

Executive Summary

A Modular Open Systems Approach (MOSA) is both a business and technical strategy for developing a new system or modernizing an existing one. It is an integral part of the toolset that will help DoD to achieve its goal of providing the joint combat capabilities required for 21st century warfare, including supporting and evolving these capabilities over their total life-cycle. DoDD 5000.1 states that, “Acquisition programs shall be managed through the application of a systems engineering approach that optimizes total system performance and minimizes total ownership costs. A modular, open-systems approach shall be employed, where feasible.”

This approach is an enabler to achieve the following objectives:

- *adapt to evolving requirements and threats*
- *promote transition from science and technology into acquisition and deployment*
- *facilitate systems integration*
- *leverage commercial investment*
- *reduce the development cycle time and total life-cycle cost*
- *ensure that the system will be fully interoperable with all the systems which it must interface, without major modification of existing components*
- *enhance commonality and reuse of components among systems*
- *enhance access to cutting edge technologies and products from multiple suppliers*
- *mitigate the risks associated with technology obsolescence*
- *mitigate the risk of a single source of supply over the life of a system*
- *enhance life-cycle supportability*
- *increase competition*

Application of MOSA is consistent with sound system engineering principals; however it requires a different mindset as the SE process is executed during the design of a system and then repeated throughout the life-cycle of that system. Application of MOSA is most effective when implemented within an Integrated Product and Process Development (IPPD) environment. Moreover, MOSA implementation is dependent on continuous market research.

As shown in Figure 1 below, MOSA is characterized by modular design, key interfaces, and the use of open standards for key interfaces where appropriate.

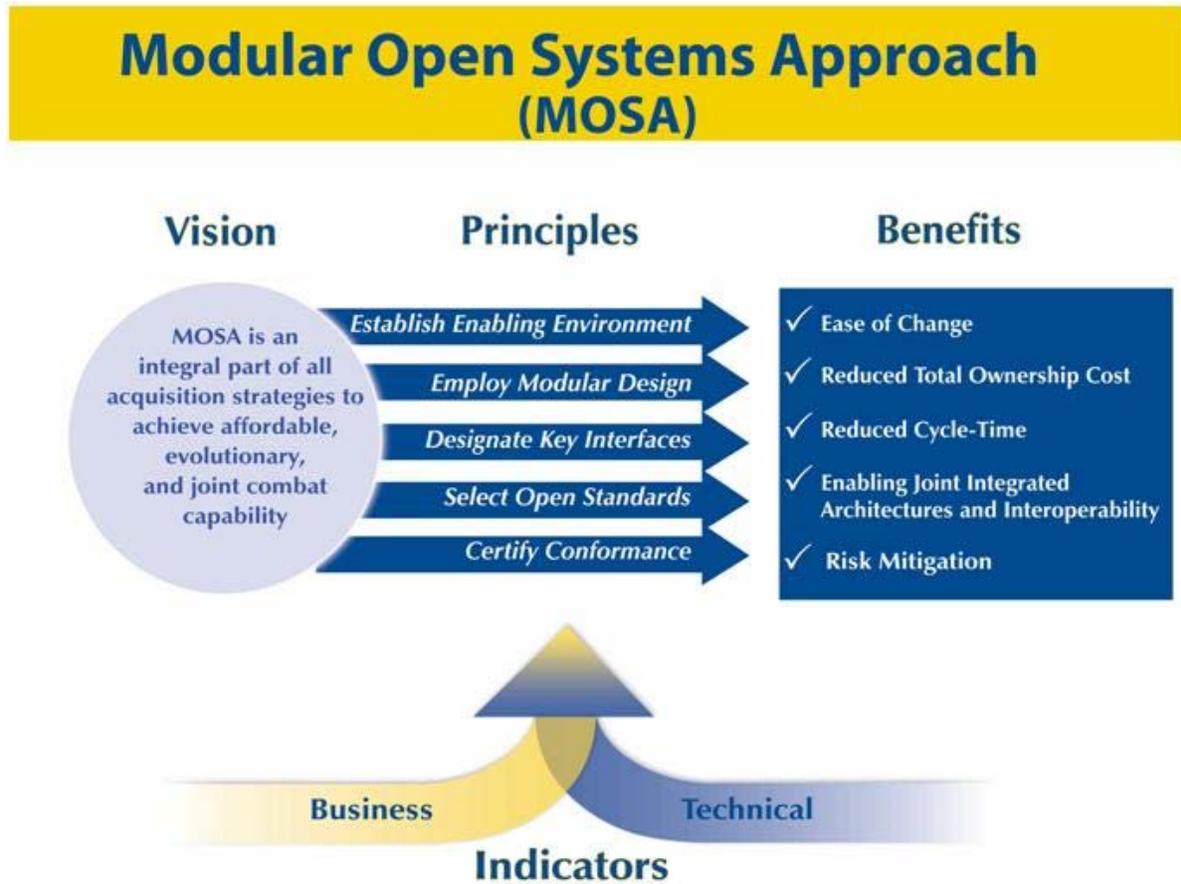


Figure 1: Modular Open Systems Approach (MOSA)

The Open Systems Joint Task Force (OSJTF) has developed a set of indicators that have been incorporated as MOSA implementation questions in an assessment tool called MOSA PART; which is a DoD adaptation of the Program Assessment and Review Tool (PART) originally prepared by the Office of Management and Budget. MOSA PART may either be used for self-assessment by program managers, or be utilized by acquisition executives to recognize when an acquisition program is following MOSA. When MOSA indicators are taken into account and adhered to by an acquisition program, there can be a level of confidence that such program has effectively implemented MOSA.