MOSA

PMO Task
The PMO should focus on the 'Talking Points' (e.g. business cases, data rights, MOSA objectives, etc.) when interacting with industry.

MOSA TO Task
N/A

Quick Notes

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The Printed piece is a high-level synopsis of and quick reference for the MOSA Implementation Guide. **This is NOT a replacement for the Guide.**

The Format for this is as Follows:

MOSA Quad Fold Pamphlet
The PEO Aviation MOSA Implementation Guide contains an Introduction, along with ten sections and appendices that correspond with nine the PEO Aviation Lines-of-Efforts (LoEs).

This block provides key points for each section

PMO Focus
This block provides guidance of the responsibilities that the PM should do to implement MOSA within their programs (Note: Every task should be coordinated with the PM's MOSA POC to coordinate with MOSA TO

MOSA Transformation Office
This block provides responsibilities of MOSA Transformation Office and/or PEO Aviation to the PMs.

SECTION ONE
Introduction of Key Points

Every program should have a tailored Modular Open Systems Approach (MOSA) to address their program's specific objectives.

Your tailored MOSA must be balanced with enterprise level efforts.

Your requirement for MOSA is law. Title 10 U.S. Code 2446a defines MOSA as an integrated business and technical strategy that:
- Employs a modular design that uses modular system interfaces
- Is subject to verification
- Uses a system architecture that allows severability
- Complies with technical data rights guidance (10 U.S. Code 2320)

Applying MOSA at the enterprise level fosters collaboration across PMs to drive towards the following PEO Aviation MOSA objectives:
- Improving Lifecycle affordability
- Increased readiness
- Enhanced capabilities
- Reduced schedule pressure
- Reduced supply chain risk

PMs must consider key stakeholders across PEO Aviation and their roles in the development and implementation of MOSA acquisition strategies.

PMO Focus
MOSA TO will evaluate all MOSAs and assist in ensuring enterprise considerations and trades are appropriately managed and elevated to the right level for disposition; such as enterprise reuse considerations and new investments applicable to the enterprise.

SECTION TWO
Governance & Management Key Points

The primary role and responsibility of MOSA TO is oversee the implementation of MOSA and coordinates efforts and collaboration across PEO Aviation to ensure success.

PMO Focus
The PM has a MOSA PM POC as their focal point of MOSA integration and to assist with the implementation of this guide in the coordination within the MOSA TO.

The PM should establish goals and roadmaps relative to MOSA-related programs; and coordinate with MOSA TO for input, approval, and periodic goals and objectives assessments.

MOSA Transformation Office
The MOSA TO manages the coordination of multiple working groups, tiger teams, pilot programs, IPTs, etc. to develop and maintain the various MOSA policy, MOSA implementations, and modeling products (e.g. EA, the PEO Aviation RA, CSMs, etc.).

MOSA TO will provide MOSA implementation assistance to the PMs until MOSA is a PEO Aviation standard practice.

SECTION THREE
Collaborative Digital Environment (DE) Key Points

Having and utilizing a collaborative DE is very critical to establishing an enabling environment for MOSA related programs. The APEO for Systems Engineering (SE) manages the DE tools and associated DE Community of Practice (DECoP).

PMO Focus
The PMO should identify and schedule needed training early in acquisition with APEO for SE.

PMO should work with APEO for SE and EISD to resolve gaps on the PEO Aviation side, which may introduce risk to their program.

The PM will use NoMagic Cameo Enterprise Architecture and Teamwork Cloud while leveraging enterprise libraries, methods, and patterns for developing MBSE models.

MOSA Transformation Office
N/A

SECTION FOUR
Architecture Key Points

The EAF is a framework that guides the development of the Enterprise Architecture (EA).

The PEO Aviation EA is the highest level governing principles to implement MOSA while designing, developing, and fielding of open systems.

The Enterprise Product Architecture (EPA) decomposes mission capabilities into functional boundaries for products and the interfaces between those functional boundaries. The functional boundaries are called Product Specifications (PSs), and their interfaces are the Modular Interfaces (MIs). This enables consistent modularity decisions and product development.

System Architecture (SA) contains the fundamental concepts or properties of a system (detailing elements in its environment and documents governing principles) for the realization and evolution over its related life cycle acquisition processes defined in the EPA.

PMO Focus
Use the EPA to derive Systems Architectures (SAs) in alignment with the PM MOSA goals and objectives.

MOSA Transformation Office
MOSA TO will review and approve program SAs.

MOSA TO will validate that the Program's procurements align to the EPA.

SECTION FIVE
Hardware Key Points

There are many hardware items in which modular and openness is important to achieve objectives like affordability and readiness. Examples: Engines, Batteries, removable wings/props, etc.

Decoupling Hardware from Software separates the hardware from the software – enabling the PM to easily plan for software reuse, third party software procurement, obsolesce replacement, maintenance planning, among other benefits.

Decoupling of hardware from software is possible through the generation of open standards such as the FACE Technical Standard, Hardware Open Systems Technologies (HOST), etc.

For non-computing hardware including items like payload mounts for sensors and munitions (i.e. Hellfire, ATS, etc.), programs will use standard hardware interfaces to promote reuse and interoperability

PMO Focus
The PM must evaluate all hardware systems for MOSA applicability and ensure the application of MOSA.

MOSA

(Section 5 Continued)
MOSA Transformation Office
MOSA TO will evaluate hardware systems for MOSA Applicability and ensure application of MOSA

SECTION SIX
Software Key Points

Modular software architectures with well-defined, open interfaces between components facilitate the ability to provide small, frequent updates without updating or replacing the entire Operational Flight Program on air platforms, as well as mission systems.

PMs will use the FACE Technical Standard 3.0 when an acquisition strategy identifies the need to establish a real-time, safe, secure computing environment utilizing MOSA.

A key tenet in the MOSA goals is cost avoidance by reducing duplicative developmental efforts for similar or common components. Thus, the PEO Aviation is implementing a searchable database and a software repository into which potentially reusable components are placed for future reuse consideration across programs.

The Software Acquisition Pathway (DoDI 5000.87): use of modern software development (Agile, DevSecOps, etc.), establish a path to DevSecOps from existing development methods, capitalizes on active user engagement early and often, use of enterprise services, rapid/iterative development software, tightly integrated mission-focused government-industry software teams, and automated tools used for development, integration, testing, certification.

PMO Focus
Apply the PEO Aviation Software Reuse Checklist to determine if an existing software component meets new program requirements.

Require vendors to maximize reusability of the software components, and establish FACE Units of Conformance (UoCs), use a service-oriented architecture or micro-services.

Establish an open software architecture environment, based on FACE Technical Standard, described in the AMCE CSM.

PMs that acquire new major systems or computing environments shall contract for a SDK as a deliverable on the contract in order to facilitate third party development and integration of software components.

The PM should maximize the use of the U.S. Government (USG)-owned development pipelines, when available, for new software development projects.

MOSA Transformation Office
PEO Aviation is implementing a searchable database and a software repository into which potentially reusable components are placed for future reuse consideration across programs. They will identify one or more software development technologies (or pipelines) that employ DevOps and DevSecOps approaches, which are intended for mandatory use.

SECTION SEVEN
MOSA Conformance Capability (MCC) Key Points

Conformance is a measurement of the openness and modularity of the system designed to meet the program's tailored MOSA objectives.

- The intent of MOSA Conformance is to ensure the PM's they have the tools necessary to satisfy the objectives of PEO Aviation.
- Use of this guide will meet or exceed the objectives of the ASA(ALT) MOSA Implementation Guidance established to meet the requirements of Title 10.
- Openness is measured by a third party's ability to add, modify, replace, remove, support, integrate with, and share data with a component or subsystem, based on open standards and published interfaces.
- Modularity is the use or reuse of a design severable into discrete, cohesive, and self-contained units with well-defined, open and published interfaces that permit substitution of units with similar components or products.
- Programs are to be measured against the tailored degrees of openness and modularity to achieve their program objectives and applicable the enterprise objectives.

PMO Focus
Each program is unique and should work with the MOSA TO to tailor their MOSA and develop a corresponding conformance plan.

The Acquisition Strategy, SEP, MOSA Conformance Plan, and OSMP should provide a clear picture of the tailored MOSA and how the program will implement and evaluate MOSA throughout the program.

At a minimum, PMs should prioritize MOSA efforts to focus on the PEO Aviation prioritized MSCs.

The PM should work with the MOSA TO in determining applicability of each of the requirements within the MOSA Assessment Matrix and then work to fill out the matrix.

MOSA Transformation Office
Establish, enforce, and align MOSA conformance targets for all relevant MSCs.

Maintain the MOSA Assessment Matrix alignment with Title 10 MOSA Requirements and the ASA(ALT) MOSA Implementation Guide.

Provides a self-assessment checklist aligned with each phase of the program.

SECTION EIGHT
Affordable, Funding, & Savings (AFS) Key Points

PEO Aviation MOSA must capture the desired cost avoidance and overall affordability benefits

The MOSA BCA guide intends to take planned acquisitions within a single PM or Product office and expand the scope to encompass similar problems sets across the PEO Aviation fleet of systems

MOSA BCAs will provide financial understanding and analysis of technical decisions affecting enterprise affordability

The MOSA BCA makes use of should-cost analysis. The current should-cost culture is focused on application to a single weapon system or subsystem

The MOSA BCA Assessment Questionnaire provides PMOs an opportunity to expand on current program restrictions/limitations to applying MOSA.

The MOSA Effort Approval form identifies the impacted PM offices, the responsible PM office, and the initial funding adjustments/realignments necessary to meet the estimated MOSA requirements.

PMO Focus
PMs must submit a completed MOSA PM BCA Assessment Questionnaire and MOSA Effort Approval form to the MOSA TO for all efforts that may have potential impacts/synergies with other offices across the enterprise.

MOSA applicable BCAs will be approved by PEO Aviation enterprise stakeholders.

PMs must work with the MOSA TO and G8 for all MOSA identified BCAs to review the acquisition against EA standards.

MOSA Transformation Office
MOSA TO will determine if a PEO Aviation acquisition has a wider enterprise MOSA application and if the PM office is required to submit a MOSA BCA

MOSA TO and G8 will approve BCA and MOSA Effort Approval form before the acquisition can move forward.

SECTION NINE
Acquisitions and Contracts Key Points

The contract language should address the desired levels of systems design and modularity in major systems and/or major components, Intellectual Property (IP), and Data Rights (DR)

The SOO/PWS/SOW shall address all documentation standards, requirements traceability to modular components, and interface design/management. It requires the contractor to describe its approach to ensuring the system design helps avoid technology obsolescence and maintains open competition throughout the lifecycle of the program.

The guide gives input on MOSA insertion for:
- PWS, SOO, or SOW
- Special Contract Requirements
- Pre-award documents and Evaluation Criteria
Open Systems Management plan (OSMP) is a new CDRL

that will be required in future contracts.
DoD OSA Contracting Guidebook
(https://www.milsuite.mil/book/docs/DOC-788494)

PMO Focus
PM should leverage contracting language in the MOSA Implementation Guide that aligns with the overall acquisition plan and strategy that address the MOSA objectives.

The PM should ensure that information from the 'Statement of Work' and 'The Statement of Objectives' are addressed in the RFP (within the SOW or PWS).

MOSA Transformation Office
Continue to refine contracting language for PM use.

SECTION TEN
Qualification and Materiel Release (QMR) Key Points

Materiel Release Process (AR 770-3) is for all programs in the Army. Airworthiness Process (AR 70-62) and its corresponding programmable hardware/software processes (DO-254/DO178) are only for Aviation programs.

MBSE should be an enabler to both the Airworthiness and Materiel Release process. This will occur with proper expectation management and execution with airworthiness and material release stakeholders through the SEP, TEMP, LCSP, AQP, Contract SOW and associated CDRLs.

Making and documenting modularity and openness decisions via MBSE models will be a key enabler to achieving additional QMR related benefits by establishing clearer separation of concerns … i.e. making complex systems less complex.

PMO Focus
Ensure LCSP contains an active Materiel Release Plan matching fielding strategy in other Milestone Documentation. Tailor the SEP, TEMP and AQP to ensure optimal execution of your MR Plan in your LCSP.

Engage appropriate Materiel Release Functional Areas during the development and qualification phase of your program, and document in the MR Plan and LCSP.

Integrate component re-use (component, circuit card, and/or software) in the architecture for long-term benefits in fielding and program cost/schedule.

Include MBSE tools in the SEP, TEMP, LCSP, AQP, Contract SOW and associated CDRLs to deliver airworthiness and MR content.

MOSA Transformation Office
N/A

SECTION ELEVEN
Strategic Communications Key Points

The Strategic Communications objective is to ensure consistent and cohesive alignment of messaging to influence strategic outcomes, which will generate supplier enthusiasm and MOSA compliance, from identified key stakeholders across the Aviation Enterprise, the Army and DoD.