DISC 2026

MARCH 18-19

CHAPEL HILL, NORTH CAROLINA

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Technology and Innovation Showcase

Speakers:

- Moderator: **Bob Burton**, Director of Defense Technologies, North Carolina Military Business Center

Presenting Businesses:

- Arch Systems, LLC
- BattleBoxes
- Cohesive Robotics Inc
- i2E Group, LLC

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LOGISTICS INTELLIGENCE & OPTIMIZATION NETWORK

LION AI

DISC Summit – Technology & Innovation Showcase

March 19, 2026

PRESENTED BY
Narayan Srinivasa
Chief AI Scientist, Arch Systems LLC

Arch SYSTEMS

Where Arch AI is Making Impact Today

trusted ai capabilities for critical federal missions

AIEA | AIPPO | ORBIT Optimized Review & Business Insight Terminal | ASTRAL-OPS

Decision Intelligence & Planning

xTRACE | SentinelAI Guardrails | VigilAi

Risk Detection & Program Integrity

Neuro Cert | Smart CLASS

Workforce Readiness & Performance

SentinelAI Guardrails | VigilAi | TwinTrap

Operational Awareness & Threat Detection

FleetSight | Smart CLASS | iSVS Integrated Site Verification System

Predictive Readiness & Sustainment

StratusSec AI-POWERED RMF AUTOMATION | SentinelAI Guardrails | Smart CLASS

Secure AI infrastructure & Governance

Certifications & Clearances

50+ project completed

15+ government agencies served

15+ years of service to the federal government

The Problem it is Solving

land | littoral | aviation | maritime | aerospace

- Operational and logistics data remains fragmented across systems like JBC-P, GCSS-Army, and IPPS-A.
- These systems support operations across Army and Marine Corps, reflecting activity across land, littoral, aviation, and aerospace assets, while increasingly connecting to broader Joint Force environments.

- Commanders often do not have a single real-time logistics picture across domains
- Sustainment gaps and shortages are often discovered too late
- Staff must manually correlate information across multiple systems, slowing decisions
- Operations become more difficult in contested or communications-denied environments across domains.

Logistics data fragmentation across domains prevents real-time decision making and mission success.

What does Lion-AI do?

land | littoral | aviation | maritime | aerospace

TRACK
Unified Operational Awareness

- Integrates data from JBC-P and GCSS-Army
- Displays a real-time common operational and Logistics Picture
- Shows locations of units, supplies, vehicles, and routes

PREDICT
AI Enabled Logistics Forecasting

- AI models analyze operational and sustainment data
- Predict fuel, ammunition, and supply depletion
- Identify route risks and contested areas
- Warn commanders before logistics gaps impact operations

RECOMMEND
Decision Support for Commanders

- Generates multiple resupply and sustainment plans
- Evaluates tradeoffs including speed, safety, and operational risk
- Explains why the AI recommends each options

LION-AI fuses Army logistics data to deliver predictive AI decision support across domains

Why Is This Different From Existing Systems?

Existing Systems

- Show data in isolation
- Require human interpretation
- Don't adapt quickly to battlefield changes

LION-AI

Combines data from multiple systems	01
Uses AI to anticipate problems	02
Continuously re-plans when conditions change	03
Works even when communications are degraded or offline	04

LION-AI enables decision support, not automation the human commander always stays in control.

Key Capabilities

LION-AI

Faster Decisions
- COAs in seconds
- Reduced staff workload

Better Risk Awareness
- Route risk scoring
- Threat-aware logistics

Resilient Operations
- Disconnected operations
- Offline fallback plans

Secure Processing
- NIST Compliance
- Zero Trust environments

Trust & Transparency
- Plain-English rationale
- Explainable AI factors

LION-AI enhances decision-making, automation, and security across Joint Force Operations.

Current Status of Lion-AI

Current MVP using synthetic data that closely mimics real JBC-P, IPSS-A, and GCSS-A data — using the same formats, structures, and behaviors.

FOCUS

Movement & location | Supplies & readiness | Personnel & Readiness

ANSWERS THE QUESTION

“Where are my units?” | “What do I have and need?” | Who is available and qualified?

Together, they form the minimum data backbone for tactical logistics.

The system is built to joint force data standards, so swapping in real feeds later should be straightforward

MVP Lion-AI Results are Promising

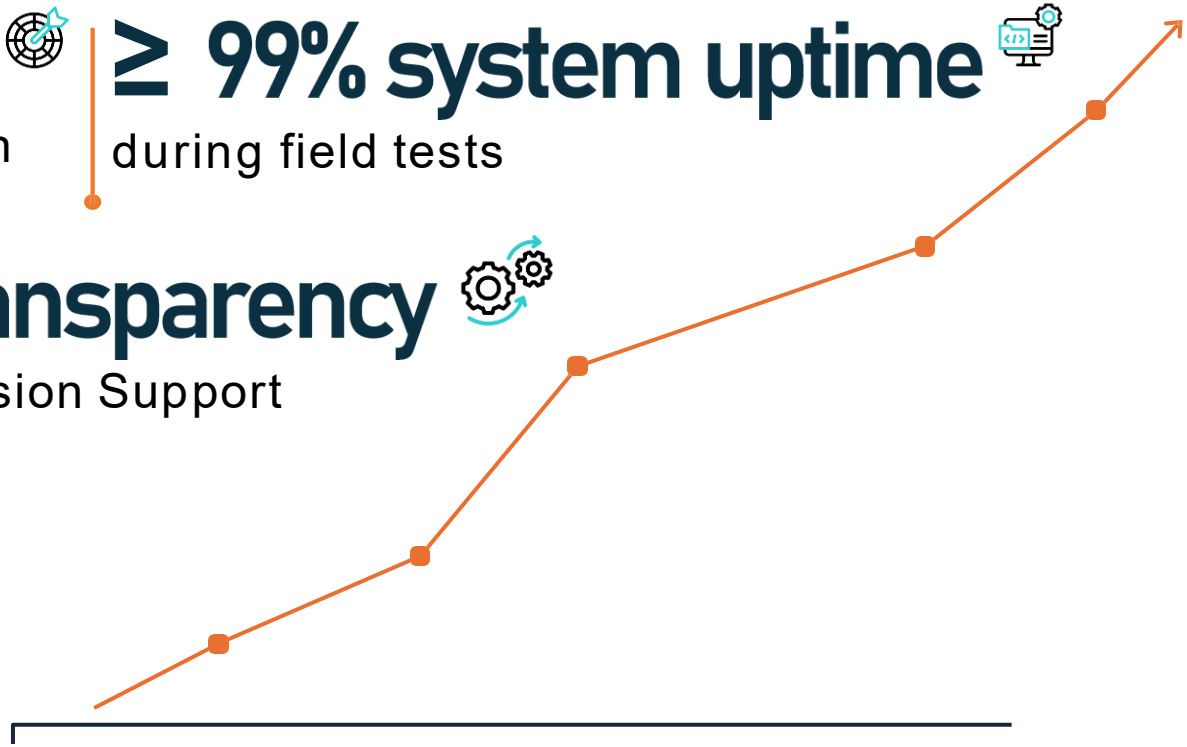
Key metrics obtained on simulated JBC-P, IPSS-A, and GCSS-A data

≥ 85% accuracy
in predicting supply depletion

≥ 99% system uptime
during field tests

GenAI-Driven Transparency
with Human-Controlled Decision Support

≤ 10 seconds
to generate logistics plans



LION-AI aims to make logistics faster, smarter, safer, and resilient under combat conditions.

ncmbc CONNECTING MILITARY AND BUSINESS

LION-AI

Arch SYSTEMS

Name of Company: Arch Systems, LLC
POC: Vini Ehsan (Founder & CEO) | **Phone:** (240) 421-1747
Email: vehsan@archsystemsinc.com

Logistics Intelligence & Optimization Network – AI

LION-AI

- Combat sustainment focused, extensible to joint systems (Navy ERP, AF LIMS-EV).
- Integrates GCSS-Army, JBC-P, IPPS-A, and sensors into one logistics COP.

Mission Impact

- **6 hrs → 20 min** planning cycle improvement (brigade resupply).
- **40% fewer emergency deliveries** through predictive resupply alerts.
- **30% reduced convoy exposure risk** via threat-aware routing.
- **Operational Agility:** Commanders adapt sustainment plans in minutes.

Technology Readiness Level (TRL)

- **TRL 5:** Validated MVP demo (brigade-scale Army scenario, FY25 Q1).
- Demonstrated ~90% forecast accuracy and **sub-5 min COA generation**.

LION-AI – Solution Specifics

- **Unified Logistics COP**: Combines Army & joint data sources in one dashboard.
- **AI Forecasting:** ~90% accuracy predicting fuel/ammo consumption, alerts 4 hrs in advance.
- **Generative COA Engine:** Produces ranked sustainment plans in <5 minutes.
- **Threat-Aware Optimization:** Routes reduce convoy risk by 30% and cut transit times by 10%.
- **Edge Resilience:** Maintains full COP + forecasting 72 hrs offline (target 7 days via federated learning).
- **Explainable AI:** Plain-language rationales + SHAP factors ensure trust & auditability.

USP – Why Us

Combat-System Focused: Tailored for contested sustainment, unlike generic commercial tools.

TRL 5 Validated: Brigade-scale MVP demo (FY25 Q1) achieved ~90% accuracy & <5 min COA generation.

Secure & Compliant: Implements 102/110 NIST 800-171 controls, targeting IL5 accreditation with Army sponsor.

Performance – Warfighter Payoff

- **≥90% forecast accuracy** → eliminates stockouts.
- **40% fewer emergency deliveries** → ensures readiness.
- **30% reduced hostile exposure** → increases force protection.
- **<5 min COA generation** → enables real-time sustainment agility.

"Validated through a brigade-scale synthetic Army sustainment scenario using historical consumption logs, simulated convoy operations, and red-team threat overlays in MVP testing,"

Problem Statement

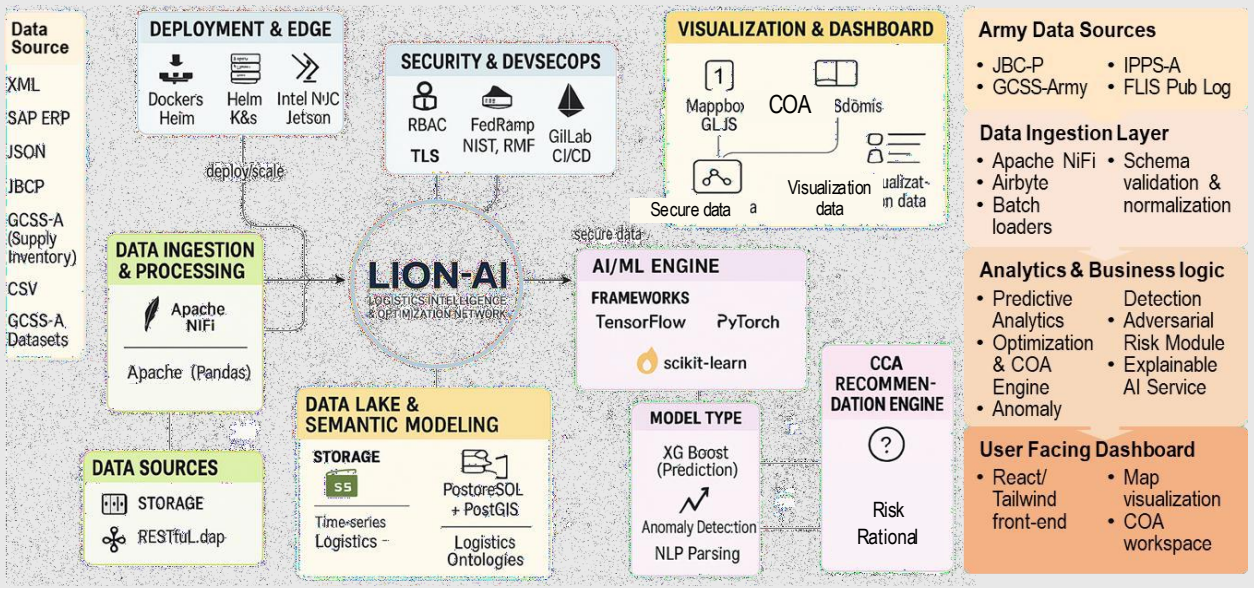
- Current sustainment is manual, siloed, and reactive (spreadsheets, separate systems).
- Commanders lack predictive visibility of fuel/ammo demands and convoy risks.
- Operational impact: delayed resupply, unplanned downtime, increased exposure to threats.

Mission Impact

- **6 hrs → 20 min** planning cycle improvement (brigade resupply).
- **40% fewer emergency deliveries** through predictive resupply alerts.
- **30% reduced convoy exposure risk** via threat-aware routing.
- **Operational Agility:** Commanders adapt sustainment plans in minutes.

Dual-Use Applications

- **Defense:** Combat sustainment, contested logistics, DDIL operations.
- **Commercial:** Disaster relief logistics, oil & gas field supply, port logistics.
- **Transition Path:** Next pilot demo FY25 Q4 with [named unit/POC]. Roadmap to SBIR Phase III / OTA for scale-up.

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Arch
SYSTEMS
Thank you

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Group
INNOVATION TO
EXECUTION

The Problem

Uncrewed System Tracking Technology:

INS technology enables uncrewed military systems to navigate and maintain positional awareness in GPS-contested environments.

The problem we solve?

The United States military frequently operates in GPS-contested environments where soldiers are unable to reliably track uncrewed systems and vehicles. Operations in caves, subterranean spaces, and other signal-degraded or contested environments significantly increase operational risk.

Our Solution

How we solve the problem?

Our technology enables real-time tracking of friendly uncrewed systems in GPS-contested environments by maintaining communication continuity and movement awareness through uncharted terrain, significantly reducing operational risk.

What makes us different from the competition?

i2E Group supports solutions from concept design through prototyping and scalable manufacturing. Our team works collaboratively to transition ideas into production-ready systems, with a focus on reliability and performance in austere environments, bringing deep expertise in RF design and manufacturing.

Our Impact & Technical Approach

Technology Readiness Level (TRL): 7- Built Alpha and Beta prototype for technology demonstration.

Manufacturing Readiness Level (MRL): 5-Built Alpha and Beta prototypes demonstrating technology's feasibility and manufacturability.

What is Our Technical Approach?

- The system integrates secured two-way voice and data communication with an Inertial Navigation System, GPS receiver, and accelerometer. These components are linked to provide situational awareness in GPS-contested environments. Future improvements will enable a transition to ASIC, supporting lighter-weight and more efficient equipment.

Performance

End-user payoff/expected operational value/new capability:

- Provides reliable tracking and coordination of friendly uncrewed systems in environments where GPS and conventional communications are contested.

Dual-Use (Commercial / Military) applications for the technology solution:

- **Military:** Applications operate in GPS-contested environments for drones and other uncrewed military systems.
- **Commercial:** Applications can primarily be utilized by disaster relief and emergency response teams in situations where reliable communication is critical and traditional signals are contested.

SCOUT CARD:
Uncrewed System Tracking Technology

i2E Group, LLC
POC: John Weir
336-307-0903
jweir@innov2exec.com

Problem

Uncrewed System Tracking Technology:

- INS technology enables uncrewed military systems to navigate and maintain positional awareness in GPS-contested environments.

What problem do you solve?

- The United States military frequently operates in GPS-contested environments where soldiers are unable to reliably track uncrewed systems and vehicles. Operations in caves, subterranean spaces, and other signal-degraded or contested environments significantly increase operational risk.

Solution Specifics

How do you solve the problem?

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Why you? What makes you different from the competition?

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Impact and Technical Approach

Technology Readiness Level (TRL): 7- Built Alpha and Beta prototype for technology demonstration.

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What is the Impact of your Solution?

The Uncrewed Systems Tracking Technology enhances mission efficiency while enabling more compact, adaptable solutions for use across military assets.

What is the Technical Approach?

- Secured 2-way Voice and Data Communication.
- Inertial Navigation System.
- GPS Receiver.
- Accelerometer.
- All linked in system to provide redundant and overlapping situational awareness.
- Future improvements will enable a transition to ASIC, supporting lighter-weight equipment.

Performance

End-user payoff/expected operational value/new capability:

- Provides reliable tracking and coordination of friendly uncrewed systems in environments where GPS and conventional communications are contested.

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Thank you!

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