

THE IMPACT OF MODEL-BASED SYSTEMS ENGINEERING (MBSE) ON THE FUTURE OF MANUFACTURING AND PROCUREMENT

ABSTRACT

The 2018 National Defense Strategy set forth a vision to modernize the Department of Defense (DoD) engineering approach by developing digital authoritative data sources to replace legacy paper documents.¹ Implementing a Model-based Systems Engineering (MBSE) approach for procurement activities facilitates collaboration on product manufacturing information (PMI) and allows “Digital Twins / Digital Threads” of these authoritative sources to be extracted for supply chain optimization. The Digital Thread incorporates business, contextual, and sensor data from physical systems (or processes) into the virtual system model of the digital twin to facilitate analyses, circumvent manufacturing problems, and develop informed technology roadmaps for DoD suppliers.² This paper will provide insight on how MBSE is changing manufacturing strategies and the impact on procurement of DoD systems.

REFERENCES

1. Department of Defense, *2018 National Defense Strategy of The United States of America*, 2018.
2. Madni, A.M.; Madni, C.C., Lucero, S.D. Leveraging Digital Twin Technology in Model-Based Systems Engineering. *Systems*, 2019, 7.