



**OFFICE OF THE DEPUTY ASSISTANT SECRETARY OF DEFENSE
SYSTEMS ENGINEERING**

**System of Systems Engineering
Collaborators Information Exchange (SoSECIE)**

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Model-Based Systems of Systems Engineering

Mr. Zane Scott, Vitech Corporation

To achieve better value for Department of Defense (DoD) weapon systems, acquisition paradigms need to change from today's reliance on a single large integrator performing as the central focus of all acquisition, design, production, and support to a distributed design allowing specialty and niche engineering companies to provide their products as part of a system of systems (SoS). An expanded industrial base enables competition at lower assembly levels and may lead to increased SoS performance at a lower cost.

This presentation will demonstrate distributed SoS models captured in a model-based systems engineering (MBSE) tool, including a discussion of how the systems engineer can manage the SoS challenge while maintaining design integrity, consistency, and confidentiality as appropriate. An SoS approach considers lower assembly units as systems, all of which detailed in a systems engineering model provide the processes, methodology, and engineering rigor to build the SoS. At successful completion of an SoS, the government program office controls the system and subsystem interfaces and owns the systems engineering architecture, the requirements with rationale, and the allocated functionality.

A direct extension of SoS planning and implementation is the support of mission engineering. Current systems are architected and designed to meet today's explicit requirements. Tomorrow's systems will need to adjust, add, and eliminate missions in much shorter time frames. How the mission is achieved is the focus of the design space. Successful systems engineering pre-positions upgradability and obsolescence safeguards.

Biography

Mr. Zane Scott is the Vice President of Professional Services at the Vitech Corporation where he is responsible for consulting and training functions. He is active in INCOSE – as a member of the Chesapeake Chapter and with the international organization where he chairs the Corporate Advisory Board and serves on the Board of Directors. Zane is a frequent blogger, instructor and speaker. With David Long, the Vitech President, he co-authored Vitech's Primer for Model-based Engineering.