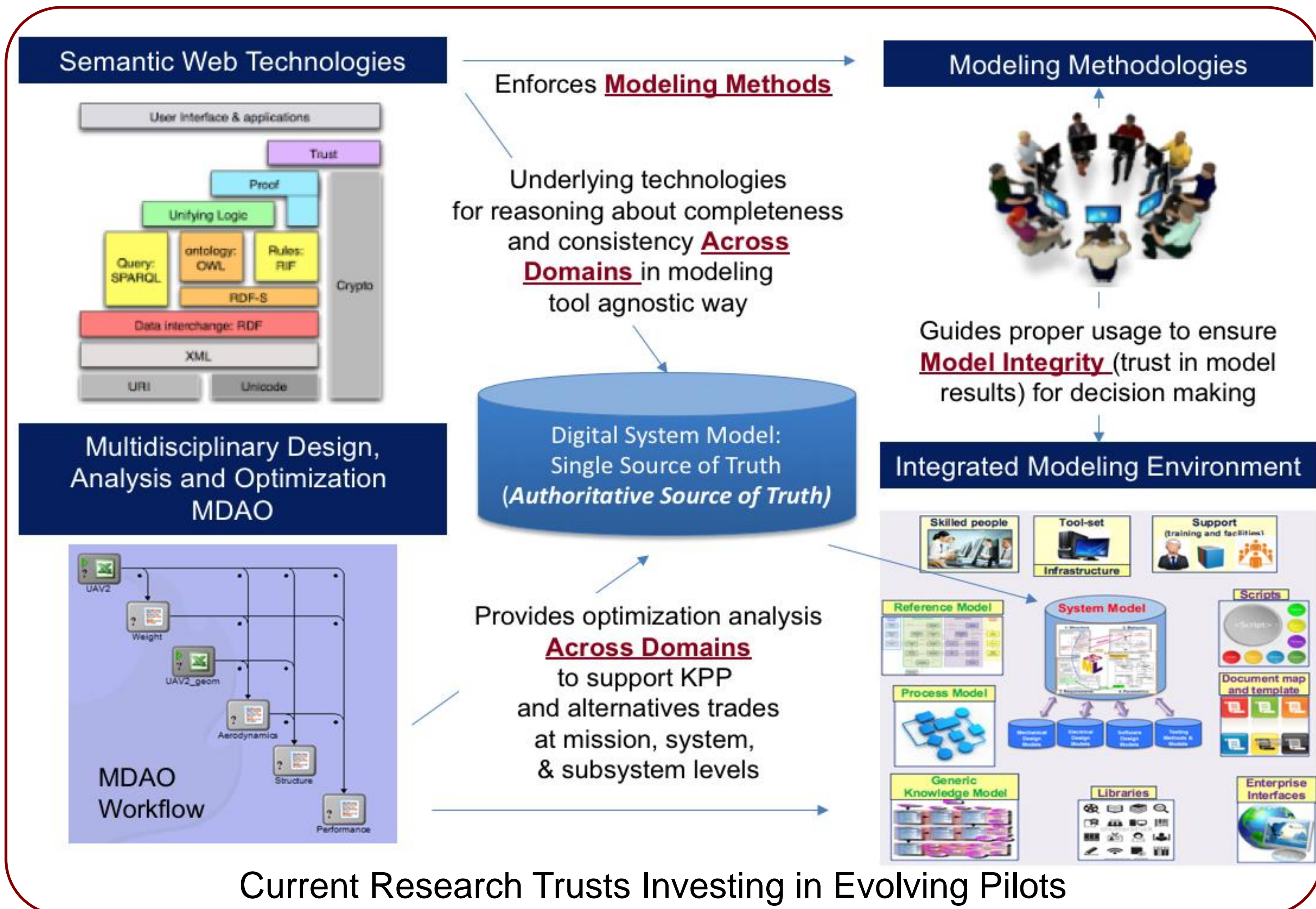


Overview of Research Task

In 2013, Naval Air Systems Command (NAVAIR) initiated SERC research to:

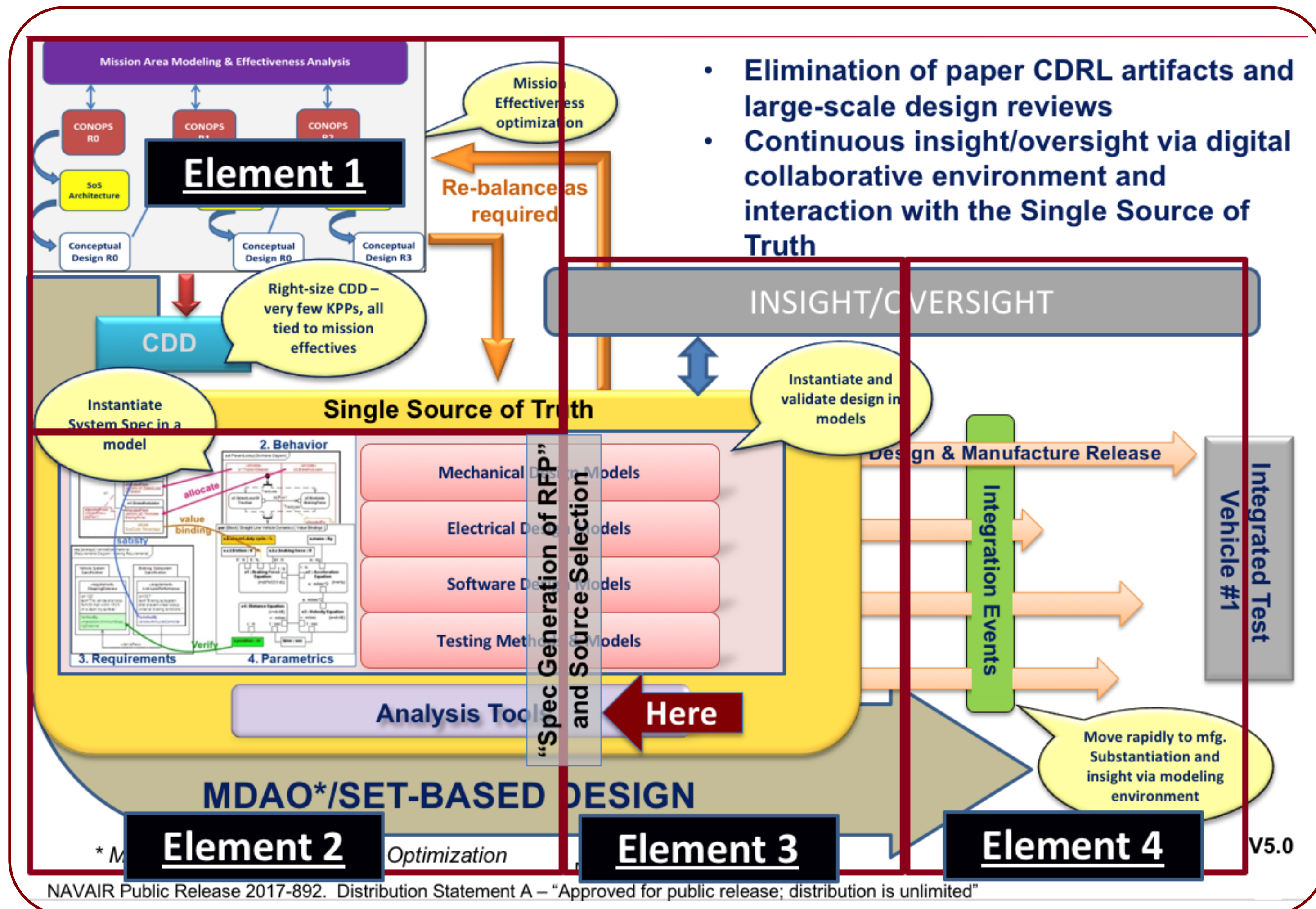
- 2013-2015: Global Scan of Most Holistic approaches to MCE/Digital Engineering
- 2015: NAVAIR leadership decides they must move quickly to keep pace with other organizations that adopted MCE
- 2016: NAVAIR leadership accelerates SET based on **SET Framework** Concept
- 2017: Systematic planning of six (6) SET Functional Areas includes SERC research
- 2017 late: **Surrogate Pilot Experiments kickoff** to Characterize, Assess and Refine SET Framework approach to Model-based Acquisition using new operational paradigm between government and industry using Skyzer (fictitious) System
- 2018 now: Received Surrogate RFP Response from Surrogate Contractor



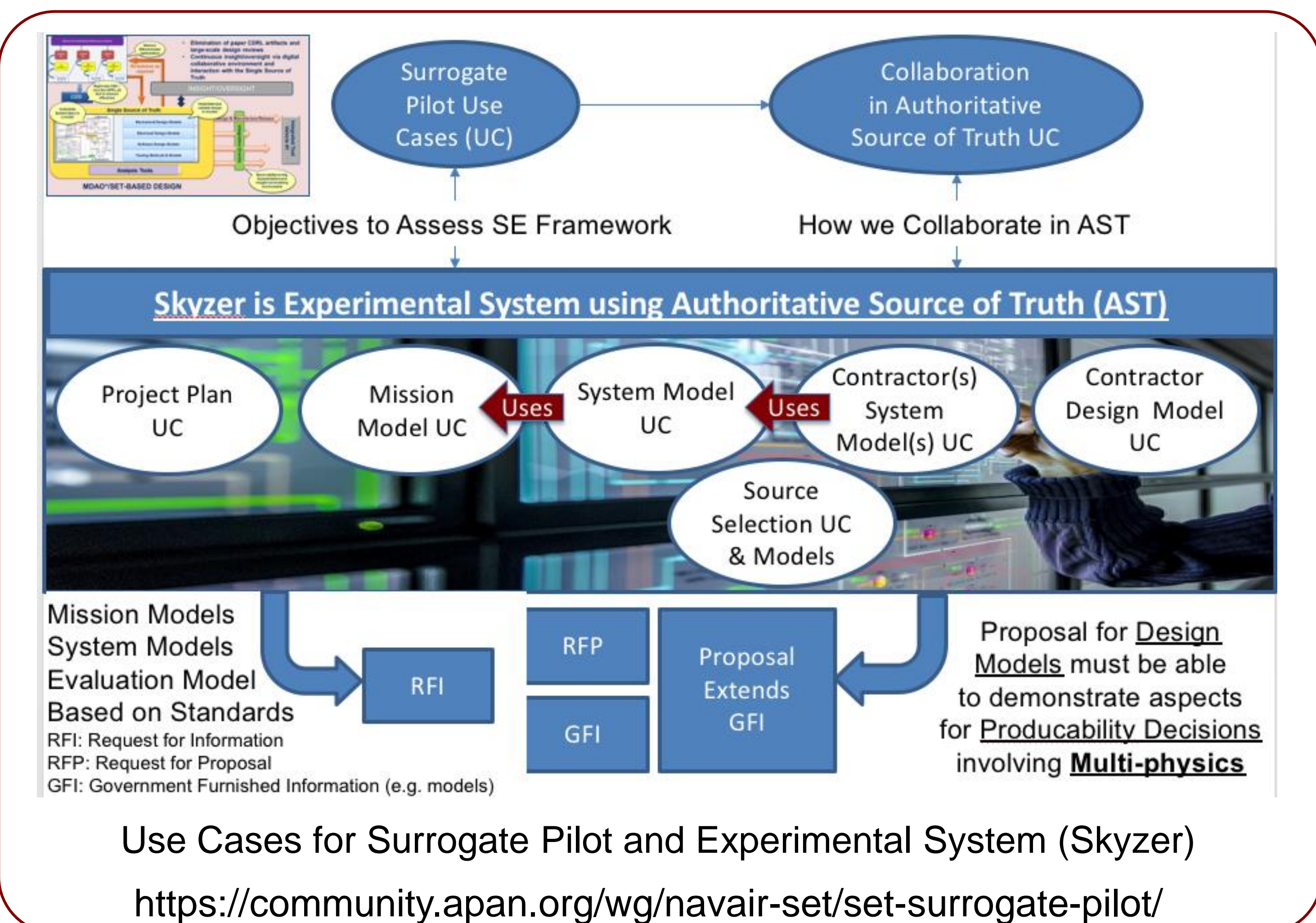
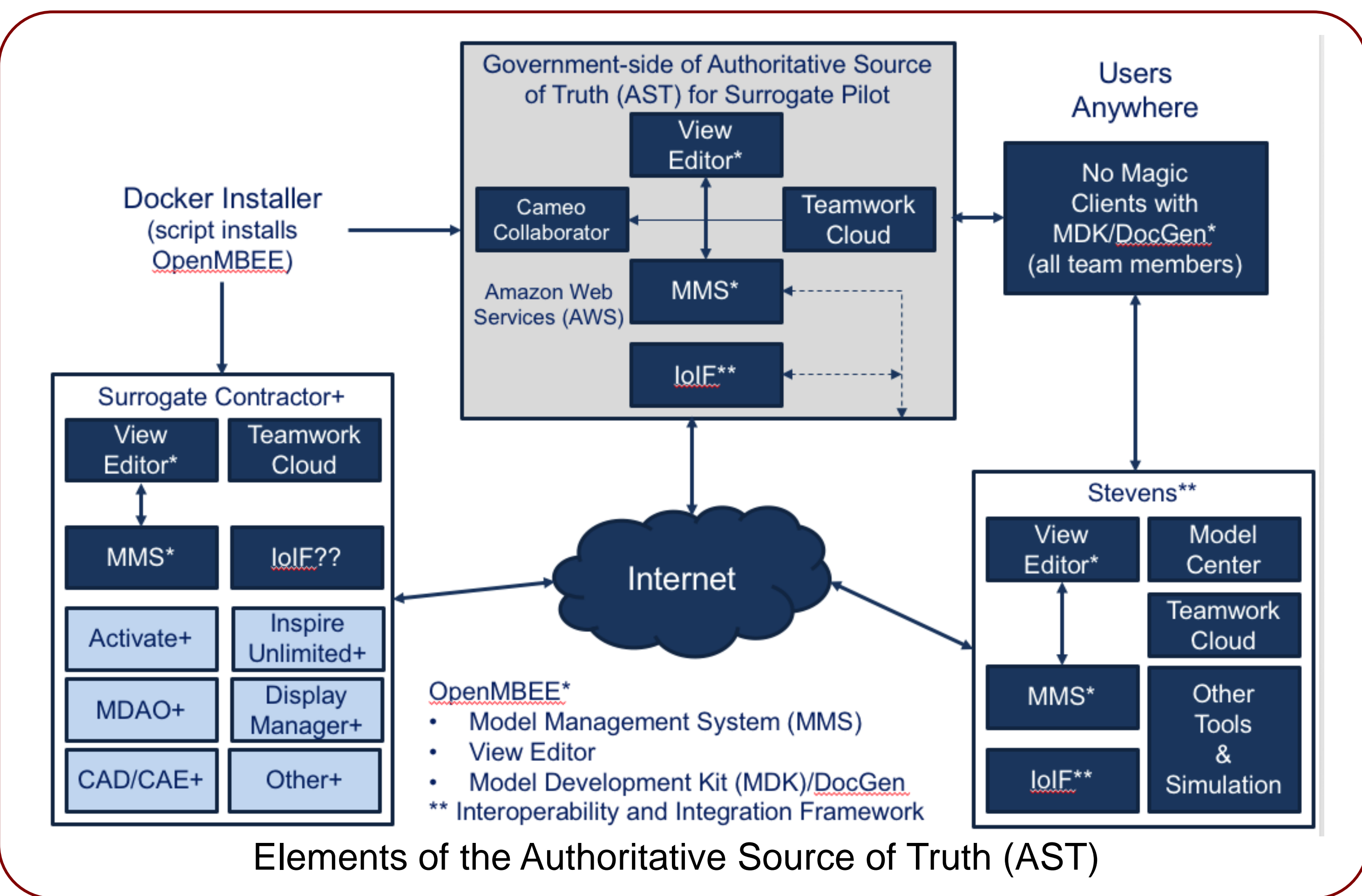
SE Transformation (SET) Framework

SET framework for a new operational paradigm for event-driven model-centric (“digital engineering”) approach.

- Elements 1 & 2 collaborative involvement between Government and Industry to assess Mission and System of System (SoS) capability analyses
- Elements 3 & 4 industry leads process to satisfy conceptual model addressing the Key Performance Parameters, with focus on Performance, Availability, Affordability, and Airworthiness to create an Initial Balanced Optimized Design



Research Activities



Executing/Assessing the SET Framework using a Surrogate Pilot

Mission: Collaboration between Government and Industry in Model-based Acquisition under SET Framework

Goal: Execute SET Framework to Assess, Refine, and Understand a New Paradigm for Collaboration in Authoritative Source of Truth (AST)

Objectives (non exhaustive):

- Formalize experiment to answer questions about executing SET framework using Surrogate Contractor (SC)
- “Government team” creates mission, system (& other) models, “generates specification/RFP,” & provides acquisition models to SC as Government Furnished Information (GFI)
- SC refines GFI reflects corrections/innovations with physical allocation views with multi-physics-based Initial Balanced Design
- Simulate continuous virtual reviews and derive new objective measures for assessing maturing design in AST
- Demonstrate visualizations for real-time collaboration in AST

Significant Accomplishments/Deliverables In FY18

- Everything done in a model – to demonstrate Art-of-the-Possible
- Surrogate Pilot Project model characterize objectives for understanding the “execution” and assessing the SET Framework for model-centric acquisition
- Collaboration in an AST with Integrated Modeling Environment/OpenMBEE
 - All models Views generated with DocGen viewable on Amazon Web Service
 - Linking Government to Surrogate Contractor Collaborative Environment
- Skyzer Mission Model – Element 1
 - Simulated Request for Information (RFI) & Industry Day
- Skyzer System Model – Element 2 links/traces to Skyzer Mission Model
- Acquisition Models for Skyzer for simulating Source Selection
 - Models for the Statement of Work (SOW)
 - Models for source selection evaluation computer margins for Key Performance Parameters, and surrogate contractor provide model as GFI for RFP
- Surrogate Contractor System model for Skyzer – Element 3 – links to Skyzer System Model
- All documented on All Partners Network (apan.org)
- Navy and DoD Ontology Suite initiated and pilots identified

Contacts/References

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