Digital Tapestry: Digital System Modeling at Lockheed Martin Space Systems Company for NDIA M&S Digital System Model Workshop
The Digital Tapestry is Lockheed Martin’s interconnected environment where data becomes information and information becomes decisions that create value.
Digital Tapestry – The Integrated System Model

- Beyond As-Designed
- Matured Data-Set throughout Life-Cycle
- Fully Integrated, Delivered, Maintained
Significant Engagements

• NASA NIMA
  – Model-Centric Architecture
  – Across NASA Centers

• AFRL DT/ERS
  – Lockheed Martin CRADA
  – Focus on several areas of study
  – Guided by BBP 3.0 and Affordability Initiatives

• Others across Lockheed Martin engagements
Challenges & Opportunities for DSM

• Standards defining DSM contents
• Given desires for DSM integration . . .
  – Interoperability for domain modeling tools
  – Concepts for data set integration
  – Abstractions for customer-level analyses
• Constructs for Model-Based System Performance Characterization
• Constructs for handling IP in a Model-Based Paradigm
• Tool Integrations Easily Compatible in Classified Environments
Digital Twin – Notional Operations

- As Built Configuration
- Visualized Real-Time Telemetry
- Hi Fidelity Physical Models
- Predictive Analytics
- Operational Digital Twin (Simulated Mission Planning)
- Product Certifications & Traceability
- Digital Twin Simulated Telemetry
- Near Real Time Anomaly Assessments
- As Maintained Software Configuration

Image Credit: NASA & USAF