MOSA Transformation Office, Aviation

ACVIP Industry Day
Army Aviation – Leading with MOSA Transformation

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Our Mission World Wide

Serve Soldiers and Our Nation by *Designing, Developing, Delivering &* *Supporting* **Advanced Aviation Capabilities for Operational Commanders and Our Allies**

What is MOSA? Why MOSA Now?

MOSA is a *technical* and *business* strategy in which modularity and openness principles are applied in order to achieve a particular set of objectives.

Unique Inflection Point

- **Mandate for Rapid Capabilities to Pace Threat Evolution**
- **Must Accelerate Program Execution at the Speed of Technology**
- **Affordability Paramount in Current Fiscal Environment**
- **Opportunity to Leverage Across Future and Enduring Fleet is NOW!**

Future Aviation Platforms
FARA, FLRAA, FTUAS

ALE

Sensors

COP

Maneuver Elements

Command Post

Mounted

Mobile Hand-held

PEO Aviation MOSA Objectives

- **Improved Affordability**
- **Increased Readiness**
- **Enhanced Capabilities**
- **Reduced Schedule Pressure**
- **Reduced Supply Chain Risk**

Engagement Throughout the Aviation Life Cycle to Optimize Value of MOSA

PEO Driving MOSA Transformation Effort

Aligning **People, Tools, Processes** for Successful Execution

Current State

Industry

FACE™
Future Airborne Capability Environment

ACVIP

DEVCOM ARMAMENTS CENTER

OpenVPX™

MBSE

SOSA
Sensor Open Systems Architecture

HOST

CABAIL

The ACE Collaboration Challenge

Academia
OEM
System Integrator
Mission App & System Developer
AvMC
PEO AVN
Missiles & Space
Soldier
ACE

Science & Technology

IME

MSAD

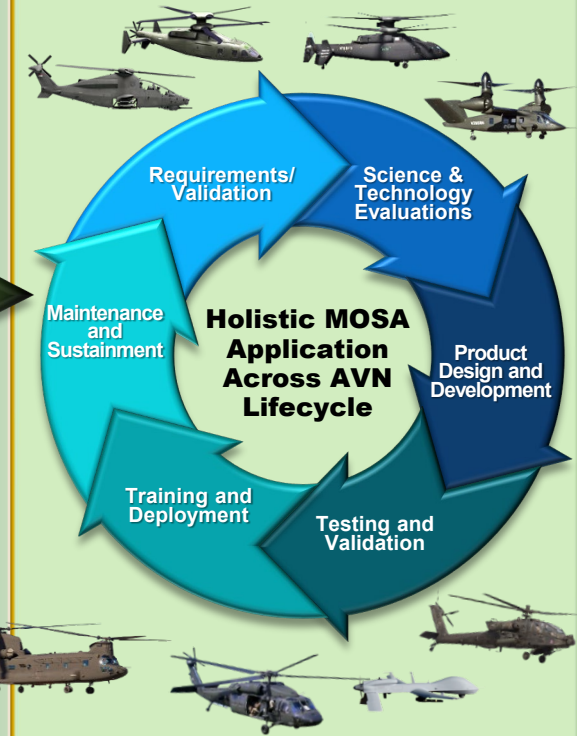**Industry MOSA Investments**

ACWG/ICWG

MOSA 9 LOEs

Creating Standardization, Increasing Communications, Applying Lessons Learned, Eliminating Stovepipes

1. Governance & Policy
2. Architecture & Standards
3. Software Development
4. Collaborative Digital Environment
5. MOSA Conformance Center
6. Qualification & Materiel Release
7. Affordability & Savings
8. Contracting
9. Strategic Communications

FY21 NDAA MOSA ICRD

Future State

Integrated, Aligned, Synchronized

Holistic MOSA Application Across AVN Lifecycle

Requirements/ Validation

Science & Technology Evaluations

Maintenance and Sustainment

Product Design and Development

Training and Deployment

Testing and Validation

Positioning for Efficient and Effective Modernization

PEO Aviation MOSA – Driving Forward

- **PEO Aviation Has Stood Up Their MOSA Transformation Office (TO)**
  - Body to Represent the Enterprise Perspective
- **Published Internal PEO Aviation MOSA Policy and Implementation Guidance**
- MOSA TO identified **PEO Aviation Enterprise Priority MSCs** which are common to multiple enduring and future platforms

Initial MSC Priorities Are Based on Existing Common Components and/or Functions

- Aviation Mission Computing Environment
  - Configurable Processing
  - Open Transports
  - Graphical Interfaces
  - BSP Decoupling
  - SW Field Loading
  - Symbology / COP
- Comms / Datalinks / Control
  - Communication Radios
  - Data Radios
  - Link 16
  - Airborne Radio Control Manager (ARCM)
- Navigation
  - TACAN
  - COR/ILS
  - EGI
  - ILS
  - ADS-B
  - RNP/RNAV

- Aircraft Survivability Equipment (ASE)
- Dynamic Airspace and Mission Planning Environment (DAMPE)
- Common Pilot Vehicle Interface (PVI)
- Degraded Visual Environment (DVE)
- Electrical Power Systems
  - ECB
  - Power Management
  - Generators
  - Conversion Electronics
  - Batteries
  - Supplemental Power Units
- Unmanned Vehicle Control

Initial MSC Priorities for PEO Aviation
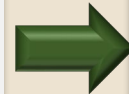
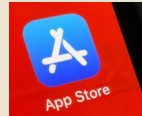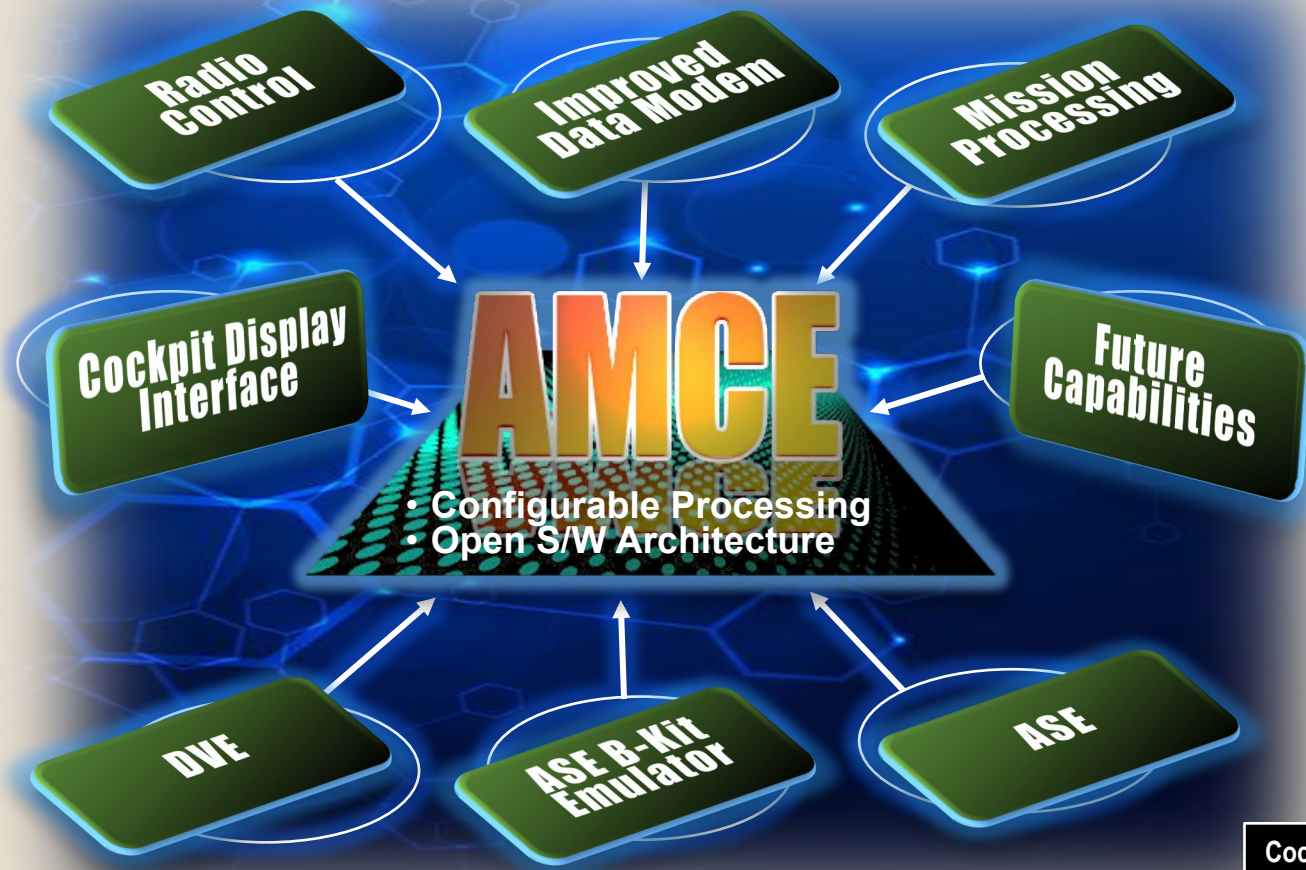**Future MSCs Will be Prioritized Based on PEO Investment Strategy**

Specific Example - Aviation Mission Computing Environment

Fundamentally Different Approach to Capability Introduction

- **AMCE Introduces Modular/Configurable Processing to Aviation**
  - Provides *Scalable*, *Configurable*, and *Modular* Processing Resources
- **AMCE Introduces Open Software Architecture**
  - Breaks Vendor Lock; 1 Capability ≠ 1 LRU
  - Enables App Store Approach

Cockpit Display Interface

CHU

DVE

ASE

AMCE FoS

Aviation Info System Mobile Device

Specific Example – Communications/Datalinks/Control

CMFF Modular Communications

- **Convergence** of Multiple LRU-based Communications and Data Link Devices Into Radio Cards in an Open Standards- based Modular Environment
  – 1 Capability ≠ 1 LRU

- Aligns with Army's CMFF A-CDD Modular Communications Effort

- **Scalable** Form Factors – Ease of Integration

- Universal Control Through Aviation Radio Control Manager (**ARCM**)
  – Avoids Opening Platform OFP for New Radio Technology

CXP

KOR

ARC 231

ARC 220

BFT-2

AGNR

Common Modular Communications

MOSA TO Provides Aligned Standards and Guidance

- **Single Standard Approach has *Potential* Issues**
  - Mixed Criticality SW/HW
  - Various Approaches to Data Models
  - Different Abstraction Layers / Mission Needs
  - Different Functional Decomp Approaches / Definitions
  - Divergent Hardware Needs
- **FACE Consortium (and other) Standards Interoperability Initiatives**
- **Need for *Portfolio* and *Programmatic* Level Design Guidance**
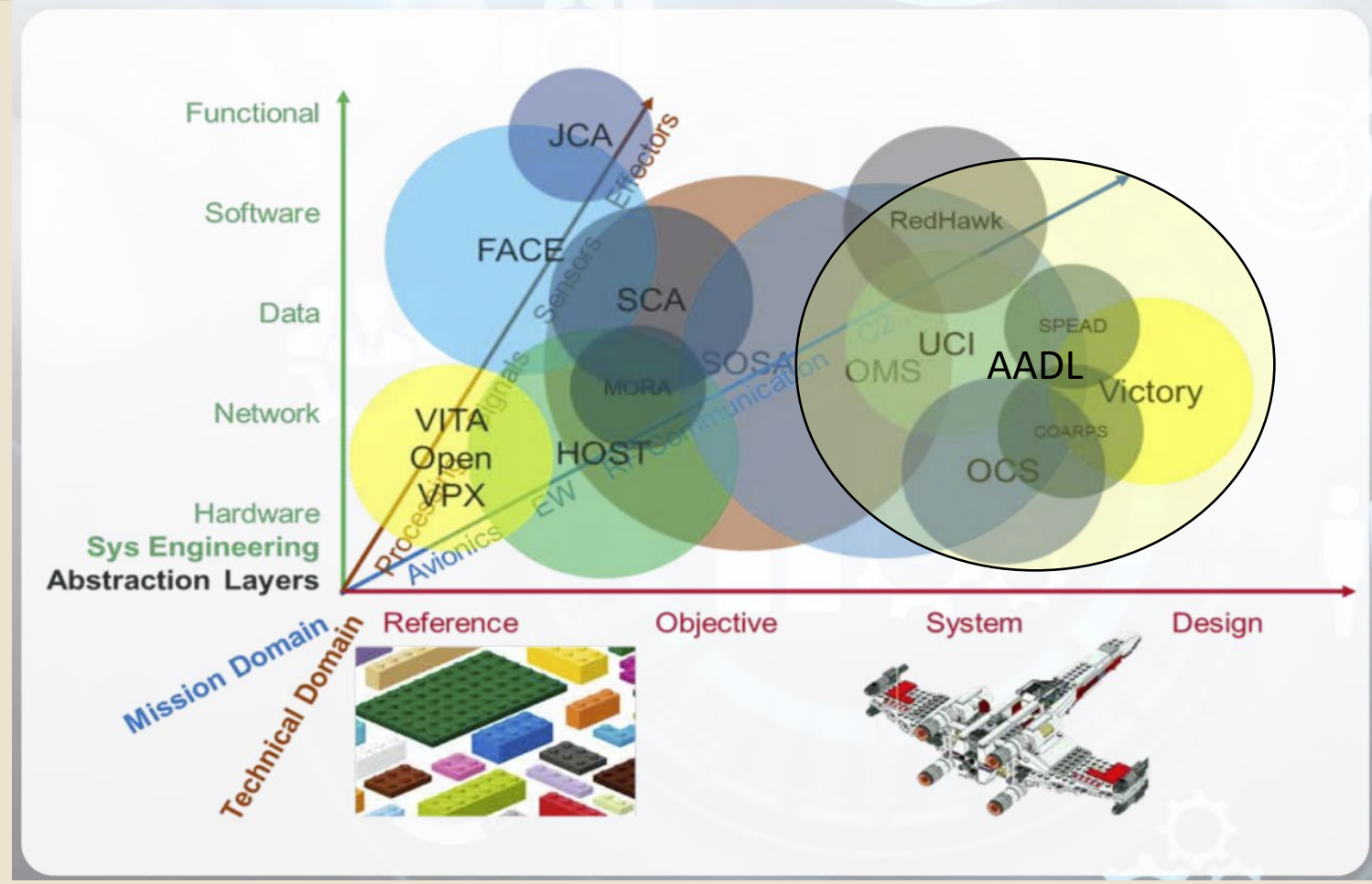
> **While these various Standards overlap, they are complementary and can be coordinated with appropriate Enterprise guidance.**

ACVIP & PEO AVN

- **PEOPLE, TOOLS, AND PROCESSES** are critical to PEO AVN's ability to Effectively and Efficiently Modernize and Acquire Systems

- **PEO AVN Digital Ecosystem is ramping up**
  - SE: SysML
  - PLM: Windchill
  - DevSecOps

- **Must continue to leverage cutting edge tools and processes that bring clear value to the acquisition environment**

- **PEO AVN encouraging ACVIP efforts to continue to mature in S&T environment and beginning to leverage ACVIP on multiple programs**

Closing Comments and Questions

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