptability compared to conventional field exercises. Results will inform potential applications for expeditionary training, rehearsal before deployment, and distributed joint force exercises in resource constrained environments.

SYSTEM DESCRIPTION

Orama Technologies' Mixed-Reality Combat Simulator is an AI training tool that uses mixed reality to create immersive, realistic scenarios for soldiers and law enforcement. It combines augmented reality (AR) and machine learning to support military training. The simulator adds virtual elements to real environments, allowing soldiers to practice in life-like exercises that reflect actual combat conditions. AI-controlled opposing forces respond in real time to soldiers' actions, creating a dynamic and interactive experience that enhances lethality and survivability in complex environments. Trainers can customize enemy behaviors to simulate specific tactics, providing personalized, data-driven training. The simulator sets up quickly in various locations and operates independently from external networks. Its rapid setup capability allows transport and deployment in just 10-15 minutes with minimal personnel, enabling training in diverse settings while reducing logistical barriers.

G-14: Providence: AI Enabled Wargaming

PROJECT INFORMATION

Organization	**Expert Theory**
Principal Investigator	Daveed Gartenstein-Ross
Technology Readiness Level	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest	G) Situational Awareness
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

Providence is a wargaming platform designed to make complex planning and COA analysis faster and more realistic. The system allows users to create a complete, ready-to-run simulation in less than ten minutes. Providence would integrate with Operations Center FUOPS Cells to wargame potential COAs and deliver decision points, revised planning guidance, and updated assumptions as part of MDMP.

SYSTEM DESCRIPTION

With providence, a game designer or operator simply answers a short series of questions and the system automatically generates the game materials in under two minutes. These materials include team packets, resources, constraints, intelligence, rules, and a simulation overview. Users can edit any of these outputs directly in the platform, and the changes are carried forward as the game unfolds. Providence employs a facts-first agentic workflow that decouples world-state reasoning from narrative generation, ensuring high-quality fact processing and material generation as separate phases. The system orchestrates its generation pipelines using an event-driven architecture: (1) specialized LLM agents extract structured world facts from player actions and scenario beats, establishing an immutable event log with full provenance tracking; (2) a planning agent allocates facts to documents based on visibility rules and information asymmetry requirements; (3) separate generation agents transform these facts into natural language narratives constrained against hallucination.

G-15: Mentat

PROJECT INFORMATION

Organization	**Arlo Industries Inc**
Principal Investigator	Thadeo Arlo
Technology Readiness Level	TRL 5: Component and/or breadboard validation in relevant environment.
Research Area of Interest	G) Situational Awareness
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

We will evaluate a passive, multi-node optical sensing mesh capable of detecting and localising low-signature UAS using distributed ray-intersection rather than RF or radar emissions. The experiment measures how accuracy and detection confidence scale as additional nodes are added to the network. We will deploy 3–6 sensing nodes around a defined airspace and fly small UAS through predetermined trajectories at varying altitudes and speeds.

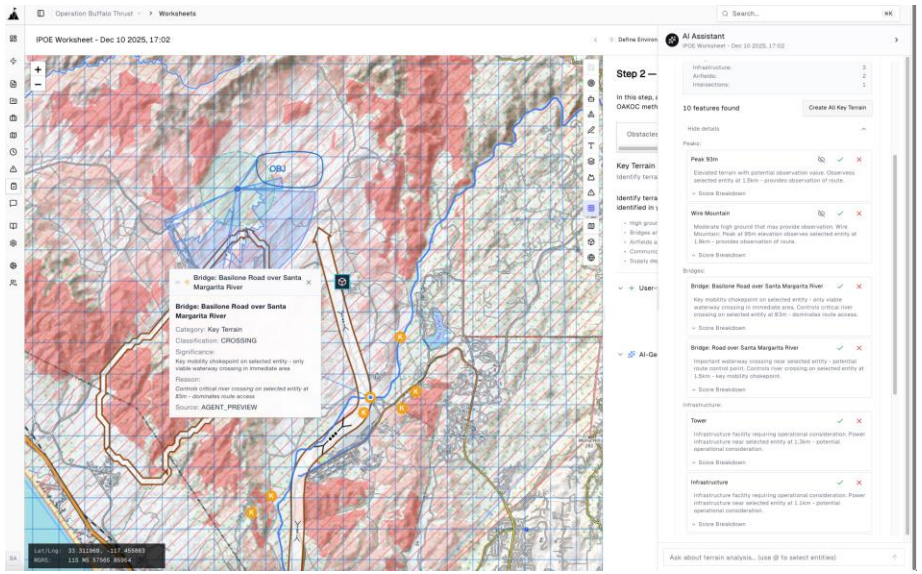
Data collected will include: time-synchronised pixel-event streams, voxel-space reconstructions, detection latency, and localisation error relative to ground-truth GPS logs. The objective is to validate performance under realistic clutter, assess sensitivity to range and geometry, and quantify the effect of node count on target acquisition probability. All data will be stored locally and exported for post-experiment analysis.

SYSTEM DESCRIPTION

Mentat is a fully passive, multi-sensor airspace awareness system designed to detect and localise low-signature aerial objects without relying on radar emissions or RF activity. The system uses distributed optical sensing nodes that monitor changes within a shared airspace and collectively estimate the position and movement of objects of interest. Rather than depending on any single sensor, the network combines observations from multiple viewpoints to increase detection confidence and reduce false alarms.

Mentat is designed to operate in cluttered, low-altitude environments where traditional radar and RF-based systems struggle, and it scales efficiently by adding additional nodes to expand coverage or improve accuracy. The system outputs real-time tracking data suitable for early warning, situational awareness, and cueing existing defence or counter-UAS systems. No personally identifiable information is collected.

G-16: Endstate: Collaborative AI for military planners



PROJECT INFORMATION

Organization	**Endstate Technologies**
Principal Investigator	Jamison Pereira
Technology Readiness Level	TRL 4: Component and/or breadboard validation in laboratory environment.
Research Area of Interest	G) Situational Awareness
Funding	Internally

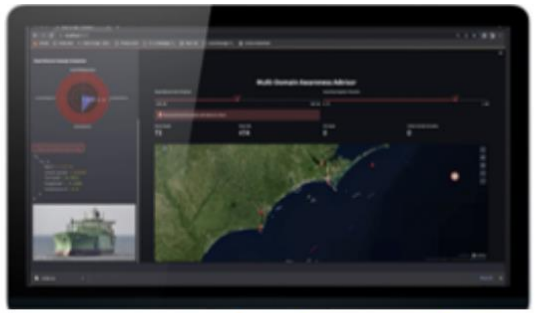
PROPOSED EXPERIMENT OVERVIEW

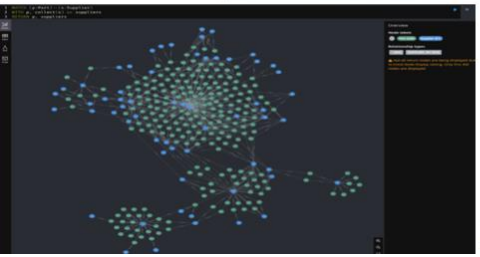
Experiment Objectives:
We will conduct an interactive experiment with Endstate to evaluate AI-enabled planning and decision support for military operations. Participants will start a sample planning process and use Endstate to rapidly generate initial plans and WARNOs, complete structured analysis and COA development supported by environmental and threat analysis tools. The experiment will also assess which planning modules, data inputs, and interface adaptations are most critical for domain-specific mission sets.
Experiment Objectives & Measures
- Accuracy: Compare AI-generated artifacts to doctrinally correct outputs and planner validation.
- Speed: Measure time to produce products versus baseline SOF planning cycles.
- Relevance: Assess contextual appropriateness of surfaced doctrine and case-study suggestions.
- Human-in-the-loop control: Evaluate how effectively users guide and refine AI outputs in real time.

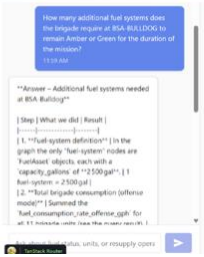
SYSTEM DESCRIPTION

Endstate is an AI-powered planning and decision-support platform purpose-built for military staffs and tactical-level units. The system ingests higher-headquarters orders, automatically extracts and structures mission-relevant data, and generates doctrine-aligned planning artifacts in seconds. Unlike generic AI tools, Endstate is designed around the Military Decision-Making Process (MDMP) and equivalent service planning frameworks (AFPP, MCPP, JPP). It synchronizes information across staff sections, shortens planning cycles, and reduces friction by providing role-aware coaching and surfacing relevant doctrine and historical case studies at each step. Built to integrate flexibly with existing C2 networks and MOSA/ABMS standards, Endstate enables faster, more informed decisions at division-level and below, while preserving commander intent and doctrinal rigor. The result is a collaborative AI assistant that functions as a staff multiplier—accelerating the creation of plans that are both faster to produce and more resilient in execution.

G-17: VIPER Decision Support Platform







PROJECT INFORMATION

Organization	**Avathon Government**
Principal Investigator	Jason Gross
Technology Readiness Level	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest	G) Situational Awareness
Funding	Internally & Federally

PROPOSED EXPERIMENT OVERVIEW

Our experiment will test power and flexibility of VIPER's Model Context Protocol (MCP) server. We will take simulated or real maritime domain awareness data, pass it through, our MCP server, and display the corresponding outputs on our Auto-Dynamic Logistics Common Operating Picture (adLCOP+). We will also test our GenAI enabled decision support tools and their ability to accelerate decision making in the operations center.

SYSTEM DESCRIPTION

Visualization and Intelligence Planning for Enhanced Readiness (VIPER) is an AI-enabled contested logistics decision support platform designed to help Commanders and sustainment staff optimize logistics operations in complex, degraded, or contested environments. VIPER integrates with existing DoW systems of record by transforming operational data into actionable, mission relevant insight.

VIPER ingests data from systems such as JBCP, GCSS, and SAP ERP and fuses them into a unified computational knowledge graph. This graph models the relationships between units, assets, supply nodes, routes, maintenance status, personnel, and missions across echelons and time. Unlike traditional dashboards or static COPs, the knowledge graph enables VIPER to reason dynamically about dependencies and second order effects. For example, how a delayed fuel delivery or maintenance shortfall cascades across operational reach, readiness, and maneuver timelines.

G-18: Augmented Reality Pathways with Object Retrieval

PROJECT INFORMATION

Organization	**HoloTerra Inc**
Principal Investigator	Sheila Sepulveda
Technology Readiness Level	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest	G) Situational Awareness
Funding	Grant / Private Equity

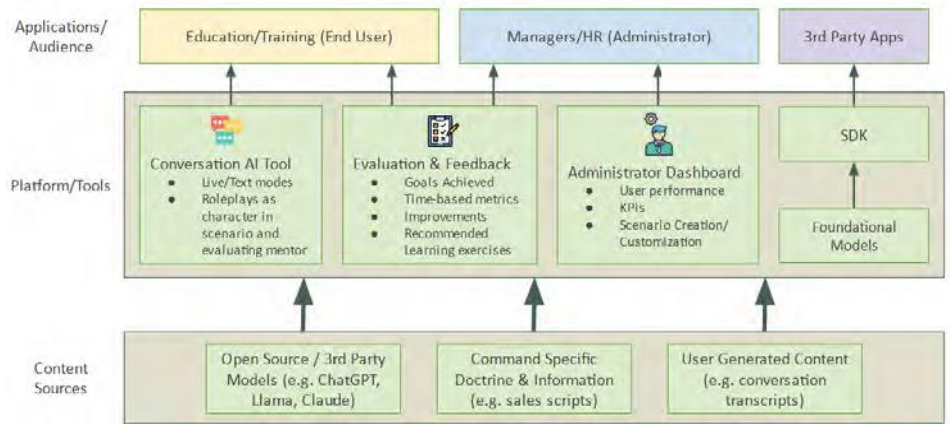
PROPOSED EXPERIMENT OVERVIEW

HoloTerra will experiment with RAG-connected avatars in augmented reality for mission planning and training use cases. The experiment will focus on avatar interactions with stakeholders during mission planning, specifically their ability to provide intelligence and retrieve relevant assets as map markers. Success will be measured by object retrieval accuracy and the effectiveness of semantic RAG queries.

SYSTEM DESCRIPTION

HoloTerra is developing an augmented and mixed reality system focused on RAG-connected avatars that support mission planning to enable training and simulation. The platform uses a shared, roundtable-style map where in-person users collaborate alongside AI avatars connected to retrieval-augmented knowledge sources, including extracted data from DINA. These avatars provide mission-relevant information, advisory support, and contextual insights during planning activities, while the roundtable maps serve as a wireframe foundation for producing dynamic, adaptive training scenarios. The system is currently focused on semantic retrieval and asset placement, with multilingual interactions and remote user support planned for future development. Users can manipulate TAK-style mission assets with associated data to mark maps, query avatars, and collaboratively plan missions. The system is being built in Unity for Quest 3, iPhone, and Android tablets, and leverages a local RAG instance to support real-time retrieval and interaction.

G-20: AI-Enabled Role Player Training



PROJECT INFORMATION

Organization	**Delta Learning Inc**
Principal Investigator	Mark Buonforte
Technology Readiness Level	TRL 4: Component and/or breadboard validation in laboratory environment.
Research Area of Interest	G) Situational Awareness
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

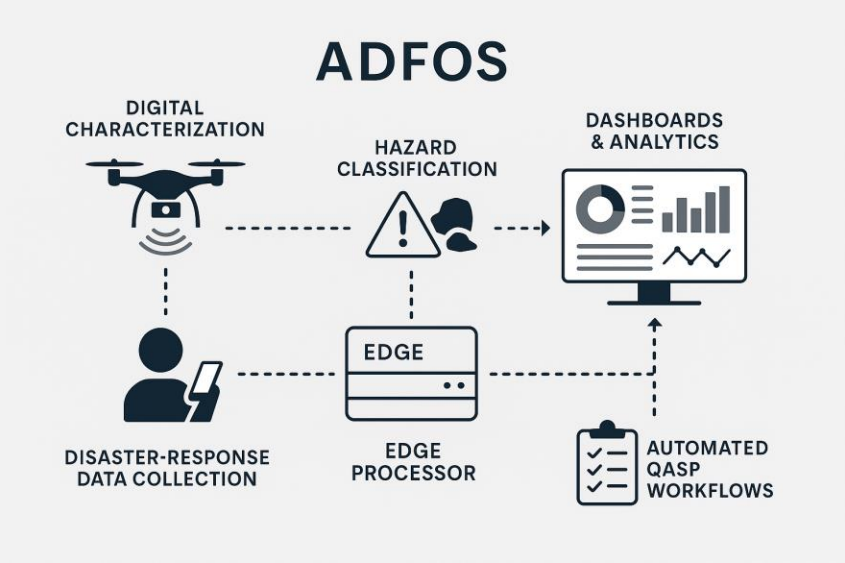
Ebective training often struggles to replicate real-world scenarios in a way that's engaging and adaptable to specific needs. My experiment focuses on addressing this challenge by showcasing Delta AI's prototype, AI-powered, scenario-based training interactions that are tailored for SOCOM and Leadership training. The experiment invites attendees to engage with the scenario and provide real-time feedback on how the system can adapt to meet situation-specific requirements. This hands-on involvement will not only demonstrate the flexibility and ebectiveness of Delta AI's technology but also gather insights on areas for improvement. Additionally, the experiment aims to explore potential applications of Delta AI across other functional areas, identifying how our AIenabled role players can become valuable assets to the DoD and be tailored to achieve whatever training or learning objectives are desired. The ultimate goal is to refine our solution and uncover broader opportunities for collaboration.

SYSTEM DESCRIPTION

Delta AI's training platform allows trainees to simulate realistic, high-impact conversations using an AI agent. We leverage Large Language Models (LLMs) along with text-to-speech (TTS) and speech-to-text (STT) models to produce an AI agent that can listen, think, and speak to the trainee in real-time. Once a trainee completes a scenario, an LLM evaluates the trainee's performance and provides instantaneous and consistent feedback based on a custom rubric.

We leverage LLMs to serve two purposes: providing the trainees with 1) the ability to role-play a persona in a live scenario, and 2) a mentor that evaluates the member's performance and recommends new training exercises to improve areas of weakness. We are able to accomplish this by developing a modular ecosystem of LLM prompts that are refined and evaluated for ebicacy and consistency.

H-01: Adaptive Digital Characterization & Automated Field Oversight System



PROJECT INFORMATION

Organization	**ConnectDotsSolution**
Principal Investigator	Kwesi Acquah
Technology Readiness Level	TRL 2: Technology concept and/or application formulated.
Research Area of Interest	H) Defense Support to Civil Authorities (DSCA)
Funding	Federally

PROPOSED EXPERIMENT OVERVIEW

At JIFX, we will conduct an experiment to evaluate the effectiveness of the ADFOS system—integrating digital characterization, automated disaster-response data collection, and QASP-based oversight workflows—under field conditions. Participants will use mobile devices and simulated sensor feeds to classify hazards, submit structured field reports, and execute automated QASP tasks. We will measure accuracy and speed of digital classification, completeness of data capture, user workload, and system performance in low-connectivity environments.

Data will be collected through anonymized system logs, timestamped task records, geolocation metadata, and automated analytics dashboards. Key metrics include classification precision, report latency, task completion rates, and quality of CPARS-ready performance evidence. Insights gathered will support refinement of automated oversight tools and inform disaster-response and ISR data-fusion approaches.

SYSTEM DESCRIPTION

The Adaptive Digital Characterization & Automated Field Oversight System (ADFOS) is a modular, field-deployable platform integrating AI-enabled digital characterization, automated disaster-response data collection, and QASP-driven performance oversight. Developed by ConnectDotsSolution with ASC Group's SeeSOR® engine, ADFOS fuses sensor inputs, mobile observations, and geospatial data to classify hazards, document field conditions, and create structured, timestamped operational records.

The system includes automated QASP workflows, digital checklists, corrective-action tracking, and dashboards that visualize mission activity, classification outputs, and analytics in real time. All collected data is converted into traceable, CPARS-ready evidence, enabling objective assessment of field operations. ADFOS functions in connected, low-bandwidth, or disconnected environments and can run on edge devices or hybrid cloud infrastructure.

I-01: Real-Time Neurocognitive Monitoring for Human Performance and Safety Assessment

PROJECT INFORMATION

Organization	**Neurable**
Principal Investigator	Pawan Lapborisuth
Technology Readiness Level	TRL 7: System prototype demonstration in an operational environment.
Research Area of Interest	I) Health and Safety
Funding	Internally & Federally

PROPOSED EXPERIMENT OVERVIEW

This experiment evaluates whether Neurable's AMP Neuro EEG-integrated hearing protection can capture real-time changes across brain health and readiness biomarkers during high-stress training environments, including potential blast overpressure exposure. Participants will complete a short three-minute cognitive snapshot protocol (questionnaire plus eyes-open/eyes-closed neural baseline) before and after selected training events, while passive EEG is continuously recorded through the AMP Neuro headset. The experiment measures changes in neural activity associated with cognitive degradation, stress, or mild traumatic brain injury (mTBI) risk factors and compares these signals with self-reported state and training conditions. Data will be collected via onboard storage and Bluetooth following the standardized workflow in the submitted protocol. The goal is to determine whether wearable neurotechnology can non-invasively detect early indicators of cognitive or readiness changes in real time to support future force protection equipment and warfighter performance monitoring.

SYSTEM DESCRIPTION

Neurable's AMP Neuro integrates neural sensing technology directly into an Ops-Core hearing protection headset without altering its form, fit, or function and protection capabilities. Dry, unobtrusive sensors inside the earcups capture high quality brain signals during training and demanding operational tasks with specialized preparation. An onboard COTS processor filters and interprets neural activity, storing data locally or streaming it wirelessly in real time. These signals enable detection of changes associated with cognitive performance, decision making, cognitive load, and exposure to operational stressors, including but not limited to blast overpressure. Because all original hearing protection and remain intact, operators can monitor cognitive and readiness indicators without impacting normal training or mission workflows. AMP Neuro is designed for reliable use in outdoor and tactical environments, providing a field ready capability for assessing human performance, cognitive resilience, and overall force protection.

I-03: Warfighter airborne threat detection and monitoring

PROJECT INFORMATION

Organization	**Deeper Breath Inc**
Principal Investigator	Dustin Wish
Technology Readiness Level	TRL 4: Component and/or breadboard validation in laboratory environment.
Research Area of Interest	I) Health and Safety
Funding	Internally

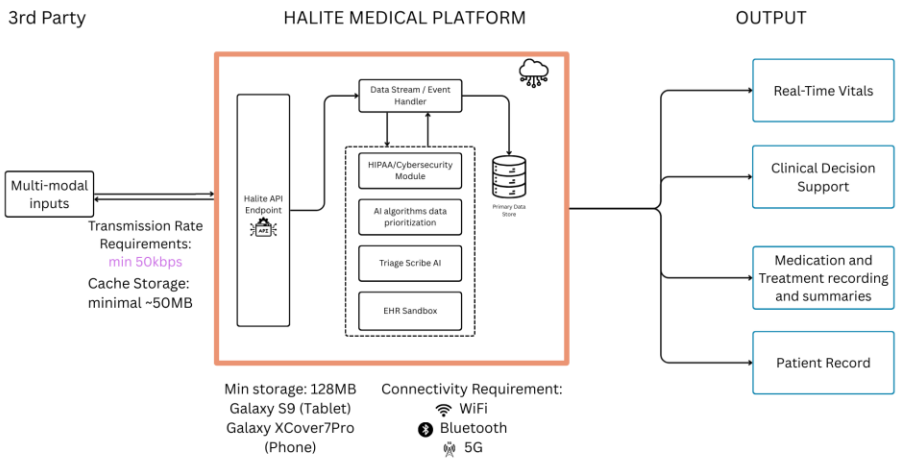
PROPOSED EXPERIMENT OVERVIEW

At JIFX, we will conduct a field experiment to validate a networked, AI-enabled respiratory sensing and communications platform for contested and disaster environments. The experiment will deploy prototype smart respirators equipped with environmental sensing (CBRN indicators, CO_2, VOCs), cardio-respiratory monitoring, and secure edge AI for real-time inference. Participants will execute representative operational tasks while the system measures exposure detection latency, data fidelity under motion and stress, speech intelligibility through the mask, and resilience of peer-to-peer communications when connectivity is degraded. We will assess interoperability with existing command-and-control tools via standardized data outputs and evaluate usability, comfort, and power endurance. Success criteria include sub-second threat alerting, reliable speech amplification/translation, accurate physiological telemetry, and sustained operation in dusty, humid, and noisy conditions. Results will inform readiness for first responder, SOF, and humanitarian operations.

SYSTEM DESCRIPTION

The system is an AI-enabled smart respirator platform designed for first responders, military, and disaster-response personnel operating in hazardous and communications-degraded environments. The respirator integrates environmental sensing for chemical indicators, CO_2, VOCs, temperature, and humidity with onboard cardio-respiratory monitoring to assess wearer status in real time. An embedded edge-compute module performs local AI inference to detect threats, assess exposure risk, and generate actionable alerts without reliance on cloud connectivity. The system includes a hardened audio subsystem that amplifies and optionally translates speech through the mask, improving intelligibility in high-noise settings. Secure, low-bandwidth peer-to-peer and gateway communications enable data sharing with nearby team members and command systems using standardized interfaces. The platform is modular, battery-powered, and designed to operate in dusty, humid, and austere conditions, providing both individual protection and networked situational awareness.

I-04: Triage Scribe



PROJECT INFORMATION

Organization	**Halite Medical Inc.**
Principal Investigator	Dylan Sharrock
Technology Readiness Level	TRL 3: Analytical and experimental critical function and/or characteristic proof of concept.
Research Area of Interest	I) Health and Safety
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

Halite will test and demonstrate Triage Scribe, an AI-powered voice ambient documentation system designed for combat casualty care environments. The experiment will test the application's ability to capture real-time verbal communications during simulated triage scenarios and automatically populate Tactical Combat Casualty Care (TCCC) cards and other medical artifacts.

During the demonstration, medics will perform triage procedures while speaking naturally about patient assessments, interventions, and vital signs. Triage Scribe will listen to ambient conversations, extract clinically relevant information, and generate accurate, structured medical documentation without requiring manual data entry.

The experiment will evaluate the system's accuracy in noisy field conditions, its ability to distinguish relevant medical information from background conversation, documentation completeness compared to manual methods, and time savings during high-tempo casualty situations. Success metrics include documentation accuracy rates, time-to-complete TCCC cards, and medic feedback on usability in tactically realistic scenarios.

SYSTEM DESCRIPTION

Triage Scribe is a hands-free mobile application enabling combat medics and emergency responders to document casualty care while actively treating patients. Using voice-activated Push-to-Talk recording, medics verbally describe patient conditions, keeping hands free for lifesaving interventions. The system automatically transcribes speech and employs AI to extract structured medical data, instantly generating standardized TCCC (Tactical Combat Casualty Care) cards following military MARCH protocol.

Key capabilities include real-time voice-to-text transcription, automated injury and treatment extraction, interactive anatomical body mapping, multi-patient triage support for mass casualty incidents, and secure encrypted storage. The system generates professional PDF reports for seamless handoff to receiving medical facilities.

Built on offline-first architecture, Triage Scribe eliminates paperwork delays and reduces documentation errors in tactical environments. By capturing critical patient information through voice commands, medics maintain focus on treatment while ensuring accurate medical records when seconds matter most.

K-01: Silent Power in Austere Environments

PROJECT INFORMATION

Organization Name:	New Use Energy
Principal Investigator:	John Webber
Technology Readiness Level:	TRL 9: Actual system proven through successful mission operations.
Research Area of Interest:	K) Infrastructure and Power
Funding	Internally

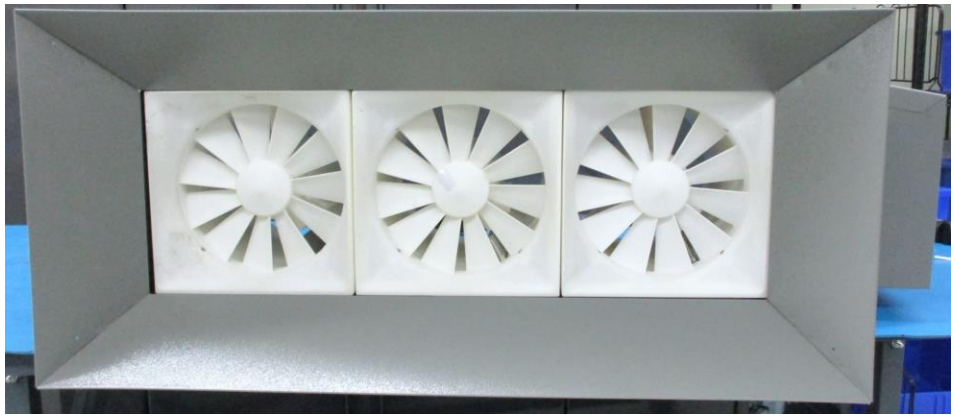
PROPOSED EXPERIMENT OVERVIEW

Use resources of height and cold to collect data about the thermal emissions from portable power equipment. Learn if other experimenters are using drones or other observation equipment to detect objects on the ground. Learn from Anti-Drone/detection participants their power needs.

SYSTEM DESCRIPTION

Portable AC Power in a black case. We provide AC Power, 24vdc or 48vdc direct battery applications. Provide USB 12, aux and for storage 500wh to 50000wh of portable power

K-02: StormCell™ Multi-Mode Micro-Wind Power (Driven, Forced, and Natural Wind) for Tactical and FOB Energy Resilience



PROJECT INFORMATION

Organization Name:	**Sujen International LLC**
Principal Investigator:	Emerson Simon
Technology Readiness Level:	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest:	K) Infrastructure and Power
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

At JIFX 26-2, the StormCell™ team will conduct a field experiment to evaluate modular micro-wind power generation across three operational airflow regimes: driven wind (vehicle or trailer-induced airflow), forced wind (HVAC, ventilation, or controlled exhaust), and natural ambient wind. A baseline 3-Pack StormCell™ configuration will be deployed and incrementally reconfigured to assess scalability, deployment speed, and operational integration.

The experiment will measure direct DC voltage, current, and power output; cumulative energy production (Wh/kWh); correlation with airflow conditions; setup and teardown time; and system behavior when charging DC loads, battery buffers, and UAV batteries. Acoustic and visual signature observations will also be recorded. Data will be logged using inline electrical measurement tools and time-stamped observations. Operator and evaluator feedback will be captured to assess usability, manpower requirements, and applicability to expeditionary and FOB energy resilience use cases.

SYSTEM DESCRIPTION

StormCell™ is a modular micro-wind power system designed to provide persistent, low-signature electrical power in expeditionary, tactical, and infrastructure-constrained environments. The system is composed of compact, ducted wind generation modules deployed in minimum 3-Pack configurations that are scalable.

StormCell™ is engineered to harvest energy from three wind sources commonly present in military operations: driven wind created by vehicle or platform motion, forced wind generated by equipment such as HVAC or ventilation exhaust, and natural ambient wind. The system produces direct DC power, enabling standalone DC load support, battery energy storage charging, UAV battery recharge, and integration with DC- or AC-coupled inverters/microgrids. Its modular architecture enables rapid deployment, reconfiguration, and replacement without specialized infrastructure or extensive operator training.

K-03: COPA 500: Next Generation Industrial Control

PROJECT INFORMATION

Organization Name:	**CPLANE.ai**
Principal Investigator:	Bob Hagenau
Technology Readiness Level:	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest:	K) Infrastructure and Power
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

The COPA 500 is a next-generation industrial control system built for critical infrastructure management. In our experiment, COPA 500 act as a remote cyber-resilient control of energy production, infrastructure building, and maintenance facilities. We will demonstrate the COPA 500 test unit serve as the test bed for threat emulation during red teaming exercises.

SYSTEM DESCRIPTION

The COPA 500 is a next-generation industrial control system built for rugged, distributed environments and critical infrastructure energy management. It combines open, modular hardware with a tightly integrated, proprietary software stack that allows for centralized control, remote management, and resilient operations. COPA 500 is built around the Open Process Automation Standard (O-PAS), which ensures interoperability across diverse vendor components while maintaining a common control and management layer. This architecture is standards-compliant and designed from the ground up to support the needs of distributed and secure environments. COPA 500 integrates field-proven components, including: Phoenix Contact I/O modules, ASRock industrial control nodes, SuperMicro application servers, and R. Stahl intrinsically safe gateways through a unified software environment that ties process control (via CODESYS), human-machine interface (via Ignition), configuration, cybersecurity enforcement, and orchestration together.

K-04: Physical Asset Intelligence for Sustainment and Assurance Operational Readiness: AI-Driven Automated Identification, Data Structuring, and Awareness for Equipment and Infrastructure Assets.

Physical Asset Intelligence for Sustainment and Assurance Operational Readiness

Contact Information

Empower Equity, Inc
314 East State St
Ithaca, NY, USA 14850

Company POC:
Herbert Dwyer, CEO
Herbert@empeq.ai
Work: (347) 903-6737
Cell: (607) 391-1378

Innovation Synopsis

Solution's Uniqueness: Sentry is a field-ready AI platform that generates structured asset intelligence from photos and legacy records in operational environments. It combines edge-capable computer vision, offline operation, and authoritative data linking to modernize sustainment workflows. A patent-pending ingestion method enables rapid identification and validation of legacy parts without barcodes, sensors, or pristine data.

Operational Impact: Sentry digitizes equipment at the point of maintenance, reducing manual research, accelerating logistics decisions, and improving readiness across sustainment and infrastructure operations.

Description of Technology

Scientific Feasibility: Sentry applies computer vision, deep learning, and proprietary asset libraries to extract identifiers, specifications, and condition indicators from degraded imagery and documents. The system connects assets to technical orders and engineering data, enabling instant identification and sustainment context. The approach has been tested on legacy DoW equipment and exercised in operational logistics workflows.

Enabling Technologies: Sentry operates on tablets and handheld devices with edge and cloud AI processing. Its patent-pending identification engine compensates for missing labels, poor lighting, and incomplete records using standardized visual capture and inference pipelines. Outputs integrate with logistics, CMMS, and readiness systems used across DoD environments.

TRL Pathway and Maturation Plan: Sentry is at TRL 5. An awarded TACFI effort advances it to TRL 7 through expanded digitization, usability refinement, and field validation, with Phase III transition supporting TRL 9 deployment.

Specific Benefits to the Navy

Navy sustainment organizations rely heavily on manual inspections and paper or PDF technical orders to identify and validate equipment. These methods are slow, difficult to scale, and contribute to equipment downtime and reduced mission capable rates for legacy platforms.

Sentry enables real-time, non-destructive identification and validation of equipment at the point of maintenance using existing mobile devices. By converting unstructured imagery and documents into decision-ready asset data, Sentry reduces research time, improves logistics confidence, and accelerates sustainment cycles. DoD testing has demonstrated up to a 97 percent reduction in part identification and verification time, supporting faster repairs, improved readiness, and more efficient sustainment across mission-critical systems.

PROJECT INFORMATION

Organization Name:	**EMPEQ**
Principal Investigator:	Herbert Dwyer
Technology Readiness Level:	TRL 7: System prototype demonstration in an operational environment.
Research Area of Interest:	K) Infrastructure and Power
Funding	Investment, Commercial Revenues, Federal Contracts

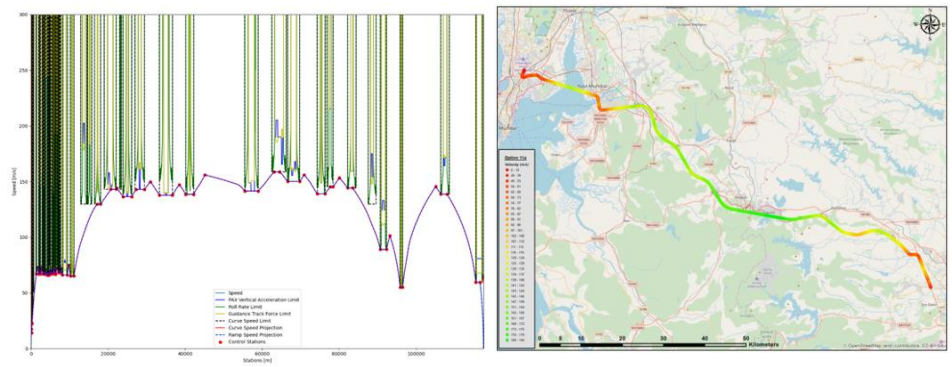
PROPOSED EXPERIMENT OVERVIEW

EMPEQ will conduct an experiment demonstrating real-time generation of structured, actionable asset intelligence from unstructured inputs (photos, legacy records) in realistic operational conditions. Participants will capture images of fielded infrastructure and equipment (power systems, HVAC, electronics, enclosures). EMPEQ's AI will automatically identify assets, extract specifications, and standardize records into decision-ready formats. The experiment will evaluate accuracy, speed, and completeness compared with manual data entry. Data will be used to validate infrastructure situational awareness, readiness metrics, and support command decision workflows. This experiment builds on EMPEQ's prior invitation to present and exhibit at the NPS Innovation in Action Emerging Tech Showcase in Monterey, CA (July 2025), demonstrating direct NPS interest in EMPEQ's relevance to defense applications.

SYSTEM DESCRIPTION

EMPEQ's platform leverages its proprietary AssetIQ™ AI engine to transform fragmented, analog, and degraded equipment data into standardized, structured digital records at scale. AssetIQ works with imperfect inputs—such as photos, handwritten notes, and legacy PDFs—without requiring barcodes, RFID, or connected sensors. The system combines a mobile capture interface with cloud and edge-based AI processing, generating outputs that integrate with CMMS/EAM platforms, digital twins, and logistics systems. EMPEQ enables rapid asset verification, classification, and lifecycle inference, improving infrastructure data fidelity for sustainment, planning, and operational readiness. EMPEQ's supply chain product, Sentry, provides full-spectrum supply chain visibility and has been delivered to the U.S. Air Force's 448th Supply Chain Management Wing at Tinker AFB and the 402nd Electronics Maintenance Group at Robbins AFB. EMPEQ's Fast Site Survey product is used by leading enterprise customers, including Johnson Controls, Veolia, and Siemens, to conduct critical facility and equipment audits.

K-05: Model-Based Assessment of Power and Infrastructure Resilience Under Disruption



PROJECT INFORMATION

Organization Name:	**KOAPAKA Solutions Corp**
Principal Investigator:	Donald Min
Technology Readiness Level:	TRL 5: Component and/or breadboard validation in relevant environment.
Research Area of Interest:	K) Infrastructure and Power
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

This experiment demonstrates a model-driven approach to assessing power and infrastructure resilience under disruption scenarios relevant to expeditionary bases, depots, and critical facilities. Using representative infrastructure layouts and power architectures, the experiment simulates failure modes such as partial grid loss, fuel constraints, and cascading dependencies between power, transportation, and logistics systems. The experiment does not involve physical power equipment or generators. Instead, it focuses on analytical outputs that support contingency planning and prioritization of restoration actions. Participants may review scenario results showing operational impact, recovery timelines, and dependency sensitivities. The goal is to enable proactive infrastructure resilience planning without intrusive testing or infrastructure manipulation.

SYSTEM DESCRIPTION

The system is a software-based infrastructure modeling environment that represents power, fuel, transportation, and facility dependencies as interconnected systems. It enables structured “what-if” disruption analysis and visualization of downstream operational impacts. The system operates offline, is platform-agnostic, and supports early-stage planning and tabletop-style experimentation. Outputs include dependency graphs, impact timelines, and prioritized mitigation and recovery options. The architecture supports future integration with digital twin or sensor-derived data but is demonstrated as a self-contained analytical capability.

L-01: OXONTM: Nano-Engineered Fuel Enhancer for Superior Engine Performance

Introducing OXONtech™

OXONtech™ is a fuel additive that operates within diesel, gasoline, and jet fuel, effective at an ultra-low dosing ratio of 1:10,000. Its power lies in stabilizing free radicals—short-lived, highly reactive elements that normally exist for only nanoseconds.

In fuel, OXONtech™ forms nano-micelles that spread out in a colloidal dispersion, creating a stable suspension. When the fuel enters the combustion chamber, exposed to extreme pressures and temperatures, the stabilized free radicals are released, becoming unstable and active again. This triggers self-amplifying chain oxidation reactions with lower energy barriers, enabling more complete combustion.

IMPROVED COMBUSTION
OXONtech™ is added to liquid fuels (diesel, gasoline, jet fuel) and operates at molecular level to enhance combustion.

HUGE SAVING
Effective at a 1:10,000 dosing ratio, it delivers significant savings in consumption (up to 15%), carbon emissions (up to 21%) and engine maintenance (up to 10%).

SCALABLE
Proprietary, patented and infinitely scalable innovation.

FULLY OPERATING
Operating today, already at target unit economics for us and our early customers.

8 | oxon-tech.com

PROJECT INFORMATION

Organization	**Oxon Technologies**
Principal Investigator	Robert Biddle
Technology Readiness Level	TRL 9: Actual system proven through successful mission operations.
Research Area of Interest	L) Mobility and Transportation
Funding	Internally & Federally

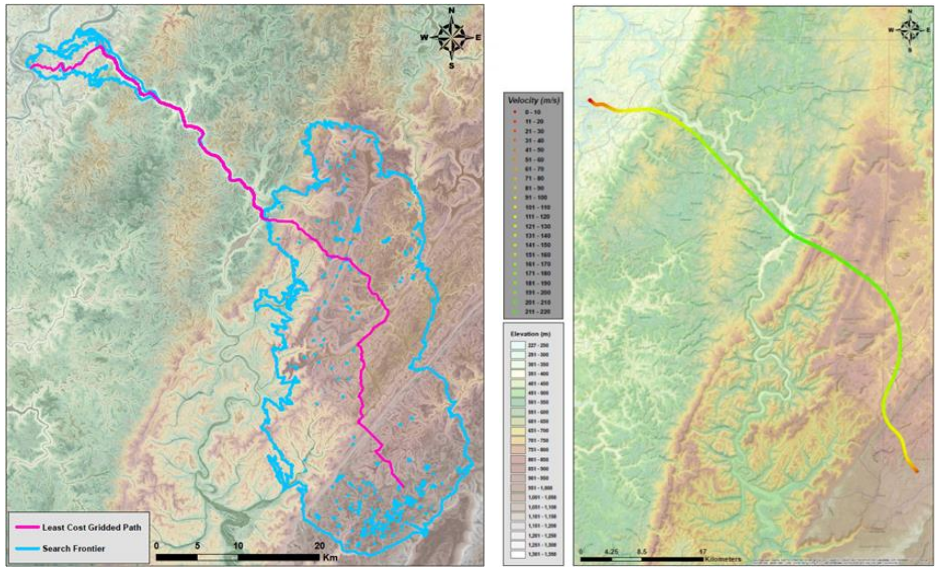
PROPOSED EXPERIMENT OVERVIEW

OXON will test its fuel enhancer on diesel vehicles at Camp Roberts to measure diesel efficiency, emissions behavior, and soot load under matched field conditions. The team will select vehicles that follow a fixed route inside the range. Each platform will run a baseline cycle with untreated diesel that follows a defined pattern of start, idle, acceleration, steady speed, and return. The team will refuel the same platforms with Oxon treated diesel and will repeat the identical pattern with the same load and driver actions. Each cycle will record fuel volume at start and finish, run time per liter, exhaust temperature, visible smoke output, and soot indicators from onboard diagnostics. A compact flow device will provide precise volume data for selected vehicles. The team will store all measurements in time stamped files and NPS staff will confirm each cycle.

SYSTEM DESCRIPTION

OXON is a nano-engineered fuel enhancer that uses charged, pseudo-catalytic micelles to make combustion start faster, burn more completely, and produce fewer emissions. Each micelle holds a stable charge that draws oxygen toward hydrocarbon chains before ignition. This action lowers the energy required for ignition and raises the fraction of fuel that converts into useful work. The formula enters diesel at a ratio of 1 to 10,000, so the fuel remains within normal specifications and requires no hardware change. Oxon functions as a physics based modifier that alters molecular behavior rather than a detergent or octane or cetane agent. Engines that operate with Oxon treated diesel show lower soot output, more stable power delivery, and reduced stress on filters. The system fits routine refuel points at any scale and supports standard storage or handling practices, which allows rapid use across diverse vehicle types.

L-03: Adaptive Terrain-Aware Mobility Modeling for Operational Planning and Logistics



PROJECT INFORMATION

Organization	**KOAPAKA Solutions Corp**
Principal Investigator	Donald Min
Technology Readiness Level	TRL 5: Component and/or breadboard validation in relevant environment.
Research Area of Interest	L) Mobility and Transportation
Funding	Internally

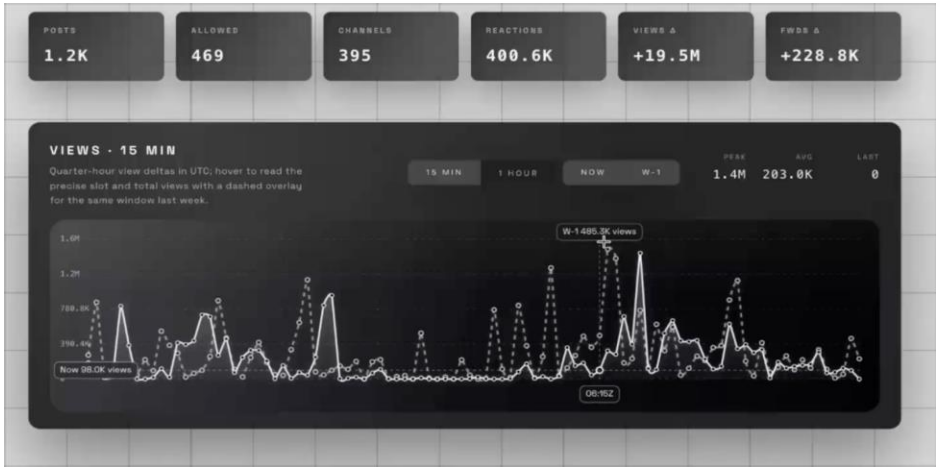
PROPOSED EXPERIMENT OVERVIEW

This experiment demonstrates a terrain-aware computational mobility model that supports operational planning, logistics routing, and maneuver analysis in degraded or contested environments. The experiment uses pre-loaded terrain, infrastructure, and environmental datasets to simulate route feasibility, mobility constraints, and time-to-effect across multiple vehicle and unit profiles. Rather than a live vehicle demonstration, the experiment emphasizes analytical outputs and scenario replay suitable for low-connectivity conditions. Scenarios include damaged road networks, elevation and soil constraints, and environmental degradation. Outputs include comparative route assessments, mobility degradation visualization, and sensitivity analysis highlighting how infrastructure disruption affects movement options. The experiment demonstrates how planners could assess mobility tradeoffs and sustainment options when real-time sensing, GPS, or if communications are unavailable or constrained.

SYSTEM DESCRIPTION

The system is a modular, software-based mobility modeling framework that integrates terrain data, infrastructure attributes, and vehicle performance abstractions into a unified analytical engine. It produces predictive mobility assessments rather than real-time navigation and operates on standard computing hardware without reliance on live sensors or external connectivity. Inputs include digital elevation models, surface classifications, road networks, and environmental modifiers. Outputs are decision-support products such as route feasibility maps, comparative mobility scores, and estimated movement timelines. The architecture is designed for future integration with live or sensor-derived data but is demonstrated as an offline, analyst-driven capability.

M-01: Real-Time Detection of Narrative Activity, Anomalies, and Amplifier Waves in High-Noise OSINT Environments



PROJECT INFORMATION

Organization Name:	DAGR Group LLC
Principal Investigator:	Boris Levin
Technology Readiness Level:	TRL 6: System/subsystem model or prototype demonstration in a relevant environment.
Research Area of Interest:	M) Precision strike, Non-Lethal Weapons, Information Operations
Funding	Internally

PROPOSED EXPERIMENT OVERVIEW

This experiment evaluates the stability, performance, and real-time processing capability of the DAGR prototype when connected to a continuous live OSINT stream using Telegram's public API. DAGR relies on external network access to ingest multilingual Telegram channels in real time. The experiment will run sustained live ingestion sessions to measure system responsiveness, frame-to-frame update rates, resilience to network latency, and behavior under varying message throughput.

Key metrics include:

- ingestion stability (dropped / delayed packets)
- system update latency
- message-per-minute processing capacity
- UI refresh consistency during high-noise periods

The experiment requires internet access (cellular hotspot acceptable).

No classified or controlled data will be used.

All processing occurs locally on the participant's laptop.

Outcome: Establishing performance thresholds and stability limits for real-time OSINT ingestion in field conditions.

SYSTEM DESCRIPTION

DAGR is an AI-enabled OSINT analysis platform designed to monitor and interpret real-time information activity across public messaging channels. The system connects to open Telegram APIs to ingest multilingual messages, extract metadata, and update analytic views in near-real time. DAGR focuses on detecting activity spikes, identifying shifts in message volume, and tracking basic propagation patterns to support situational awareness and information environment understanding.

The system runs on a standard laptop and requires only an internet connection to operate; all processing occurs locally, and no classified or restricted sources are used. DAGR provides simple visualization dashboards that display message flow, temporal dynamics, and high-level indicators of activity changes. The platform is built to assist analysts and operators in monitoring fast-moving information environments and evaluating how message traffic evolves over time under varying conditions.