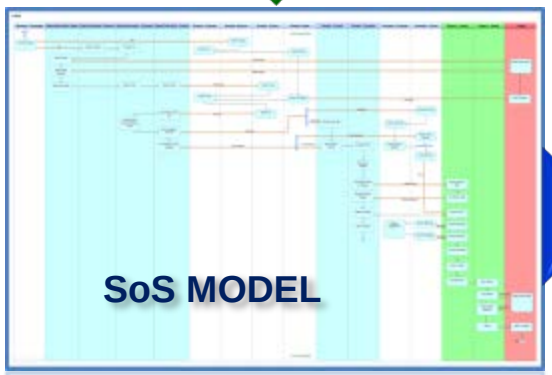
Naval Service Perspective on Digital Engineering

DoD Executive Panel: Systems Engineering
23 October 2018
Tampa, FL

Deputy Assistant Secretary of the Navy for Research, Development, Test and Evaluation

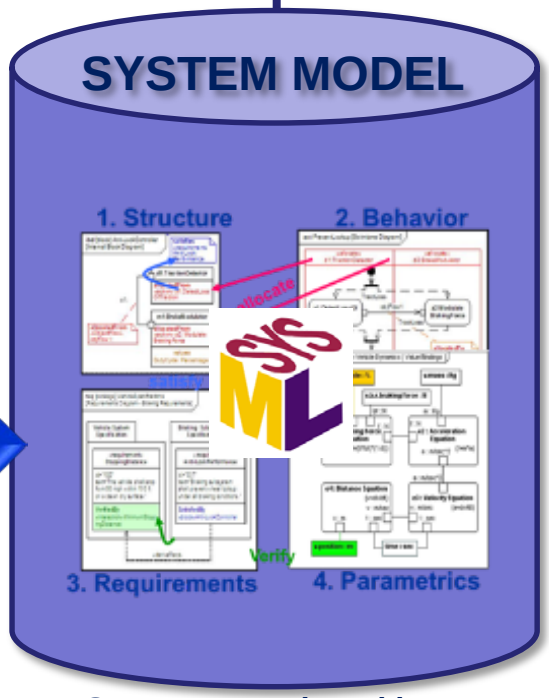
Pull it All Together

Integrated Warfare Analysis Establishes CONEMPS and Effects-Chains



CONEMPS and Effects Chains are modeled at the System of Systems (SoS) level

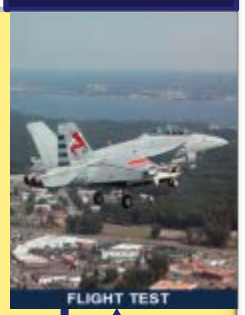
System models form Basis for LVC M&S environment

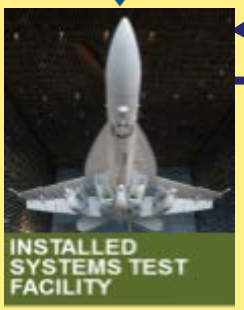


Systems Developed in a Model-Based Environment

Enabling Capabilities-Based T&E

Constructive | Virtual | Live





LVC-Based Training Improves Fleet Proficiency

Digital Linkage

Path Forward: MBSE, M&S and T&E Supportive of Acquisition, Prototyping and Experimentation

- **Policy and Technical Interfaces to advance common standards and practices**
  - Interoperability and open interfaces to allow reuse and reduce cost of current and future integration
  - Deliverables properly specified in contracts to allow reuse and integration into Enterprise
- **Models verified, validated and accredited for intended use in a streamlined, risk based process**
- **Test Labs/Ranges and Training Simulators interconnected to support distributed events**
- **Infrastructure investments regularly identified to reduce program costs**
  - Corporate insight into available models, labs and T&E capabilities for use by RDT&E programs will drive down cost by avoiding duplication and "starting from scratch"
  - Connected labs and ranges across the Enterprise enable programs to compose LVC components as needed to test systems, warfighting capabilities and prototypes
- **Enterprise development and sustainment of critical cross-cutting capabilities**
  - Trusted Data within an accessible trusted, supported and protected
  - LVC supported with M&S "Virtual Range" concept. M&S enterprise evolved and maintained similar to MRTFB capabilities

Managing key RDT&E and M&S as an Enterprise

Allows programs to focus on system development not building infrastructure