



# ARTIFICIAL INTELLIGENCE INTEGRATION CENTER

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**AI Factory**



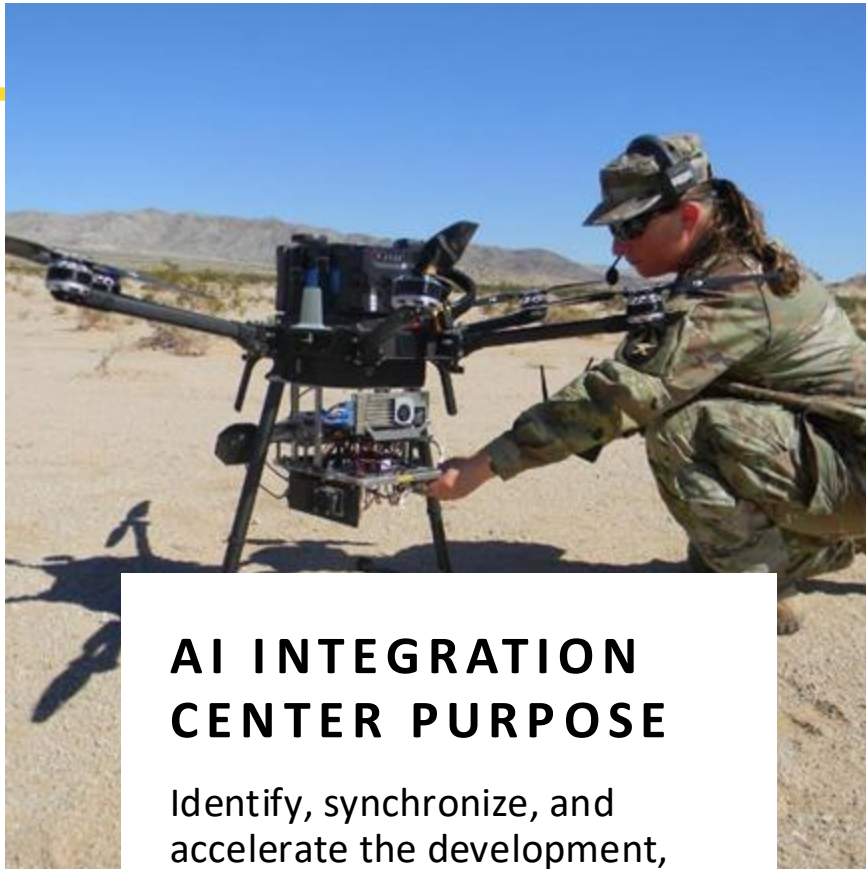
## AI2C Purpose and LOEs— Nested within AFC purpose

### AI INTEGRATION CENTER LINES OF EFFORT

- Set the Conditions (Infrastructure and Data)
- AI Workforce Development
- Modernizing our Platforms
- AI Governance and Partnerships
- AI Ethics

### ARMY FUTURES COMMAND PURPOSE

Transform the Army to ensure war-winning future readiness.

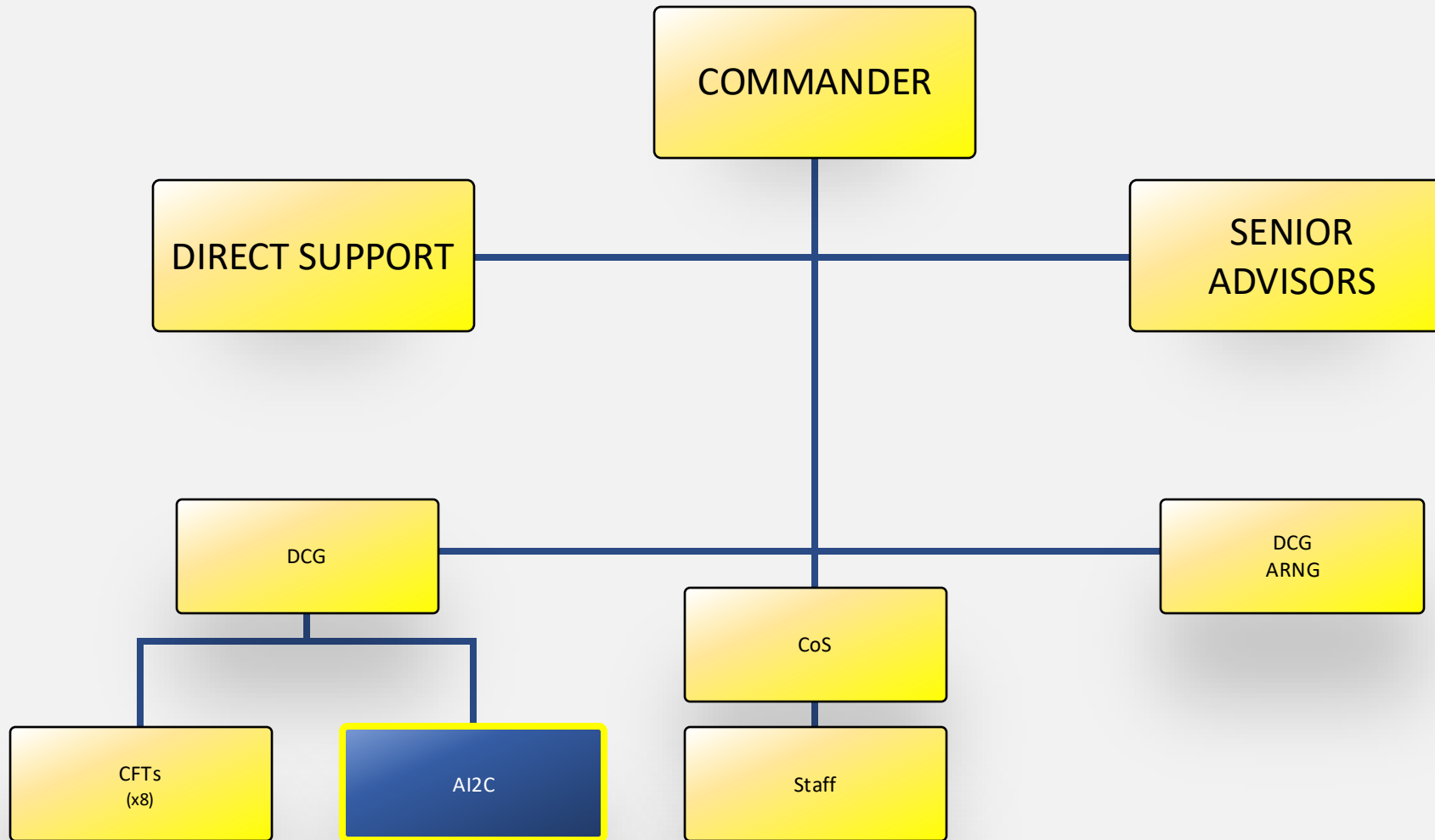


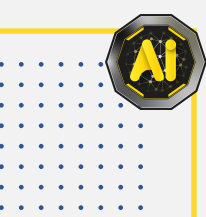
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Identify, synchronize, and accelerate the development, **integration**, and adoption of effective and timely AI solutions.

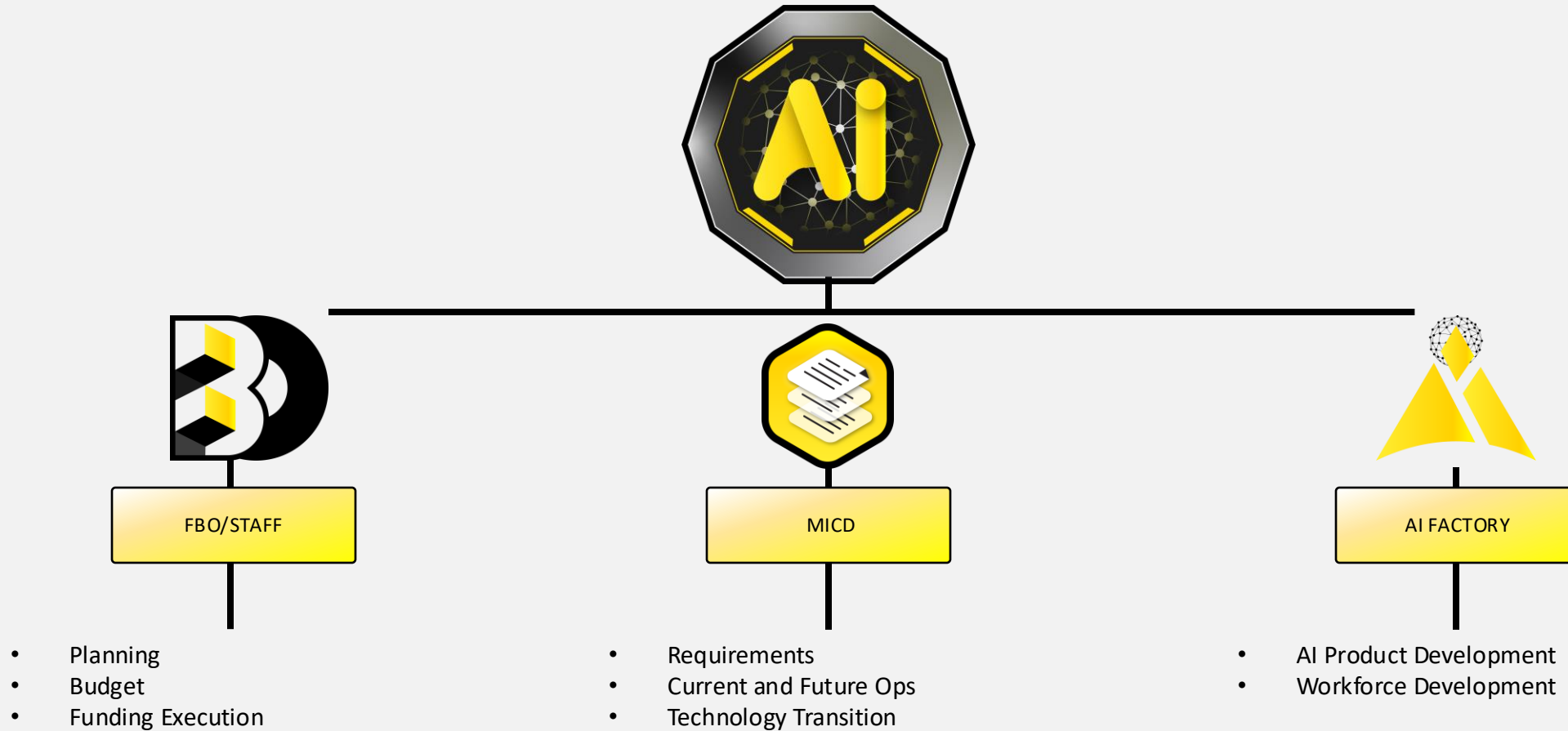


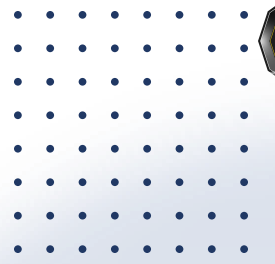
# Army Futures Command Headquarters





# Army Intelligence Integration Center Organizational Chart (AI2C)





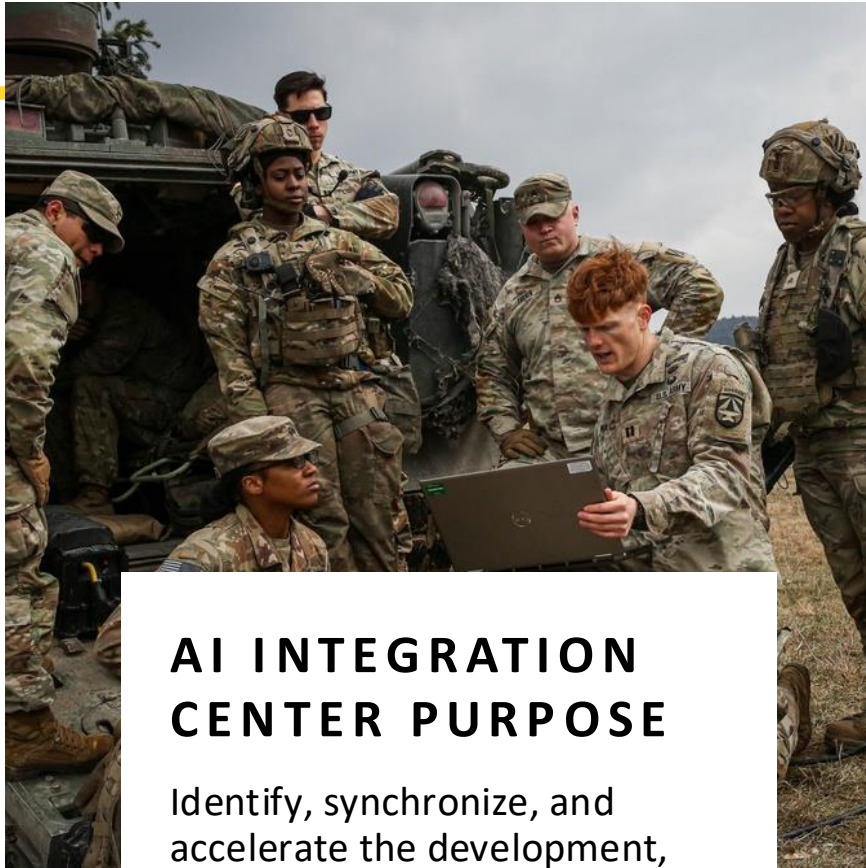
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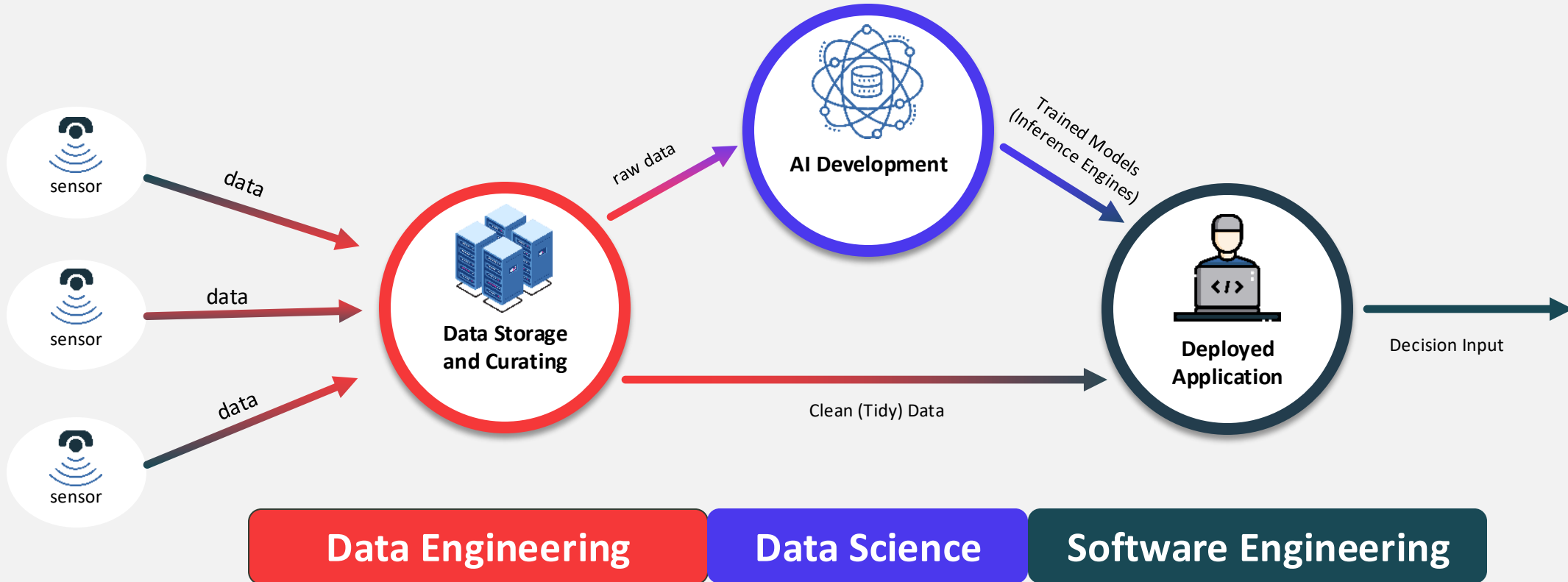


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Identify, synchronize, and accelerate the development, integration, and adoption of effective and timely AI solutions.



# LOE: 1 Set the Conditions (Infrastructure and Data)



**BLUF:** AI2C's AI Development Environment is designed to be scalable, modular, portable and open. It is suitable for a broad range of AI projects required by the Army.

- Common Tools
- Consistent Data Collection
- Enable AI Experimentation
- Repeatable Processes



## A I S T A C K

## ETHICS

AUTONOMY

HUMAN  
INTERACTION

PLANNING &amp; ACTING

DECISION SUPPORT

MODELING

MACHINE LEARNING

MASSIVE DATA MANAGEMENT

DEVICES

COMPUTING

## Establishing the Army's AI Foundation

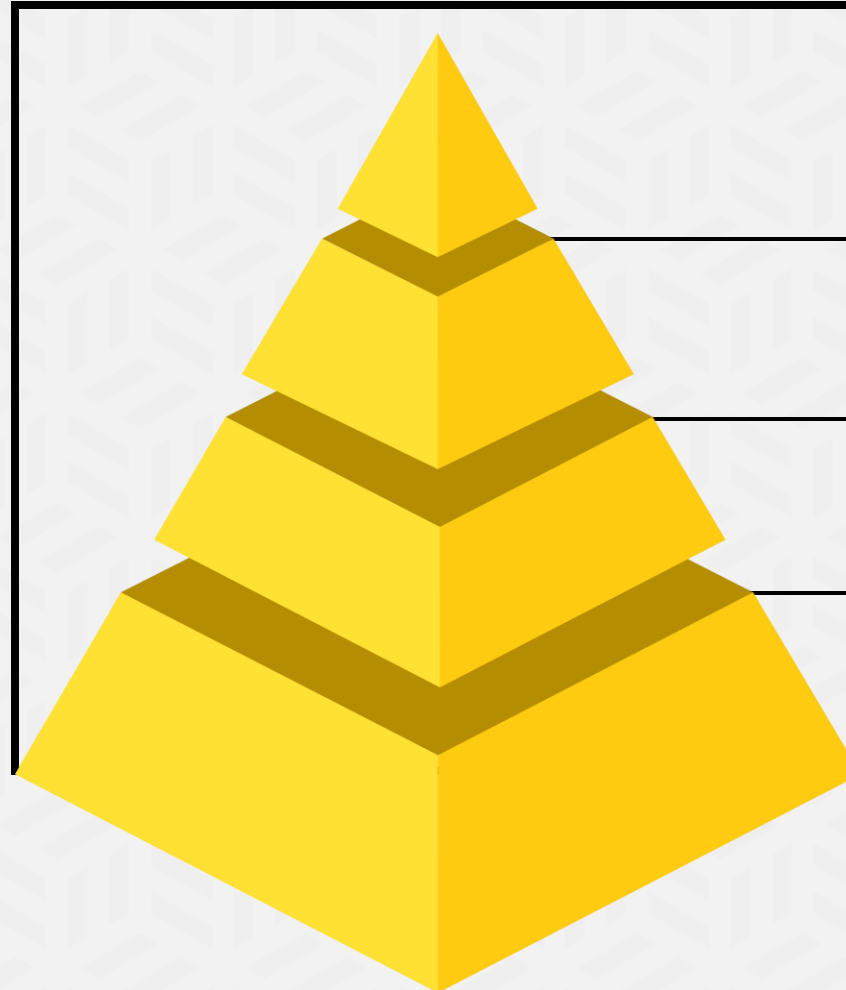
## THE AI STACK

- Using this framework as a basis ensures that AI capabilities provide a holistic approach analogous to doctrine, organization, training, materiel, leadership, personnel, facilities and policy (DOTMLPF-P).



# LOE 2: Workforce Development

Acquire, Develop, Employ and Maintain each category of the workforce to enable DOTML-PFP capabilities.



**Leadership:** Education for Leaders Who Employ Data Capabilities

**AI Professionals:** Graduate Education Data Analysts, Data Engineers, Autonomous Systems Engineers

**AI Technicians:** Cloud Architects (Fellowship/TWI/Utilization)

**AI Users:** Hybrid Delivery with On-site Trainers for Soldiers and Civilians Who Use Data for Decision and Process Support





# Development Teams



## OPERATIONAL DATA SCIENCE TEAM

### STAFFING (2-6 PAX)

#### DESCRIPTION

Focused on data specific product generation. Intended to be imbedded within operations working directly for a commander (i.e. S2, S3).

#### PROJECT TASKS

- Data science process
- Building data pipelines for applications
- Building ML models
- Building and deploying reports, basic web applications, dash boards



## MACHINE LEARNING OPERATIONS TEAM

### STAFFING (10-40 PAX)

#### DESCRIPTION

Intended to support large scale AI enabled software projects such as computer vision, autonomous vehicles, etc.

#### PROJECT TASKS

- Curating ML datasets for training
- Building data pipelines for applications
- Building ML models
- Managing and monitoring model deployment

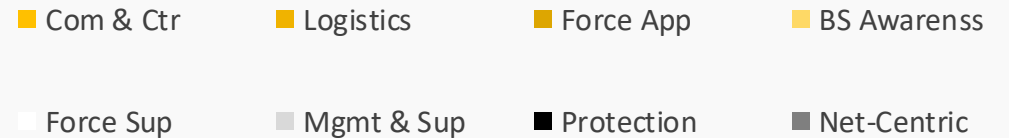
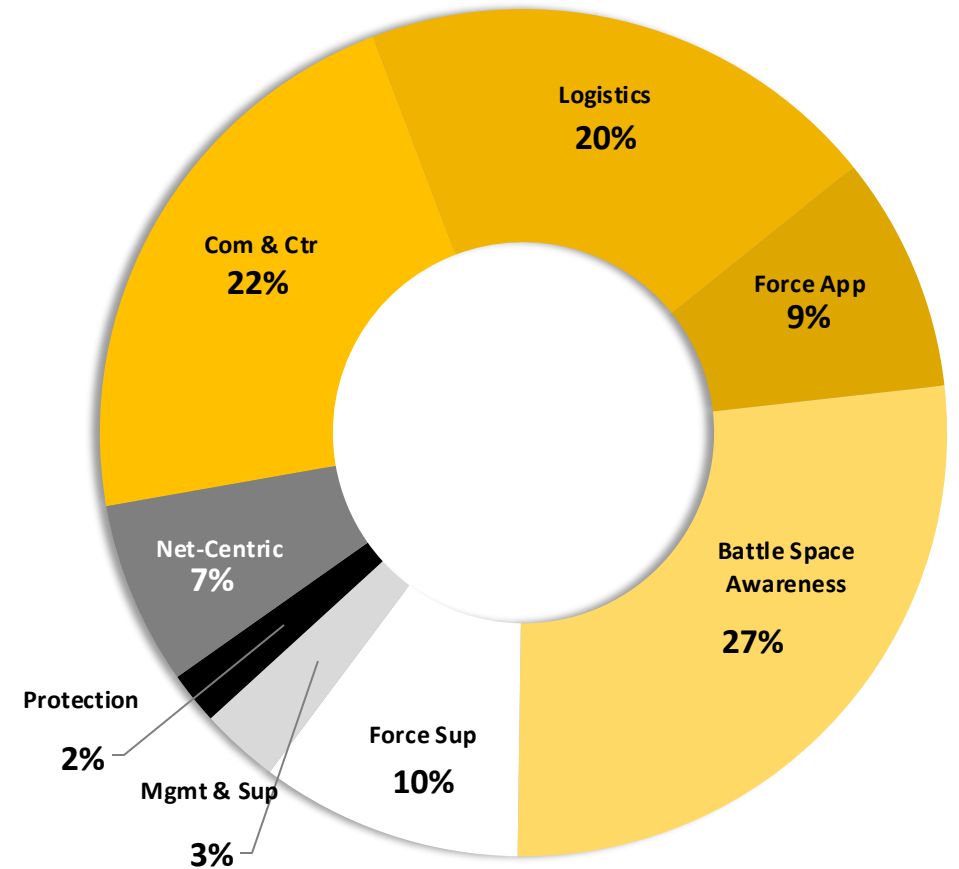
# LOE 3: Army AI Capability

TEAM OF PARTICIPANTS



- AROC Approved Initial Capability Document (JUN 21)
- Focused on near-peer adversary using the phases of MDO+
- Outcome was 90 Army AI specific Capability Gaps

AI GAPS BY JOINT CAPABILITY AREAS

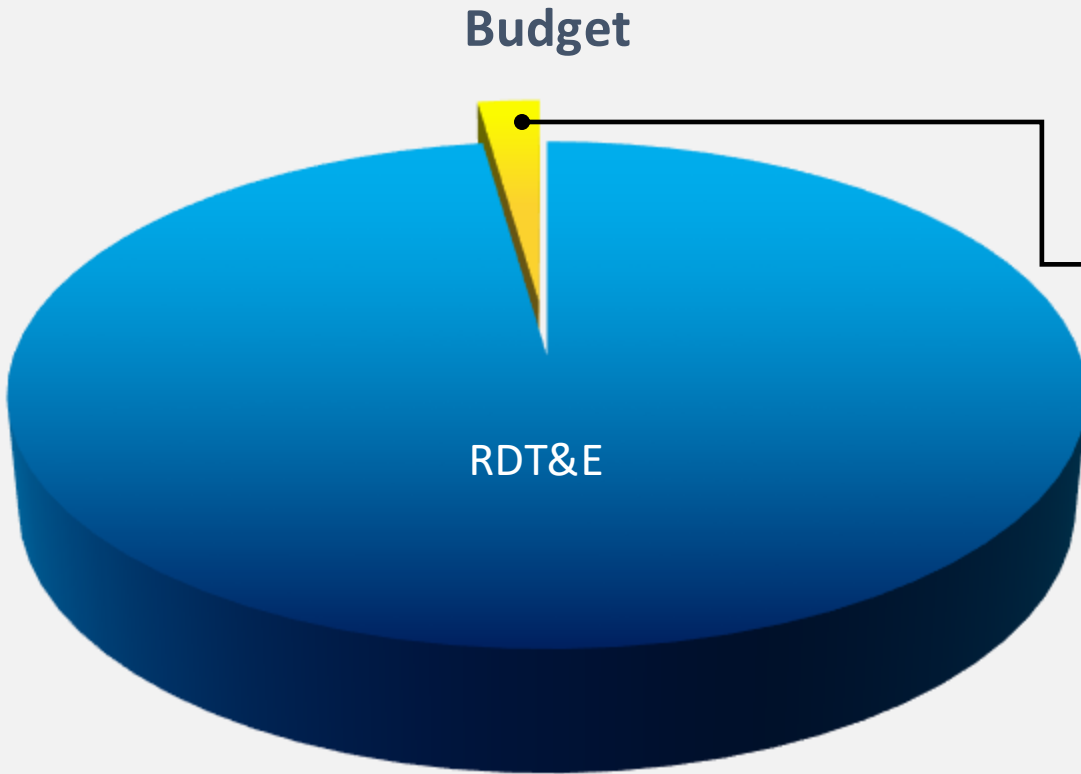




# CURRENT AI2C BUDGET

## AI Factory Budget

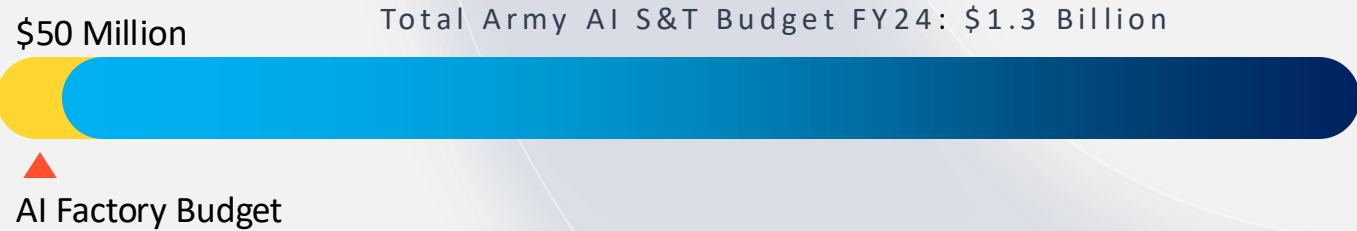
Projects are selected through deconfliction across the army and aligned with capability gaps. Candidate projects meet certain criteria that allow for rapid maturation.



### AI Factory

#### Characteristics

- Feasible
- Speed
- User Engaged/Operation Need

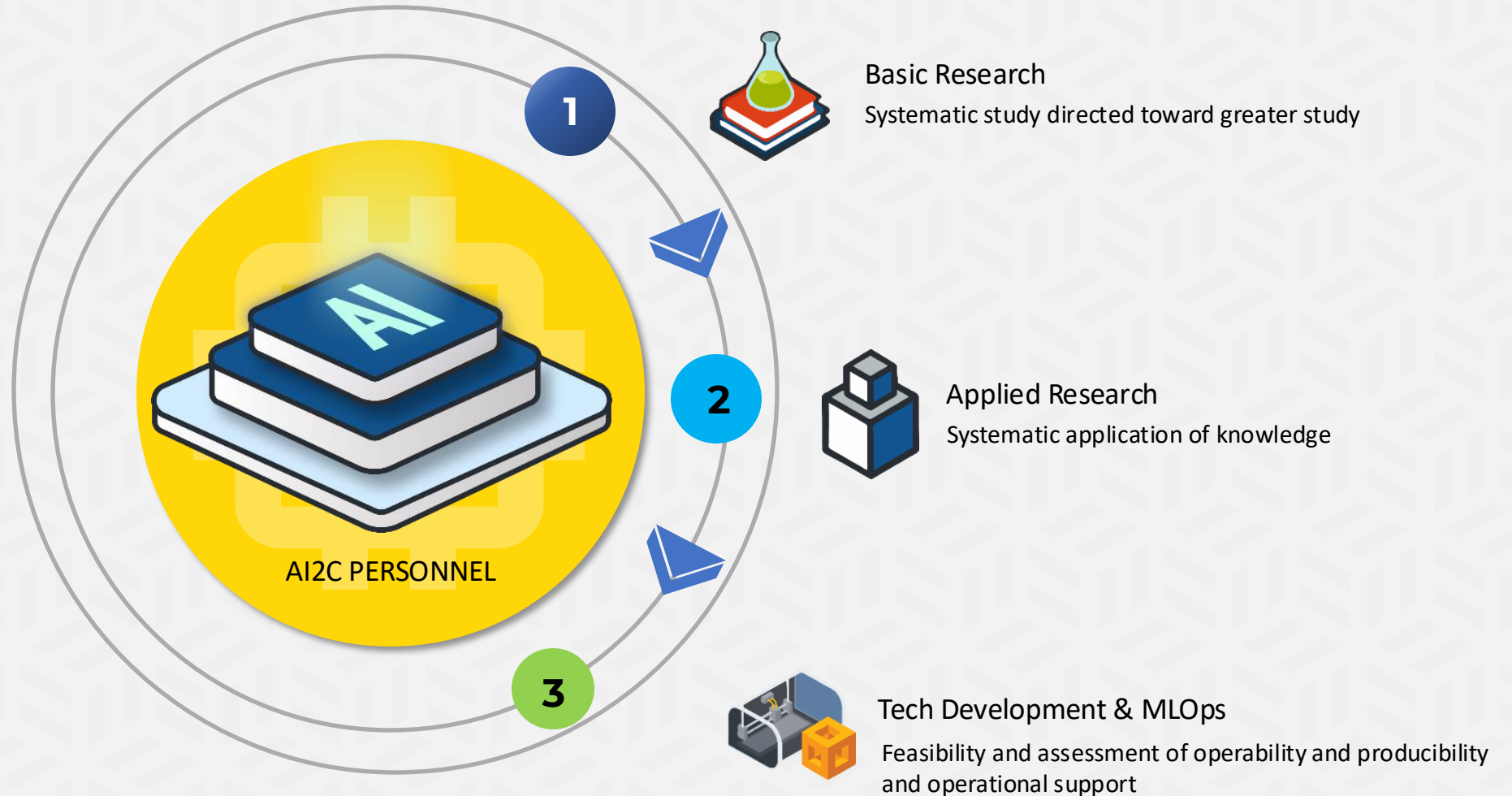


■ RDT&E ■ AI Factory



# Three LOE's

Project Development Collaboration Continues Life-Cycle from Research to Production

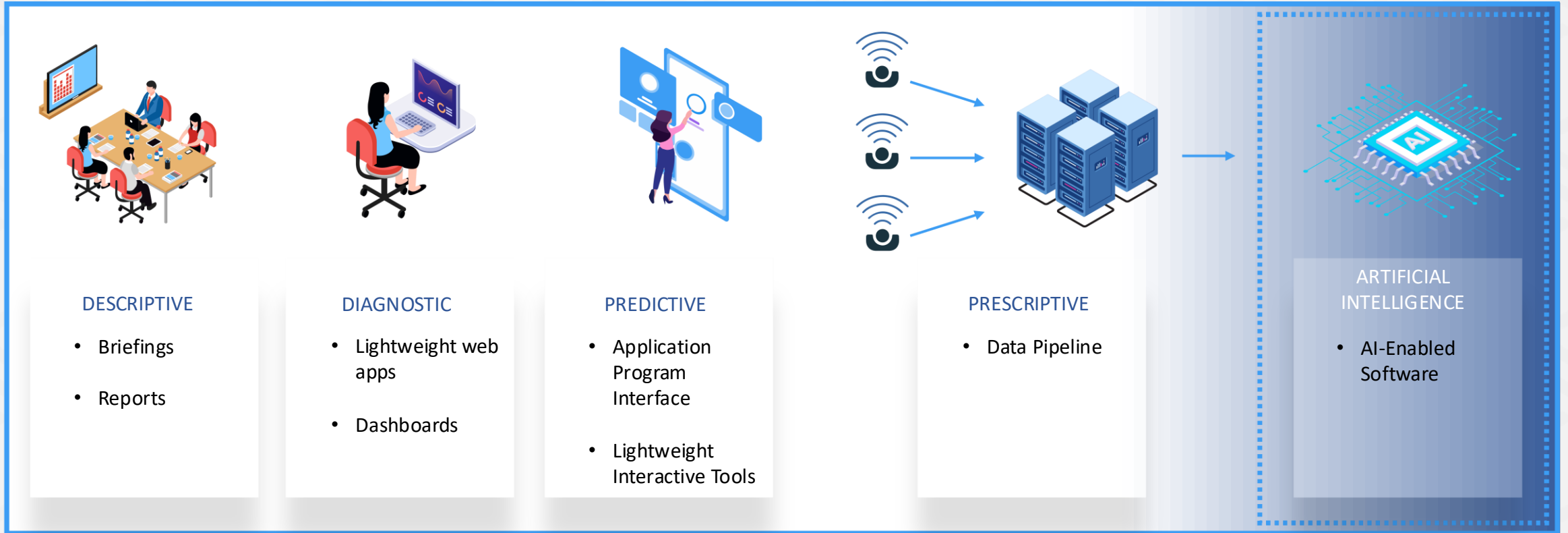




# Project Deliverables: Extracting Value and Insight from Data

Requires only a Data Science Team

Requires an ML Ops Team (Data Science and Software Development)



← Increasing Complexity, Time-To-Complete, and Automation →



# Data Science Maturity



Logistics resupply mission in contested environment

Decision

Action

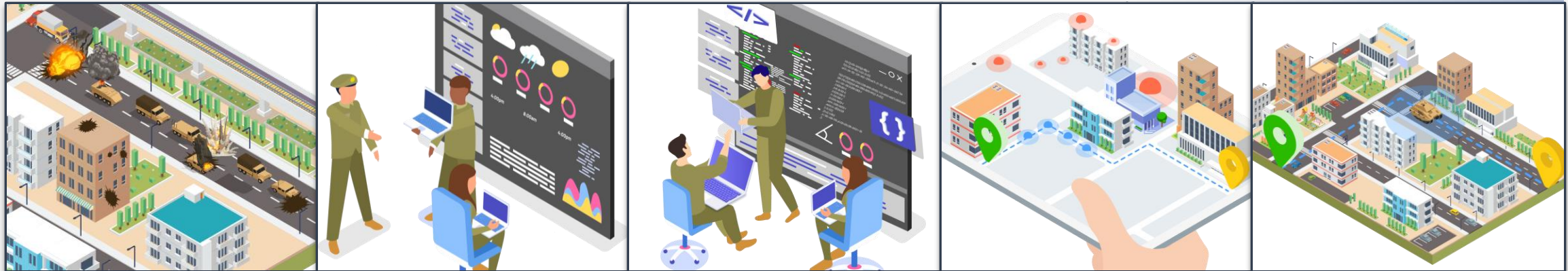
DESCRIPTIVE

DIAGNOSTIC

PREDICTIVE

PRESCRIPTIVE

ARTIFICIAL INTELLIGENCE



## Previous Mission

- People who have ran this mission
- Show me data of attacks in the past

## Intelligence

- Patterns of attacks over time
- Types of attacks
- Weather
- Dates
- Time
- Pattern of life

## Patterns and Plan of Action

- Building Algorithm that predicts where the attack might happen

## Best Route

- The data recommends the best possible route

## Autonomous Vehicle

- Vehicle predicts the route
- Autonomous vehicle drives that route



# AI2C Factory Portfolios and Projects



## Foundations and Theory (F&T) / Basic Research

- Edge Computing (Drone Corridor)
- Reinforcement Learning for Tactics/Operations
- AI Factory Individual Research
- AI Fusion/Distributed AI
- Phoebe - AI Development Environment (MLOps)
- ATR-MCAS NREC Research
- Social Cybersecurity/AI-Enabled Cybersecurity
- Integrated Product Team 2

## Infrastructure and Platforms (I&P)

- AI Development Environment (AIDE)
- Project Linchpin Support
- AI Development Environment (AIDE)
- Project Linchpin Support

## Robotics and Autonomous Systems (RAS)

- Machine Scale C2
- Shrike
- Peregrine
- Tactical Machine Learning/Schoolhouse ATR

## Operations and Intelligence (O&I)

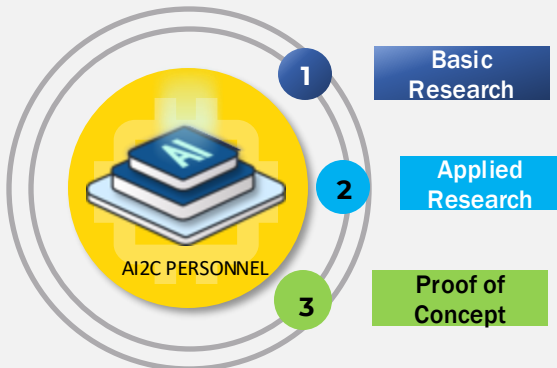
- AI Enabled COP/PANGEA
- Loadout
- CamoGPT
- Handmic

## Soldiers and Sustainment (S&S)

- Robo-RTCH
- Griffin (PMx)
- Recruiting
- VIRTUS (BCT AI)
- Griffin (PMx)
- A-MAP
- Centaur

## Special Operations and Cyber (SOF-C)

- Partner Assessment Workbench (PAW)
- Elucidate
- Total Translation (IDT)
- Automated Mission Analysis for Special Mission Units
- Counter/Adversarial Machine Learning
- Synthetic Network Data Generation

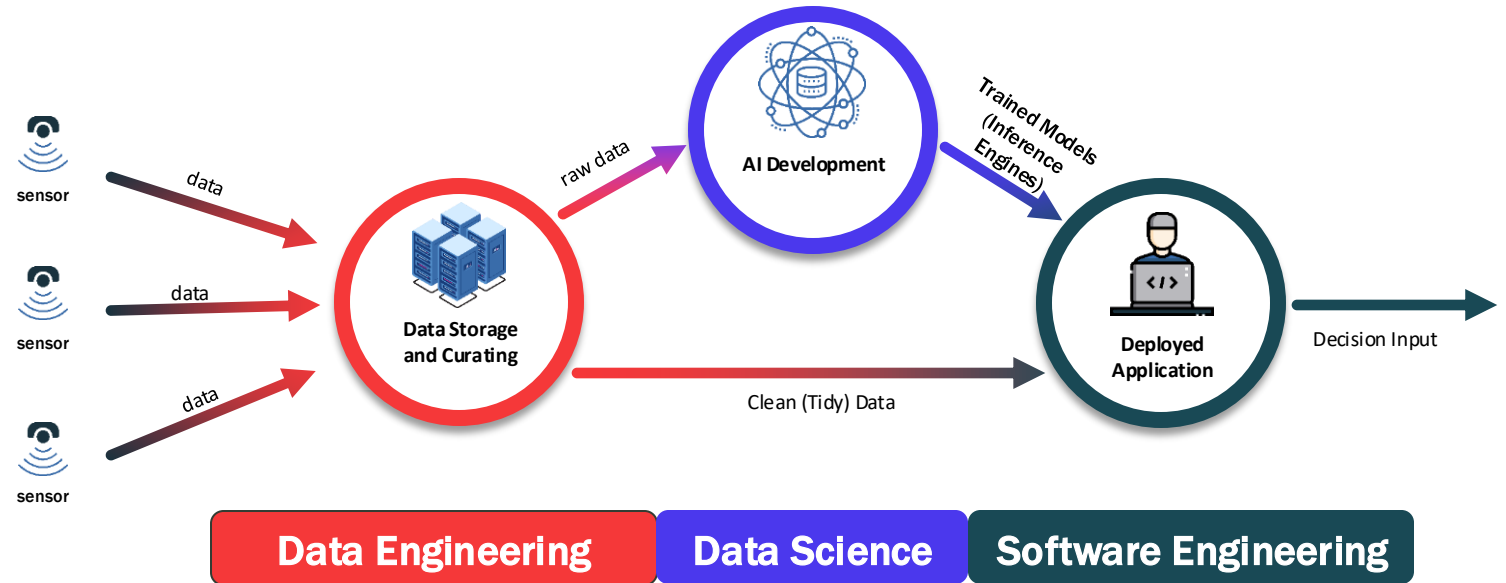


\*Scoping or Proposed\*



# AIDE

## A DOD Platform Dedicated to Data Science



### Tactical Edge-To-Cloud Proof of Concept

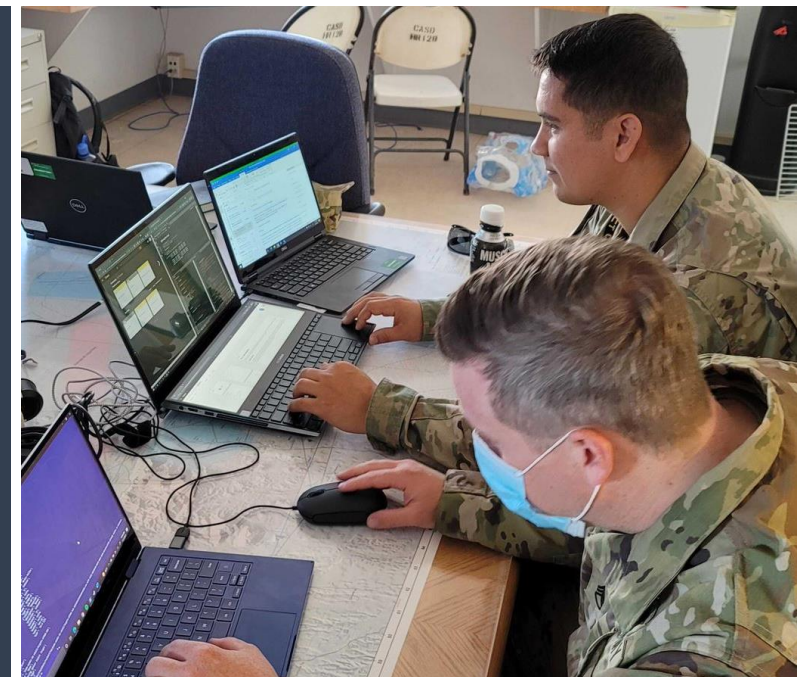
AIDE is a collaborative platform for the DOD's data workforce; this includes:

- Data Scientists
- Data Analysts
- Data Labelers
- Machine Learning

Enables the entire life cycle of a data project from initial data collection to final product deployment. Code, Data Models and Environments can all be shared with users on AIDE

Scalable, modular, portable, secure:

- Common Tools
- Consistent Data Collection
- Enable AI Experimentation
- Repeatable Processes







S u s t a i n m e n t

# Griffin (PMx)

## Increasing Operational Readiness Through Predictive Maintenance

- ▶ Maintenance insights when and where the war fighter needs them.

Griffin empowers the force by:

- Automating common maintenance tracking forms, lowering the number of personnel needed for support operations.
- Serving as a conduit to bring AI models to the tactical edge, enabling better cognizance of maintenance and supply trends.
- Ensuring persistent access to curated mission-pertinent data with or without wide area network connectivity.
- Lowering barriers to unit data automation and visualization creation.

AI Factory Overview

2024

**Griffin Analytics**

User: JohnTomaselli  
Access Level: Admin

**Daily Status Report**

Select Battalions: 1ST BATTALION 100TH AVIATION REGIMENT

Last CAMMS Sync: 1ST BATTALION 100TH AVIATION REGIMENT, 2022-03-23 03:24:06

Last PC Officer Update: 1ST BATTALION 100TH AVIATION REGIMENT, N/A

**Battalion Details**

Ready To Launch: NRTL: 9, RTL: 155

Current Fleet Status: FMC: 113, MTF: 1, NMC: 28, NMCS: 5, PMCM: 13, PMCS: 1, DADE: 1

Flight\_Hours: 487.00

(The aircraft's Serial Number will be green if a PC Officer has edited either STATUS or HOURS)

Show 50 entries

UIC	Model	Serial	Status	RTL	Date_Down	Days_Since_Down	ECD	ACFT.Hours
AB1CA0	AA-50B	005003	FMC	NRTL				7
AB1CA0	HC-10	021257	FMC	RTL				457
AB1CA0	RC-30	024607	FMC	RTL				1881



Griffin's utility comes from being a solution that delivers unique capabilities while also:

- Maximizing the potential of existing maintenance and supply data flows.
- Minimizing unit accreditation, network, and automation overhead.
- Packaging multiple Army-wide initiatives (i.e., movement to the cloud, increased automation, contested logistics) in one solution.





FORCE APPLICATION

# ATR-MCAS

## Aided Target Recognition from Mobile Cooperative Autonomous Sensors



### ▶ AI-Enabled Zone Reconnaissance

#### Cross Function Synergy

- Collaborative and distributed zone reconnaissance
- Scalable Platforms: Single to 100+
- Suitable for Homogenous or Heterogeneous platform sets
- Mission type and zone coordinates sent directly to platforms via ATAK, no explicit waypoints required



### ▶ Passive Navigation and Sensing

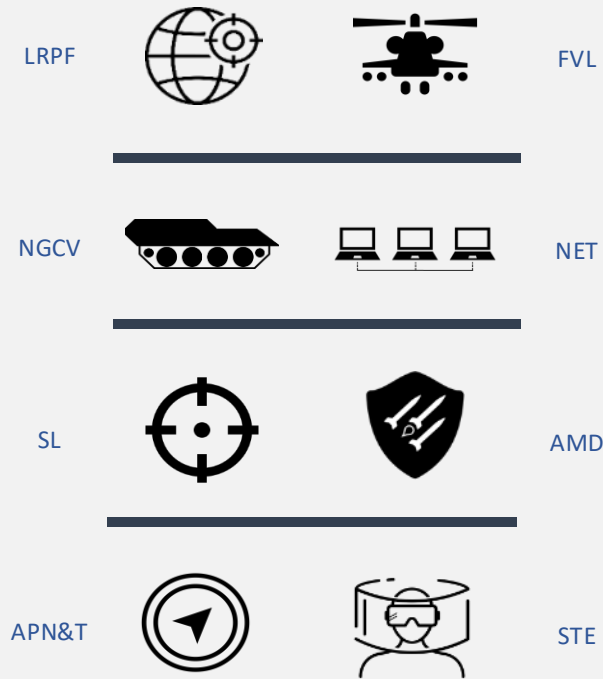
- No-to-low signature
- Multi-Spectral perception for both autonomous navigation and target detection
- Modular for diverse applications





# LOE 4: Set the Conditions for AI Integration (How)

## AAL & Cross-Functional Teams (CFTs)



**Strategic Partnership:**  
Leverage the **Army AI Hub** to better connect with the broader AI community.





Thank You

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