



**PEO IEW&S Integration Directorate**  
*Open Systems and Standards for Industry - Introduction*



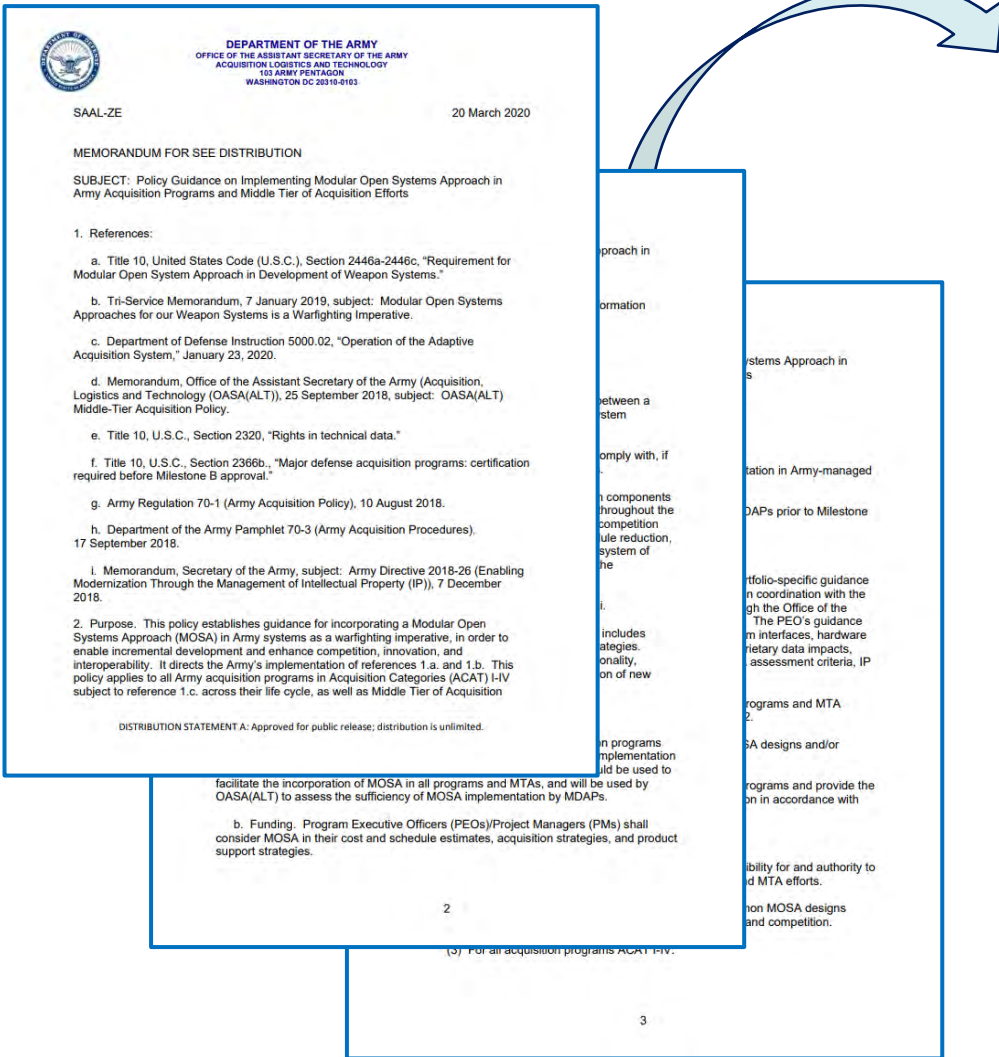
**PEO**  
**IEW&S**

Program Executive Office  
Intelligence, Electronic Warfare & Sensors

APRIL 26, 2023



# Modular Open Systems - ASA(ALT) Policy



## ASA(ALT) Policy on Implementing Modular Open Systems Approach in (MOSA) Army Acquisition Programs:

- Policy signed by the AAE on 20 March 2020.
- **Purpose:** The policy establishes guidance for incorporating a MOSA in Army systems as a warfighting imperative.
- “This policy applies to all Army acquisition programs in Acquisition Categories (ACAT) I-IV subject to reference 1.c. across their life cycle, as well as Middle Tier of Acquisition (MTA) efforts subject to reference in 1.d. It does not apply to Automated Information Systems/Defense Business Systems”

## PEO Responsibilities:

- Within one year of the date of the policy, develop portfolio specific guidance for implementing MOSA throughout their portfolio of programs, in coordination with the appropriate stakeholders.
- The PEOs guidance for implementing MOSA should include considerations for system interfaces, hardware and software, government furnished equipment, proprietary data impacts, cybersecurity, maintainability and architecture requirements.

# Modular Open Systems – Integrated Acquisition Strategy



**MOSA Requirements:** are codified in law (10 United States (U.S.C) 4401–4403) for Department of Defense (DoD) acquisition weapon systems.



**Major Capability Acquisition:** MOSA used to evolve system capability, improve interoperability, reduce cost or schedule, and refresh technology. Planning will be consistent with DoDI 5000.85, Para 3C.3.a(5).



**Information Technology:** All milestone and decision point approvals will be designed and developed, to the maximum extent practicable, with a MOSA to enable incremental development and enhance competition, innovation, and interoperability in accordance with Section 4401 of Title 10, U.S.C. [DoDI 5000.82]



**Software Pathway:** The PM, as much as practicable, will require that any commercial or proprietary software used in or interoperable with software developed for the government has document open interfaces to allow for technology insertion, and to support the use of MOSA. PMs will ensure that a holistic approach is used to ensure the government's requirements are satisfied.

# Modular Open Systems - Background



**Establish Enabling Environment**

- Published interfaces, protocols & data formats.
- Maintained by a recognized industry consortium.
- Modular & loosely coupled components.
- A well-defined software defined architecture.



**Employ Modular Design of Open Systems**



**Designate Key Interfaces between the modular hardware and software components created**



**Use Open Standards for interoperability**

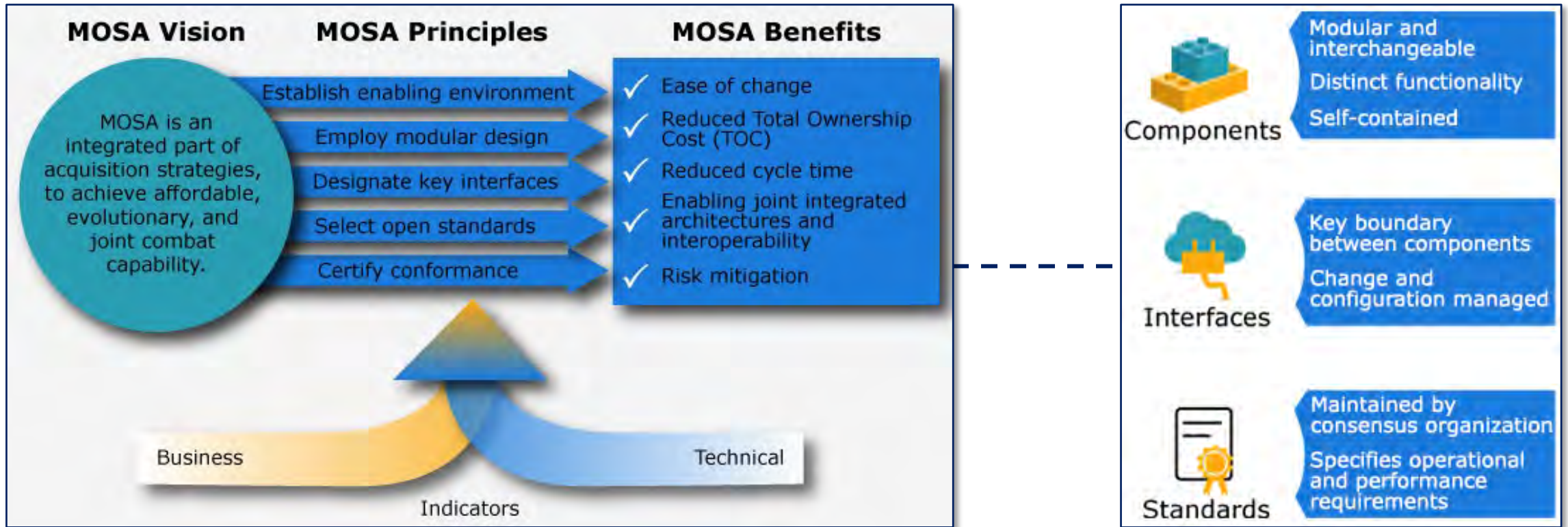


**Employ Established Conformance Certification Mechanisms**





# Modular Open Systems – Vision and Principles



## Modular Open Systems Approach (MOSA)

- Defined as an integrated business and technical strategy to enable incremental development and enhance competition, innovation, and interoperability.
- Open Systems are implemented in DoD as an acquisition and design strategy consisting of a technical architecture that adopts open standards to support modularity and openness.
- **DoD is pursuing opportunities** to use Open Systems to design and develop defense systems that are “built for change” and can be upgraded to incorporate new technologies and respond to emerging threats.

Open standards reduces the risks associated with integration and interoperability with new systems and components.

# Modular Open Systems – Approaches Supporting the Goals

## Benefits

- Interoperability
- Tech Refresh
- Competition
- Innovation
- Cost Savings / Cost Avoidance

## Approaches

- Modular Design
- Defined Interfaces
- Standards Process
- Accessible Data
- Open Interfaces
- IP Rights

## Integrated Business and Technical Strategy

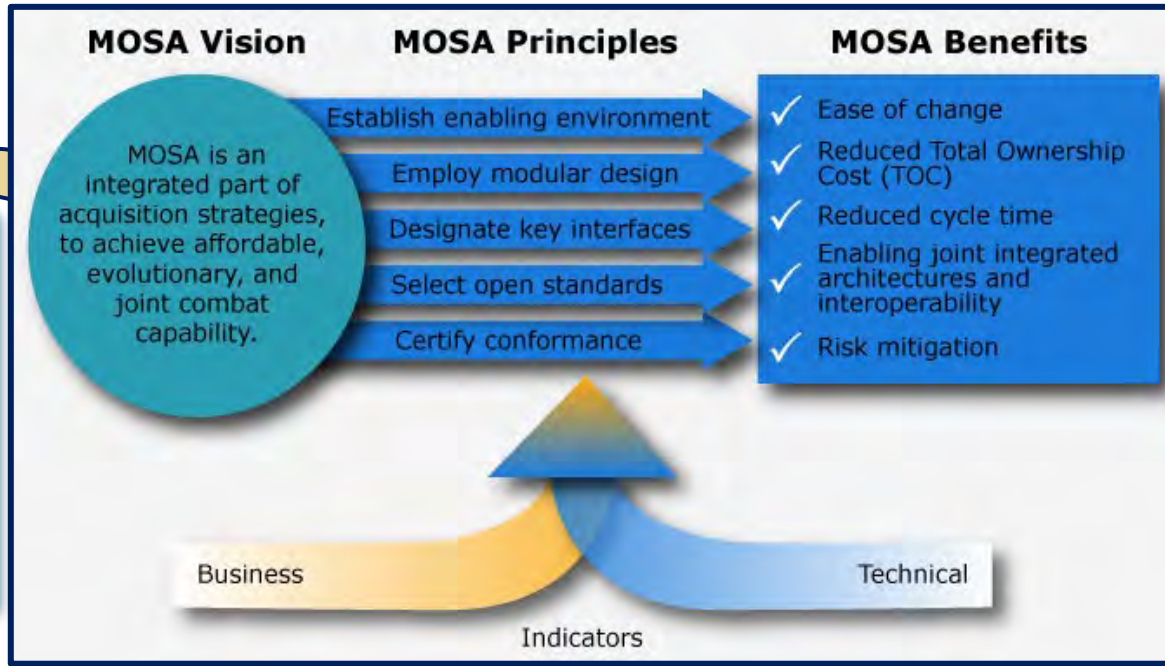
**Modular Technical Design Approaches**

- Design severable modules.
- Define Interfaces between modules.
- Publish consensus-based standards.
- Define, standardize & describe data modules.

**Open System Business Approaches**

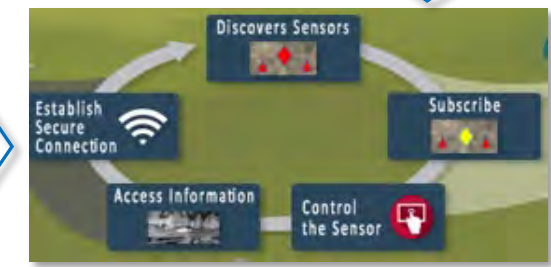
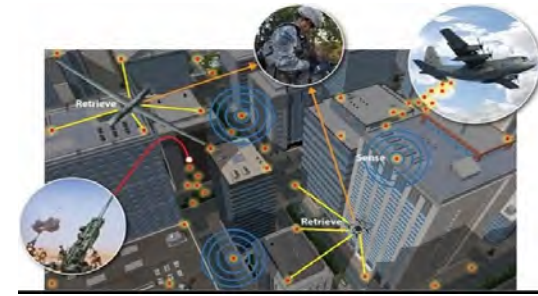
- Use standards & specs for interfaces.
- Recognize the relevant technical community.
- Acquire necessary Data and IP rights.

# MOSA - Implementation and PEO IEW&S Benefits



## 4. Identifying Common Standards

- Integrated Sensor Architecture (ISA)/ Sensor CE.
  - Dynamic discovery of sensor data and alerts.
  - Usable for any sensor modality.
  - Process data near the point of collection.



### \*IEW&S Integration Directorate MOSA Implementation and Support to the PMs.

#### 1. PM Program Document Development Support

- Program Acquisition Strategy
- Program Contract Strategy
- SAMP, SEP
- SOWs, RFPs, RFIs, CDRLs
- Sample Contracting Language

#### 2. Program Technical Review Support

- SSR, SFR, PDR, CDR, TRR
- ASA(ALT) OCSE PART Tool
- QPRs to the DPEO/PEO

#### 3. Building Knowledge Base and Training

- Discussions with OTA Lead
- Participating in CMRBs
- Industry Engagements
- Workforce Training Sessions
- MOSA Implementation Guide



# MOSA - Roles and Responsibilities



## PEO Responsibilities

- Provide MOSA implementation guidance to PMs.
- Provide oversight on MOSA implementations.
- Provide MOSA assessment to non-MDAPs and MTAs.
- Collaboration with other PEOs, C5ISR MMO, and external organizations.
- Provide feedback on PMs MOSA compliance scores through the DASA(DES) PART tool.



## PM Responsibilities

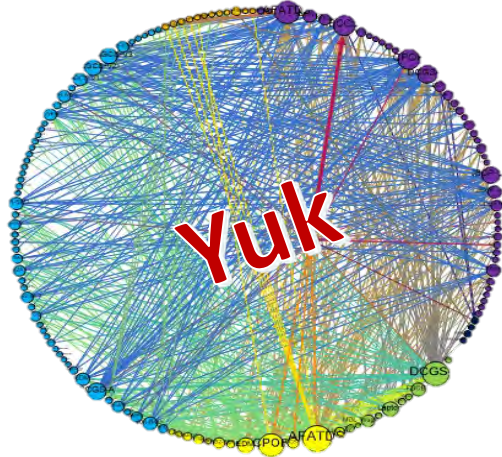
- Follow PEO MOSA implementation guidance.
  - Implementation Guide V1.0 signed by PEO.
  - PMs involved in creation of guidance.
- Provide self-assessment on MOSA implementation at all technical reviews (SSR, SFR, PDR, CDR, TRR).
- Provide MOSA-PART tool assessment report and artifacts to PEO.
- Work with DASA(DES) / PEO to adjudicate feedback on assessment.



# Future MOSA State in PEO IEW&S

## Non MOSA Implementation

“776 Point-to-Point connections between 118 systems”



## Future MOSA Implementation State

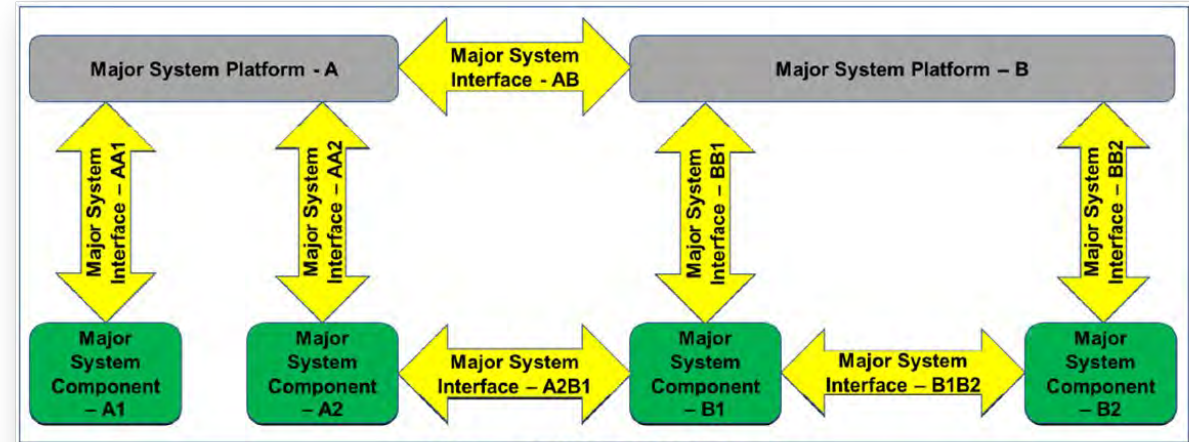


Figure 1: MOSA Definitions

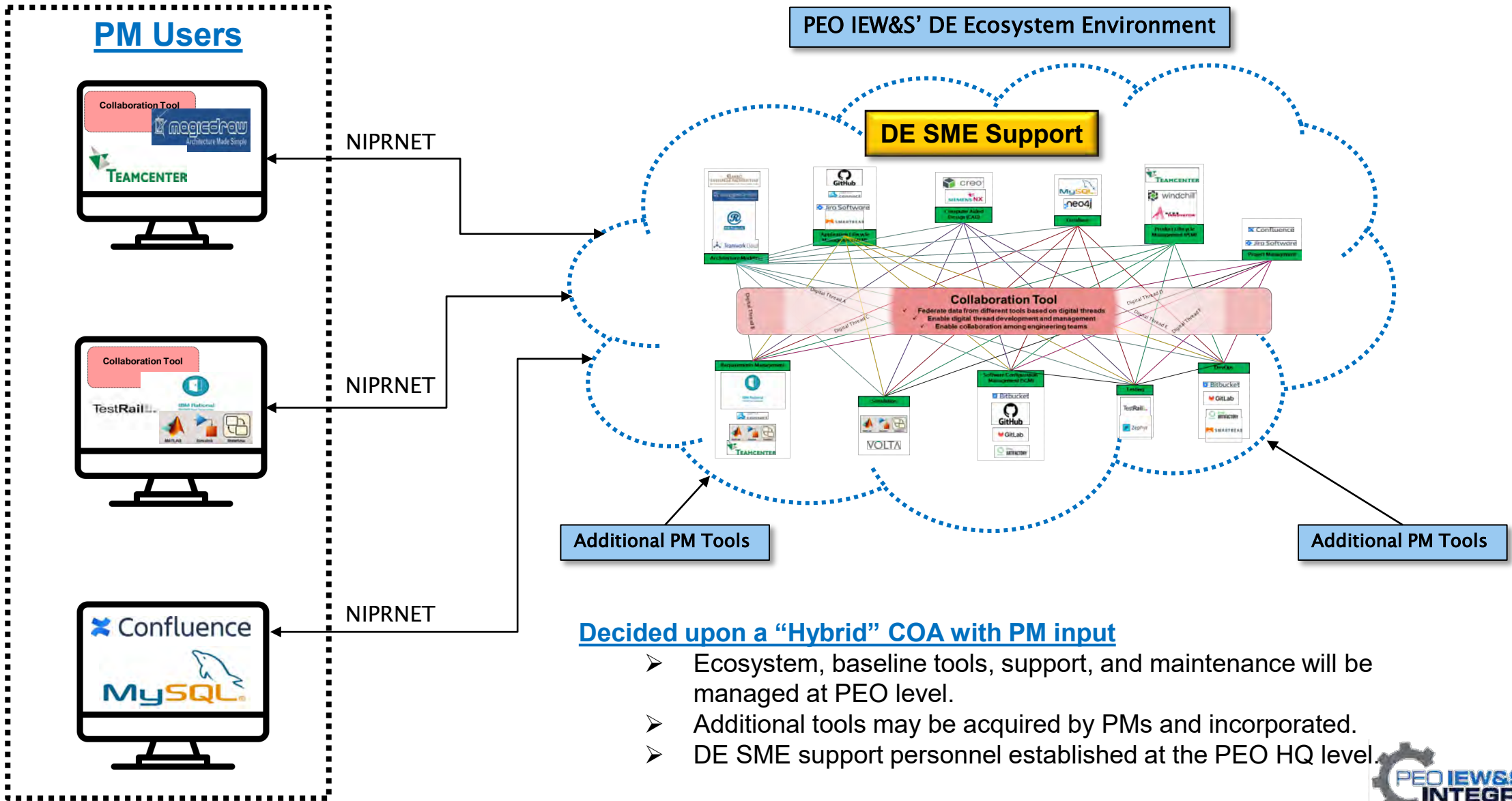
### Issues with Historical Approach

- Proprietary connections.
- Connections are determined pre-deployment.
- Redundant connections.
- Security Concerns.
- Unintentional stovepipes.

### MOSA Benefits to the End User:

1. Government managed and defined Interfaces.
2. Modular and adaptable. Designates Key Interfaces.
3. Establishes enabling environments for standard data transfer.
4. Multiple MOSA standards in use in PEO IEW&S (ISA, CMOSS, etc.)

# Digital Engineering Ecosystem

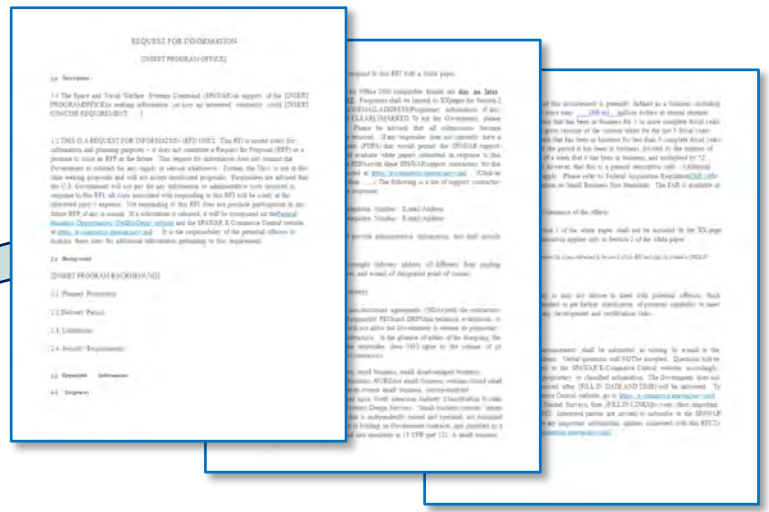


## Decided upon a "Hybrid" COA with PM input

- Ecosystem, baseline tools, support, and maintenance will be managed at PEO level.
- Additional tools may be acquired by PMs and incorporated.
- DE SME support personnel established at the PEO HQ level.



# DE Request for Information (RFI) to Industry



**Developing a Digital Engineering Request for Information** to determine the availability of commercial products and services and to evaluate industry market practices.

- Based on discussions with the PMs, and preliminary market research, PEO IEW&S DE ecosystem requirements will be codified in an RFI.
- The RFI will be used for DE planning and final market research in order to find viable sources of products and services to meet the PEO baseline requirements.



## Benefits of the DE RFI Pathway

- Information is gathered in a formal, structured, comparable fashion.
- Suppliers understand that there is fair and open competition.
- PEO IEW&S will act on information without the appearance of a preferred supplier.
- A formal pre-proposal and reply will be submitted by suppliers to support the development of the future PEO IEW&S DE RFP.

# Modular Open Systems - Conclusion and Benefits

## Payoffs and Benefits

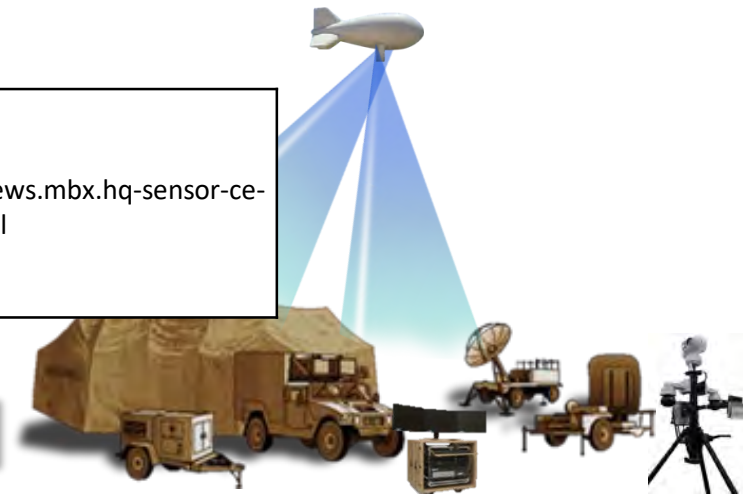
- MOSA enables IEW&S acquisition efforts to maximize industry innovation with tailorable warfighter software and hardware capabilities.
- MOSA also allows for customizable warfighter solutions with rapid upgrades and the integration of new open system-based solutions.
- Helps to ensure the maximum potential for cost savings through open and competitive contracting.
- MOSA utilizes open standards and helps avoid proprietary vendor lock situations.

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Contact the Integration Directorate POCs for MOSA support.





# Questions?

