

SPA MODEL-BASED MISSION ENGINEERING



ARCHITECTURE & ENGINEERING RESOURCE

END-TO-END MISSION MODELING

LINKS DIGITAL TO PHYSICAL

Models physical behaviors (e.g., flight paths), basic orbital mechanics, and networks into a single, integrated environment for combined analytical insights.

- Kill Chain Analysis
- Joint All-domain Analysis
- Networks & Architecture
- Situational Awareness

INTEROPERABLE

Brings the right, tailored level of fidelity to all relevant domains.

- Engineering, Systems, and Network Sources
- Mission and Operations
- Simulation Data

MODEL-BASED SYSTEMS ENGINEERING ARCHITECTURES

Supports development and integration of MBSE models from the component level to complex systems, platforms, and networks.

- Component/Subcomponent Models
- System of Systems Architectures

EFFICIENT

Legacy Data + Data Model = Integrated Views

SPA Model-Based Mission Engineering empowers engineers, program managers, and decision makers across DoD, Intelligence, and other government agencies.

It streamlines the analytic process, reduces errors, and minimizes cost by automating ingestion of structured data sets into the SPA MBME data model and generating engineering viewpoints.

→ SPA MODEL-BASED MISSION ENGINEERING ENABLES DIGITAL TRANSFORMATION

Integrated Digital Engineering environment.

Defines, develops, refines, and evaluates complex System of Systems solutions and digital twins.

Proven MBSE principles.

Uses **quantitative** technical and operational metrics.

Mission data is captured in an Operational View and includes all key performers, platforms, and significant communications pathways in the mission thread.



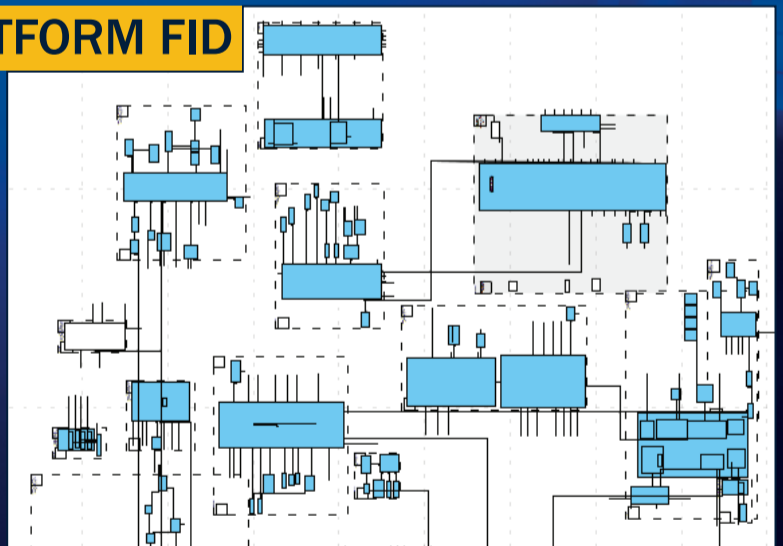
CONOPS are articulated in a time-phased Activity Trace (SV-6) that captures Blue and Red mission operational activities.



Operational activities are decomposed into supporting system functions, which are then mapped to individual systems and their services.

PLATFORM FID

Individual systems are characterized at the component level of detail and are directly mapped to the architecture as the foundational building blocks for each platform.



System data is derived from authoritative sources and is exportable to a variety of formats (e.g., Cameo Systems Modeler).

→ SPA MODEL-BASED MISSION ENGINEERING EXPLICITLY MODELS THE ENTIRE OPERATIONAL NETWORK TO ASSESS FOR FULL MISSION IMPACT

Automatically generates **architecture views** and simulates the SoS architecture to evaluate its effectiveness.

Integrates architecture with **modeling and simulation** to support the entire Systems Engineering V.

Captures all **System of Systems information** at the data level.

Enables **traceability from integrated data** through high-level Operational Views to individual system components.

DECISION SUPPORT FOR NATIONAL SECURITY

Systems Planning & Analysis, a leading global provider of advisory services supporting national security objectives, provides deep domain expertise, problem-solving capabilities, and a results-driven approach to program lifecycles, reaching a wide spectrum of market areas.

With over 50 years of experience, SPA successfully manages large, integrated professional service projects in engineering, analytics, modeling and simulation, and financial and scientific services for clients worldwide.



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