GLOBAL SOF:
THE ASYMMETRIC STRATEGIC OPTION FOR A VOLATILE WORLD

COL Rhea Pritchett

PROGRAM EXECUTIVE OFFICER, SOF DIGITAL APPLICATIONS

OVERVIEW

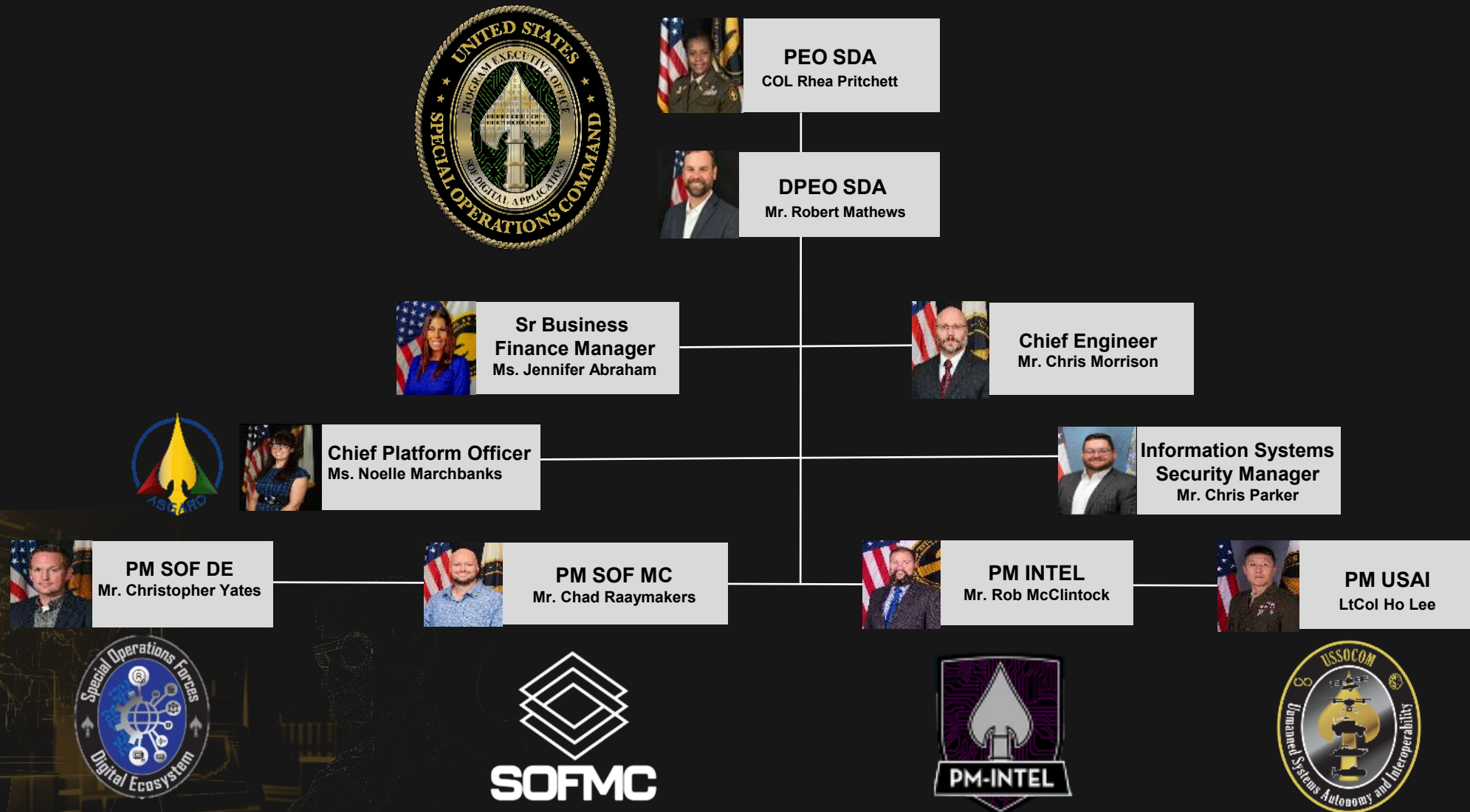SPECIAL OPERATIONS FORCES ACQUISITION, TECHNOLOGY, & LOGISTICS

PEOPLE I WIN I TRANSFORM

AGENDA

- Overview

  Digital Transformation

  PMO Briefings

  Getting Connected

  Questions

PEOPLE I WIN I TRANSFORM

PEO-SOF DIGITAL APPLICATIONS

Mission: Deliver Innovative, Relevant, Dependable Special Operations-Peculiar Software and Data Capabilities for the SOF Warfighter to Achieve Information Dominance And Win In A Joint Force Environment

Vision: Trusted experts for interoperable software and data solutions

Digitally accelerating the kill chain

PEOPLE I WIN I TRANSFORM

INTEGRATED SOFTWARE SOLUTIONS

Trusted experts for interoperable software and data capabilities

PEOPLE I WIN I TRANSFORM

CHIEF ENGINEER

DISTRIBUTION A: APPROVED FOR PUBLIC RELEASE

PEOPLE I WIN I TRANSFORM
MOSA PHILOSOPHY

APPROACH & PRACTICAL GUIDELINES

INFRASTRUCTURE & DEPLOYMENT

- **Hybrid Deployment:** Operate across multi-cloud, on-premises, and edge.

- **Cloud-Agnostic:** Ensure consistent operations with minimal managed services.

- **Edge Capability:** Use ruggedized servers and low SWaP-C devices.

- **Multi-Vendor:** Promote adaptability over full-stack reliance and vendor lock.

- **Open-Source:** Deploy for flexibility and cost savings.

- **COTS Integration:** Combine COTS and modified COTS with IP as needed.
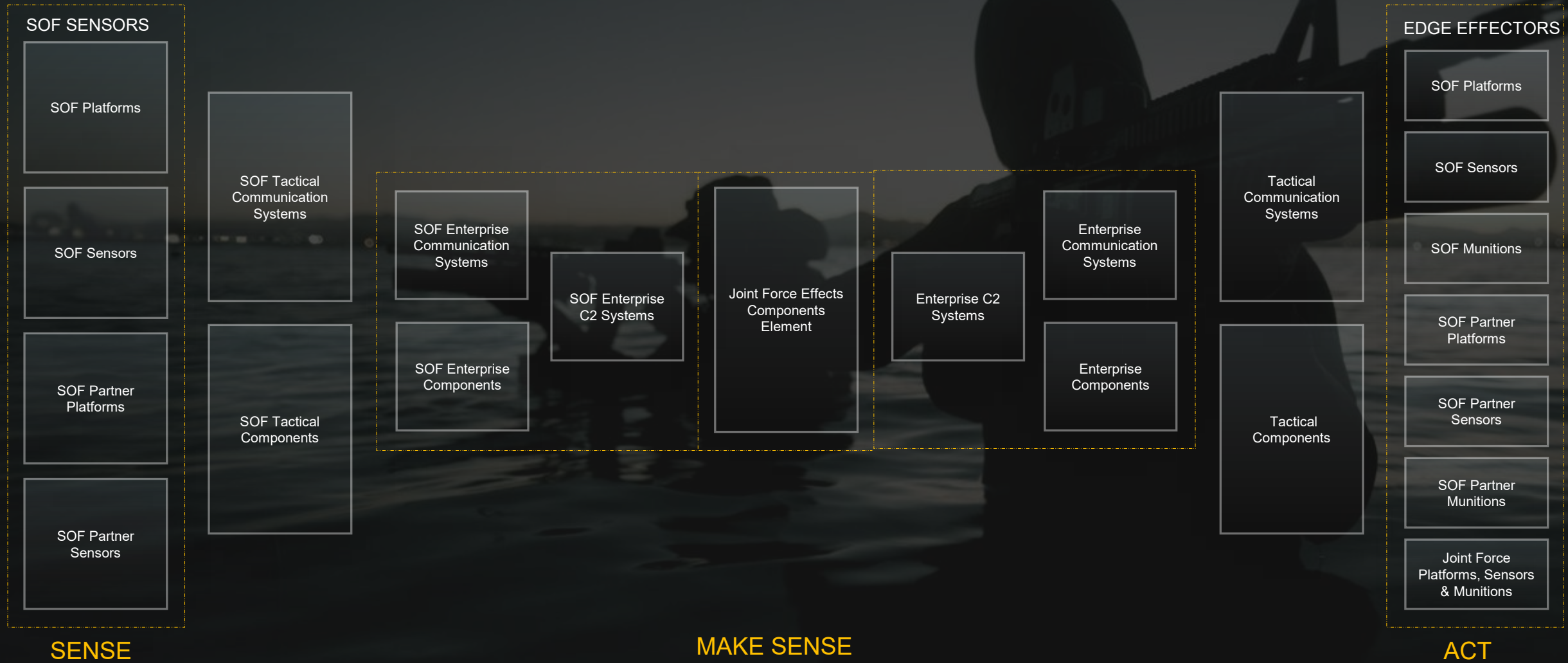
DATA CENTRICITY & INTEROPERABILITY

- **Messaging & EDA:** Employ multiple message exchange patterns and Event-Driven Architecture for efficient data flows.

- **Black Box:** Allow with industry standard interfaces (e.g., REST, gRPC, GraphQL, SQL).

- **Ontology Support:** Enable seamless multi-ontology compatibility.

- **Containerization:** Prefer containers, support VMs as needed.

- **Multi-level:** Ensure secure operations across all classification levels.

AI IMPLEMENTATION & SUSTAINMENT

- **Sustainment:** Choose low-cost, remotely maintainable solutions.

- **Lifecycle:** Enable resilience with remote updates.

- **AI Support:** Ensure compatibility for ATR, LLM, and LMM models, including edge deployment & DDIL operations.

- **Improvement:** Adapt architectures for evolving AI and mission needs.

PEOPLE I WIN I TRANSFORM
COMMON CORE ARCHITECTURE

SOF SENSORS

SOF Platforms

SOF Sensors

SOF Partner Platforms

SOF Partner Sensors

EDGE EFFECTORS

SOF Platforms

SOF Sensors

SOF Munitions

SOF Partner Platforms

SOF Partner Sensors

SOF Partner Munitions

Joint Force Platforms, Sensors & Munitions

SOF Tactical Communication Systems

SOF Tactical Components

SOF Enterprise Communication Systems

SOF Enterprise Components

SOF Enterprise C2 Systems

Joint Force Effects Components Element

Enterprise C2 Systems

Enterprise Communication Systems

Enterprise Components

Tactical Communication Systems

Tactical Components

SENSE   **ACT**

MAKE SENSE

PEOPLE I WIN I TRANSFORM

AREAS OF INTEREST

EDGE & MISSION CRITICAL OPS

- Continuous Delivery to the edge.
- Ops-Intel fusion for real-time situational awareness.
- D-DIL support for resilience.

AUTONOMOUS CAPABILITIES

- UxS autonomous behavior compliant with Rules of Engagement, Airspace Coordinating Measures, etc.
- All-domain (heterogeneous) interoperability and collaboration.
- Modeling and Simulation to garner AI trust.
- AI model cyber hygiene & scanning.

DATA MANAGEMENT & AUTOMATION

- Automated tiered storage in hybrid/multi-cloud environments to reduce cost.
- Parsing of complex unstructured documents to retain context for LLMs, search, etc.
- Mission partner sharing to enable seamless collaboration, including Data Centric Security (DCS) apps/tools.

SDA FOCUS AREAS

Open Systems Architecture

Cloud and edge runtime & platform independence

Data-Centricity & Data Virtualization

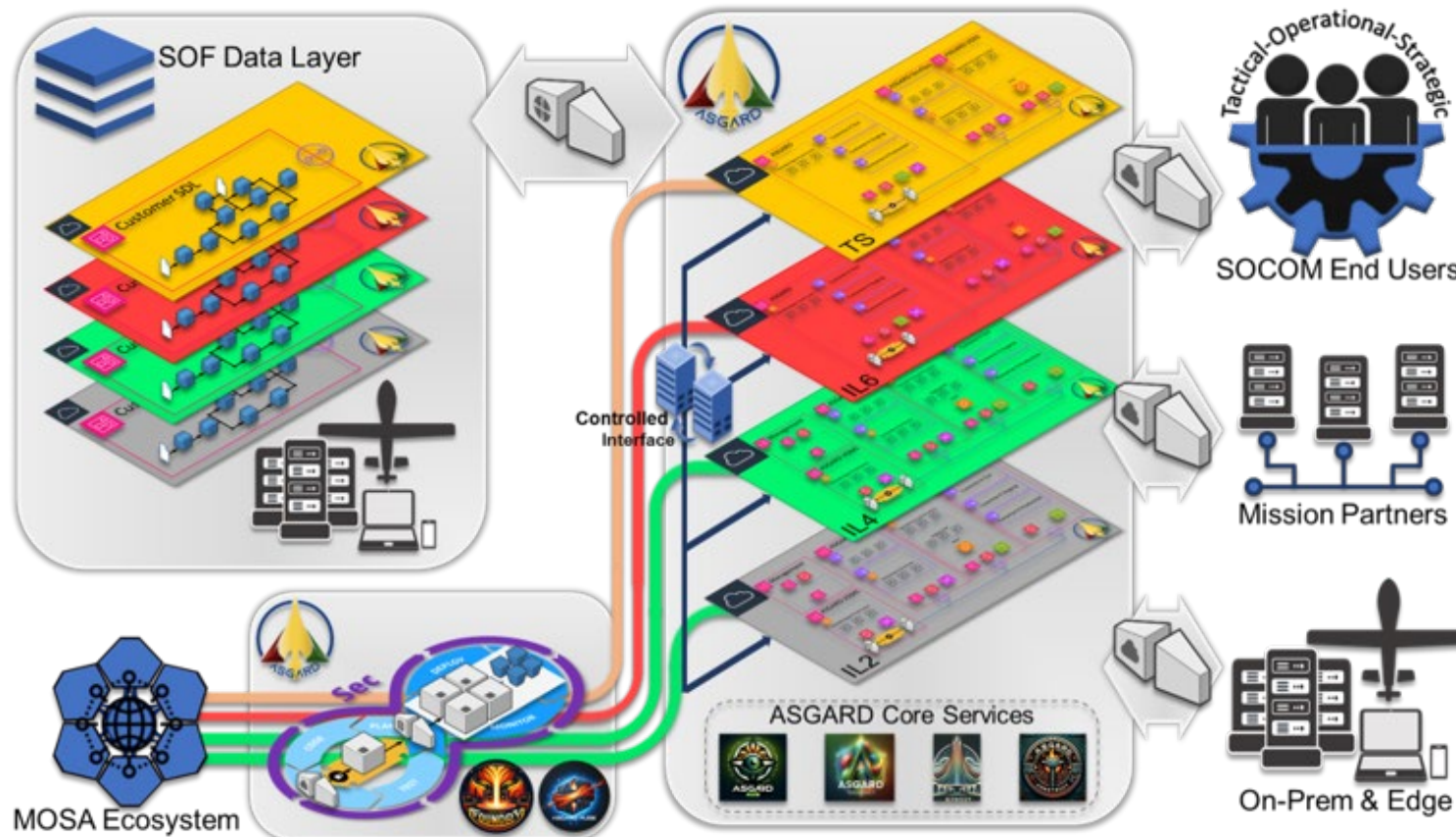Apps (& AI models) from Cloud to Edge

Ops/Intel Fusion (COP/CIP)

PEOPLE I WIN I TRANSFORM

CHIEF PLATFORM
OFFICER

DISTRIBUTION A: APPROVED FOR PUBLIC RELEASE

PLATFORM: DESCRIPTION

ASGARD serves as a platform for developers within PEO-SDA to provide software and model development, security, and deployment in multiple enclaves.

The main goal of ASGARD is to remove the administrative burdens from developers for repeatable security checks and documentation for authorities to operate to allow developers to focus on delivering value to the warfighter.

PLATFORM: STATUS

Fully staffed OTA to build and maintain our Platform as a Service Offering:

- Cloud-based hosted production environment
- Development environment in multiple impact levels
- Automated scanning pipeline with code/model quality and security gates
- Automation for ATO artifacts supporting a "Path to Production"
- Infrastructure as code with secure containerization
- Virtual desktop alternatives
- Data transformation services
- Data hosting
- Secure data transfer service
- Digital Engineering Tools
- ML Model Scanning Tools
- Collaboration Tools
- SAFe Agile Events

Not currently a Program of Record – supporting PORs within PEO SDA

PLATFORM: AREAS OF INTEREST

DevSecOps
- Software test automation
- Software lifecycle management
- AI-assisted developer platforms with best practice guidance
- Secure over the air updates for software
- Responsible ML Ops
- Self-healing digital systems

Data
- Smart data storage tiering
- AI-assisted data on-boarding and data modeling

Enabling Infrastructure
- AI/ML compute accelerators for hybrid cloud/on-prem
- Condition aware, smart hybrid infrastructure
- Digital engineering best practices
- Process automation

PEOPLE I WIN I TRANSFORM

Program Manager

SOF Mission Command

14

SOFMC: DESCRIPTION

- **Combined program office for MCS/COP and SOMPE**
  - Tackling same problem: data flow between echelons
- *Still* **a System of Systems providing SOF Situational Awareness and advanced insights for more effective decision making from tactical to strategic echelons**
  - Advanced geospatial interfaces that visualizes the Command's data in a multitude of ways
  - Backend data and application architecture that takes hundreds of thousands of data points on a map and creates context from pure content

Plus:

- **Air Mission Planning and Execution**
  - Air Mission Planning (Nyx)
    - Replacing legacy software with modern software that emphasizes user centered design
    - Rapid deployment of new software capabilities
- **Tactical Mission Planning and Execution**
  - Largely Ground and Maritime via TAK based capabilities
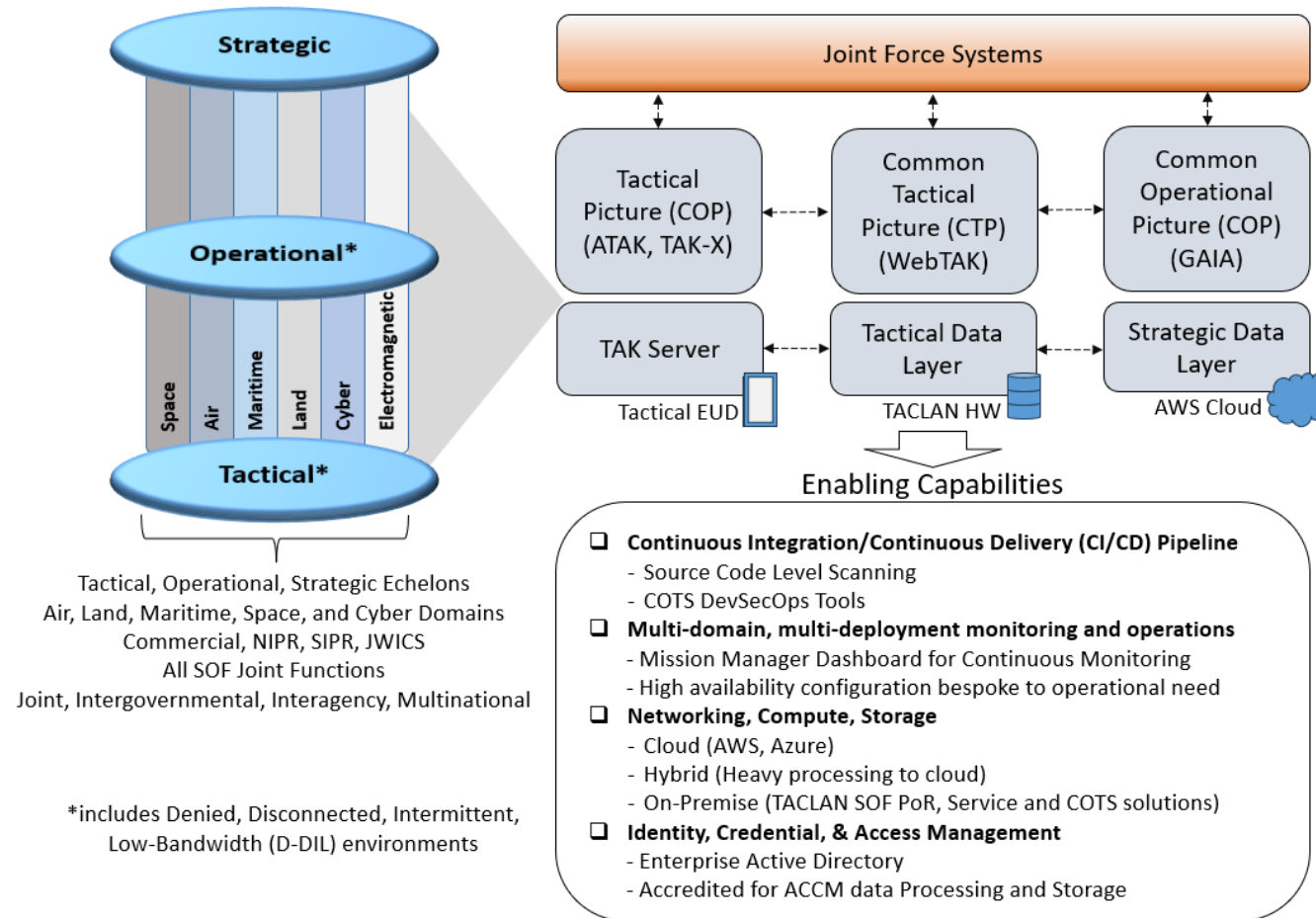   - Gov't Owned Software
    - SOF-peculiar TAK plug-ins

SOFMC: STATUS

- Operational deployment of core capabilities across SOF Enterprise
- Codification of Deployment "flavors" to enable tailor-ability and repeatability
- WebTAK OASIS maturation, expansion of features and partners (Army PEO-C3N, TAK Product Center)
- Hardened security posture; implementing C-ATO w/Source code scanning included

SOFMC: AREAS OF INTEREST

- **WebTAK OASIS Plug ins**
- **Generative AI for reduction of operator cognitive burden**
- **Down domain capabilities**
- **Automated "smart" data routing**
- **TAK Plug-ins and integration with upstream data sources/COP tools**
- **Applications to integrate data from other SOCOM/Joint Force programs**
- **Capabilities to enable scalability to resolve TAK-server saturation issues**
- **Strategies for inference at the edge**
- **Software Applications need to be:**
  - Highly Available
  - Secure from the outset (CVE Remediated)
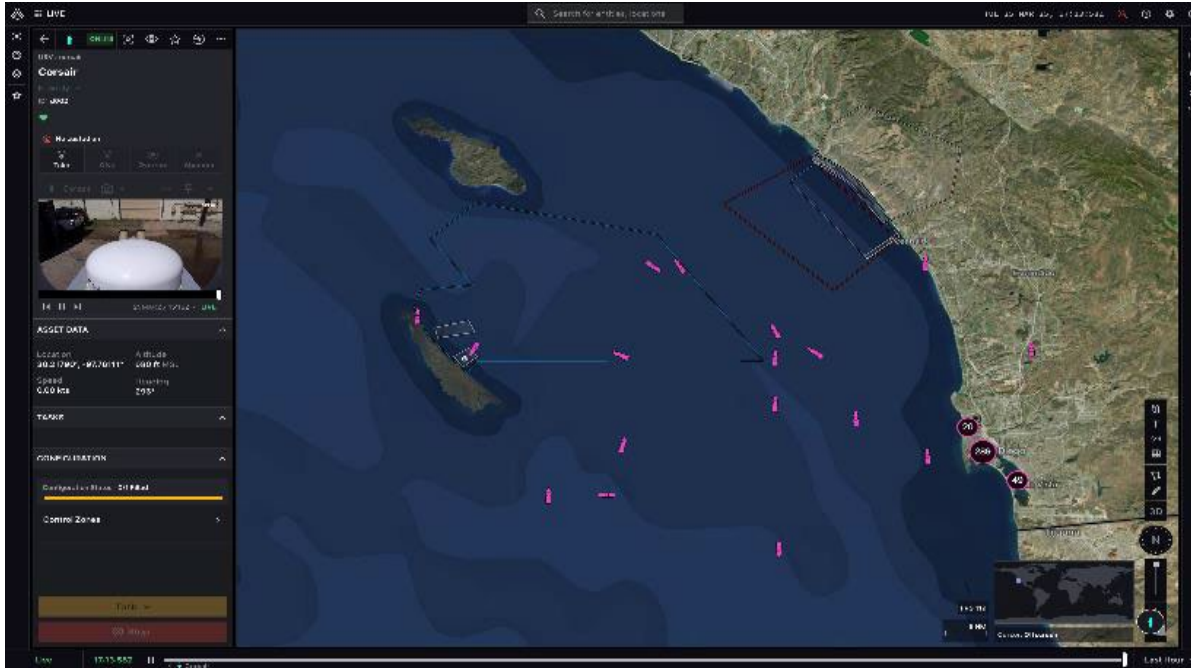 - Platform Agnostic
  - K8s Ready with Helm Charts

PEOPLE I WIN I TRANSFORM

Program Manager Unmanned
Systems Autonomy
& Interoperability

PEOPLE | WIN | TRANSFORM
UxSAI: DESCRIPTION

- Develop collaborative autonomy software utilizing artificial intelligence (AI), machine learning, and enterprise architecture to significantly improve SOF manned / unmanned teaming at the tactical edge

- Maximize the ability of UxS to broaden the kill web, shorten the kill chain, and enhance capabilities for command and control, communications, computing, cyber, intelligence, surveillance, reconnaissance, and targeting

- Provide the software infrastructure, capabilities, and accreditation process for the deployment of software at the speed of relevance
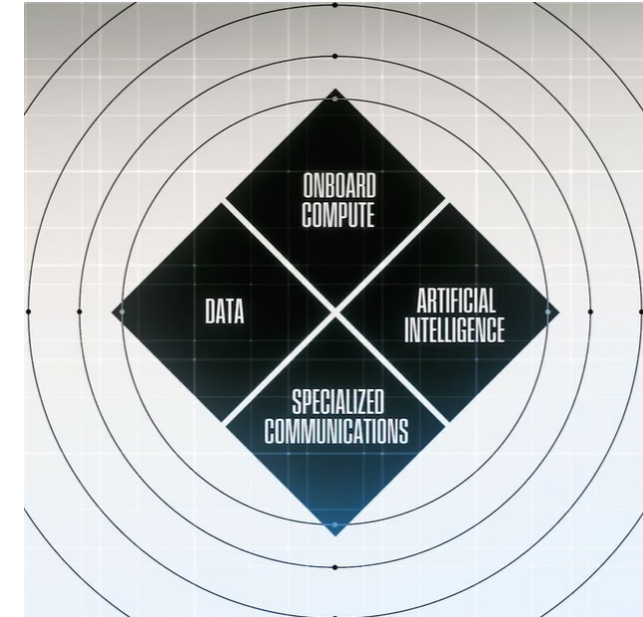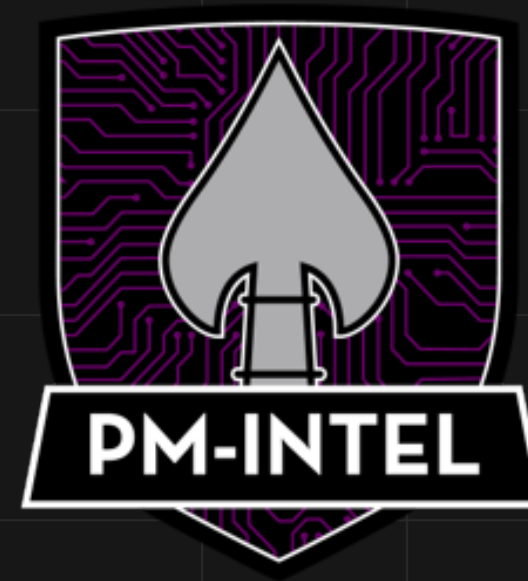
UxSAI: STATUS

- **Anduril is the systems integration partner; also working with academia and warfare centers**

- **Entered Execution phase of the Software Acquisition Pathway**

- **FY25 focused on two lines of effort:**

  - Collaborative Heterogenous Autonomy Operations Software (CHAOS) development

    - Enable a swarm of collaborative autonomous unmanned systems in support of a variety of mission sets across air, land, sea

    - Continuous integration / continuous deployment (CI/CD) pipeline, implementing a development, security, and operations (DEVSECOPS) approach to software development

  - MVP/MVCR Product Development – Ground & Maritime capability

    - Automatic target recognition (ATR), mission autonomy, Command & Control, Over-the-Horizon Targeting (OTH-T)

UxSAI: AREAS OF INTEREST

- Modular open systems architectures to enable growth and interoperability

- Modeling and simulation

- AI Test & Evaluation

- Collaborative autonomy executed by multiple unmanned systems to perform an ISR-T mission

- Multiplatform MLOPS capability

- Automatic target resolution MLOPS (edge perception) software solutions

- Onboard computing for edge-based intel processing

PROGRAM MANAGER

INTELLIGENCE

- **PM-INTEL PORTFOLIO CONSISTS OF 3 BRANCHES:**

  - Enterprise All-Source Information Fusion (ENT/ASIF): ENT/ASIF provides interoperable All-Source Information Fusion at all SOF echelons connecting Intelligence and Operations analysts to data sources in an advanced analytical tools environment used to produce the "common intelligence picture" in support of situational awareness for planning and executing of SOF missions.

  - SOF Geospatial Intelligence Imagery Processing, Exploitation and Dissemination (SGIP): SGIP supports both near-real time actionable reporting and visualization requirements in Garrison, & Forward locations , as well as a collaborative & coordinated process for SOF Intelligence, Surveillance, Reconnaissance (ISR) cycle functions.

  - Integrated Survey Program (ISP): ISP surveys and produces detailed tactical planning data of all key US Diplomatic facilities and select vessels, ports & harbors and supports National requirements under CJCS CONPLAN.

INTEL: STATUS

- **ENT/ASIF** is in the Execution phase of the Software Acquisition Pathway and uses a modular open system architecture strategy and an agile software development framework
    - LLM tools/Data Scientists
    - Enhanced Domain Awareness/Mission Partner Sharing (MPS) tools
    - Training/Global System Engineers

- **SGIP** is a Major Capability Acquisition currently post Milestone C
    - Lockheed Martin is the Life Cycle Sustainment Manager for the program
    - Currently on the 4th year of a 5 Year IT System Admin Support Contract (This is NOT help desk support!)
    - Relies on GOTS/COTS Software and Hardware
    - Extend Captial Equipment Replacement schedules when practical

- **ISP** is a Major Capability Acquisition, currently post Milestone C
    - Relies on GOTS/COTS software and hardware
    - Currently on the 4th year of a 5 –year Production & Development Other Transaction Agreement

INTEL: AREAS OF INTEREST

- **ENT/ASIF**
  - Big Data Analytics / Leverage Advanced Analytics and Machine Learning OPS can bring to the table
  - Mission Partner Sharing
  - Common Intelligence Picture/Interoperable Data Layer

- **SGIP**
  - Enterprising capabilities
  - Process, Exploit and Disseminate Video at the Edge

- **ISP**
  - Leveraging COTS Mobile collection technologies in support of geospatial survey collection, production, and dissemination
  - Partnering with Other Government Agencies, vice "recreating the wheel"

- **All Three Programs**
  - Address Cybersecurity concerns
  - Rely heavily on feedback & inputs from Users to meet requirements
  - Need an Artificial Intelligence enabled workforce to reduce cognitive burden of the operator

GET CONNECTED

- **ESOF/Vulcan**
- **USSOCOM Small Business Office**
- **TAK.gov**
- **USSOCOM S&T BAA**
- **SOFWERX**
- **Exercise & Experimentation Events**
- **SDA Vendor Capability Form**

SOF WEEK PEO-SDA Vendor Capability

QUESTIONS

Contact:

USSOCOM SOF AT&L, Engage SOF (eSOF) / VULCAN, eSOF@socom.mil

PEOPLE | WIN | TRANSFORM
DOING BUSINESS WITH SOCOM

SMALL BUSINESS HELP
POC: Ashley Farrier
ashley.farrier@socom.mil
osbp@socom.mil
813.826.9475

SUBMITTING IDEAS AND CAPABILITIES

Engage SOF (eSOF) on Vulcan
Pathway to present SOF relevant
capabilities to USSOCOM
POC: Kimberly Carberry
kimberly.r.carberry.civ@socom.mil
eSOF@socom.mil
https://www.Vulcan-SOF.com

SOFWERX (Unclass, open forum partnering
with industry to solve Warfighter problems)
https://www.sofwerx.org

TECHNICAL EXPERIMENTATION
https://www.socom.mil/SOF-ATL/Pages/technical-experimentation.aspx