# Acquisition Perspective on Software Architecture

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# Elaboration

- ◈ Minimal Set of Architecture Representations
  - Key features: middleware, data standards, information security
  - Key UML Views
  - Government architecture does not design system or bind contractor
  - Integrate with overall system architecture
  - Example – Joint Simulation Integration and Modeling System (JSIMS)
- ◈ Abstract away specific implementations: Appropriate level of detail

# Evolution (1)

- ◆ Architecture evolves through break and rebuild cycle
- ◆ Maintainability
  - Appropriate Tools
  - Agility
- ◆ Extensibility
  - Program office estimate
  - Software experts a high level in program office
  - Vendor implementation/neutral
  - Standards based
  - Mature middleware

*Integrity - Service - Excellence*

# Evolution (2)

- ◆ Executability
  - Software performance modeling and simulation
  - Reliability a driver
- ◆ Challenges
  - Easily ignored or discarded
  - Difficult to measure
  - Changes far downstream

# Evaluation

- ◆ Automated architecture evaluation tool (Real-time Embedded Architecture-Centric Testbed (REACT))
  - Look for traceability and consistency
  - Incomplete but valuable
- ◆ In-Process Reviews
  - Is architecture guiding development?
  - Are changes reflected back to the architecture?
- ◆ COTS reference model (Remedies)
- ◆ Accessible to the Government for Evaluation
  - Periodic architecture releases shared by government and contractor