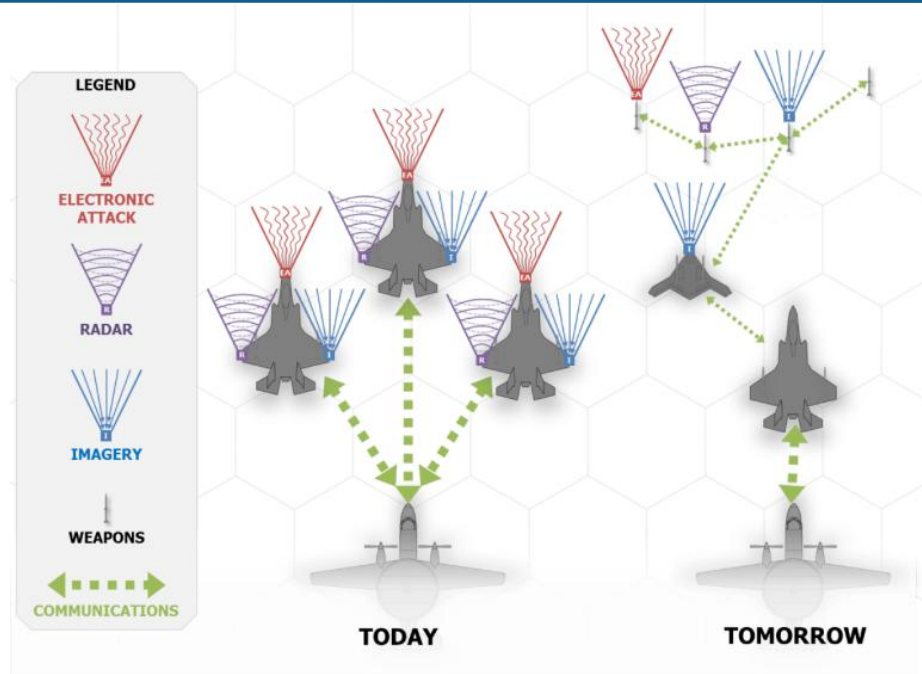


# System of Systems Integration Technology & Experimentation (SoSITE)

## Architecting Composable-SoS Configurations



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# Architecting Composable-SoS Configurations

## A System Architect & Integrator's Perspective

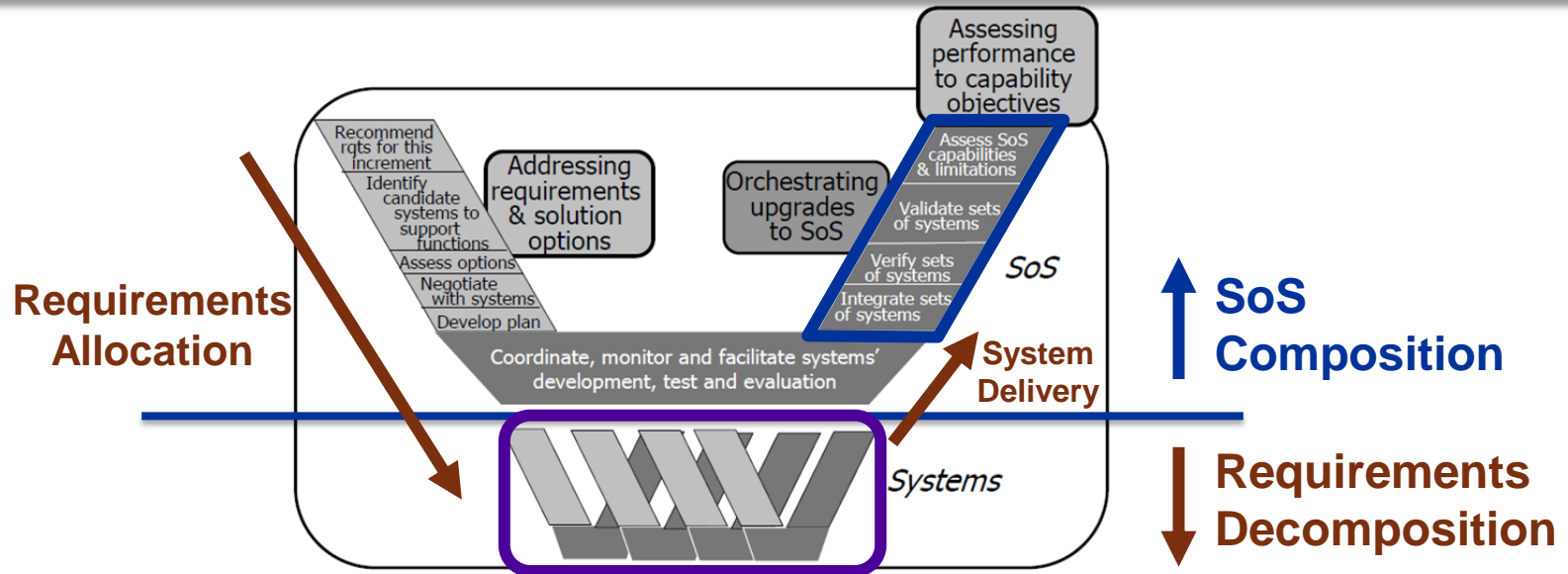
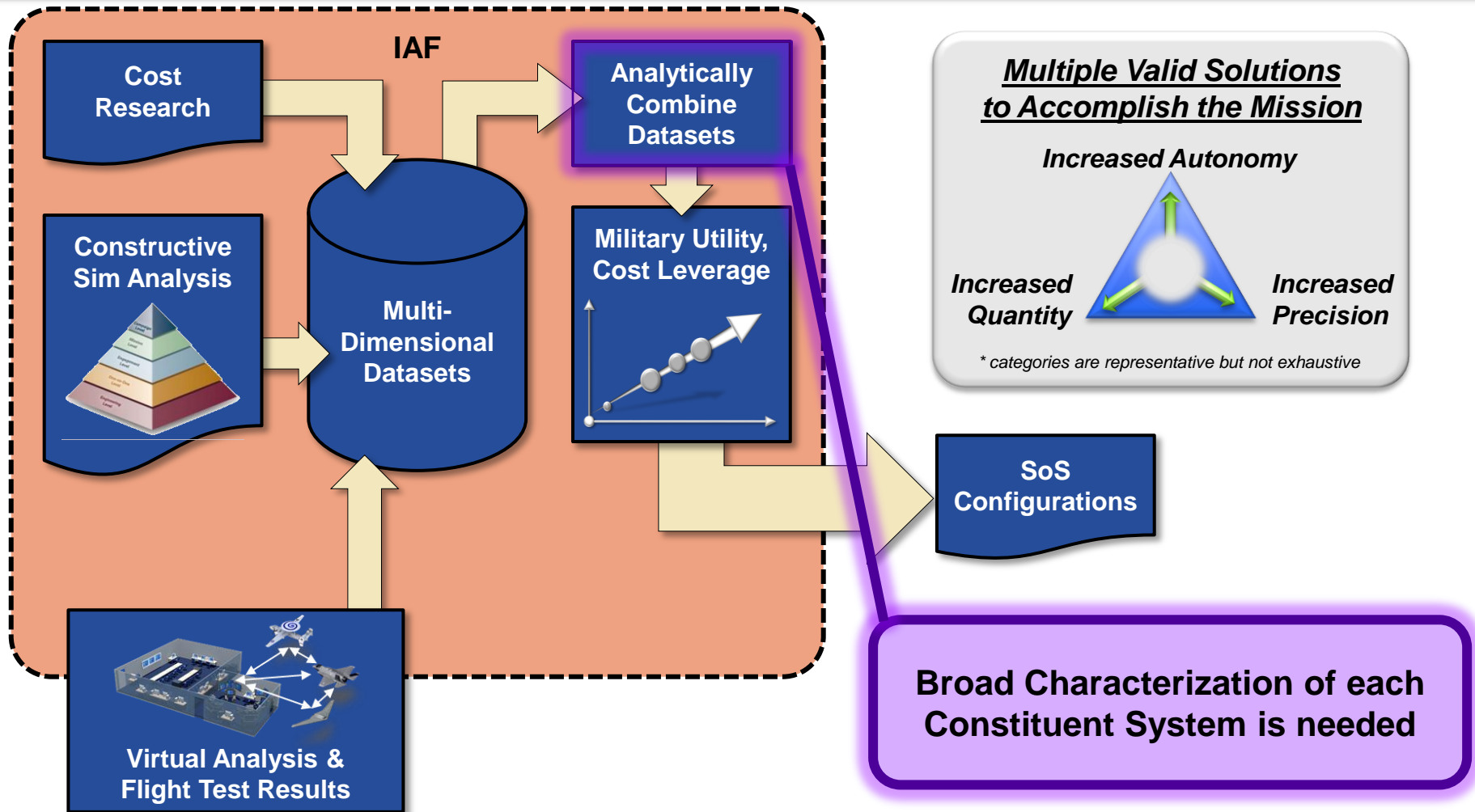


Figure 4-3. SoS SE with a Focus on SoS Upgrade for a Single Increment

Source: Systems Engineering Guide for Systems of Systems v1.0, August 2008

- **Background:** DoD has long relied on tightly integrated weapons platforms using **top-down requirements allocation**
- **Challenge for a SoS-Architect:** When the environment changes, **must employ systems in unplanned ways**
  - Must be able to plug them together
  - Must have confidence that they satisfy the mission
- **Implication on Constituent Systems:**  
**Must provide broad characterization to support SoS-Architect**

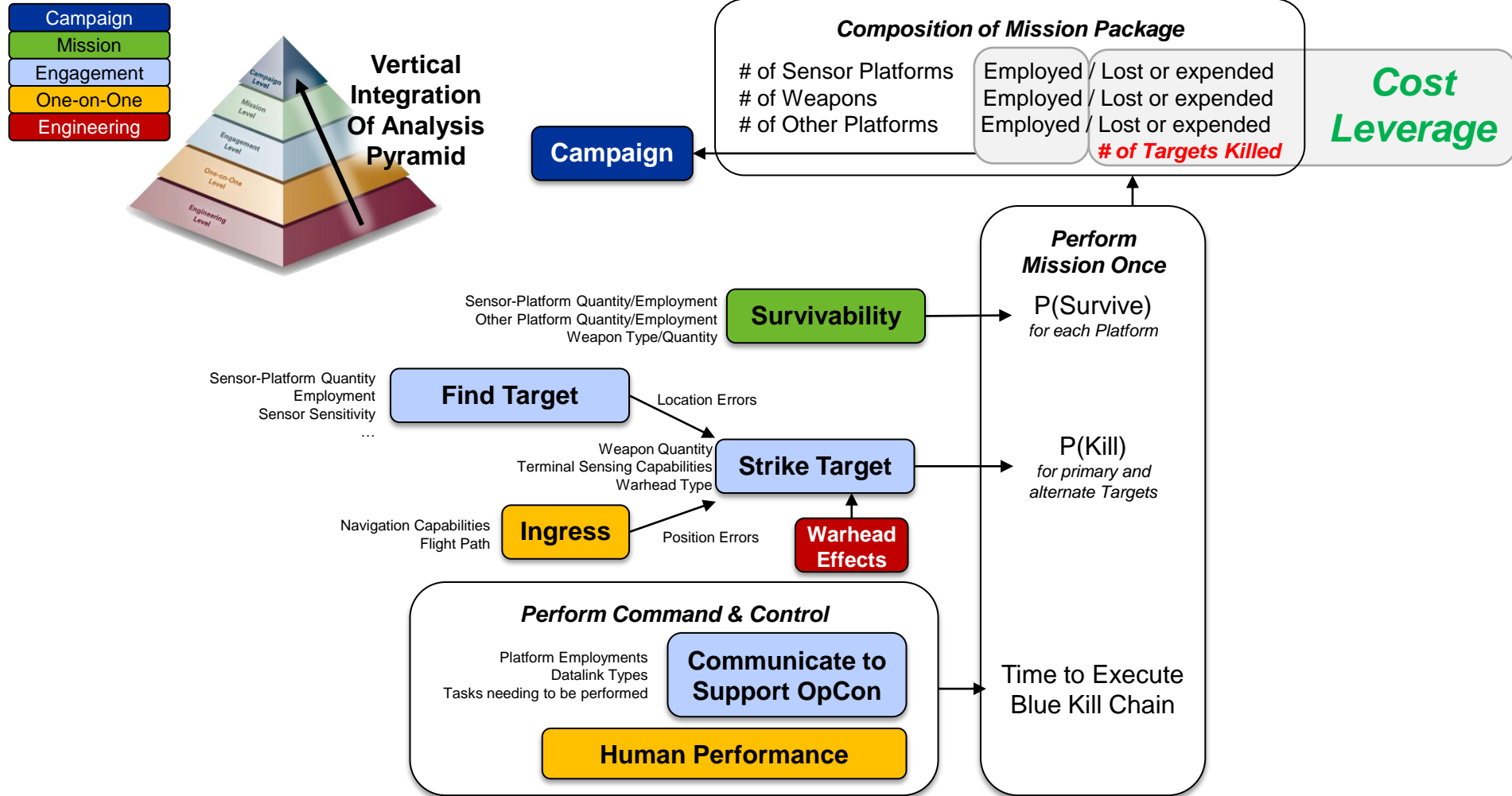
# Integrated Analytic Framework



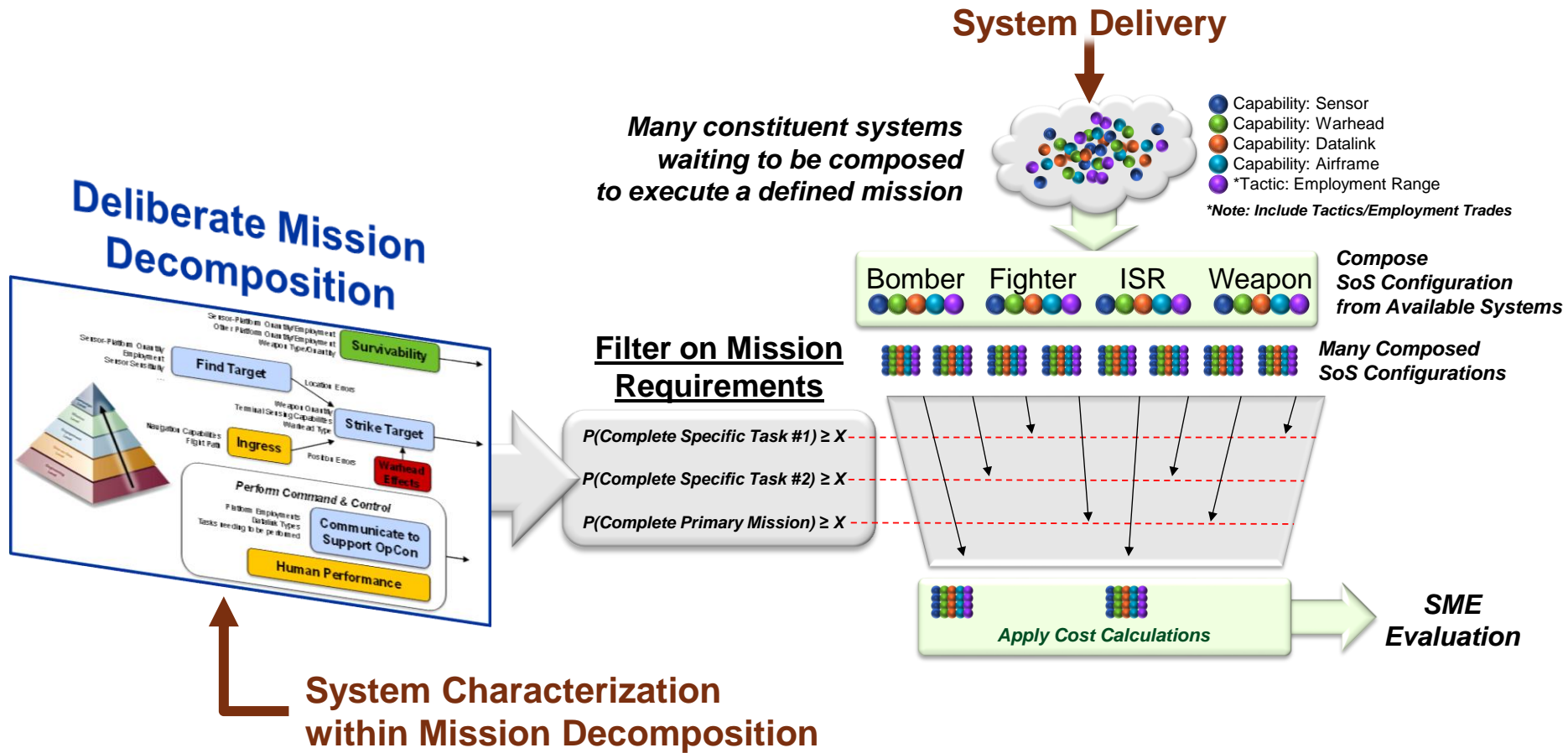
***Multiple Viable SoS Configurations,  
All Candidate Systems & Concepts Remain in Trade Space***

# Example Mission Decomposition

## Deliberate Mission Decomposition Results in Interdependent Trades



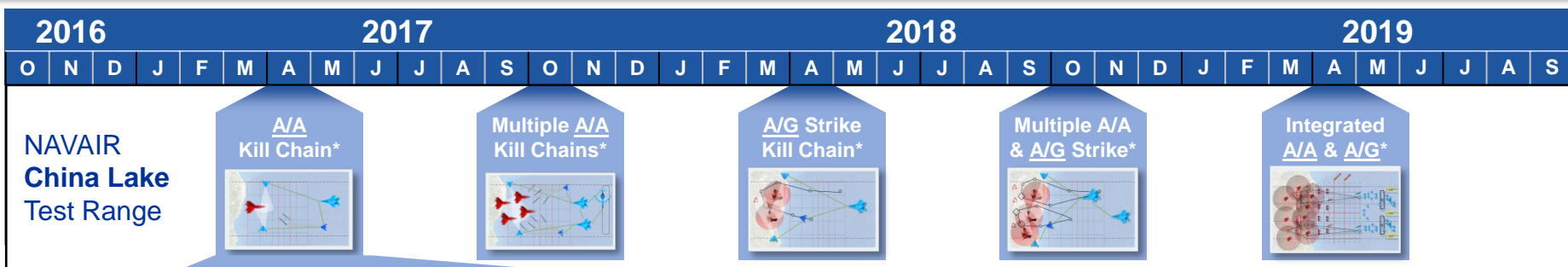
# Mission Decomposition & Interdependent Trades



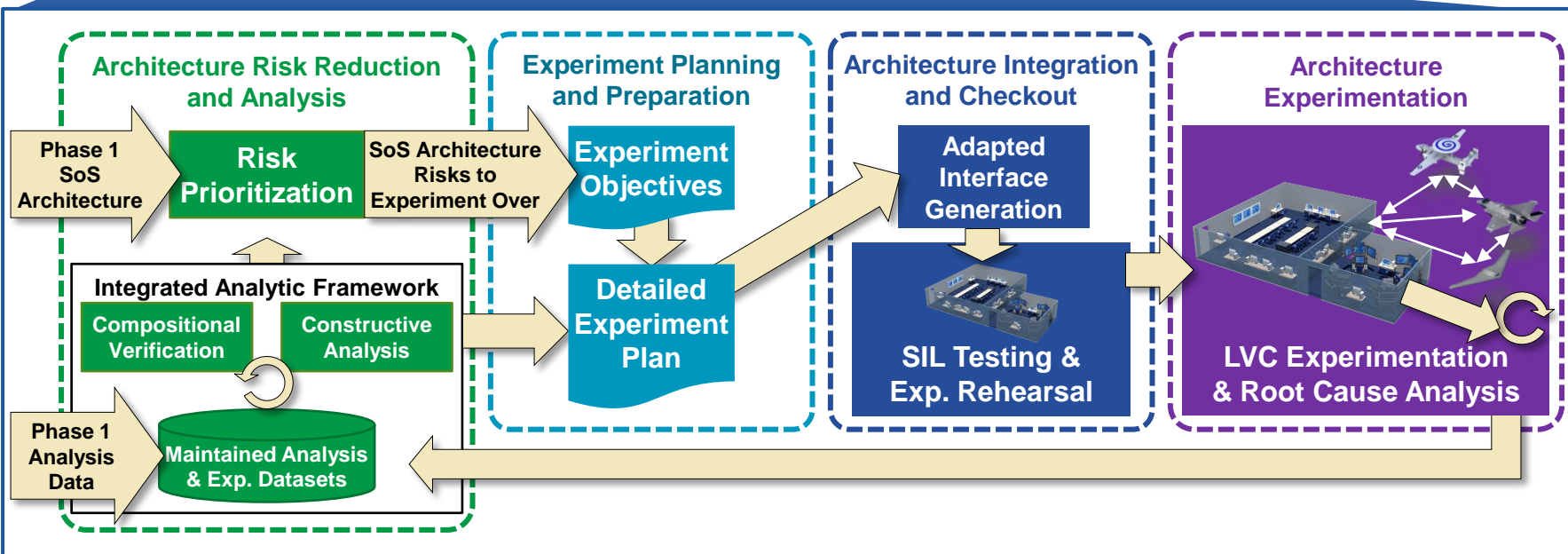
*Each Constituent System Must be Broadly Characterized to Enable Performance Evaluation in a SoS Configuration*



# Phase-2 Rapid Integration & Experimentation

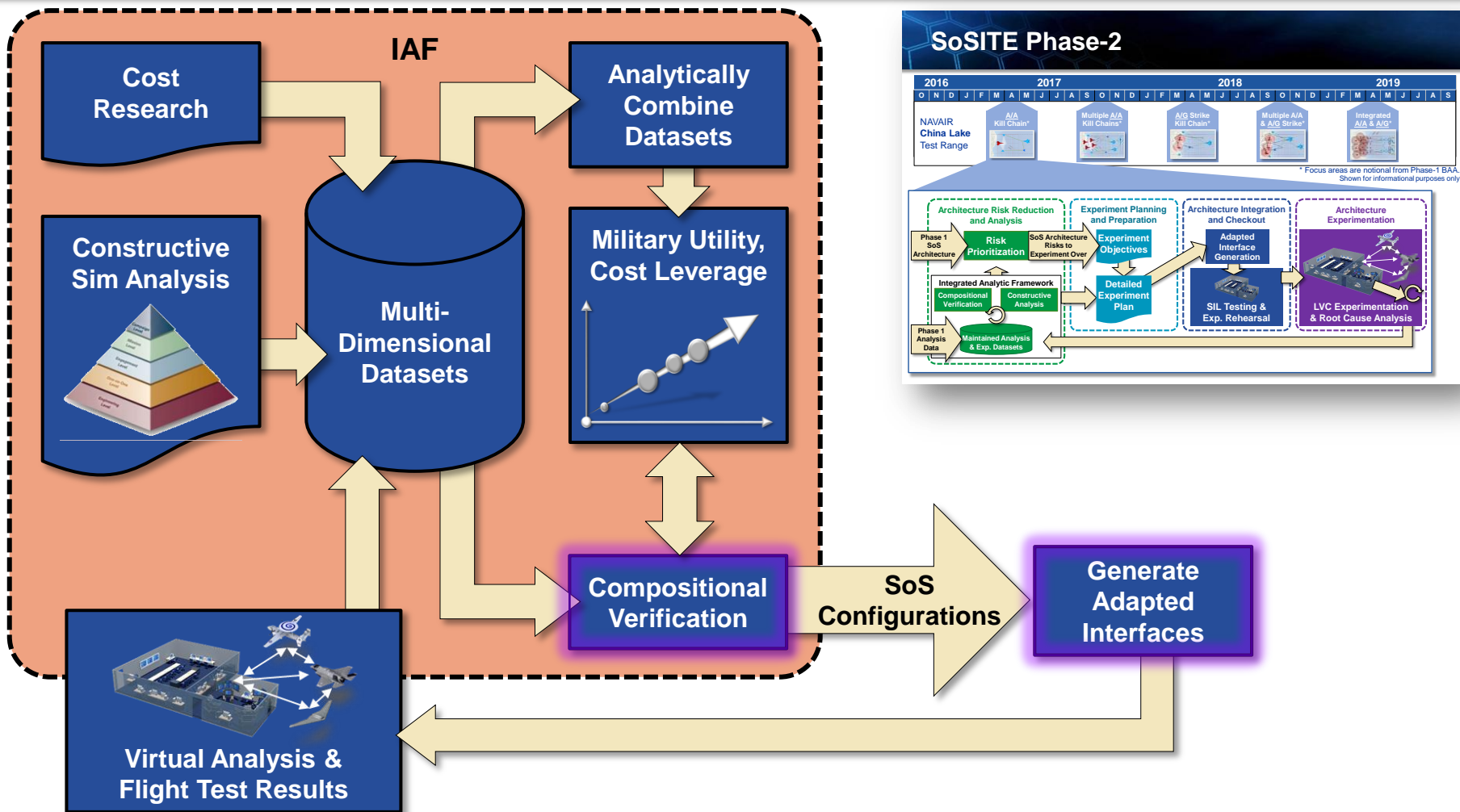


\* Focus areas are notional from Phase-1 BAA. Shown for informational purposes only



*Experimenting on SoS Disaggregated Mission Architectures, Maturing & Evaluating Innovative SoS Engineering Techniques*

# Maturing Tools for Composing SoS's



*Enhancing Toolsets via Innovative SoS Integration Technologies*