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December 17, 2024

MEMORANDUM FOR SERVICE ACQUISITION EXECUTIVES AND PROGRAM EXECUTIVE OFFICERS

SUBJECT: Modular Open Systems Approach for Department of Defense Weapon Systems

Department of Defense (DoD) Armed Forces face rapidly evolving threats across the world. The dynamic and rapid change of adversary capabilities observed in current conflicts necessitates a critical warfighting capacity to integrate advanced capabilities to counter and maintain a warfighting advantage. To meet this threat, Modular Open Systems Approach (MOSA) shall be implemented and promulgated among the Military Services to facilitate rapid transition and sharing of advanced warfighting capability to keep pace with the dynamic warfighting threat.

For several years, the Services have successfully developed, demonstrated, and validated data standards and Open Systems Architecture (OSA) through a cooperative partnership with industry and academia. This work has resulted in the establishment of Open Systems/Universal Command and Control Interface (OMS/UCI), Sensor Open Systems Architecture (SOSA), Agile Mission Suite Government Reference Architecture (AMS GRA), Weapons Open Systems Architecture (WOSA), Future Airborne Capability Environment (FACE) and Vehicular Integration for C4ISR/EW Interoperability (VICTORY), among other standards.

Congress has made significant changes in Title 10 U.S.C. regarding MOSA, adding three new sections:

- Section 4401 requires MOSA in major defense acquisition programs [MDAPs],
- Section 4402 requires the implementation of MOSA in program capability development and acquisition weapon system design, to include verification of MOSA requirements, and
- Section 4403 relates to ensuring the availability of major system interface standards and support for MOSA in defense acquisition.

The Department needs to review and formalize updated MOSA policy and guidance to remain consistent with the language and spirit of MOSA as mandated in Title 10 U.S.C.
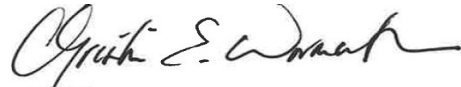
In addition, although DoD guidance focuses on using common standards as a key to implement MOSA, the Department must expand the guidance to ensure it aligns with the

evolving statutory language. We direct all DoD acquisition officers commit to all five MOSA pillars: (1) employing a modular design, (2) designating modular interfaces, (3) leveraging consensus-based open standards, (4) establishing enabling environments, and (5) certifying conformance.

MOSA guidance must include the appropriate verification method and timing within the acquisition program's development to ensure MOSA conformance. Each Service Acquisition Executive (SAE) will ensure MOSA is implemented to the extent practical and will review MOSA compliance with their MDAPs at Systems Engineering Technical Reviews (SETRs), Gate Reviews, and Program Reviews. For MDAPs, MOSA may be addressed at Milestone Reviews as part of Independent Technical Risk Assessments, as appropriate. These MOSA reviews will address how the program has implemented or will implement the five pillars of MOSA. Within 60 days of this memorandum, each SAE will identify and report to their respective Service Secretary on any MOSA architecture that is currently shared between two or more Services; this report will also identify operational military imperative capabilities that can be or are being jointly developed and transitioned. Within 120 days, each SAE will publish their Service MOSA implementation guidance as required by the memo "Modular Open Systems Approaches for Our Warfighting Systems Is a Warfighting Imperative," dated January 7, 2019.

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