GLOBAL SOF:

THE ASYMMETRIC STRATEGIC OPTION FOR A VOLATILE WORLD

Colonel Justin Bronder
PROGRAM EXECUTIVE OFFICER, FIXED WING

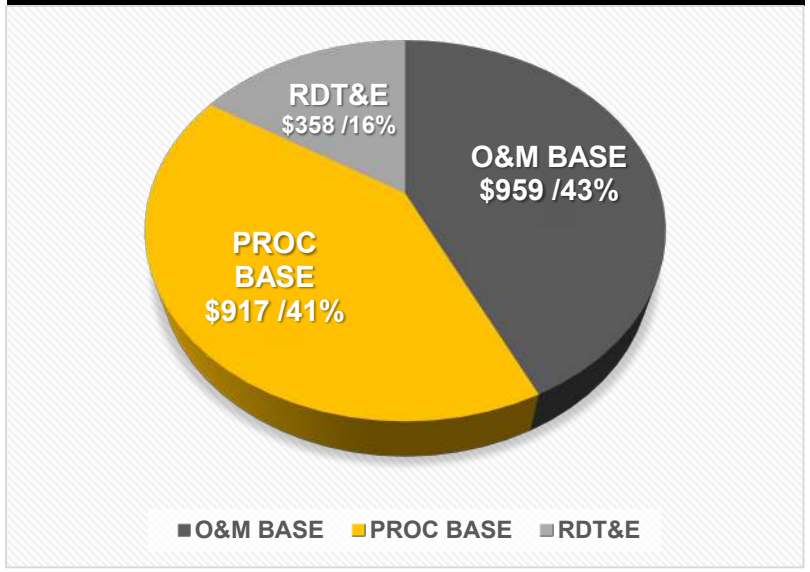
PEO OVERVIEW

SPECIAL OPERATIONS FORCES ACQUISITION, TECHNOLOGY, & LOGISTICS

PEO FIXED WING ACQUISITION TEAM

- Strike Division
- Mobility Division
- Airborne ISR & Non-Standard Aviation Systems Division
- Silent Knight Radar / CV-22 Division
- Emerging Technology Division
- Technical Director
- Program Integration
- Finance
- Contracting
- Acquisition Logistics
- Test Support Detachment 1
- Deputy Program Executive Officer Mrs. Margaret McCaskey
- Program Executive Officer Col T. Justin Bronder

FW FY25 TOA $2,234M



61 Assigned Personnel

- 9 Military
- 19 Civilian
- 33 Contractors

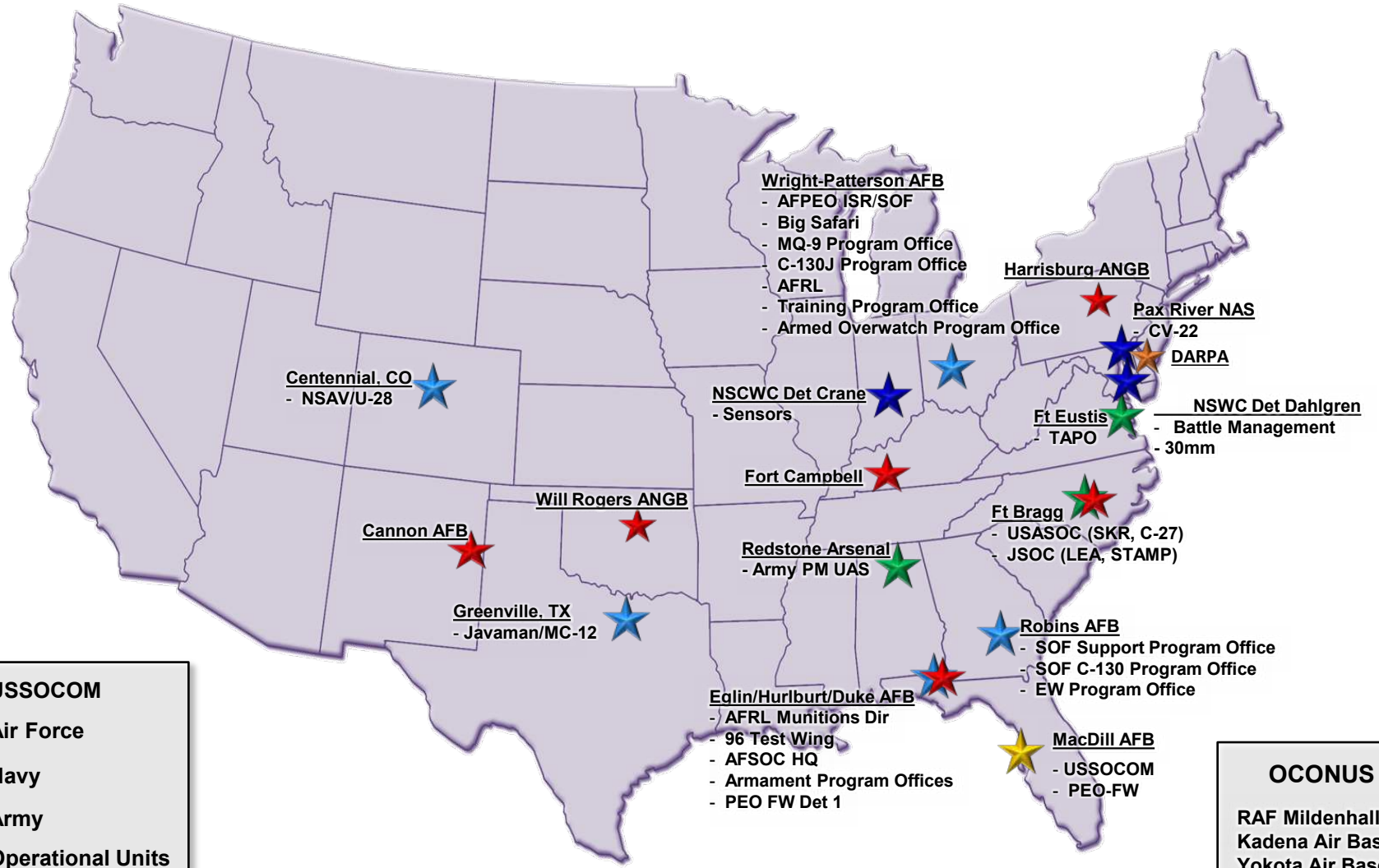
4-6 Temporarily Assigned GHOSTS

SPECIAL OPERATIONS AVIATION FW ENTERPRISE

Prime Industry Partners

BOEING
GENERAL ATOMICS
L3HARRIS FAST. FORWARD.
LEONARDO
LOCKHEED MARTIN
NORTHROP GRUMMAN
PARRY LABS
Raytheon Technologies
Honeywell
SNC SIERRA NEVADA CORPORATION
leidos
TSC TECHNOLOGY SERVICE CORPORATION

Many Small Businesses



- USSOCOM
- Air Force
- Navy
- Army
- Operational Units
- Other

OCONUS

RAF Mildenhall UK
Kadena Air Base JPN
Yokota Air Base JPN

PROGRAM EXECUTIVE OFFICE FIXED WING (FW)

AISR / NSAS

MQ-1C Gray Eagle

MQ-9 Reaper

LEA

A2E

C-146A Wolfhound

U-28A

STAMP / DCH-8

MC-12W

C-27

MOBILITY

MC-130J Commando II

Airborne Mission Networking

Terrain Following / Terrain Avoidance

Radio Frequency Counter Measures

MC-130J Combat Talon III

STRIKE

AC-130J Ghostrider

OA-1K Skyraider II

Stand Off Precision Guided Munitions (SOPGM)

SILENT KNIGHT RADAR / CV-22

Silent Knight Radar (SKR)

CV-22B Osprey

EMERGING TECHNOLOGY

HSVTOL

Automation & Reduced Crew Workload

Collaborative Autonomy

DET 1

Pathfinder Events and Rapid Acquisition & Testing

OA-1K Test

SOPGM Test

AC/MC-130 Test

Training Systems

AISR – Airborne Intel, Surveillance, & Reconnaissance NSAS – Non-Standard Aviation Systems A2E – Adaptive Airborne Enterprise LEA – Long Endurance Aircraft

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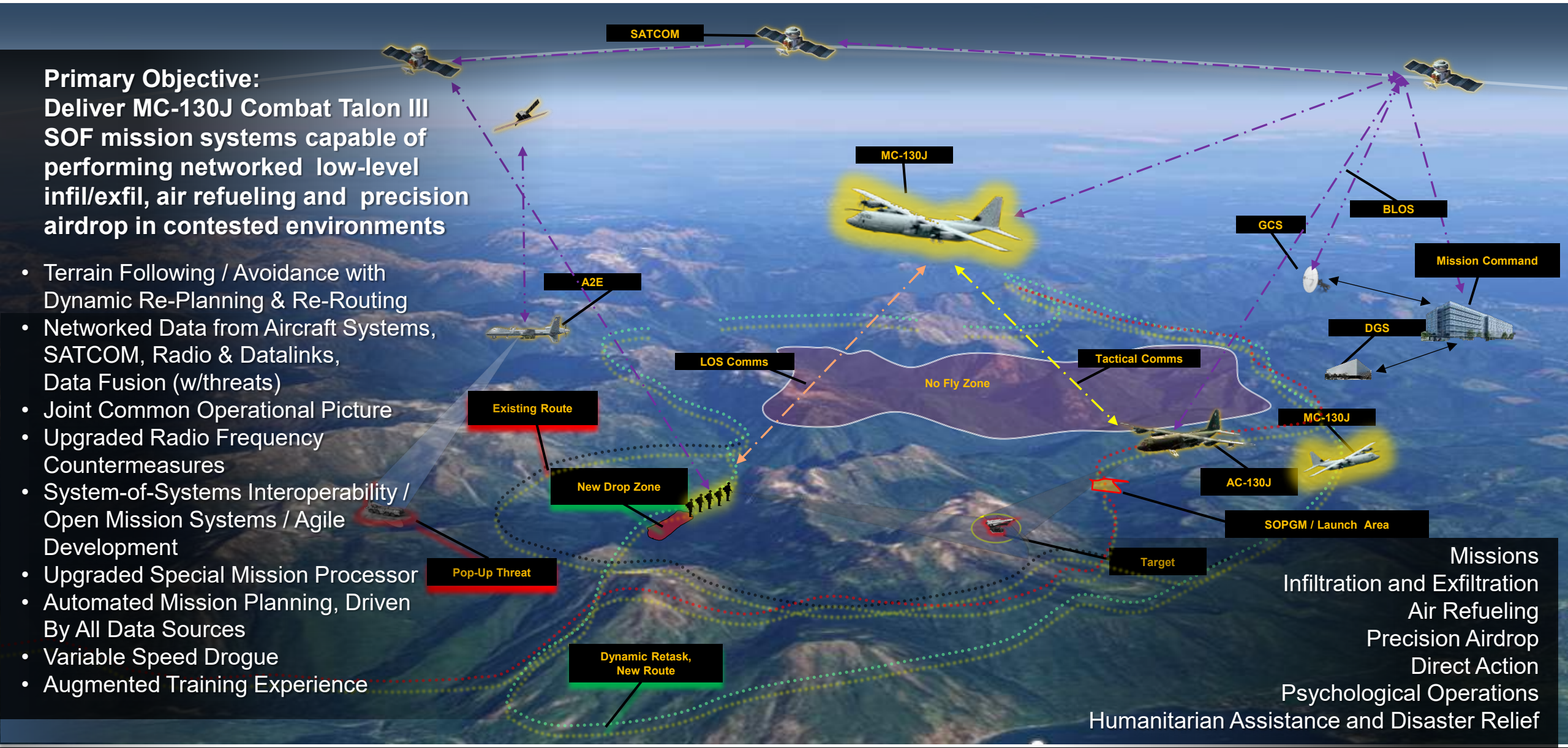
Lt Col Andrew Sturgeon
DIVISION CHIEF
MOBILITY

SPECIAL OPERATIONS FORCES ACQUISITION, TECHNOLOGY, & LOGISTICS

MOBILITY PORTFOLIO

Primary Objective:
Deliver MC-130J Combat Talon III SOF mission systems capable of performing networked low-level infil/exfil, air refueling and precision airdrop in contested environments

- Terrain Following / Avoidance with Dynamic Re-Planning & Re-Routing
- Networked Data from Aircraft Systems, SATCOM, Radio & Datalinks, Data Fusion (w/threats)
- Joint Common Operational Picture
- Upgraded Radio Frequency Countermeasures
- System-of-Systems Interoperability / Open Mission Systems / Agile Development
- Upgraded Special Mission Processor
- Automated Mission Planning, Driven By All Data Sources
- Variable Speed Drogue
- Augmented Training Experience



Missions
Infiltration and Exfiltration
Air Refueling
Precision Airdrop
Direct Action
Psychological Operations
Humanitarian Assistance and Disaster Relief

MC-130J CAPABILITY ROADMAP

CR-1

Fielded

Special Mission System (SMS)

- Special Mission Processor (SMP)
- Network File Servers

Defensive Systems Upgrades (DSU)

CR-2

In Integration & Test

Min-Viable Product (MVP)

Auxiliary Flight Deck Station (AFDS)

Airborne Mission Networking (AbMN)

Terrain Following/ Terrain Avoidance Radar (MCTF)

Radio Frequency Counter Measures (RFCM)

AbMN SW Updates

MCTF SW Updates

SMS Upgrade

NextGen SMP

Upgraded SOF Mission Processing

More Rapid Integration
- *Modular Open System Architecture*
- *Nonproprietary Interfaces*

Enhanced Sustainability
- *100% COTS*
- *Extended MTBF*

Increased Processing
- *Faster CPUs*
- *More Cores / RAM*

Hosts a Central Open Compute Environment

CR-3

In Development & Demonstration

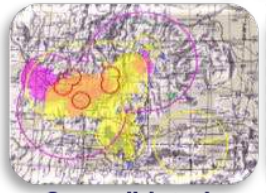
Phase 1

Tactical Mission Route Replanner (TMRR)

Federated

Tactical Flight Management System (TFMS)

Defensive Counter Measures (DCM)



Consolidated Situational Awareness

Phase 2

Auto

Upgraded FMS

Consolidated Control/ Response

Phase 3

Embedded Training (ET)

Simulated Mission Scenarios

Continued HW/SW development of future capabilities past Phase 3

Coordinated Release Cycles of Prioritized SW Updates
(AbMN, MCTF, RFCM, TFMS, TMRR, DCM, and ET)

MC-130J FUTURE NEEDS

Need to rapidly evolve to provide the SOF value proposition in contested / denied environments

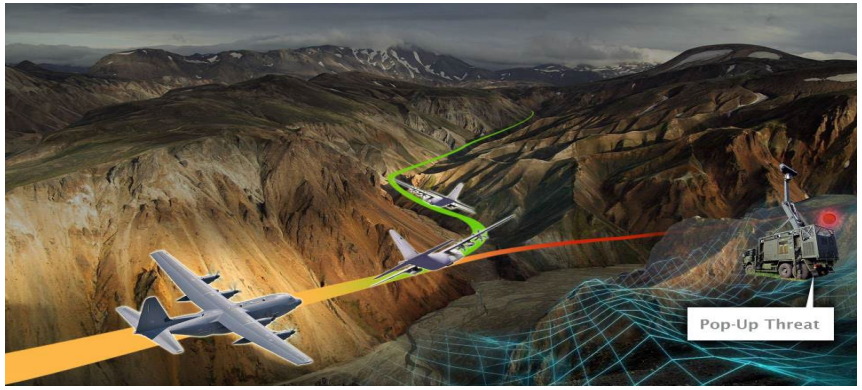
- Extended range and endurance for global reach
- Improved situational awareness and communication systems
- Advanced defensive systems to protect against modern threats
- Increased payload capacity for diverse mission sets
- Precision airdrop and landing capabilities

Key enablers to meet this challenge

- Technology to reduce the aircraft's radar and infrared signatures
- Assured Position, Navigation, and Timing – robust navigation
- Upgraded avionics and cockpit systems
- Enhanced cybersecurity measures

Areas of Interest

- Autonomous or semi-autonomous capabilities to reduce crew workload
- Artificial intelligence-assisted decision-making tools
- Next-gen communication systems for seamless data sharing
- Modular systems that can be quickly reconfigured



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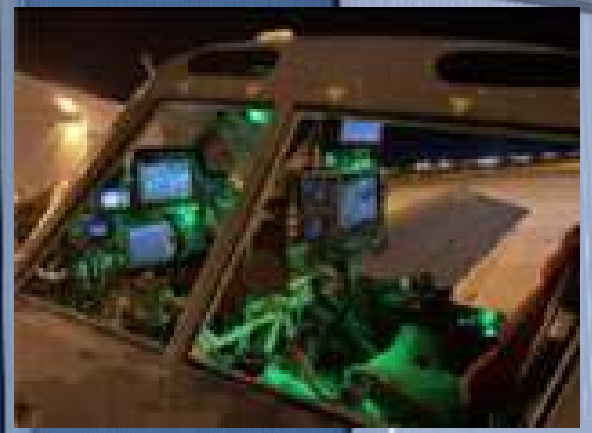
Lt Col Shawna Matthys
DIVISION CHIEF
INTEGRATED STRIKE PROGRAMS

SPECIAL OPERATIONS FORCES ACQUISITION, TECHNOLOGY, & LOGISTICS

OA-1K SKYRAIDER II

Capabilities

- Austere takeoff and landing
- Range and Endurance
- Two crew stations
- Open systems architecture
- Eight (8) external stores stations
- Multiple radios and datalinks
- Integrated Flight and Mission Management
- Multi-sensor HD Overlay and Control



Status

- 5x OA-1K aircraft delivered
- Over 1000 training flight hours accomplished
- Wing structurally reinforced for greater load-carrying capacity than commercial AT-802

Modular / Open baseline built on proven commercial airframe provides cost-effective multi-role platform with capacity for rapid reconfiguration tailored to mission need

STRIKE PORTFOLIO

SOF-unique aircraft and air-delivered precision effects, enabling Special Operations Air Components to see, sense, and strike globally

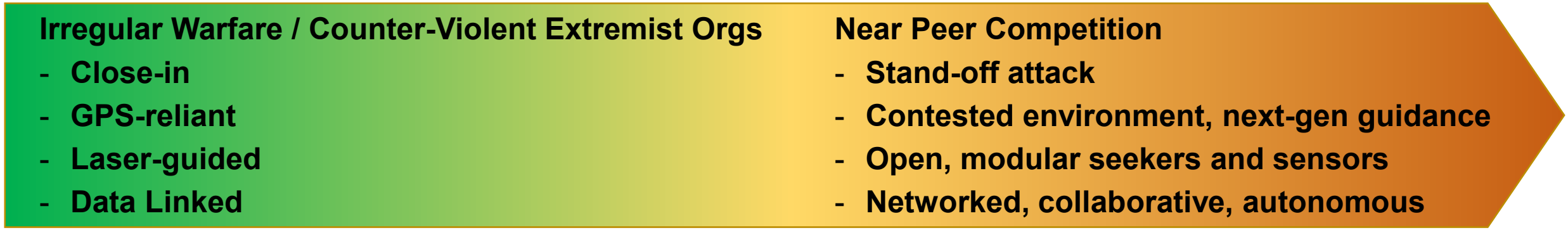
- **AC-130J Ghostrider**
  - Current: Precision strike package, defensive systems, 2x gun systems (30mm/105mm), 10 CLTs, wing wiring and weapon pylons improvements
  - Future: Deliver enhanced precision effects through AESA integration, mission optimization modifications & weapon modernization

- **OA-1K Skyraider II**
  - Current: EO/IR FMV, APKWS, Hellfire, LOS/BLOS comms
  - Future: Modular sensor payload & weapon enhancements
- **Stand-Off Precision Guided Munitions**
  - Current: Griffin, SGM, Hellfire variants, LSDB
  - Future: Long-range weapon systems, air-launched loiter munitions & collaborative weapons

STRIKE FUTURE NEEDS

Providing *ready* capability today, rapidly evolving *relevant* & *resilient* capability for tomorrow to win across the spectrum of deterrence, competition, and conflict

- Driving operational needs: sophisticated threat systems, contested/congested electromagnetic environment, no expectation of GPS
- Critical technologies to reach the end state
  - Automation & autonomy
  - Secure, resilient communications
  - Advanced navigation and sensing
  - Modular payloads/effects
- R&D focus areas: Autonomous/collaborative systems, stand-off strike capabilities, modular sensing & targeting, heterogenous (kinetic & non-kinetic) effects, autonomous/collaborative systems



READY – RELEVANT – RESILIENT

GLOBAL SOF:

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LTC Seth Green
DIVISION CHIEF
SILENT KNIGHT RADAR / CV-22

SPECIAL OPERATIONS FORCES ACQUISITION, TECHNOLOGY, & LOGISTICS

SILENT KNIGHT RADAR / CV-22 PORTFOLIO

AN/APQ-187 Silent Knight Radar (SKR)

- SOF Common Terrain Following/Terrain Avoidance (TF/TA) SKR provides a Low Probability of Intercept/Low Probability of Detection (LPI/LPD) capability to provide SOF aircraft with maneuverability in aerial denied peer/near peer environment
- Integrated with 160th SOAR's MH-47 and MH-60 helicopters and AFSOC's MC-130J and CV-22 aircraft
- SKR provides all-weather, proven TF/TA to enable clandestine infiltration/exfiltration of SOF operators in any location

CV-22B Osprey

- Medium lift tiltrotor aircraft that combines the airfield independence of a helicopter with the long range and high speed of turboprop aircraft
- Partner with V-22 Joint Program Office (PMA-275) and industry to integrate SOF-unique capabilities
- Performs infiltration/exfiltration and resupply missions for Special Operations Forces (SOF) in all weather
- Operated by Air Force Special Operations Command (AFSOC)

SILENT KNIGHT RADAR / CV-22 FUTURE NEEDS

AN/APQ-187 Silent Knight Radar Needs

- Processing Capacity and Open Architecture
  - Industry availability processors
  - Open architecture approach
  - Interoperability with existing system
- Sensor Data Fusion

CV-22B Osprey SOF-p Needs

- Next generation defensive systems against modern threats
- Modernized electric 1500lb cargo winch
- Multi-outlet, 115v 60hz cargo area power supply

GLOBAL SOF:

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Ms. Brandi Evans
DIVISION CHIEF
AISR/NSAS

SPECIAL OPERATIONS FORCES ACQUISITION, TECHNOLOGY, & LOGISTICS

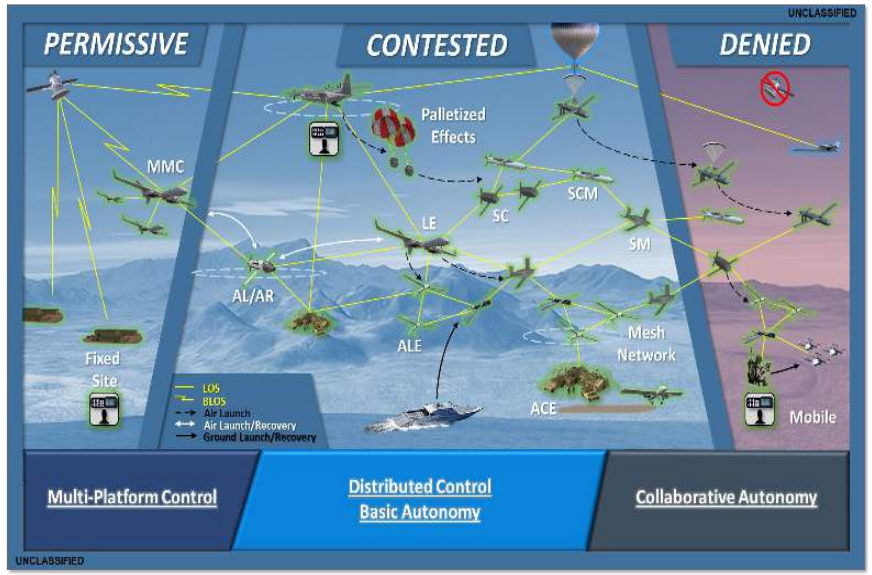
AIRBORNE ISR PORTFOLIO

Unmanned ISR

Manned ISR

Non-Standard Aviation

Adaptive Airborne Enterprise



- Provide world-class ISR and mission-specific tactical mobility capabilities for varied SOF operational users
- Organized into three distinct yet interrelated areas encompassing nine airborne platforms and numerous subsystem payloads and effects
- Varied mission sets: ISR, Strike, and Tactical Mobility
- Supporting AFSOC, USASOC, JSOC, and other operational users
- Focused on developing new capabilities while supporting operations

MEDIUM ALTITUDE LONG ENDURANCE TACTICAL

MALET Programs: Comprises Current Unmanned Portfolio

- **Driving Operational Needs:** Modify current platform capabilities for effective operations in Near-Peer fight
- **Desired Innovations:** Hardened data links and Comms, easily adaptable autonomous behavior profiles, effective application of AI/ML to reduce data link bandwidth requirements and enable effective use of autonomy for the entire kill chain

Self Protect Pod

Speed Loader Agile Pod

Small UAS Payloads

Integration of Program Capabilities into Adaptive Airborne Enterprise

ADAPTIVE AIRBORNE ENTERPRISE (A2E)

Capability Description:

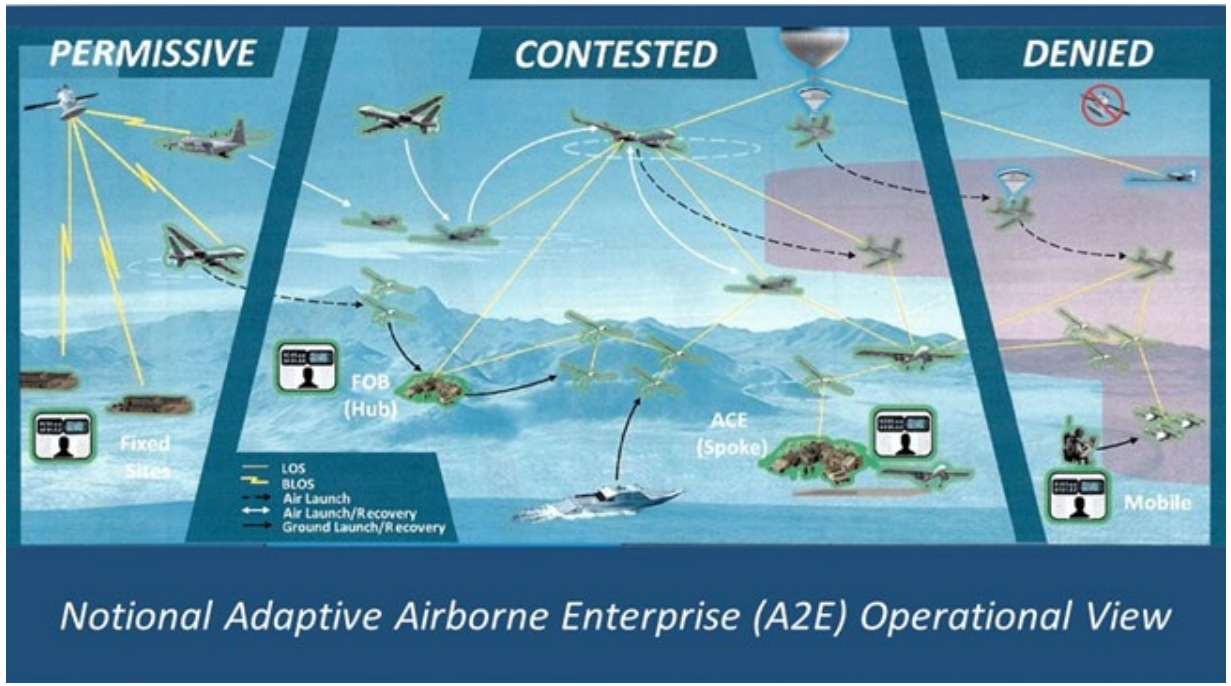
- Develop human-machine common control **interfaces** commanding a family of uncrewed and optionally-crewed systems
- Provide exquisite, attritable, and expendable UAS **platforms** for collaborative operations multi-domain environments
- Open mission systems architecture approach to ensure backward compatibility with legacy UAS platforms and integration into competitively-acquired new UAS **platforms, payloads, HMI and autonomy**

On-Going Efforts:

- Requirements development, open mission systems architecture, common control **interface**, legacy **platform/payload** integration, initial development of evolutionary **autonom**y capabilities

Future:

- Increased **autonomy**, multi-aircraft control **interface** software, increased survivability, multi-domain operations, survivable **platforms/payloads**, integration of varied UAS platforms, and continued development of system **autonomy**. and sensors



Notional Adaptive Airborne Enterprise (A2E) Operational View

Platforms: Weapons system integration on legacy platforms and development of Grp 2/3 sUAS capabilities
Payloads: Integrated pods and weapons that improve performance in contested and denied environments.
Human Machine Interface: Software/hardware allowing multi-platform/multi-domain control
Autonomy: Continued mission command in contested and denied environments when connectivity is lost

MANNED INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE

Manned Programs:

- **Driving Operational Needs:** Maintaining platform effectiveness throughout anticipated remaining lifecycle of the individual programs
- **Desired Innovations:** System survivability enhancements, improved sensors, integration of all-weather capabilities, potential automation efforts to reduce crew workload and edge data processing, ALT-PNT/GPS/C2 hardening efforts

NON-STANDARD AVIATION SYSTEMS (NSAS)

NSAS Programs

- **Driving Operational Needs:** Maintaining platform effectiveness throughout anticipated remaining lifecycle of the individual programs. C-27J cockpit obsolescence being addressed via cockpit upgrade program currently underway.
- **Desired Innovations:** Identification of more affordable solutions to meet current and future requirements.

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Lt Col Benjamin Toler
DIVISION CHIEF
EMERGING TECHNOLOGIES

SPECIAL OPERATIONS FORCES ACQUISITION, TECHNOLOGY, & LOGISTICS

EMERGING TECHNOLOGIES

FOCUS AREAS

Automation/Autonomy

- Reduced Crew Workload
- Data/Sensor Fusion
- Reduced Operation & Maintenance Cost
- Uncrewed/Remotely Crewed

Dominant SOF Air Platforms

- Survivability
- Cybersecurity Resiliency
- Runway Independence
- Longer Endurance
- AI/ML-Enhanced Precision Engagement

Advanced Electronics

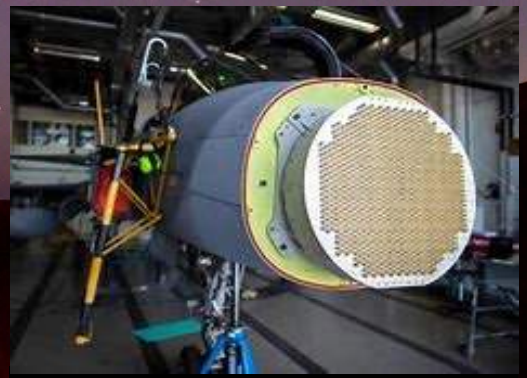
- Electronic Warfare
- Dynamic/Resilient Comms
- Human Machine Integration
- Training Transformation through AR/VR

Open Mission Systems (OMS)/Modular Open Systems Approach (MOSA): Faster Improvements, Evaluations, and Modernization

Collaborative Autonomy

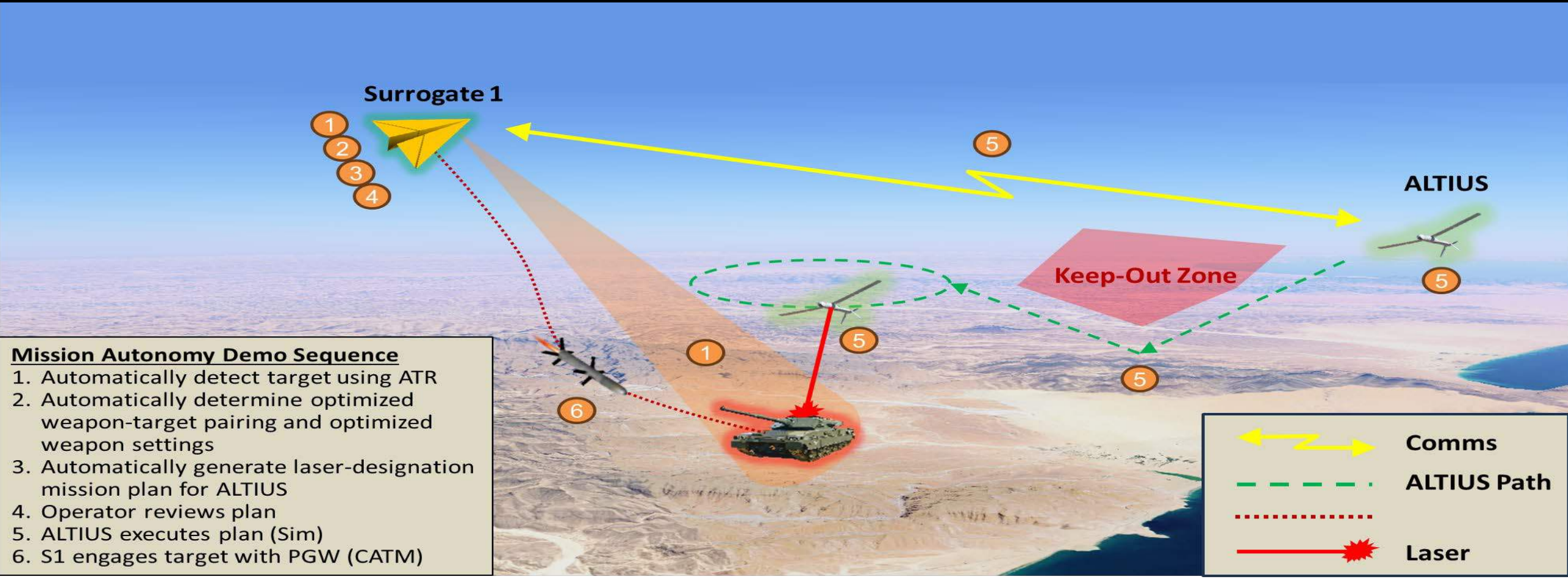
Augmented Reality / Virtual Reality Training

Cybersecurity



AESA

MISSION AUTONOMY PATHFINDER



Mission Autonomy Demo Sequence

1. Automatically detect target using ATR
2. Automatically determine optimized weapon-target pairing and optimized weapon settings
3. Automatically generate laser-designation mission plan for ALTIUS
4. Operator reviews plan
5. ALTIUS executes plan (Sim)
6. S1 engages target with PGW (CATM)

BLUF: Deliver autonomy solutions across F2T2EA warfighter functions via a SOF architecture → pathfind to scale new autonomous capabilities

Demonstration Goals

- **Integrate cutting-edge AI capabilities for automated mission operations – NSWC Dahlgren in collaboration with Big Safari and SNC**
- **Natural language processing / remote comms control**
- **AI-enhanced target ID / tracking**

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Major Andrew Monroe
Commander
DETACHMENT 1

SPECIAL OPERATIONS FORCES ACQUISITION, TECHNOLOGY, & LOGISTICS

DETACHMENT 1 PORTFOLIO

Developmental Test for SOF C-130s, OA-1K, and Special Projects

- Programs – AC-130J, MC-130J, OA-1K, Small Cruise Missile
- Missions – Developmental Test / Demos and Integration Support for precision strike, infill/exfil, airlift/resupply, armed ISR capabilities
- End Users – AFSOC aircrew / COCOMs
- What we do – Test Planning, Safety Review, Range Scheduling, Test Execution

Critical technologies going forward

- Long-range weapon development / integration
- Terrain Following / Terrain Avoidance
- Airborne Mission Networks
- Defensive Systems – Radio frequency countermeasures
- Automation and Autonomy

HUMANS ARE MORE IMPORTANT THAN HARDWARE

Ghost Junior Acquisition Deployment Program

- Created in 2007 – surge in SOF ISR requirements drove need for additional acquisition-operator teaming → *excellent opportunity for junior AF professionals*
- 'First Gen' GHOSTs validated the program's value → enduring and evolving for 17+ years and 321+ GHOSTs
- Significant value/impact for SOCOM and Air Force (and now Space Force) Acquisitions

PEO FW – Recognized Acquisition Leaders

Three-time DoD-level Packard Awards:
MC-130J, SOPGM, and OA-1K

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QUESTIONS

SPECIAL OPERATIONS FORCES ACQUISITION, TECHNOLOGY, & LOGISTICS

DOING BUSINESS WITH SOCOM

SMALL BUSINESS HELP

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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
www.engageSOF.com
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