



Modular Open Systems Approach (MOSA) Panel on Standards

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Modular Open Systems Approach and the National Defense Strategy



Remarks by Secretary Mattis
on the National Defense Strategy
January 19, 2018

“It is incumbent upon us to field a more lethal force if our nation is to retain the ability to defend ourselves and what we stand for.”

“We will modernize key capabilities, recognizing we cannot expect success fighting tomorrow's conflicts with yesterday's weapons or equipment. Investments in space and cyberspace, nuclear deterrent forces, missile defense, advanced autonomous systems, and resilient and agile logistics will provide our high-quality troops what they need to win.”

“To keep pace with our times, the department will transition to a culture of performance and affordability that operates at the speed of relevance. Success does not go to the country that develops a new technology first, but rather, to the one that better integrates it and more swiftly adapts its way of fighting. Our current bureaucratic processes are insufficiently responsive to the department's needs for new equipment. We will prioritize speed of delivery, continuous adaptation and frequent modular upgrades.”



MOSA

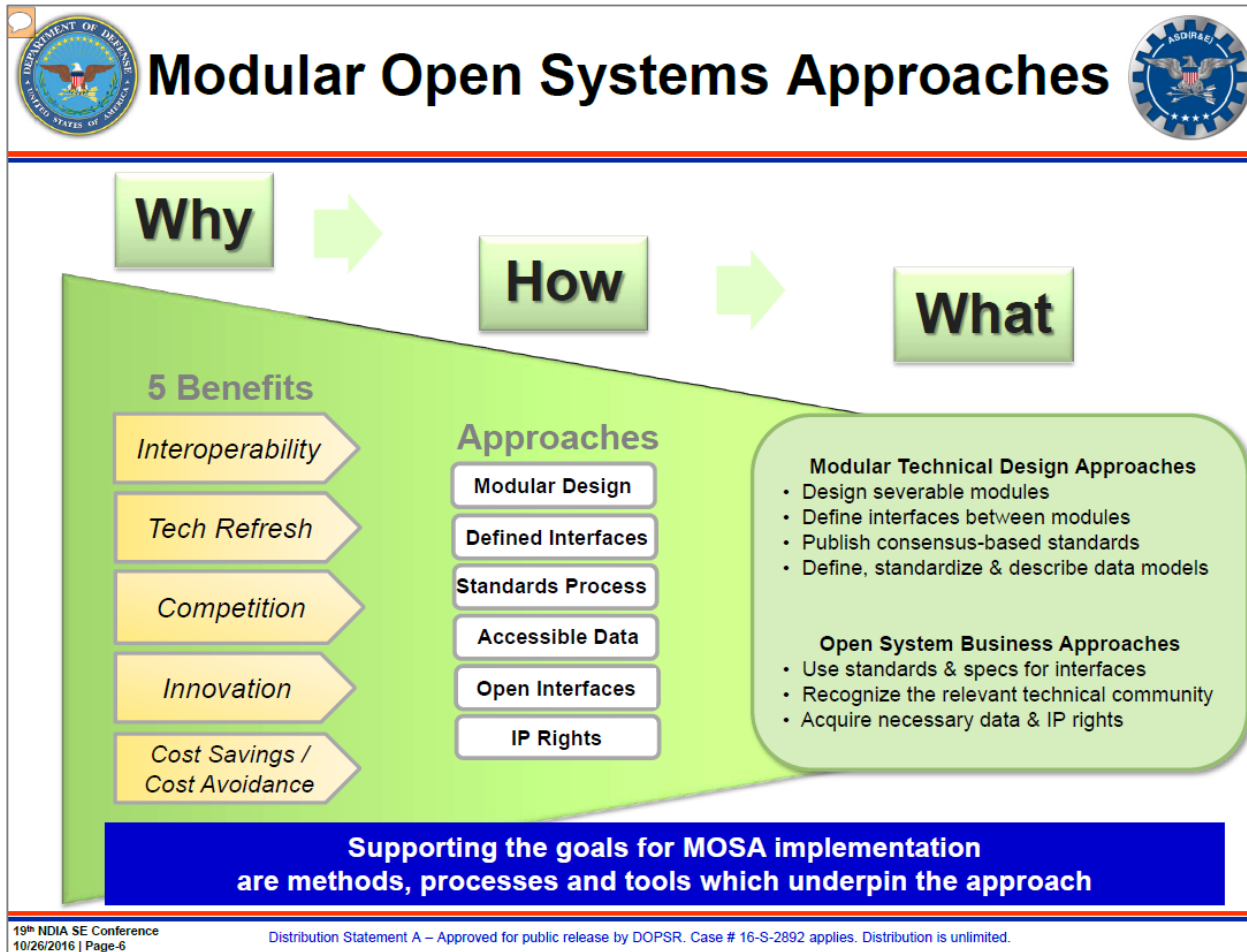
Statute, Policy, and Guidance



Statute	DoD Policy	Acquisition Strategy	Guidance
<p>10 USC § 2446a (FY17 NDAA)</p> <p>MOSA Requirement:</p> <ul style="list-style-type: none"> •MDAPs are to be designed and developed using a modular open systems approach (MOSA) to enable incremental development and enhance competition, innovation, and interoperability. <p>10 USC § 2446b (FY17 NDAA)</p> <ul style="list-style-type: none"> •Program Capability Documents to describe extent that performance requirements are likely to evolve, why, and values for IOC. •Analysis of Alternatives (AoAs) for MDAPs must consider evolutionary acquisition, prototyping, and MOSA. •Acquisition Strategy for MDAPs that use MOSA must: (1) describe the open approach, (2) differentiate between the major system platform and major system components within the MOSA, (3) describe the expected evolution of major system components, (4) describe IP issues & plans, and (6) describe system approach to ensure mission assurance and information assurance. •Milestone B Requirement for MDA to certify the validity of MOSA, or state why MOSA is not being used. •Request for Proposal (RFP) includes minimum set of major system components when contracting for design of MDAP. <p>10 USC § 2446c (FY17 NDAA)</p> <ul style="list-style-type: none"> •Selected Acquisition Report (SAR) Requirement for MDAPs to include a MOSA statement. <p>10 USC § 2448a (FY17 NDAA)</p> <ul style="list-style-type: none"> •Program cost, fielding and performance goals to address a modular open system approach to evolve system capabilities and improve interoperability. 	<p>DoDI 5000.02, Change 4, Updates</p> <p>Main Body</p> <ul style="list-style-type: none"> •Para 5.d.(6)(c). MOSA review at Development RFP Release Decision Point <p>DoDI 5000.02, Enclosure 1</p> <ul style="list-style-type: none"> •Table 5, MOSA in Selected Acquisition Report (SAR) <p>DoDI 5000.02, Enclosure 2</p> <ul style="list-style-type: none"> •Para 6.(4)(b). Intellectual Property strategy to support MOSA •Para 6(5). MOSA in Acquisition Strategy development <p>DoDI 5000.02, Enclosure 3</p> <ul style="list-style-type: none"> •Para 14. SE considerations for MOSA to include the 5 benefits of MOSA <p>DoDI 5000.02, Enclosure 9</p> <ul style="list-style-type: none"> •Para 2.(a)(4). MOSA considerations for the AoA 	<p>April 2011 Outline</p> <p>Paragraph 7</p> <ul style="list-style-type: none"> •7.6 Technical Data Rights Strategy <ul style="list-style-type: none"> •7.6.2. Open Architecture data needs •7.6.3. Business Case Analysis and tradeoff analysis outlining approach for open systems architecture and acquiring technical data rights <p>Paragraph 11</p> <ul style="list-style-type: none"> •11.3. Sustaining Industrial Capabilities. <ul style="list-style-type: none"> •Make-or-buy approach to establish and maintain access to competitive suppliers for critical areas at system, subsystem, and component level using open systems architecture (addressing product technology obsolescence, replacement of limited-life items, regeneration options for unique manufacturing processes, and conversion to performance specifications at the subsystems, component, and spares levels. 	<p>Defense Acquisition Guidebook - Chapter 3, Systems Engineering Updates</p> <ul style="list-style-type: none"> •CH 3–3.2.2 Systems Engineering Plan (SEP) •CH 3–2.3.1 Software (SW Trade Studies, Software Architecture and SW Reuse) •CH3–3.2.4.1 Modular Open Systems Approach •CH 3–2.7 SE Role in Contracting •CH 3–3.2.2 Materiel Solution Analysis Phase •CH 3–3.2.3 Technology Maturation and Risk Reduction Phase (Perform System Trade Analysis) •CH 3–4.1.7 Technical Data Management Process (Acquiring Data) •CH 3–4.1.8 Interface Management Process •CH 3–4.2.4 Implementation Process (Design) •CH 3–4.3 Design Considerations (Modular Design) •CH 3–4.3.3 Anti-Counterfeiting (MOSA) •CH 3–4.3.8 Diminishing Manufacturing Sources and Material Shortages (DMSMS) •CH3–3.4.3.15 Modular Design <p>Open Systems Management Plan (OSMP) Data Item Description (DID) January 2017</p> <p>http://quicksearch.dla.mil/Transient/C8EEEC5D14EB4CF6B2D6DE92AA451112.pdf</p> <ul style="list-style-type: none"> • Describes the developer’s modular and open system’s approach and support plan to go in in the contract Statement of Work (SOW), Performance Based SOW (PBSOW) or Statements of Objectives (SOO).



MOSA Benefits and Approaches



- There is no single, magic bullet for implementing MOSA
- Determine expected outcomes up front



Strategic Considerations



- **MOSA is not an all or nothing proposition**
 - Must tailor approach to expected MOSA benefits; requires tradeoffs
 - Must be addressed in all aspects of acquisition
- **MOSA is more than just defining architectures and selecting standards**
 - MOSA requires technical community enablers and business relationship enablers
- **Governance and leadership matter**
 - Leadership, and guidance applies across multiple programs
- **Industry must be an able and willing partner**
 - Crossing the government/industry boundary: Intellectual Property/Data Rights (IP/DR) in design, documentation, specifications, tools, etc.

MOSA enables flexibility and longevity in our weapon systems



Systems Engineering: Critical to Defense Acquisition



Defense Innovation Marketplace
<https://defenseinnovationmarketplace.disa.mil>

DASD, Systems Engineering
<https://www.acq.osd.mil/se>



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DASD(SE) MOSA Information:
https://www.acq.osd.mil/se/initiatives/init_mosa.html