SPECIAL OPERATIONS FORCES INDUSTRY CONFERENCE

Col Eric Forsyth
PEO Fixed Wing

BREAKOUT SESSION

FIXED WING

PEO-FW PORTFOLIO

ISR - FIND

MQ-1B Predator

MQ-1C Gray Eagle

MQ-9 Reaper

RQ-20A Puma

MEUAS 1.5
Scan Eagle

MEUAS 2.0
Aerosonde

JAVAMAN – MC-12

U-28/PC-12

MOBILITY- INFILTRATE

CV-22
Osprey

EC-130J
Commando Solo

Dornier 328
C-146

M-28 C-145A

MC-130P
Shadow

MC-130J
Commando II

MC-130H
Talon II

STRIKE-FINISH

MQ-9 Reaper

MQ-1C Gray Eagle

AC-130U Spooky

AC-130H
Spector

AC-130W
Stinger II

AC-130J
Ghostrider

SOPGM

EMERGING TECHNOLOGY
TRAINING & MISSION PLANNING

HOW PEO-FW WILL PREPARE FOR THE FUTURE

SOF Priorities

SOF Priorities

Prepare for the Future

SOF ready to win in an *increasingly complex world*

Ensure SOF Readiness
"The right people, skills, and capabilities...now and in the future"

Help Our Nation Win
"Addressing today's challenges and keeping the Nation safe"

Continue to Build Relationships
"Global understanding and awareness that creates options"

Prepare for the Future
"SOF ready to win in an increasing complex world"

Preserve Our Force and Families
"Short and long-term well-being of our SOF Warriors and their families"

SOF Vision

Provide Strategic Options Through a Global Network

BBP 3.0: Incentivize Innovation in Industry and Government

- Increase the use of *prototyping and experimentation*
- Emphasize *technology insertion* and refresh
- Use *modular open systems architectures* to stimulate innovation

Better Buying Power 3.0
Achieving Dominant Capabilities through Technical Excellence and Innovation

Achieve Affordable Programs
- Continue to set and enforce affordability caps

Achieve Dominant Capabilities While Controlling Lifecycle Costs
- Strengthen and expand "should cost" based cost management
- Anticipate and plan for responsive and emerging threats by building stronger partnerships of acquisition, requirements and intelligence communities
- Institutionalize stronger DoD level Long Range R&D Program Plans
- Strengthen cybersecurity throughout the product lifecycle

Incentivize Productivity in Industry and Government
- Align profitability more tightly with Department goals
- Employ appropriate contract types, but increase the use of incentive type contracts
- Expand the superior supplier incentive program
- Ensure effective use of Performance-Based Logistics
- Remove barriers to commercial technology utilization
- Improve the return on investment in DoD laboratories
- Increase the productivity of corporate IRAD

Incentivize Innovation in Industry and Government
- Increase the use of prototyping and experimentation
- Emphasize technology insertion and refresh in program planning
- Use Modular Open Systems Architecture to stimulate innovation
- Increase the return on and access to small business research and development
- Provide draft technical requirements to industry early and involve industry in funded concept definition
- Provide clear and objective "best value" definitions to industry

Eliminate Unproductive Processes and Bureaucracy
- Emphasize acquisition chain of command responsibility, authority and accountability
- Reduce cycle times while ensuring sound investments
- Streamline documentation requirements and staff reviews
- Remove unproductive requirements imposed on industry

Promote Effective Competition
- Create and maintain competitive environments
- Improve DoD outreach for technology and products from global markets
- Increase small business participation, including more effective use of market research

Improve Tradecraft in Acquisition of Services
- Strengthen contract management outside the normal acquisition chain – installations, etc.
- Improve requirements definition for services
- Improve the effectiveness and productivity of contracted engineering and technical services

Improve the Professionalism of the Total Acquisition Workforce
- Establish higher standards for key leadership positions
- Establish stronger professional qualification requirements for all acquisition specialties
- Strengthen organic engineering capabilities
- Ensure development program leadership is technically qualified to manage R&D activities
- Improve our leaders' ability to understand and mitigate technical risk
- Increase DoD support for STEM education

Continue Strengthening Our Culture of:
Cost Consciousness, Professionalism, and Technical Excellence

Attachment 1

MODULAR PAYLOADS

Why:
- Tailored, Adaptable, and Reconfigurable Capabilities for Modular Payload Development and Integration for Groups IV and V UAS, Manned ISR, and Strike Platforms

Objective:
- Demonstrate Modular, Multi-Function, Multi-Modal Payloads with Versatile Architecture
- Reduce Size, Weight, and Power (SWaP)

Applicable Technologies:
- Higher Res (4K+), 3D, and Multi-Color EO/IR
- Multiple Moving Target Tracking
- Medium/Wide Area Motion Imagery (MAMI/WAMI)
- Foliage Penetration (FOPEN)/LIDAR
- Real-Time FOPEN/LIDAR

Benefit:
- Improve Concealed, Weather-Degraded, Complex Environments Operations
- Track Hostiles and Friendlies at Night in Urban, Triple Canopy During Thunderstorm

FOPEN/LIDAR
EC-130J
JAUDIT Demo
(2014)

EC-130J
MTS-B Demo
(CRADA)
(2014)

WAMI U-28 MX-15
Dragon Eyes
Demo (CRADA)
(2015)

MISSION AUTOMATION

Why:
- Smart Integration and Automation is Crucial to Maximizing the Effectiveness of a Capacity Limited Platform or Small Ground Team

Objective:
- Detect/Understand Humanly Indiscernible Objects, Events, and Contextual Relationships at Machine Speeds

Applicable Technologies:
- Workload Reduction
- Machine Intelligent Processing
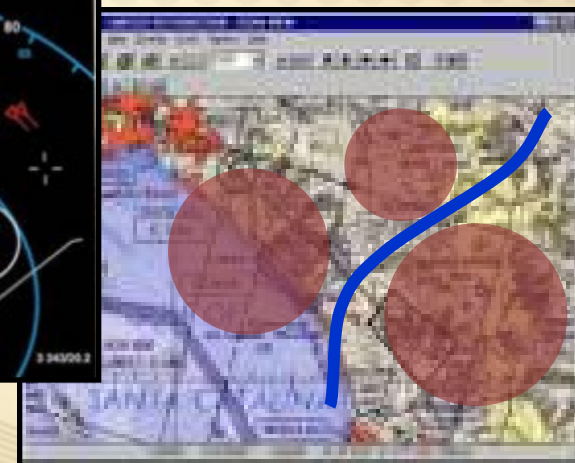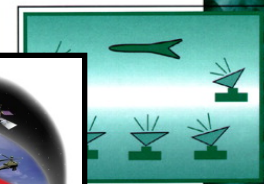- Tactical Flight Management
- Smart Integration of Federated Systems

Benefit:
- Reduced Workload and Streamlined Augmentation to Manage/Share Complex Data
- Improved Situational Awareness/Decision Making for the Crew

ENHANCED SURVIVABILITY

Why:

- Evolve Threat Detection and Counter Measure Capability Against Increasingly Lethal 21st Century Threat and Non-Permissive Environments

Objective:

- Signature Management (Acoustic, IR, RF, Visible)
- Situational Awareness with Full Spectrum Threat Warning & Counter Measures

Applicable Technologies:

- Acoustic/IR/RF Signature Reduction
- GPS-Degraded Operations
- Low Signature Communications/Antennae
- Multi-Sensor Pod
- Mission Networking and Enhanced Awareness
- VTOL Threat Suppression

Benefit:

- Versatile Innovations for Multiple Functions With Wide Range of Effects in Denied and GPS-Degraded Environments

KINETICS EFFECTS

Why:
- Provide Wide Range of Desired Lethal and Non-Lethal Effects

Objective:
- Demonstrate Improved Accuracy and Lethality
- All Weather Capability
- Reduce Size, Weight, and Power
- Reduce Life Cycle Costs

Applicable Technologies:
- 105mm Precision Guided and Fuzes
- Improved Lethality 30mm/105mm
- Wind Sensing
- Loitering Munitions
- On-the-fly Programmable/Selectable Munitions Fuzes and Effects

Benefit:
- Improved First Pass Accuracy and Lethality
- Minimize Collateral Damage

Examples:
- CRADA With Small Glide Munition, Tactical Off Board Sensor (TOBS), AN/ASQ-236
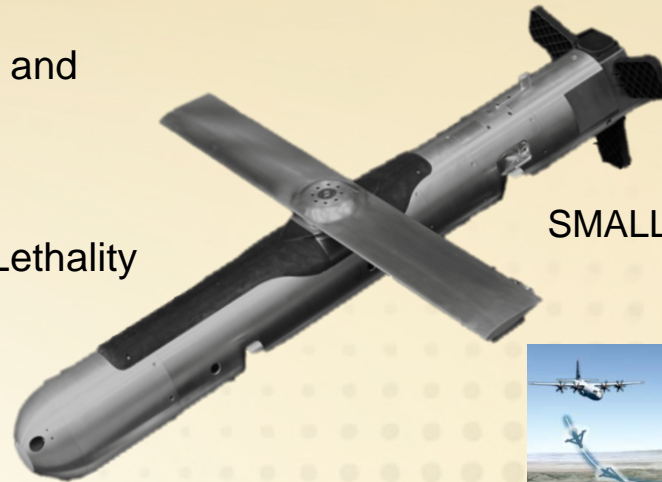
SMALL GLIDE MUNITION

TOBS

AN/ASQ-236

DIRECTED ENERGY

Why:
- Provide a Range of Offensive and Defensive Desired Effects with Directed Energy (DE)

Objective:
- Demonstrate Operationally Suitable DE Prototype
- Establish Engineering and Airworthiness Criteria for Testing and Fielding
- Aid in Develop Concept of Operations (CONOPS) and Concept of Employment (CONEMP) for DE
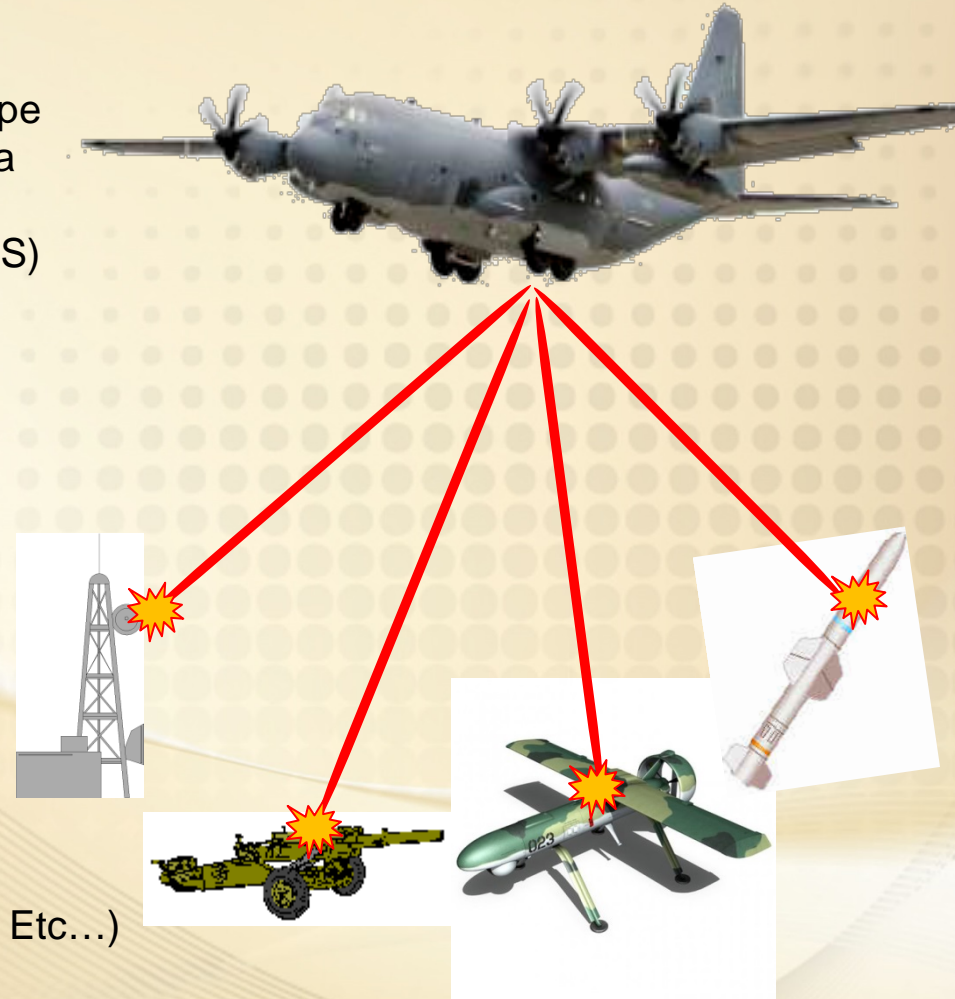
Applicable Technologies:
- High Energy Laser (HEL)
- Power Management
- Aiming and Focus Turret

Benefit:
- Minimize Collateral Damage and Signatures

Next Steps:
- Assess Currently Available Technologies
- Determine Tech Readiness Levels
- Provide Advocacy for Service Efforts (AF, Navy, Etc…)
- Focus on High Risk Areas
- Begin Transition Planning/Aircraft Integration

GROUP 1-3 UAS SYSTEMS TECHNOLOGIES

Why:
- Grow Capability for Group 1 – 3 UAS
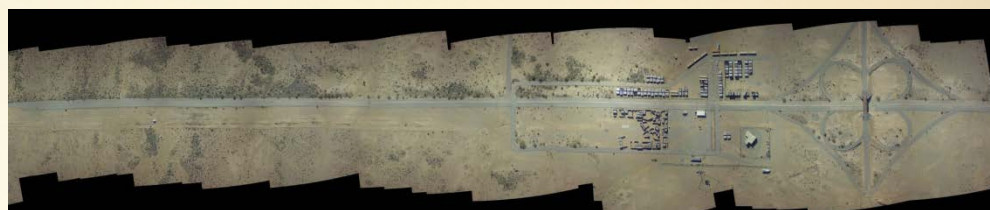
Objective:
- Identify Viable Options
- Measure SWaP Constraints/Tradeoffs
- Demonstrate Operationally Suitable

Applicable Technologies:
- EO/IR, EW, LIDAR, Hyper-Spectral
- Random Compression Sampling
- Open Source Autopilots
- Wide Band Data Links/Mini-Directional Antennas with Waveform
- Improved Power Plants

Benefit:
- Assets Under Direct Control of Tactical Units - Quickly and Dynamically Tasked
- Location Relative to the Fight Allows for Improved Response Time
- Leaning Forward to Meet Increasing Power and Data Requirements on SWaP Improvements of Advanced Payloads

Mosaic 2000 ft AGL

WEIGHT/DIMENSIONS

| Dimensions | 10 in. x 8 in. x 10.5 in. |
| Weight | 5 lb |

OPEN SYSTEMS APPROACHES

Why:
- Open Standards, Interfaces, and Protocols to Support Interoperability

Objective:
- Demonstrate Modular, Flexible, and Versatile Architecture for Rapid Integration and Reconfiguration Of Aircraft / Mission Systems
- Secure Government/Open Technical Control and Ownership of All Needed Interfaces Including Software, Payloads, Mission Equipment, Weapons, System-to-System, and Data Processing, Storage, Automation

Applicable Technologies:
- Air Force Rapid Capabilities Office - Open Mission Systems
- Navy PMA 209 - Future Airborne Capability Environment (FACE™)
- Navy Battle Management System
- Common Launch Tube

Benefit:
- Innovative Technology Insertion
- Faster Periodic Technology Refresh Cycles
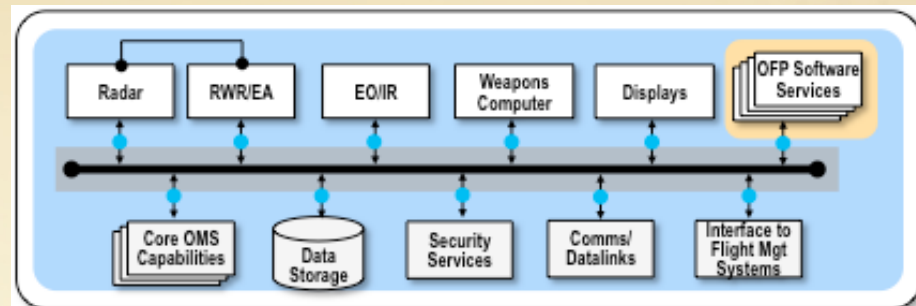
Open Mission Systems (OMS)
Key-interface definition + common composition rules = "acquisition efficiency"

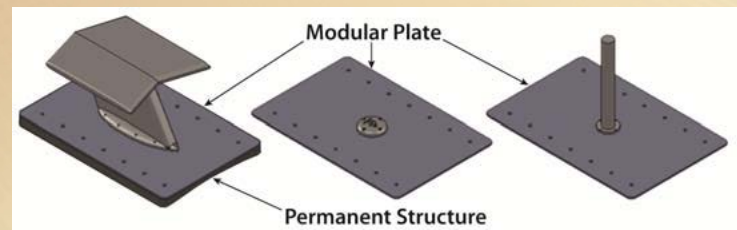**Future Airborne Capability Environment**

FACE is trademark of the Open Group

Common Launch Tube (CLT)

Do-328 DEMO PLATFORM

ISR-Survivability-Comms-Weapons

- Do-328: 335 Knots, 31k Ceiling, 1150 Mile Range
- Two External Sponsons (750 Lbs Max)
  - BRU-15 Allows 14" Lug Space Mounting
  - Aero-1 Adapter Allows For 30" Lug Mounting
- Modular Fuselage Antenna Bays (1 Top / 2 Bottom)
  - Flexible Mounting Brackets to Accommodate Various Size and Weight Antennas, 4 Feeds/Bay
- 1x UHF/VHF/SATCOM "Mission" Antenna
  - Connected to PRC-117G Radios in the Cabin For PT/CT LOS and BLOS Communications
- KU-Band BLOS Satellite Data Link System
- Nose Available for Antenna/Sensor Mount
- 2 RF Transparent (<3.0 Ghz) Pods
  - 300 lbs Payload/Payload Space = 90.7" X 18"
  - Aircraft Seat Track for Easy Mounting of Eqpt

Modular Plate

Permanent Structure

Do-328 DEMO PLATFORM

ISR – Survivability – Comms - Weapons

- Two Reconfigurable Operator Workstations
- Radio and Equipment Racks
- Seven Quick Disconnect Panels (Qdps) with Power, Ethernet, GPS And 1553 Data Bus Ports Throughout the Mission Cabin
  - LN-251, SAASM Capable INS/GPS with Native 1553
  - ARINC-429, RS-422/232, 1553 Databus, Ethernet
  - 48-port Ethernet Switch with VLAN Capability
  - 16-port GPS Splitter Via a Mission Only Antenna
  - AB3000 Ruggedized Protocol Converter
- Multi-intercom System for Pilots & Crew
- Instrumentation Disconnect Panel
- Native A/C Data Via Air Data Computer Wiring
- Cable Pass-thru for External Stores
- Mission Cabin Orange-wire Trays for Routing Cables to Equipment Throughout Cabin with Secure Separation Capability
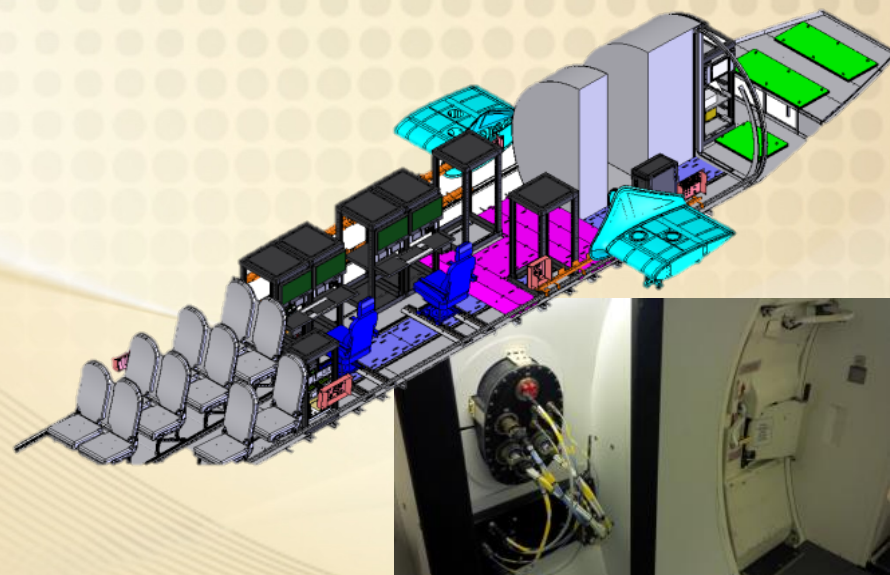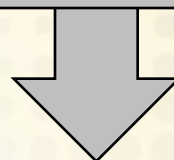
Do-328 DEMO PLATFORM

Pathways for Industry

Customer Advocates
USSOCOM Components

S&T Advocates

AFRL - AFLCMC

SOF AT&L CRADA Tasks
PEO-FW - S&T

Monthly Gov't Stakeholders Meeting
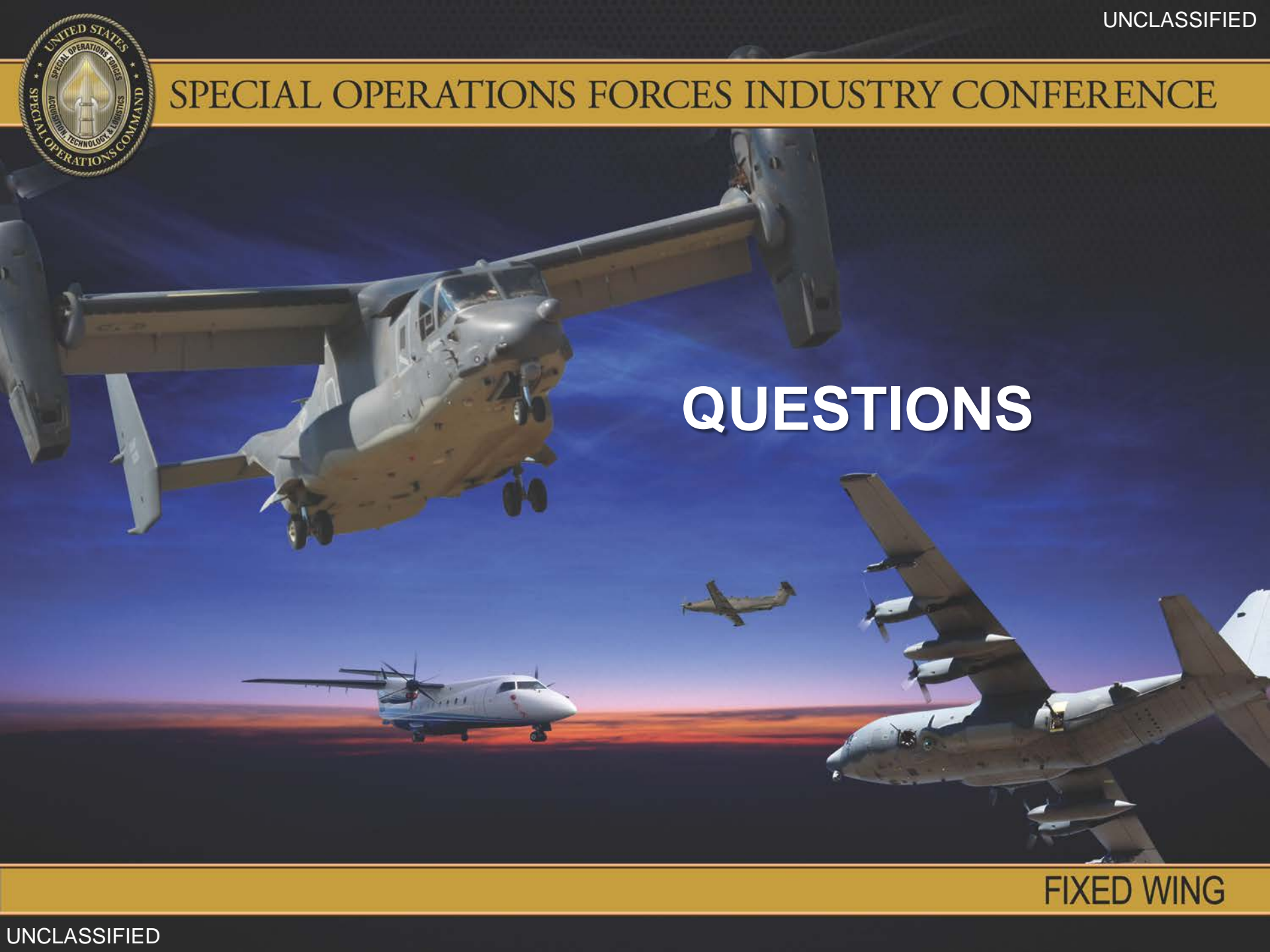*Determine Priorities, Scheduling, & Funding*

6-10 Demos per Year
Proof of Concepts, Rapid Acquisitions, TTP Development, Requirements Development, etc.

SPECIAL OPERATIONS FORCES INDUSTRY CONFERENCE

QUESTIONS

FIXED WING