



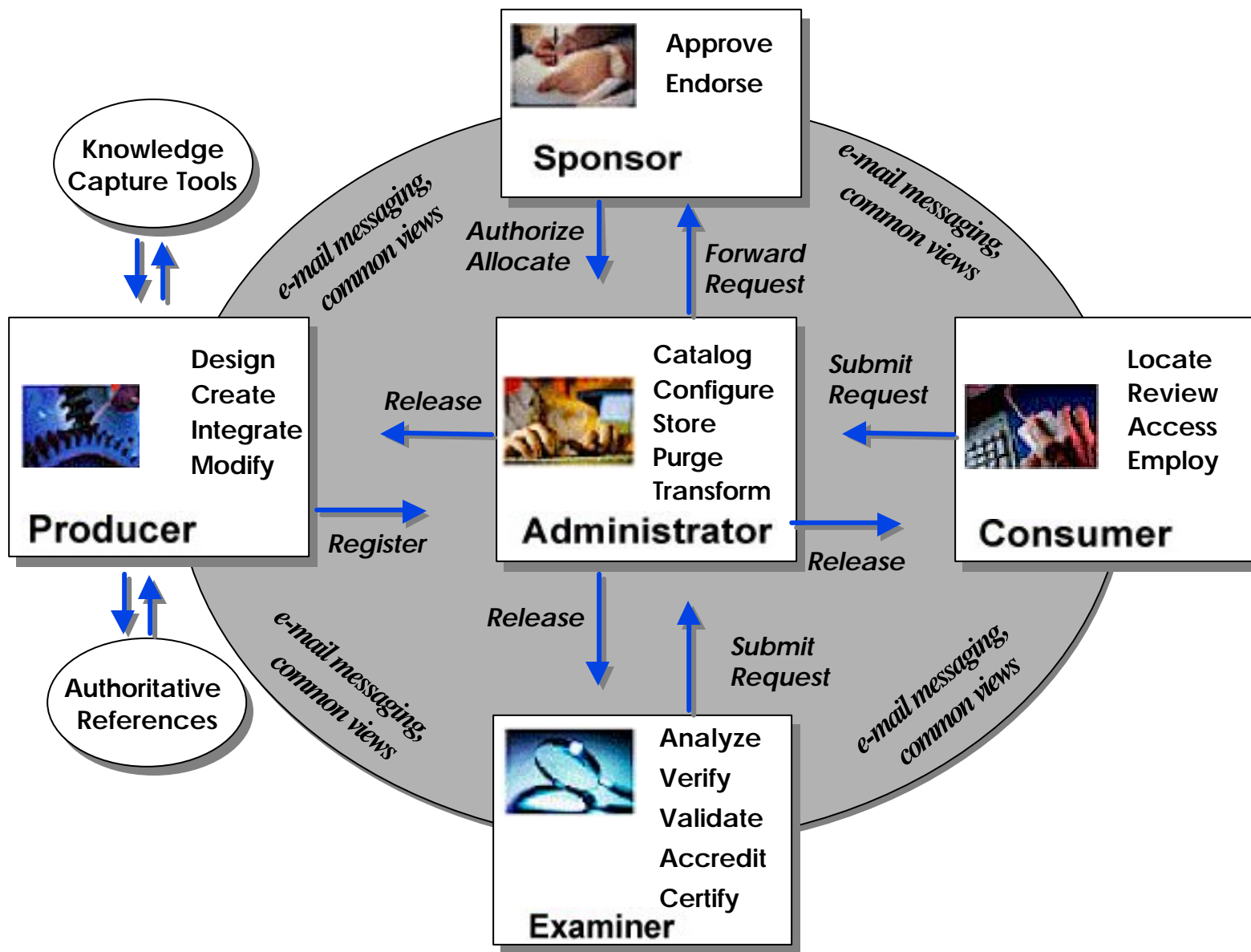
Data Engineering to Support SBA

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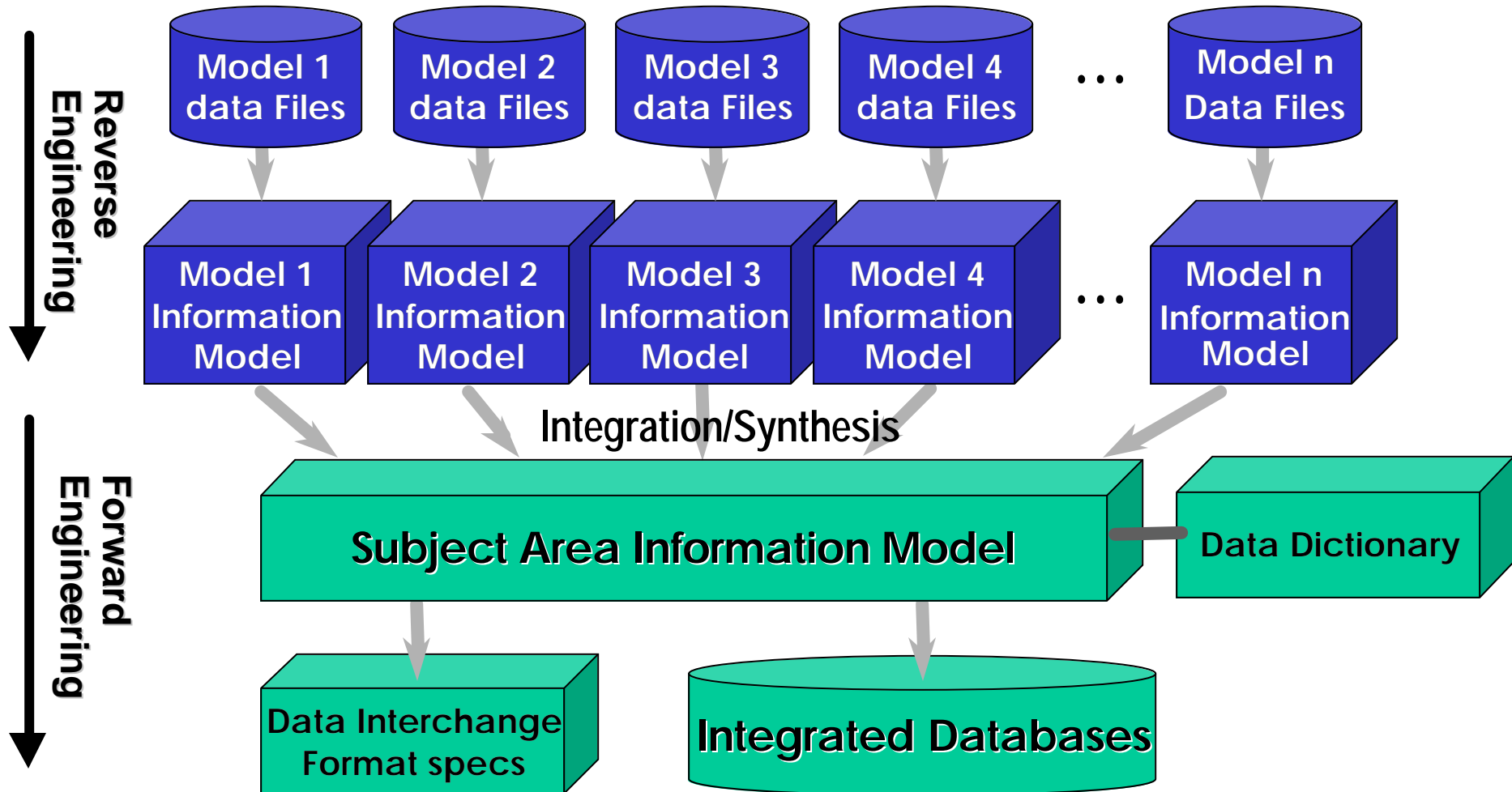
Representing
Defense Modeling and Simulation Office
Knowledge Integration Program

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- **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



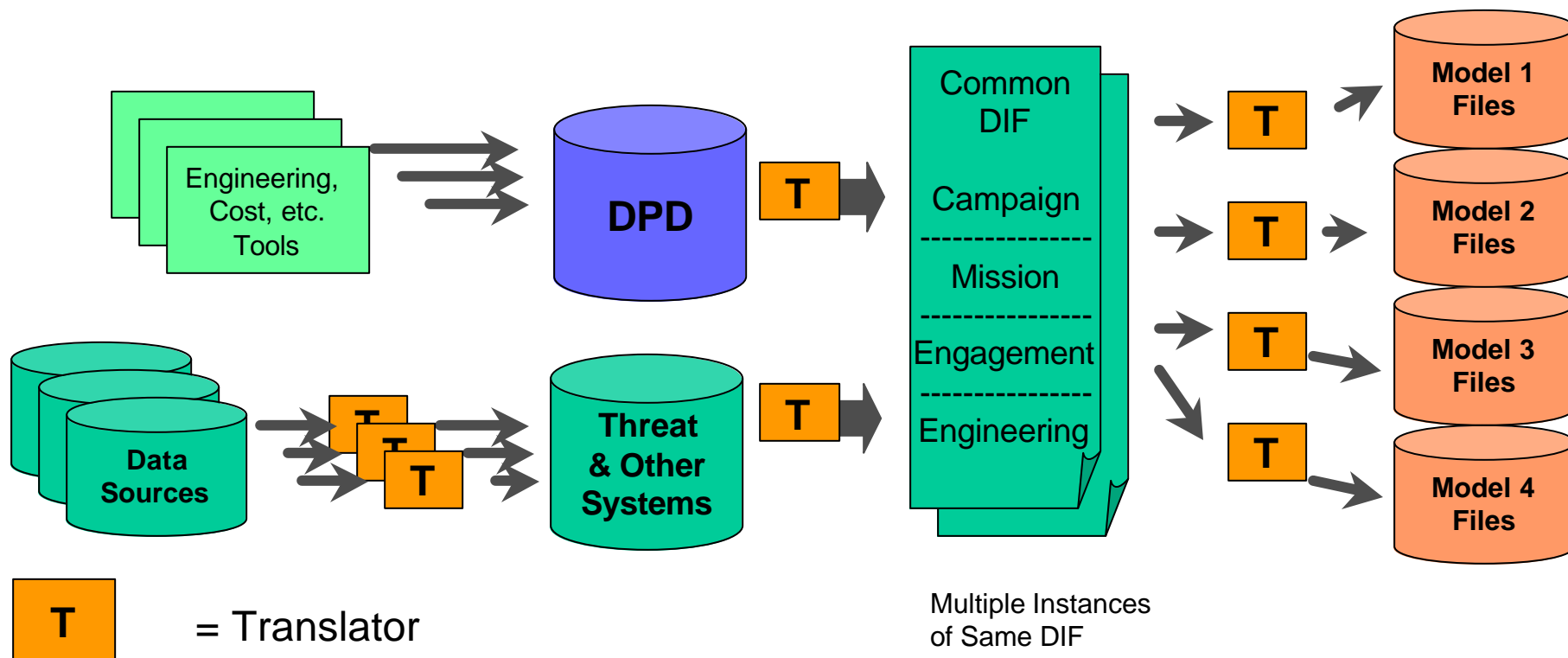
Reverse Engineering for Data Integration and Sharing (REDIS) Process



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