Data Engineering to Support SBA

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Data Engineering for SBA

- Modeling and simulation is the cornerstone of the complete product lifecycle in SBA. Data is the fuel that drives M&S and the product of M&S.

- The Distributed Product Description alone is not enough. Data engineering for an SBA project must address:
  - Information about the system under development (DPD)
  - Information about the systems with which it will interact
  - Information about the environment in which these systems will operate
  - Information about the operational context in which analyses are performed (scenarios, use cases, firing doctrine, …)

- Data coherency must be maintained
  - Temporal coherence - data being used for different tools and sites represents the same point in the lifecycle development timeline
  - Organizational coherence – organizations across the enterprise are using the same set of databases
  - Layer (tier, level, stratum) coherence - information at a given level of abstraction (e.g., engagement level) is logically consistent
  - Granularity coherence - information at different levels of abstraction is logically consistent
REDIS provides a structured data engineering process for parametric data.
Solutions to the Data Engineering Challenges

- **Metadata management is key to establishing trust in results**
  - Establishes the sources and appropriate uses of information
  - Provides traceability for data production and a basis for VV&A
- **The use of database-neutral data interchange formats is key to allowing the various parties to develop information in the form most efficient for their use but still share that information**
DMSO Contributions to JSF Data Engineering

- Complete lifecycle data engineering process expertise
- RREDIS training and consultation for parametric database engineering
- DIF development expertise
- Metadata specification to support data engineering lifecycle
- Expertise on repository design and lifecycle