OMG Model-based Acquisition (MBAcq) User Group:
A Government & Industry Collaboration Reference Architecture and Patterns

OMG UAF Summit 2024 Reston VA

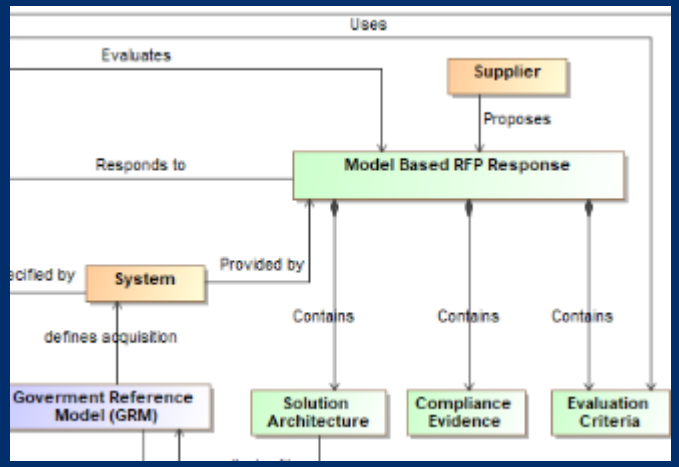
LAURA E HART LAURA.E.HART@LMCO.COM

MBACQ UG CO-CHAIR/OMG UAF CO-CHAIR

Model-Based Acquisition (MBAcq) User Group Introduction

About MBAcq

Model-based acquisition is the Technical approach to acquisition that uses models and other digital artifacts as the primary means of information exchange, rather than document-based information exchange.

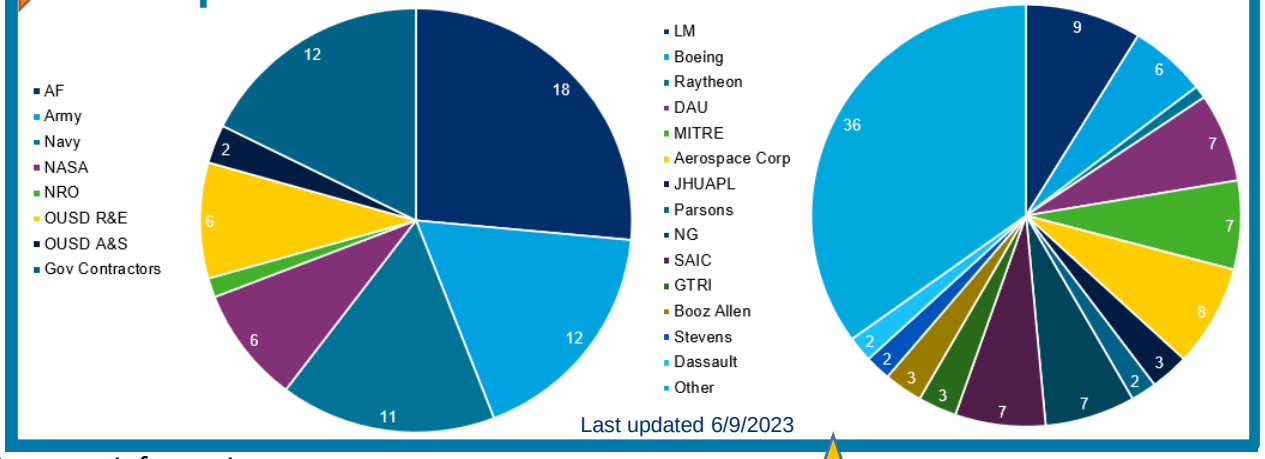


Why MBAcq Matters

Customers are increasingly specifying MBSE in RFPs
Customers are increasingly requiring models in proposals
Lack of standardization raises proposal learning curves & compliance risk

- **Model Based Acquisition will be disruptive**
- **Increased interest to organize around the MBAcq UG to define and standardize approach**
- **Broad government and industry participation**
- **Gov & Industry have an opportunity to shape future MB Acquisitions & Compliance together**

Participation



Expected Timeline

2022: Formed Team & Framework
2024: Q2 Govt Ref Arch
2024: Q4 Acquisition Users Guide
Q2/3 DAU Acquisition Training
Q4 Acquisition Model Example
Ongoing: Curate and Create Reusable Content (Reference Architectures, Domain Overlays, …)

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toni.m.nolder@aero.org

Full lifecycle should be addressed during Acquisition!

MBAcq User Group is an OMG Managed Community

OMG Managed Community Charter

1. Mission and Scope of the Community.

1.1. Purpose. The purpose of the Model Based Acquisition (MBAcq) User Group (the "Community") is to enable collaboration in support of various pre-competitive or open collaboration activities including:

- Provide a forum to addresses standardization in the use of Model-Based Engineering (MBSE) and subsequent models during the acquisition process thereby reducing the learning curve for every MB-RFP and OEM proposal response.
- Act as a bridge to the OMG Standard Development Organization (SDO) processes to assess and provide validated inputs to the SDO to update relevant specifications based on evolving user needs, including Systems Engineering (SE) and Architecture standards, such as SysML, UAF and Systems Modeling API & Services as it pertains to Acquistion.
- Provide a forum for cross-industry end users, gov services, FFRDCs, academia and tool vendors to share and develop practices that promote the adoption and advancement of Architecture and Model Based Systems Engineering (MBSE) including the definition and use of new Reference Architectures as patterns.
- Provide associated process guidance for both engineering and acquisition professionals to use the Reference Architectures for RFP creation, response, evaluation, and program execution thereby introducing MBSE principles earlier during the RFP phase.
- Provide support for building other modeling languages and domain-specific extensions based on KerML, SysML, UAF when required.

Approved by the OMG BOD 9/26/2023

- Approved by the OMG BOD 26 September 2023 as an enduring OMG Entity
- Founding Members
  - Lockheed Martin (Laura Hart)
  - The MITRE Corporation (Rae Anderson)
  - The Aerospace Corporation (Toni Nolder)

OMG Standards Development Organization.

Collaboration and Transparency in an Open Env

Transitioning Knowledge Repository to OMG MC

wiki.codev.mitre.org/display/UAF/T3%3A+High-Level+Domain+Model

Welcome to LMPeo... | External Outreach... | Service Central Ho... | CoDev Portal | SAP Budet Reports | Calendar Vacation... | Weekly Team M

Spaces | Forums | People | Questions | Polls | Ideation | Glossaries | Calen

- Websites
- Digital Acquisition WG
  - Membership and Attendance
  - Agenda/Meeting Minutes
  - Activities and Deliverables
    - T1/2: Landscape Assessment
    - **T3: High-Level Domain Mo**
      - Sustainment
    - T4: Use Case Development
    - T5: Digital Eng Env (DEE) ass
    - T6: Language Architecture
    - T7: Updates to the Example I
    - T8: (ARM) Acq Ref Model: Te
    - T9: Policy Review Group
    - T10: Identify Reference Reso
    - T11: Acquisition Guide Outli
    - T12: Modeling Environment
    - T13: MOSA Metrics
    - T14: Define (ARA & OAD): pr
    - T15: Define Model Based RFI
    - T16: Joint interface compone
- MBAcq Shared Files

Pages /... / Activities and Deliverables

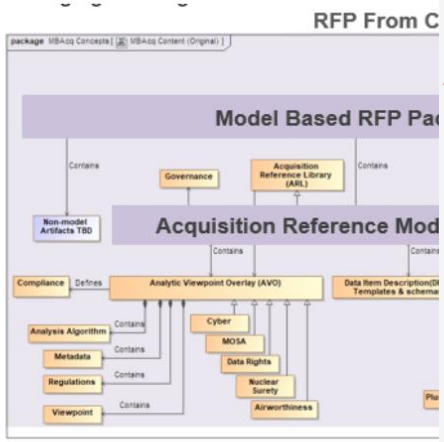
T3: High-Level Domain Mod

Created by Laura Hart, last modified about 22 hours ago

Special Task Description: Capture the core high-level cor

Task Leader: @Laura Hart @Matthew Hause , Monty

Members: Yvette Rodriguez, Jeff Banks



Spaces | Forums | People | Questions | Polls | Ideation | Glossaries | Calendars | Blogs | Create

OMG UAF Task Force

- Pages
- Calendars

SPACE SHORTCUTS

- Meeting Notes & Action Items
- UAF 1.2 Sample Model Document
- Glossaries

PAGE TREE

- Meeting Notes & Action Items
- UAF 1.2 Sample Model Document
- UAF 1.2 Layers
- Files list
- How-to Articles
- Websites
- Digital Acquisition WG
  - Membership and Attendance
  - Agenda/Meeting Minutes
    - 05/06/2022 Agenda/Minutes
    - 05/20/2022 Agenda/Minutes
    - 06/07/2022 Agenda/Minutes
    - 07/01/2022 Agenda/Minutes
    - 07/29/2022 Agenda/Minutes
    - 08/12/2022 Agenda/Minutes
    - **09/02/2022 Agenda/Minutes**
    - 09/09/2022 Agenda/Minutes
    - 10/14/2022 Agenda/Minutes
    - 10/28/2022 Agenda/Minutes
    - 11/18/2022 Agenda/Minutes
    - 12/6/2022 OMG Agenda/Minutes
    - Orientation Meeting Sept 1, 2023
  - Activities and Deliverables
  - MBAcq Shared Files
  - Files: Reference Documentation
  - MBAcq User Group Charter
  - New CoDev Request
  - Model & Data Catalog
  - Sub Committee Meeting Schedule
  - FAQs -- Frequently Asked Questions
- Glossaries

Pages /... / Agenda/Meeting Minutes 22 views

09/02/2022 Agenda/Minutes

Created by Laura Hart, last modified on Sep 02, 2022

All Attendees put your name/org/email in the chat window. That allows us to cap

and if you need access to the MITRE CoDev Collaboration Site (Confluence)

https://wiki.codev.mitre.org

General Request:

- If this was your first meeting, please send me your Chat Introduction
- To request an MBAcq collaboration site account, send email request to Rae Ande
  - Gaining access to the OMG UAF Task Force Confluence site is a THREE STE

1) follow the link and register either using a password or enrolling your D
2) You must log in to the MITRE CoDev network to create an account on t
3) Once you do, please email me (rahaselden@mitre.org), and I will invite

Agenda:

- Topics:
  - Report from the subgroups: What can we get done in the next 30, 60, 90
    - [x] Rae Anderson: T1/2: Landscape Assessment and Lessons Learned
      - [ ] Monte will provide rolled up Lessons Learned
    - [x] Hart/Hause: T3: High-Level Domain Model
    - [x] Rae/Tom: T4: Use Case Development
      - [ ] Review UC document and instructions
    - [ ] Hart: T7 Example Model Definition
    - [x] Tom M and Barry P: T9: Policy Review Group - The SERC has comple
    - [x] Yvette Rodriguez: T10: Identify Reference Resource Authoritative So
    - [x] Bob Scheurer/John Quintana: T11: Acquisition Guide Outline
      - [ ] This will be a distributed effort: all please review and provide
    - [x] T5: Digital Eng Env (DEE) associated with primary System
    - [x] Rae Anderson/Dave McDaniel: T14: Define (GRA & GRM): proposed
    - [ ] Daniel Brookshier: T12: Modeling Environment Tool Support
    - [ ] Gene Sherve: T6: Language Architecture
  - General conversation around the room:
    - Nadine: new OSD Architecture group is being formed lead by Lt Co
    - Ed Moshinski (OUSD R&E and NDIA Arch co-chair) stated that a MC these deliverables will be pivotal to the MOSA standardization appr
    - Frank Salvatore Asked, Are you planning to start with what was do
    - Keith provided new contract for ASDP ->"Frood" SCHNEIDER, MICH
    - Monte Porter - PEO MS : I'm interested in the govt reference model
    - Frank Salvatore : I will sign up to be a reviewer of the concept map.
    - Mike Guba to support GRA/GRM development
    - Frank Salvatore : There is a digital engineering measurement framework that was just released. You can find it here https://www.psmsc.com/DEMeas
    - Keith Siders, AFLCMC/EZSI, working to get AF legal/contract support from Jim Hague
- Actions:
  - [ ] Frank, can you get us a copy of the Skyzer model?
  - [ ] Ed Moshinsky, provide MOSA Implementation Guide
  - [ ] Ed Moshinsky, provide NDIA Arch MOSA Metrics from Steve Henry
  - [ ] Get SATCOM RM
- Acquire existing Arch models to build upon (NAVAIR, AF MBSE, AFC, SATCOM....) who can get these for us?

Next Week:

Spaces | Forums | People | Questions | Polls | Ideation | Glossaries | Calendars | Blogs | Create

- Meeting Notes & Action Items
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- UAF 1.2 Layers
- Files list
- How-to Articles
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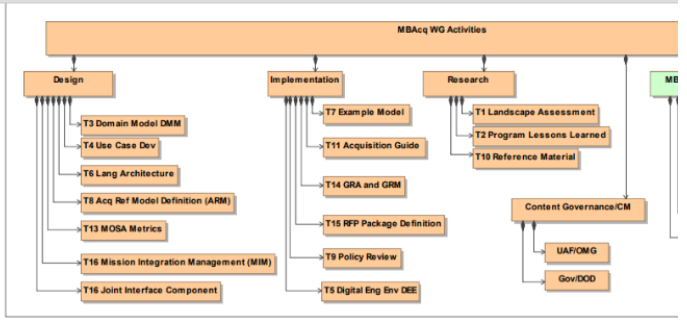
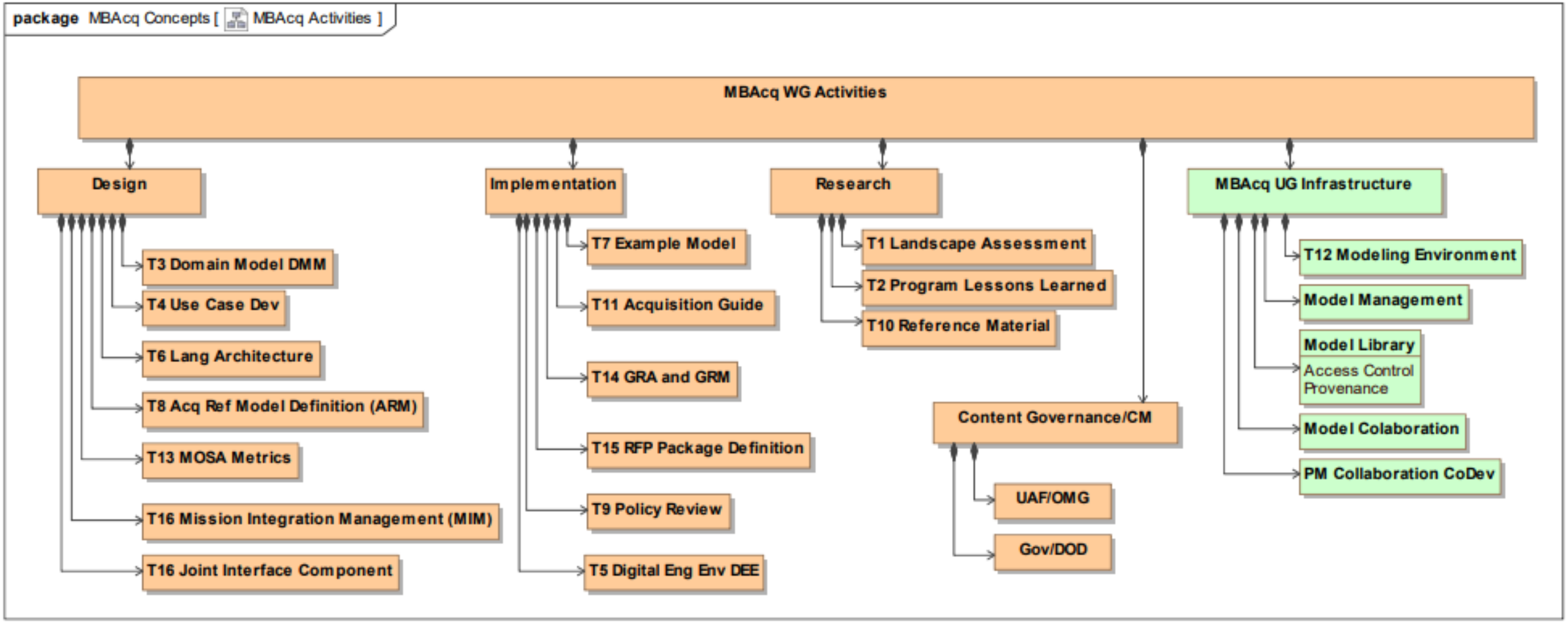
  - MBAcq Shared Files
  - Files: Reference Documentation
  - MBAcq User Group Charter



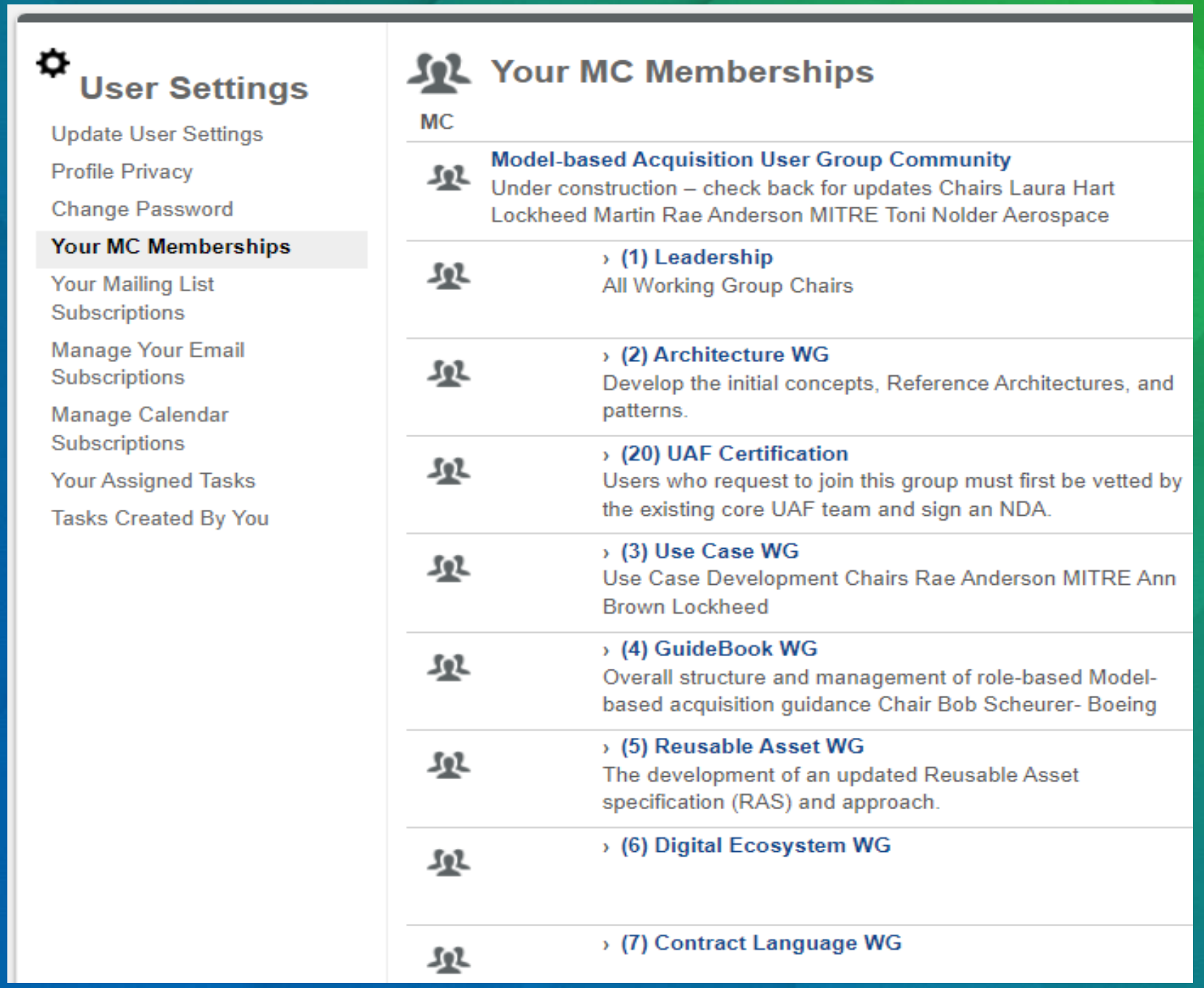
Topic ID#	WG Name	Leader(s)	Description
T1/2 Landscape Assessment & Lessons Learned	Research	@Rae Anderson	Identify Existing activities and organizations associated with [
T3 Domain Model	Design	Laura Hart Matthew Hause	Capture the core high-level concepts, definitions, relationship Metamodel
T4 UC Development	Design	@Rae Anderson	Identify and define major MBAcq Use Case set
T5 Digital Eng Env	Implement		Examine the special considerations for addressing the **Digita** support the larger strategic goals expected from Digital Engi address DEE requirements/specificity in a MBAcq context. De the enabling system and a lighter version of requirements. D
T6 Lang Arch	Design	Gene Sherve	Define the implementation of the ACQ DMM for inclusion int

MBAcq – UG Activities



OMG Standards Development Organization.

https://communities.omg.org/workgroup/index



User Settings

- Update User Settings
- Profile Privacy
- Change Password
- **Your MC Memberships**
- Your Mailing List Subscriptions
- Manage Your Email Subscriptions
- Manage Calendar Subscriptions
- Your Assigned Tasks
- Tasks Created By You

Your MC Memberships

MC

Model-based Acquisition User Group Community
Under construction – check back for updates Chairs Laura Hart Lockheed Martin Rae Anderson MITRE Toni Nolder Aerospace

› **(1) Leadership**
All Working Group Chairs

› **(2) Architecture WG**
Develop the initial concepts, Reference Architectures, and patterns.

› **(20) UAF Certification**
Users who request to join this group must first be vetted by the existing core UAF team and sign an NDA.

› **(3) Use Case WG**
Use Case Development Chairs Rae Anderson MITRE Ann Brown Lockheed

› **(4) GuideBook WG**
Overall structure and management of role-based Model-based acquisition guidance Chair Bob Scheurer- Boeing

› **(5) Reusable Asset WG**
The development of an updated Reusable Asset specification (RAS) and approach.

› **(6) Digital Ecosystem WG**

› **(7) Contract Language WG**

OMG Standards Development Organization

- **[Object Management Group Announces Model-Based Acquisition User Community](#)**

Community influences the future of Model-Based Systems Engineering specifications and architectures

-January 18, 2024

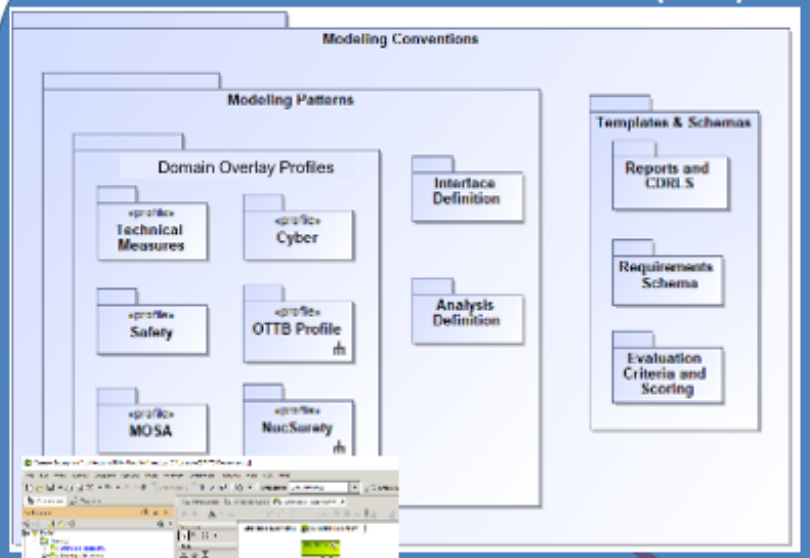
https://www.omg.org/news/releases/pr2024/01-18-24.htm

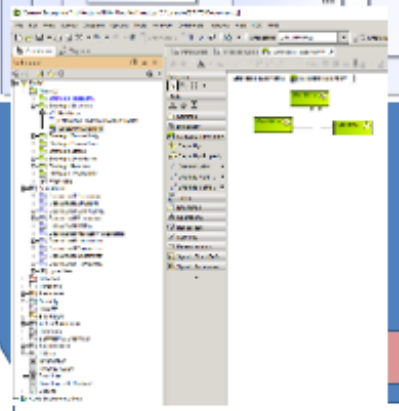
OMG Q1 Conf in Reston VA 3/18- 3/22
https://www.eventbrite.com/e/omg-model-based-acquisition-user-group-community-q1-2024-meeting-registration-817420204837

UAF Summit (Free) 3/20
https://www.omg.org/events/2024Q1/special-events/UAF-Summit.htm

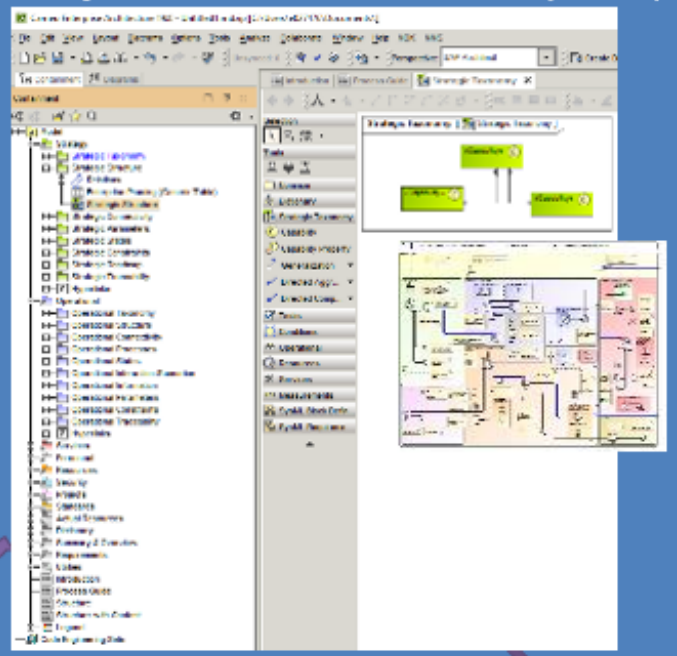
Model-Based Acquisition

1. Architecture Evaluation Criteria (AEC)

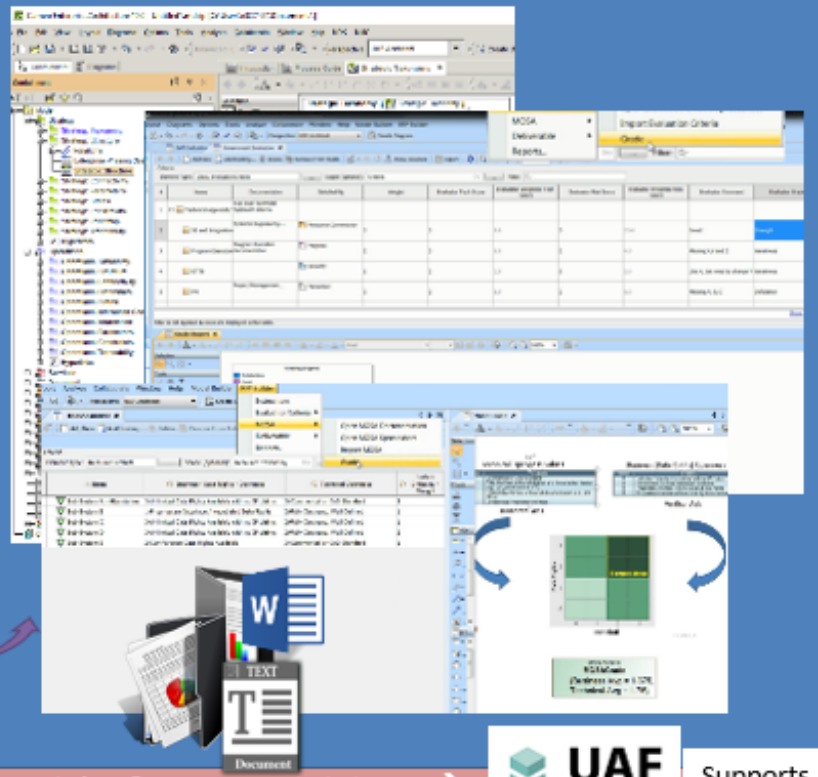




2. Objective Architecture Description (OAD)



3. Model-based RFP Package



AEC & (OAD)

Populated with Program & contract Data

← 4. Unified Architecture Framework (UAF) Process Guide for Acquisition →

UAF OMG UNIFIED ARCHITECTURE FRAMEWORK

Supports DoDAF

1. The AEC provides model structure for RFP content and evaluation tools:
- Modeling Patterns
  - DO Profiles (i.e. MOSA, Data Rights, certs)
  - Interface & Analysis Definitions
- Templates & Schemas
  - Evaluation Criteria & Scoring (Section K, L, M)
  - Reports & CDRLS

2. The OAD is a descriptive model containing the program requirements, constraints and context
- High-level Capabilities, mapped to Operational scenarios, traced to requirements (e.g. CDD, SRD, Conops)
- Technical performance measures (i.e. KPPs, KSAs, MOEs..)
- Any required architectural partitioning including structural and functional

(Based on UAF acquisition process guide and template)

3. The Model-based RFP model contains the populated OAD&AC providing **RFP evaluation content**, **CDRL definitions** for documentation generation and **scoring tools** for solution validation and evaluation

4. UAF Process Guide provides the Acquisition Guidance for using MBAcq **to create, respond and evaluate a Model-based RFP.**

SOURCE: Laura Hart, MITRE 2017

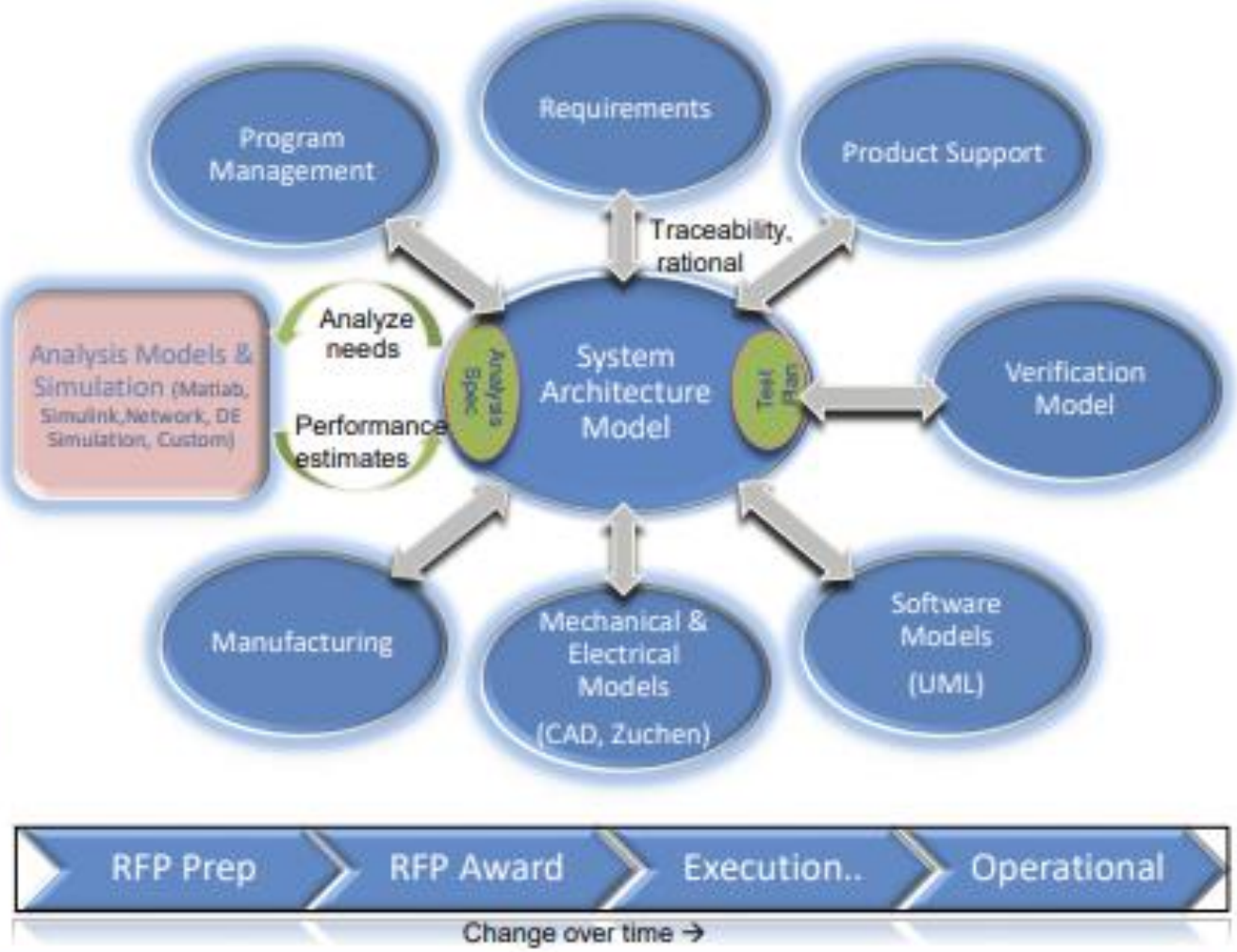
Descriptive vs Analytical Models

System Architecture Model (SAM)

- Descriptive in nature
- Emphasizes how pieces fit together into a *consistent* whole
- Provides context for analysis

Analysis Models and Simulation Models

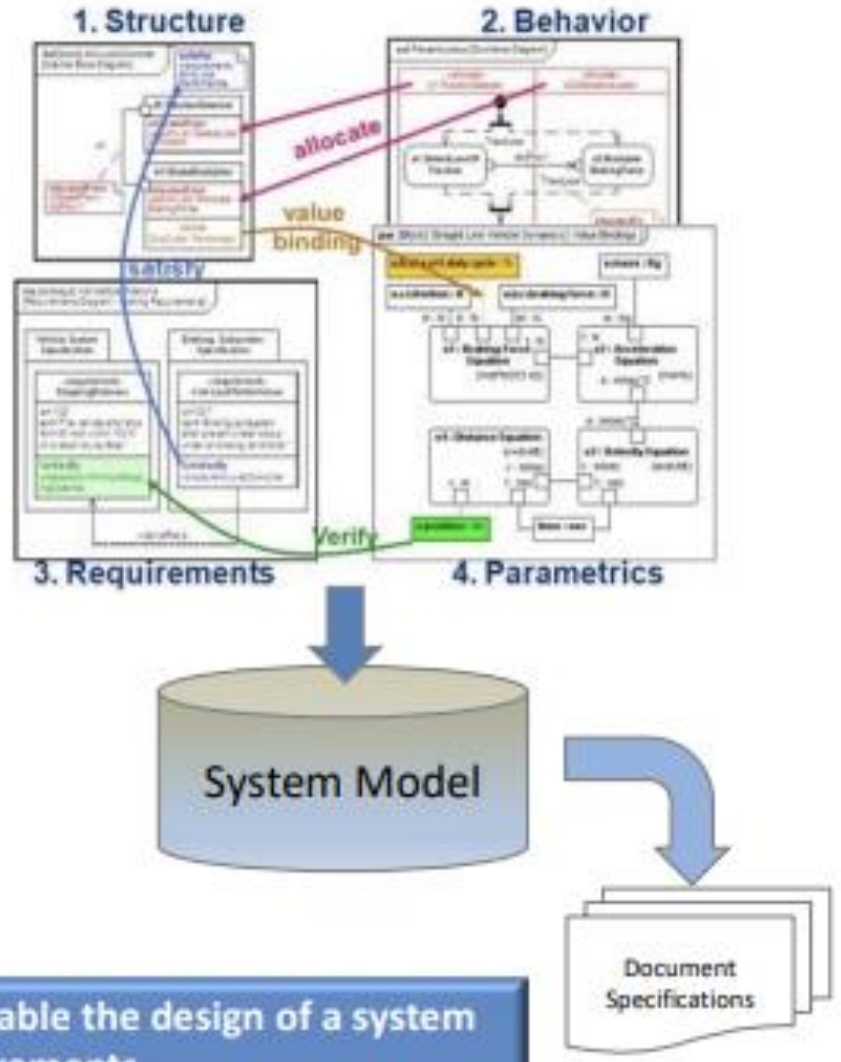
- Emphasize specific aspects of performance, *consistent* with the Architecture Model.
- Mathematically-based computation or simulation
- Reduces risks thru analysis, validation and optimization of:
  - MOE, MOP, KPP, TPM timing, probability of hit/survival reliability/availability, MTBF cost, total cost of ownership
- A vehicle to solve some problem or verify a solution



SAM provides a "hub" for data integration and transformation across the product lifecycle

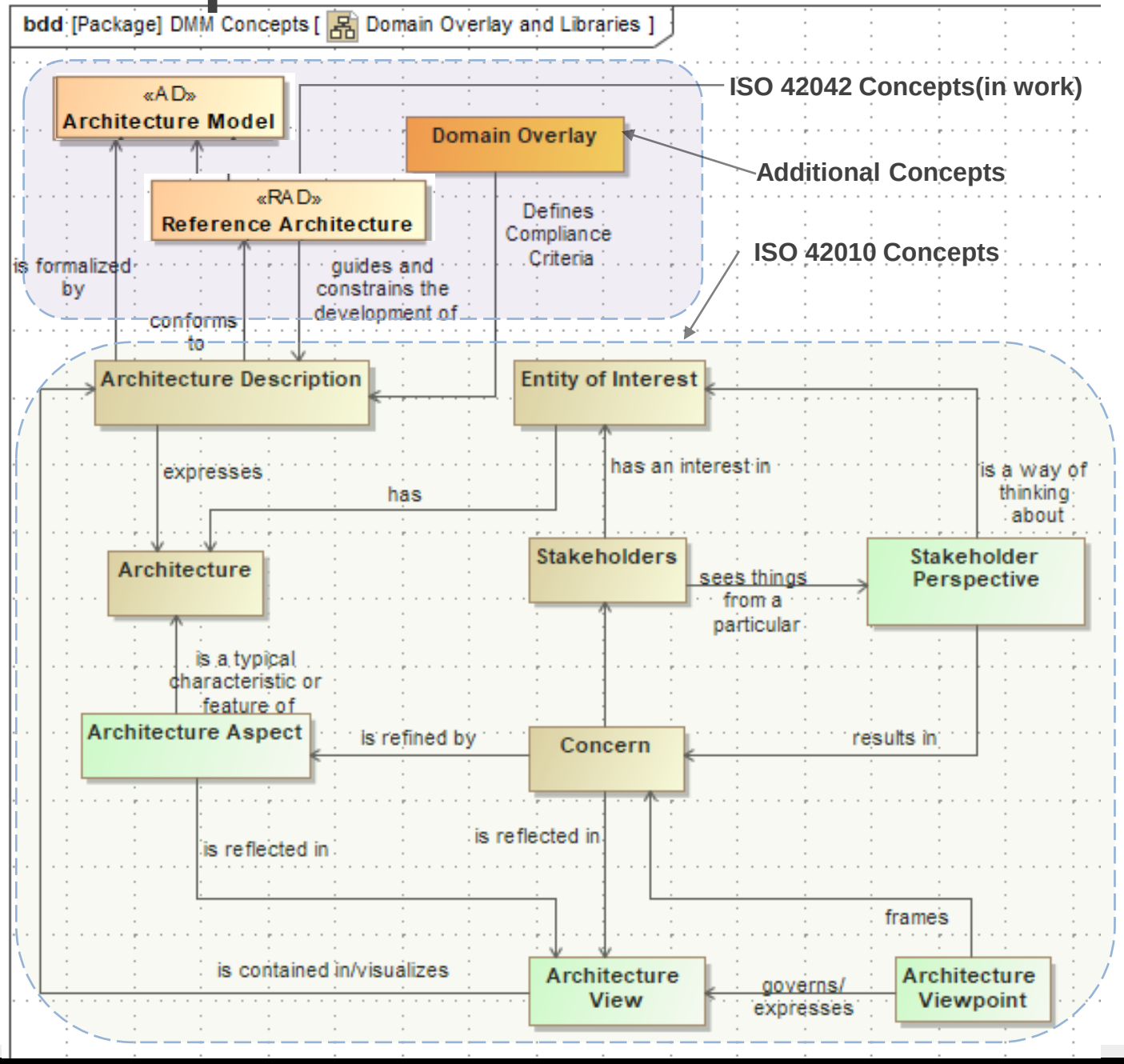
What's in the System Architecture Model

- **A System Architecture Model is an Integrated Structured Representation of the Requirements, Behaviors, Structure, Properties, and Interconnections**
  - Requirements
    - What are the mission operations, stakeholders' goals, purposes, and success conditions for the system?
  - Behavior
    - What the system needs to do to meet requirements
    - Transformation of inputs to outputs
    - Responses to External stimulus
  - Structure
    - The parts of the system that are responsible for the behaviors
    - The component hierarchy, elements and stores
  - Properties
    - The performance, physical characteristics and governing rules that constrain the structure and behaviors
  - Interconnections
    - The ability of the structured elements to exchange information and achieve their required behaviors



Primary use of the system model is to enable the design of a system that satisfies its requirements

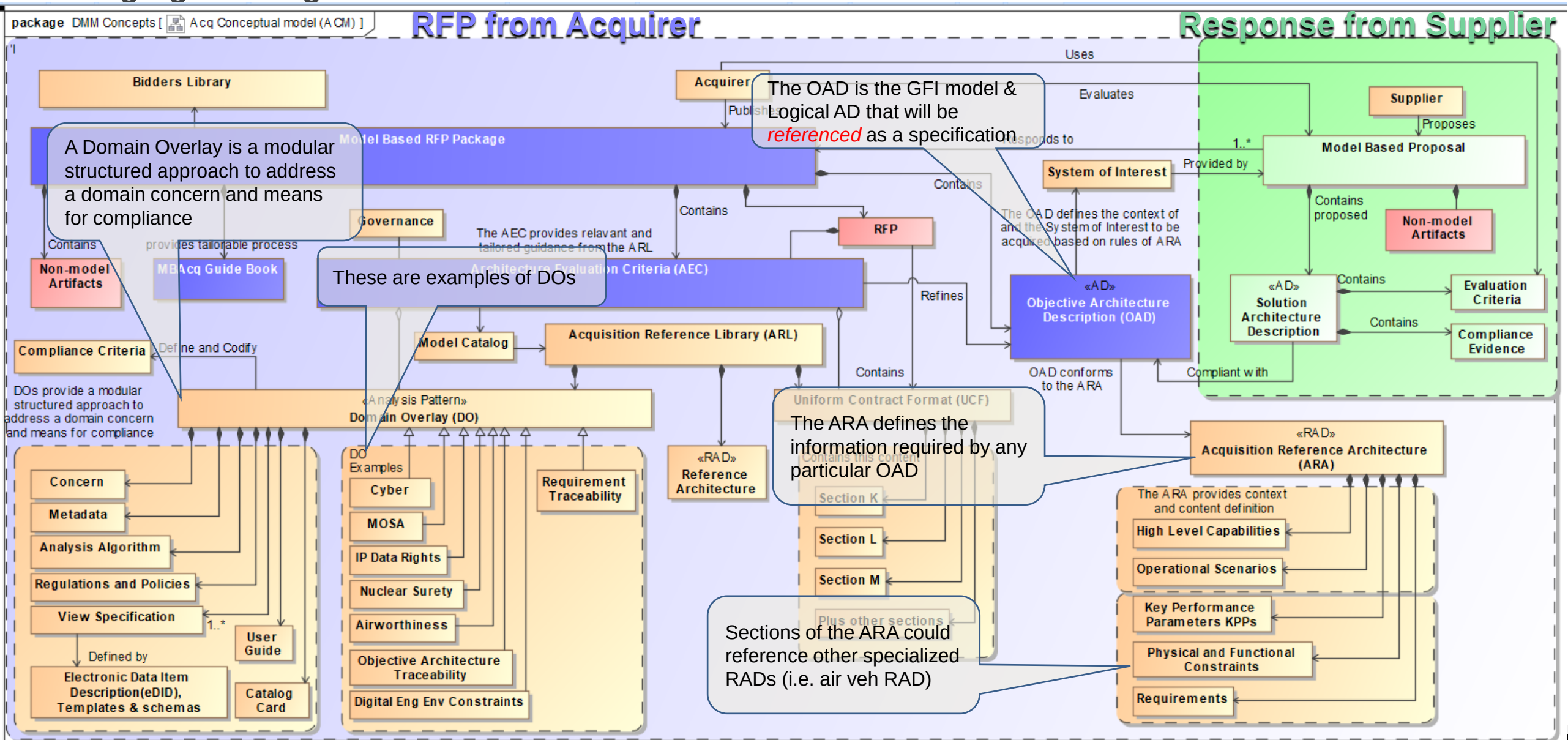
Standardized Concepts for Reusable Content



OMG Standards Development Organization.

MBAcq Future State

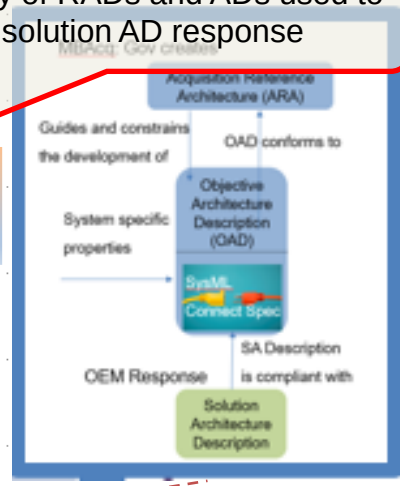
Bringing it all together!

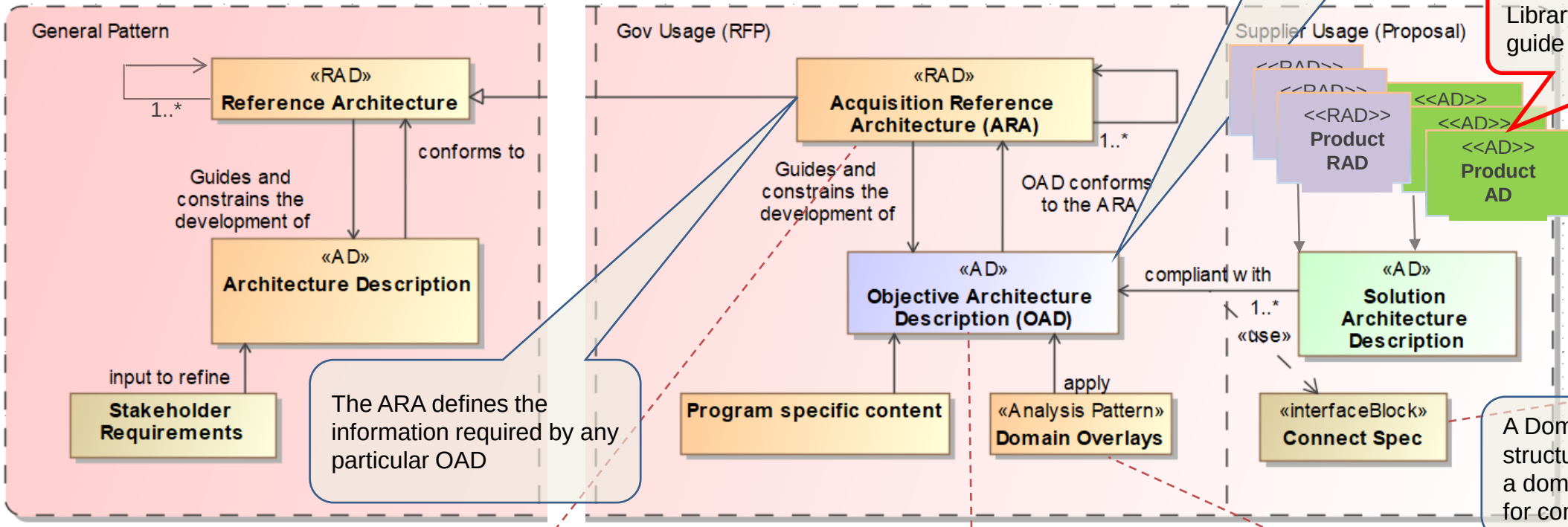


Usage of Standardized Concepts (2)

The OAD is the GFI model & Logical AD that will be *referenced* as a specification

Library of RADs and ADs used to guide solution AD response



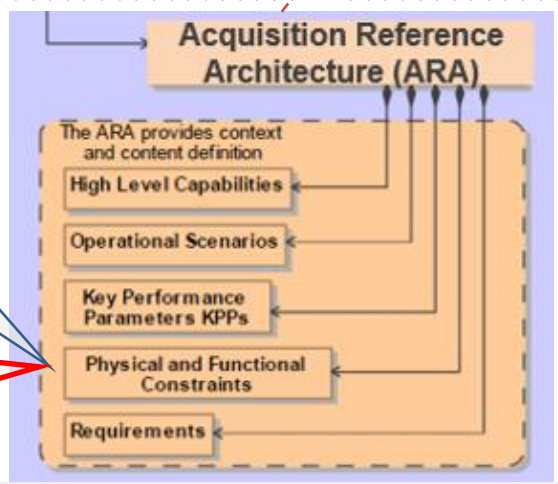


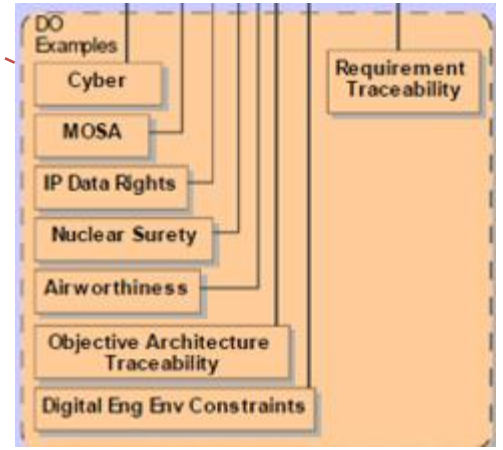
The ARA defines the information required by any particular OAD

A Domain Overlay is a modular structured approach to address a domain concern and means for compliance

Sections of the ARA could reference other specialized RADs (i.e. air veh RAD)

Example, AF AV RAD





Definitions

We make a distinction between a Reference Architecture Description and an Architecture Description that is being “referenced” such as the OAD.

- A reference architecture description (RAD) is a set of templates, models, or document sets that provides common concepts, vocabulary, reusable designs, best practices, and standards for a domain or a category of solutions[12345]. It is used to organize and guide how to apply specific patterns and/or practices to solve particular classes of problems related to domain concepts[24]. It defines the fundamental components of the domain and the relations between them[45].

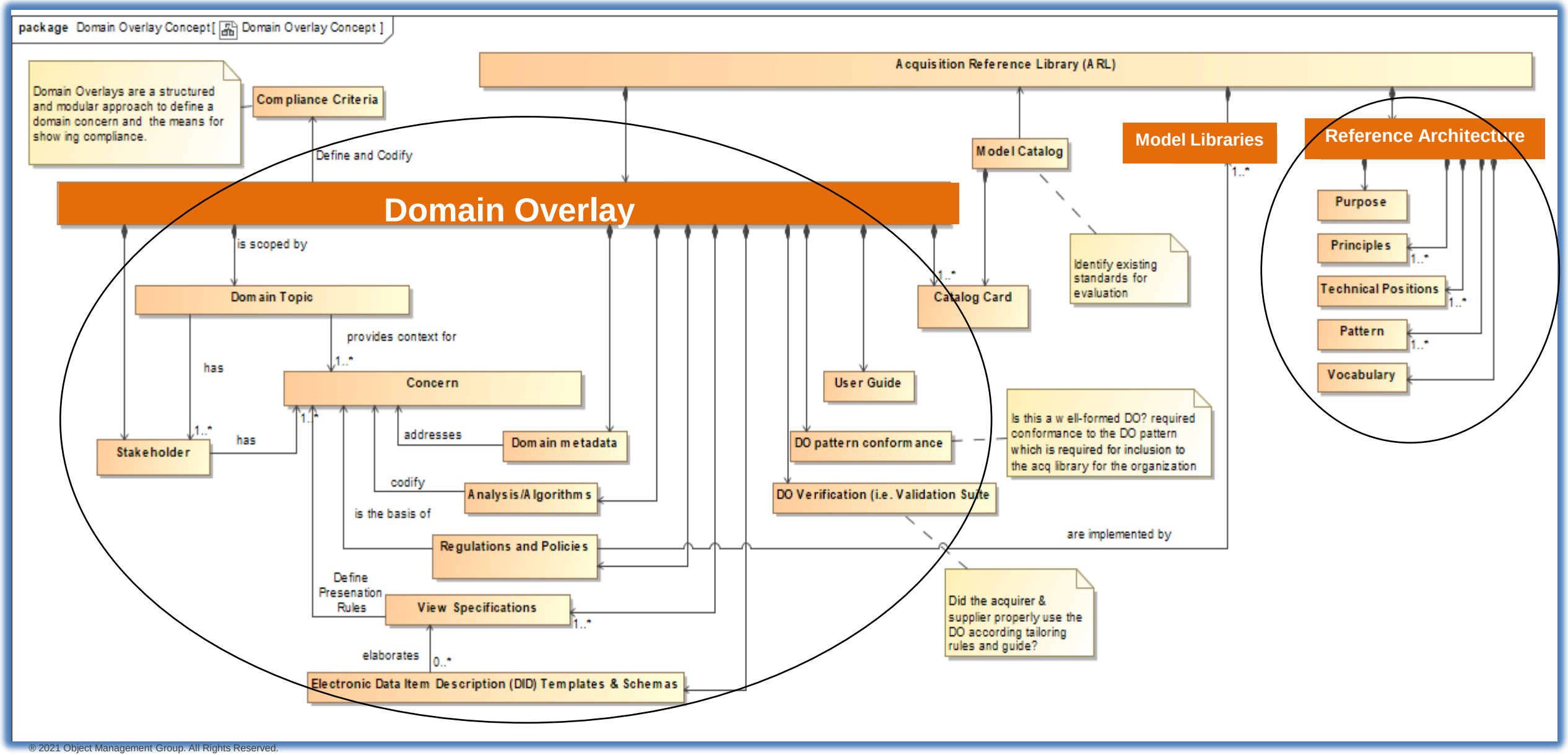
  Summarized from 5 sources and the web with modifications leh-10/2/2023

- Acquisition Reference Architecture (ARA:) (Description) Common guidance and constraints to start the development of a specific (OAD) Objective Architecture Description. Set of reusable model conventions, patterns, profiles, schemas, and templates used to govern model-based RFP activities, artifacts, and system lifecycle. Think of it as the rules for providing the system specific properties for defining an OAD.

- Objective Architecture Description (OAD): Descriptive model containing the requirements and constraints for the system to be acquired as tailored from the Acquisition Reference Architecture (ARA) and a chosen set of Domain Overlays. Tailored integrated set of model patterns a program provides in a request for proposal and on contract, in model form, that they want responded to in model form, as a solution architecture description, including digital traceability back to the OAD.

- Domain Overlay (DO): A pattern and collection of constructs needed to support analysis of a domain specific concern using a standardized approach.

Standardized Concepts for Reusable Content



Domain Overlay (DO) Lifecycle - animated

1 Framing the Analysis Why & What is needed

- Identify the concern
  Certification of a nuclear system, cert plan, verification
  Define View specification content
- Identify the associated compliance documents:
  (AFI 91-107, AFI 91-118, AFI91-119…)
- Identify the properties needed to support analysis
  Critical Functions, Safety Category, SW/HW/FPGA/Operational
- Identify the logic or processing needed to support analysis

2 Creating the DO *Package for reuse*

- Create new stereotypes, properties and associated value types to label architecture elements
  <<Critical Function >> {Authorize, SW, high}
- Create a new extended requirement type with additional properties used for reasoning
  <<Nuc Surety Requirement>>
- Parse and Import as extended requirement elements. Provide additional extended data
- Parametric diagrams, constraint blocks, and scripts can be used to capture the rules on how various SW, HW, firmware, and processes are evaluated, tested, and certified.
- Create View specifications (electronic DID for visualization)
  Nuc Surety test plan, Validation Matrix
- Create documentation & Users Guide on DO usage

3 Using a Packaged DO

acquire/supplier may use differently

- Apply DO stereotypes to Architecture Model as directed
  <Critical Function>> Launch Console
- Provide additional attribute values
  Crtitical function = Launching
  Type=SW; Safety=3

4 Evaluating the Results

Execute analysis, review populated views.
Follow guidance for success criteria.

*DO is a pattern for creating modular profiles

Domain Overlays (DOs)

Domain Overlay (DO) Description: A collection of constructs needed to support analysis for a **domain specific concern** using a standardized modular approach. Typical construct elements include:

Previously called Aspect Viewpoint Overlays (AVO)

- A set of regulations, constraints, rules…. driving the analysis (i.e. MOSA, safety, certification, airworthiness, Space …)These could be provided as an instrumented lib
- A set of Data/Metadata required to address or support analysis, compliance or fit-for-purpose. Implementation example (Domain model/profile)
- Logic/algorithm needed to perform analysis using the metadata and regulations
- A set of Viewpoints to support various analysis (Certification plan, coverage, design trades, schedule and resources…)

Characteristics

- Usually has associated regulations, governance that can be treated as pseudo requirements or constraints
- Cross-cutting both viewpoints/rows & aspects/columns
- Supports specific analysis associated with a Domain-Specific concern
- Can be created independent of a specific solution architecture description
- Can be applied or removed from a specific architecture description without impacting the AD, hence an overlay

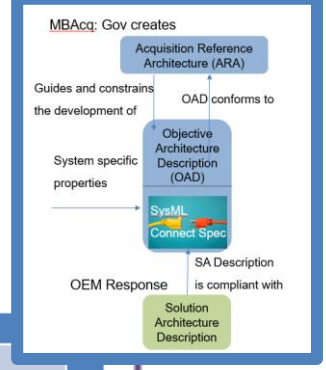
Based on NDIA Actionable Architecture Using Aspect Modeling, L Hart 2018

Modular structured pattern to support standardization

OMG Standards Development Organization.

The Architecture Continuum

Defining Guidance!



View Specifications

Views

Architecture Continuum

RFP

Proposal

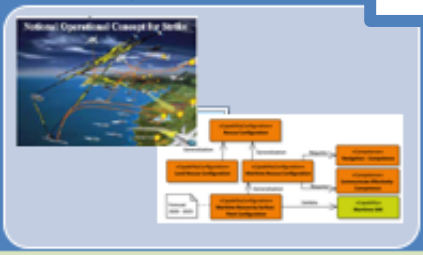
Enterprise Architecture (UAF)

- "Blueprint" for Organization
- Provides System Context
- MOEs, Enterprise Rs-Sr

OAD

- Operational Capabilities
- Operational Scenarios
- Key Performance Parameters
- Physical & Functional Constraints
- Requirements

St-Tx
Op-Sr
Ar-Ct

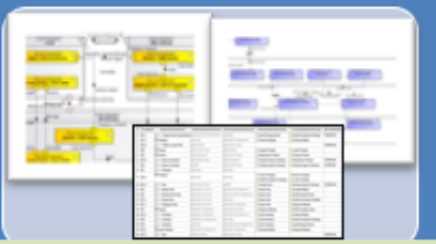


Traceability

Logical System Architecture (UAF or SysML)

- AOA Results, MOPs
- Customer Requirements
- System Rs-Sr

Rs-Sr
Op-Ra
bdd
ibd



Traceability Domain Overlays (DO)

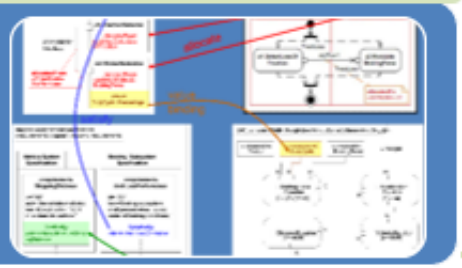
System Architecture (SysML)

- Derived Requirements
- Compliance Evidence (as defined in the DOs)

Proposed Solution

- Solution Architecture
- Compliance Evidence
- Traceability to OAD
- Requirements Allocation

bdd
ibd
par
req



UAFML

SysML

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MB Acquisition Summary

- MBSE can be inserted earlier in the acquisition lifecycle to facilitate agile response to change during the acquisition lifecycle and beyond.
- Government enterprises can respond to opportunities and risks grounded in well-formed models based on data driven decisions
- Formalize the development, integration, and use of models to inform enterprise and program decision making.
- Existing processes will need to be examined to determine where and how MBE/MBSE can be inserted, adopted and improved.
- Prototype processes to determine which work best, find issues, and socialize results.
- Stable mature patterns can be incorporated into existing standards/frameworks such as UAF, SysML
- New patterns can be considered as an independent standards

MBAcq is not just a Proposal Packaging Choice. It's about applying Effective SE practices!

Focus on Solutions Instead of Reinventing Modeling and Process!

Moving towards "Born Digital"

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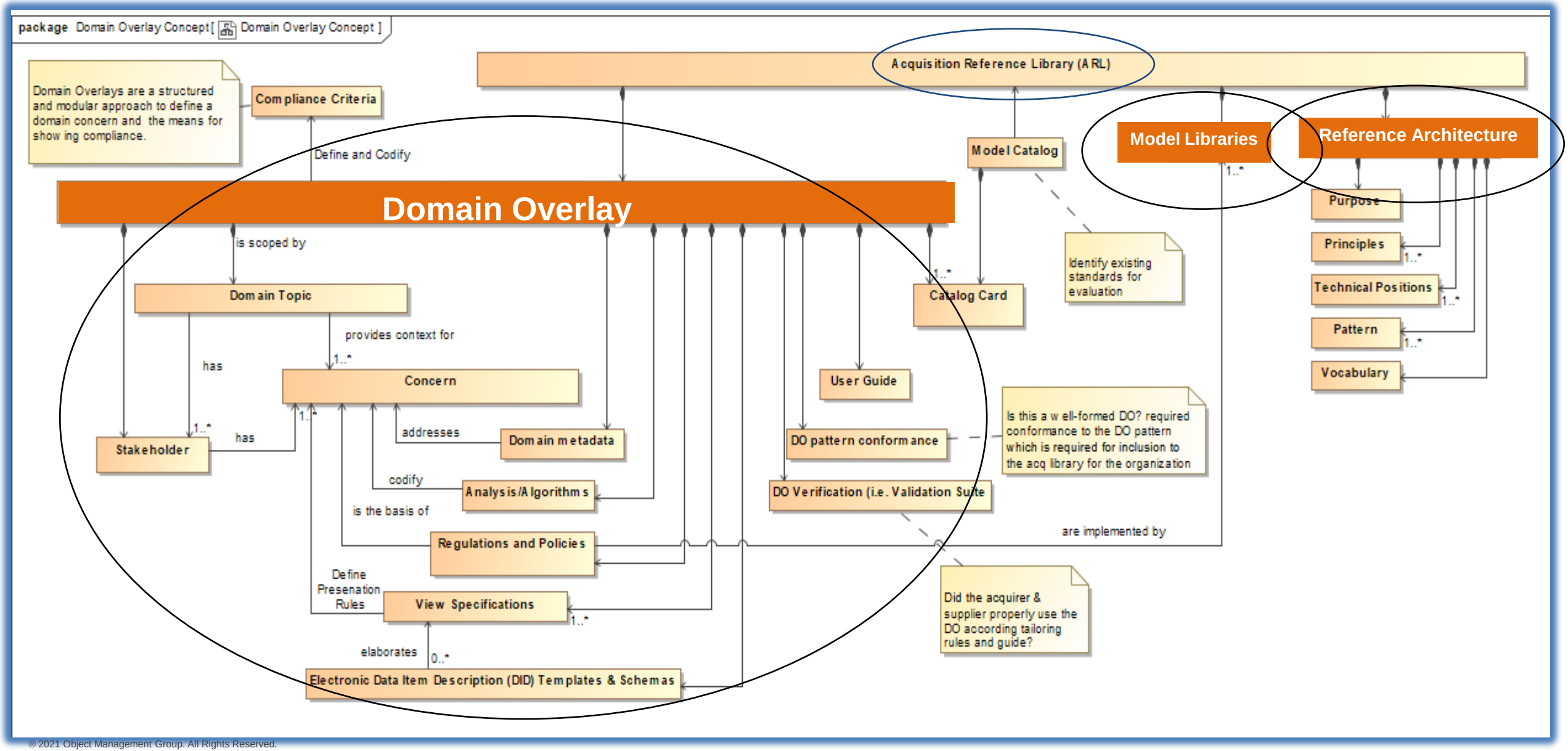
Questions?

Reusable Assets and Model Curation

3/21/2024

Standardized Concepts for Reusable Content



Model/Asset Reuse: The Problem

So, we need to share, search for, find (hopefully), reuse, publish, update, notify, trust, protect, etc.:

- Models
- Model Libraries
- Reference Architectures
- Components
- Interfaces
- Types
- Patterns
- Keywords
- Solution Elements
- Etc.

What is the solution to this?

Model Curation

"If we build it, they will come." *Field of Dreams*

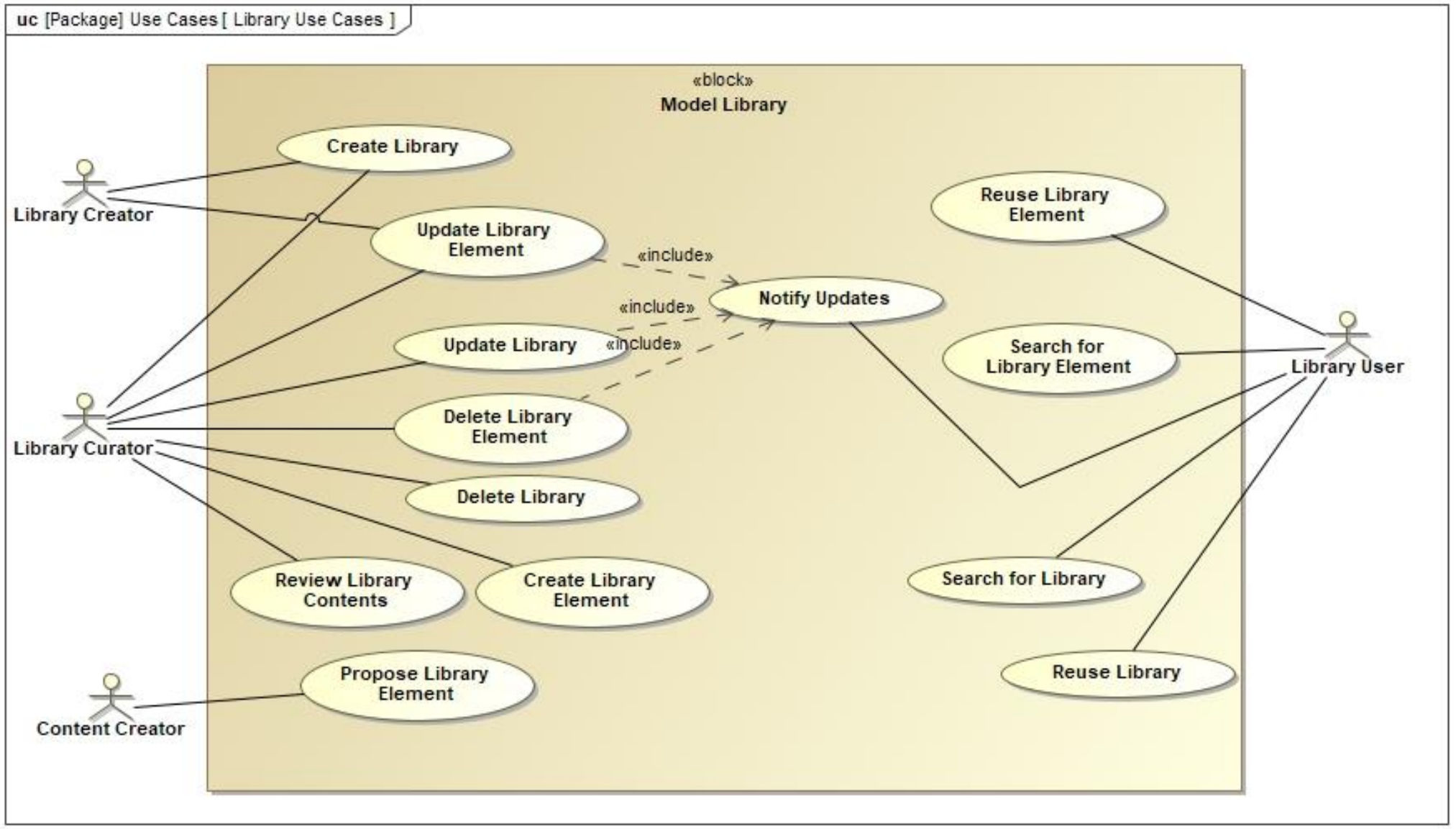
- However, ***"they"*** need to know that ***"it"*** exists.

For a library to be of any use, people need to know where it is, be able to enter it, search through a catalog system, check out the elements that they need, and suggest new items to be added. Regarding model reuse, most organizations have a hidden library that few people know about, with no doors, card catalogue or search capability, where you can't check out or add any objects. We need a solution for model curation.

A Few Requirements – NOT A COMPLETE LIST!!

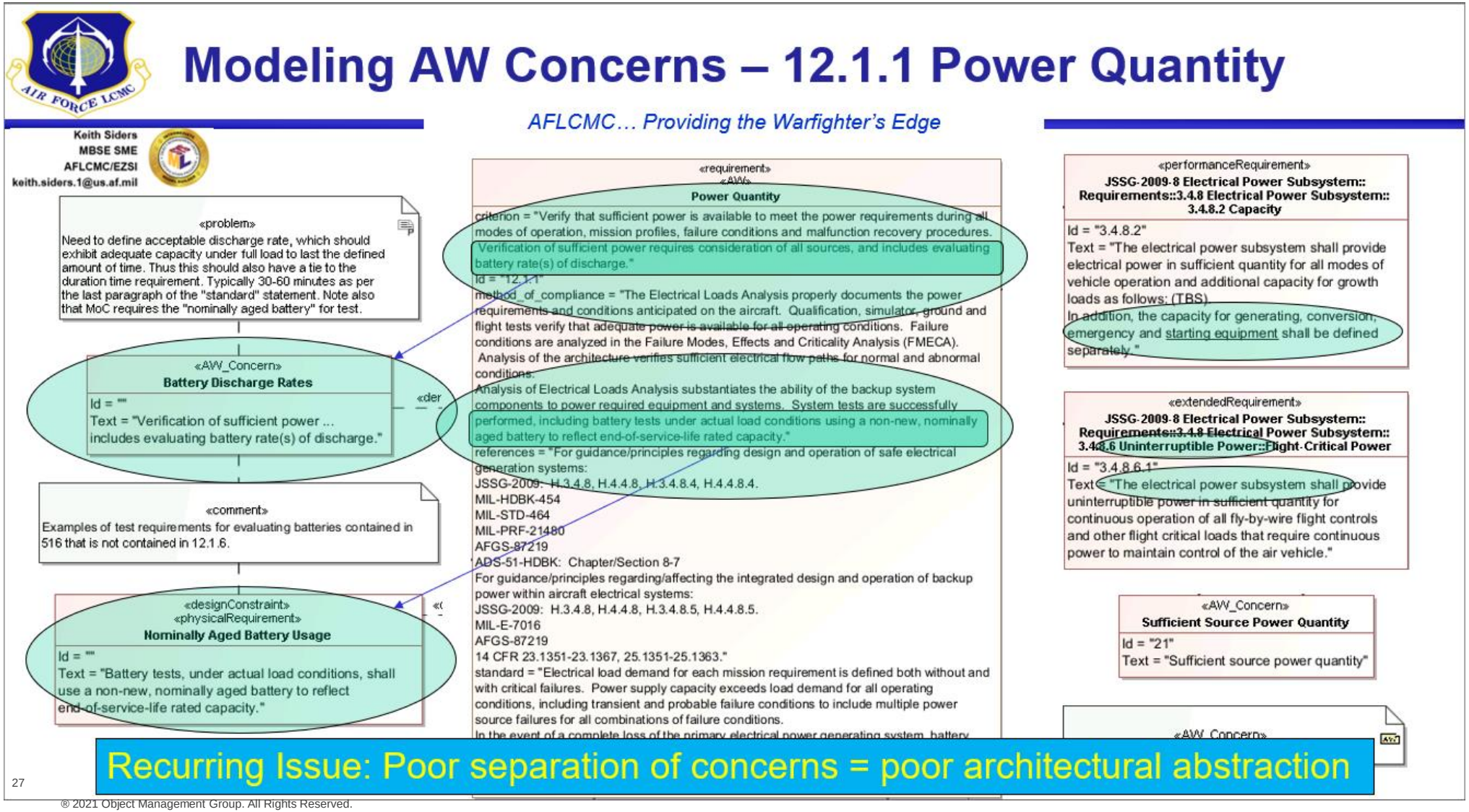
- Standard API – Extended SysML v2 API?
- Multiple libraries with access control
- Permissions at multiple levels - Library, Element, etc.
- Role-based permissions – Curator, user, creator, owner, etc.
- Configuration management of libraries, elements, patterns, ref architectures, etc.
- Search capabilities using keywords, types, purpose, domain, etc.
- Support for Vendor independent/dependent data formats
- Support for UML, SysML, UAF, etc.
- Support for non-UML tools (future?)
- Local, Department, Enterprise, Global, etc. hosted libraries
- Black box & White box sharing
- Interest registration
- Update notifications
- Global element ID’s – the same component in multiple models has the same ID
- Etc.

A Few Model Library Use Cases – NOT A COMPLETE LIST!!



Modeling Concerns as Requirements: Another Example

EXAMPLE OF MODEL LIBRARY CONTENT CREATION



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Airworthiness Domain Overlay

EXAMPLE OF STANDARDS ALIGNMENT

ISO 42010 Alignment

AFLCMC… Providing the Warfighter's Edge

MBSE Support for Airworthiness V3.0

Leveraging Domain Overlays

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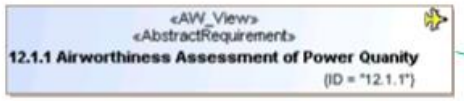

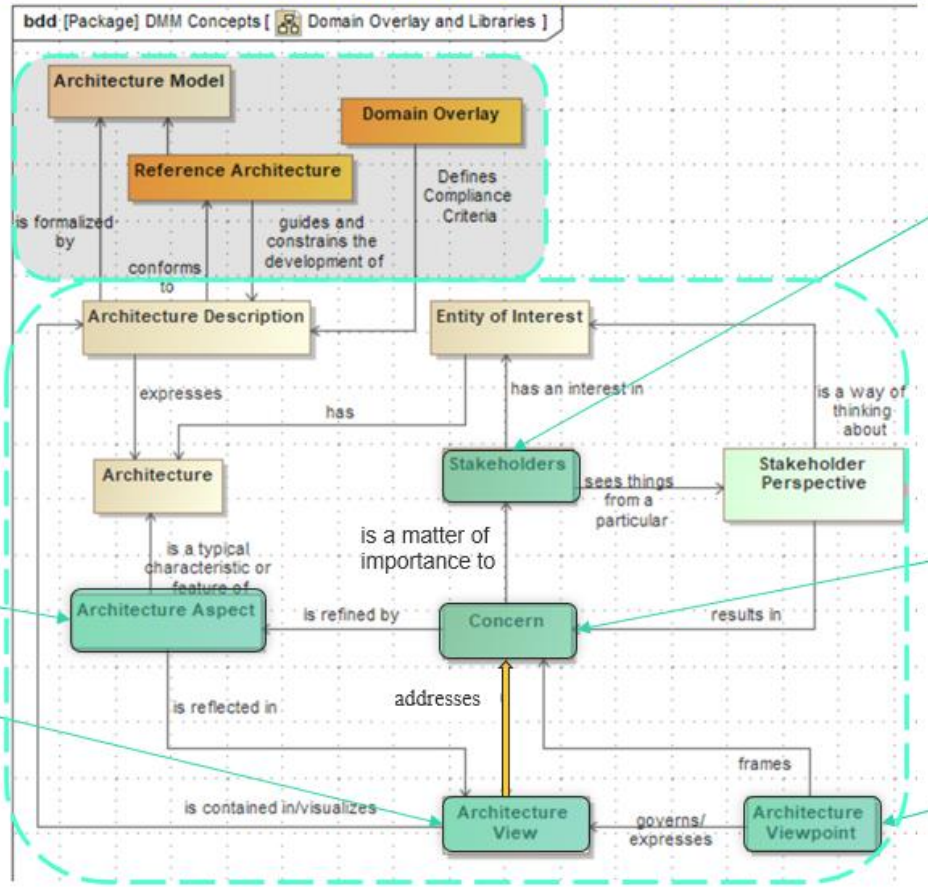

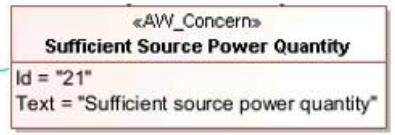

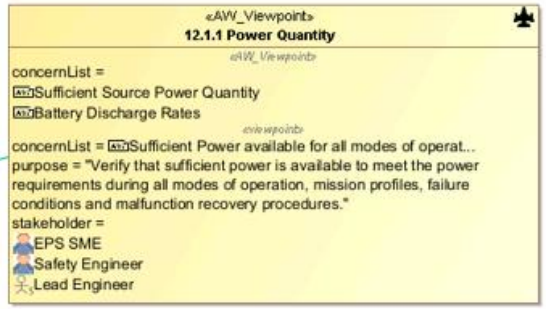

Standards Development Organization.

Airworthiness Domain Overlay

PROVIDING CLARIFICATION

Tracing Concerns to Criteria via DeriveReqt

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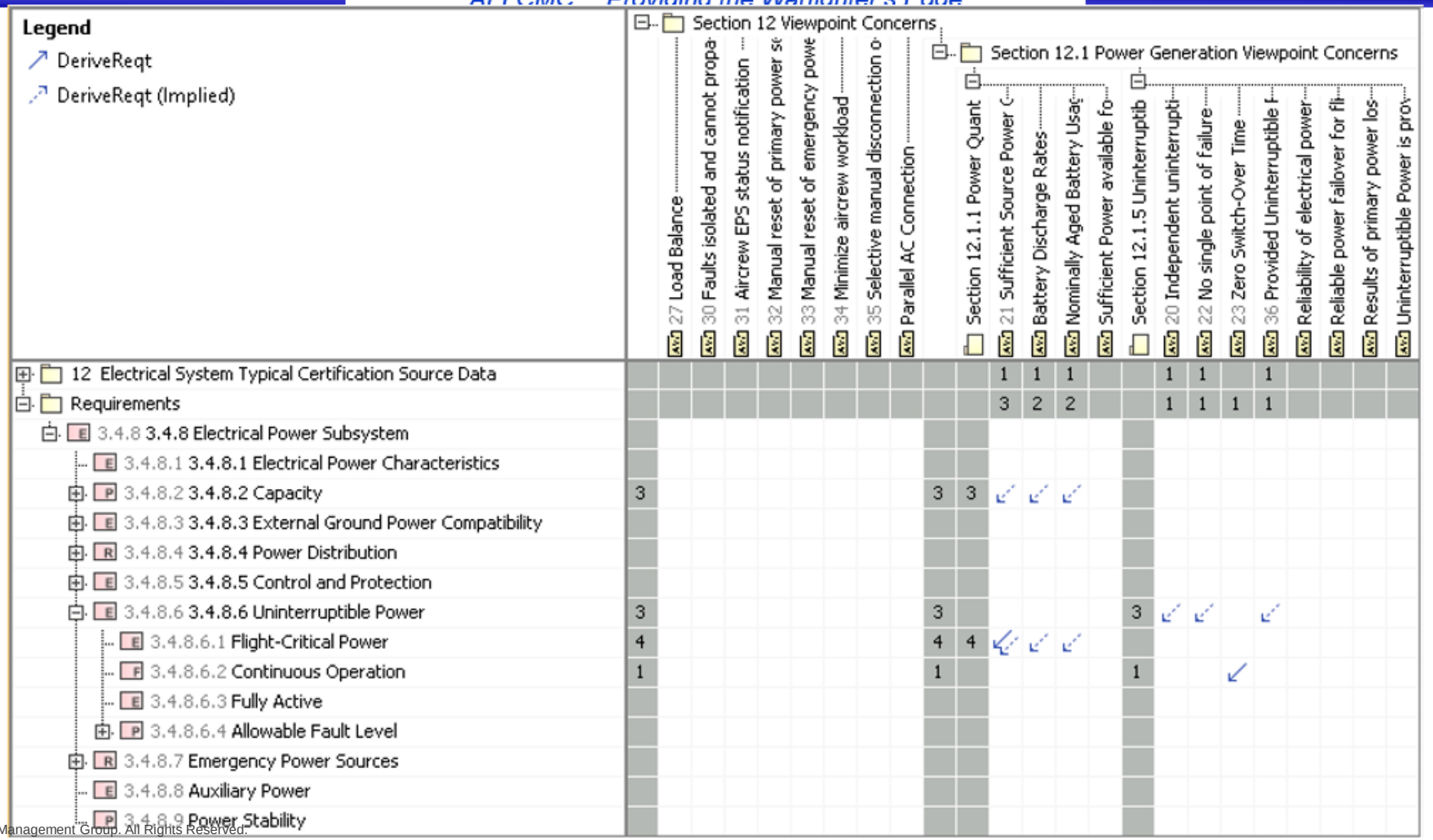
AFLCMC Providing the Warfighter's Edge



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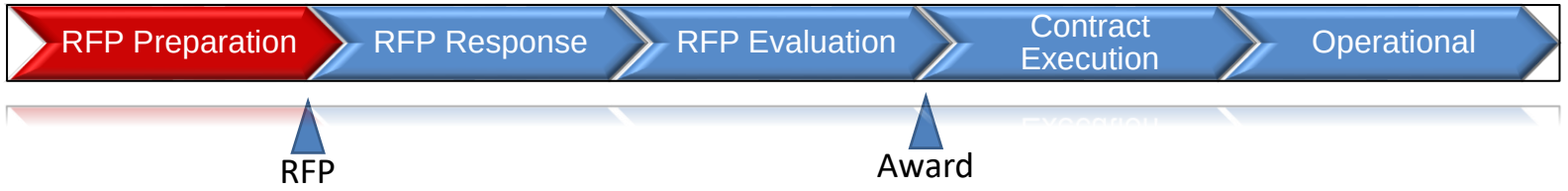
Backup

MBACQ: RFP PREPARATION AND PLANNING

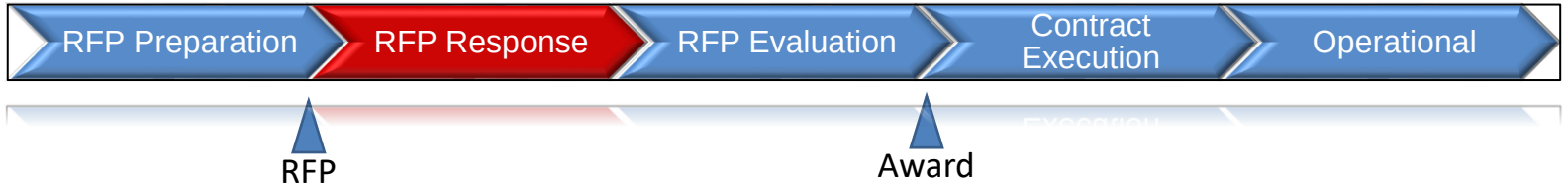


During RFP Preparation and Planning phase, the acquirer (**GOV**) can use **MBAcq** process to:

- Get a clear understanding of the system being acquired through the creation of the Objective Arch Description (OAD) addressing:
  - Operational context, capabilities, requirements, constraints…
- Determine what information will be needed for evaluation & validation of a supplier response such as:
  - MOSA, Certification properties, Data Rights, KPPs
- Determine and codify the supplier instructions expected for a model based response in the Arch Evaluation Criteria (AEC)
  - Use of gov furnished profiles (Domain Overlays), and supplier guidance
- Determine any implications to contract language (i.e. Tagging a component with certain data rights)
- Communicate the RFP content unambiguously to the supplier with a precise RFP Model (handoff or collaboratively)

Identify what is needed, know where to find it, how to use it and how to evaluate it!

MBACQ: RFP RESPONSE BY SUPPLIERS

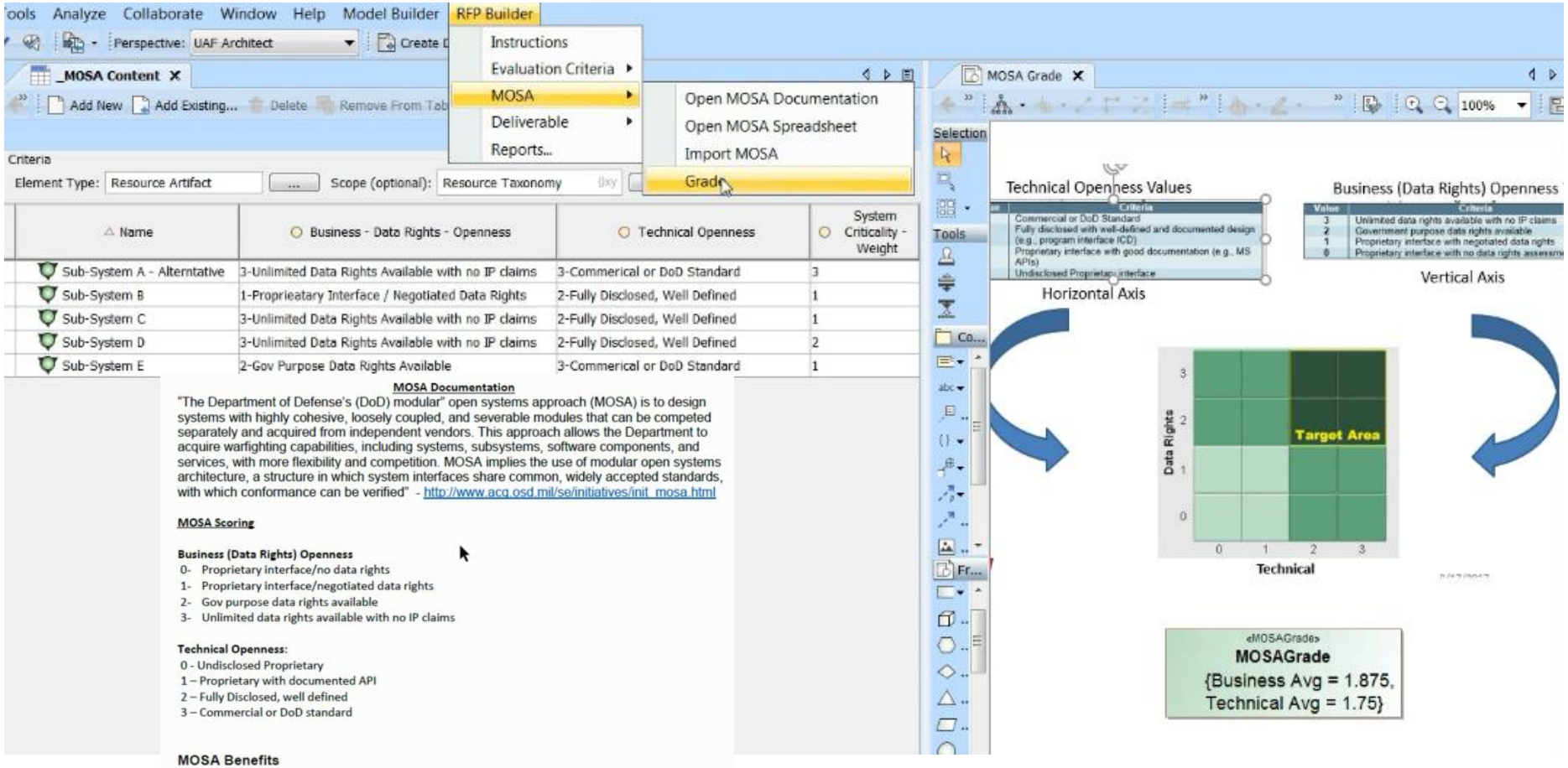


During the RFP Supplier Response phase, the **supplier** will use the **MBAcq** process to:

- Get a clear understanding of the system being acquired within the operational environment context
- Respond to the RFP with supplier value added approach supporting analysis
- Get a clear understanding of expected modeling response using the provided Arch Evaluation Criteria (AEC)
- Utilize built-in self evaluation methods to support compliance

Focus is on Response and less on process mechanics

MODULAR OPEN SYSTEMS APPROACH (MOSA) EVALUATION



[Modular Open Systems Approach](#)
[NDIA Paper](#) July 1, 2020

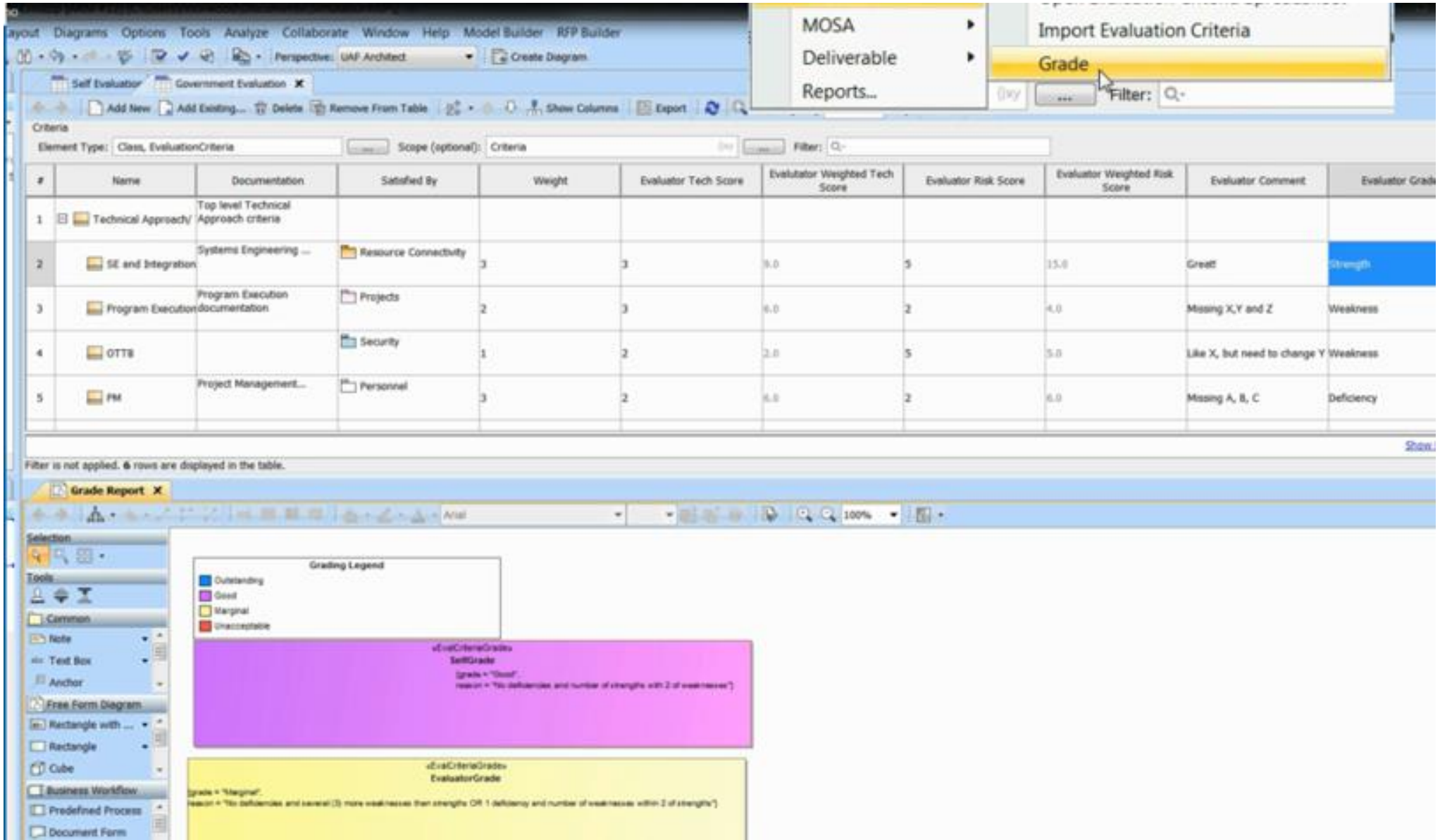
MBACQ: EVALUATION (SUPPLIER/GOV)

During RFP Evaluation phase, the **Supplier** & **GOV** can use **MBAcq** process to:

- Assist the evaluation process for compliance and scoring using built in evaluation criteria
- Assist in the assessment of key concerns such as MOSA, Security, survivability though the use of Domain Overlays(DOs) provided in the Arch Evaluation Criteria (AEC)
- Capture scoring and rational with standard metrics for future evidence

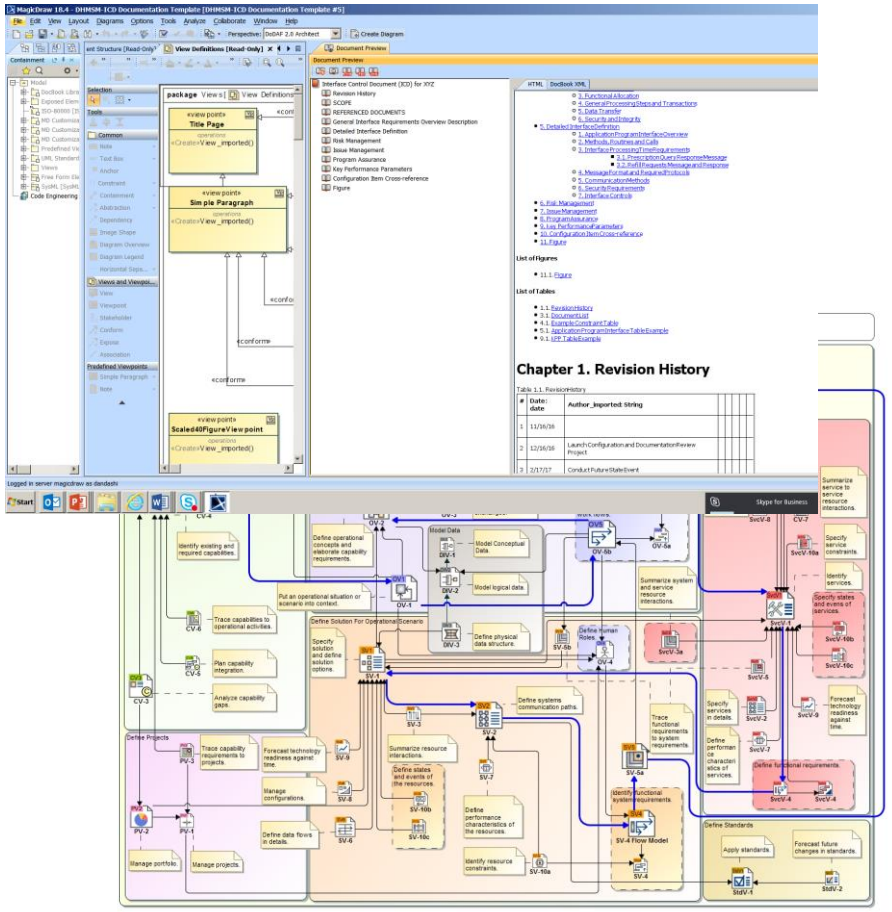
Grading Rubrics and Scoring are captured in the Model

EVALUATION CRITERIA ARE REPRESENTED AS MODEL ELEMENTS AND GRADED



DOCUMENT GENERATION FROM MODEL

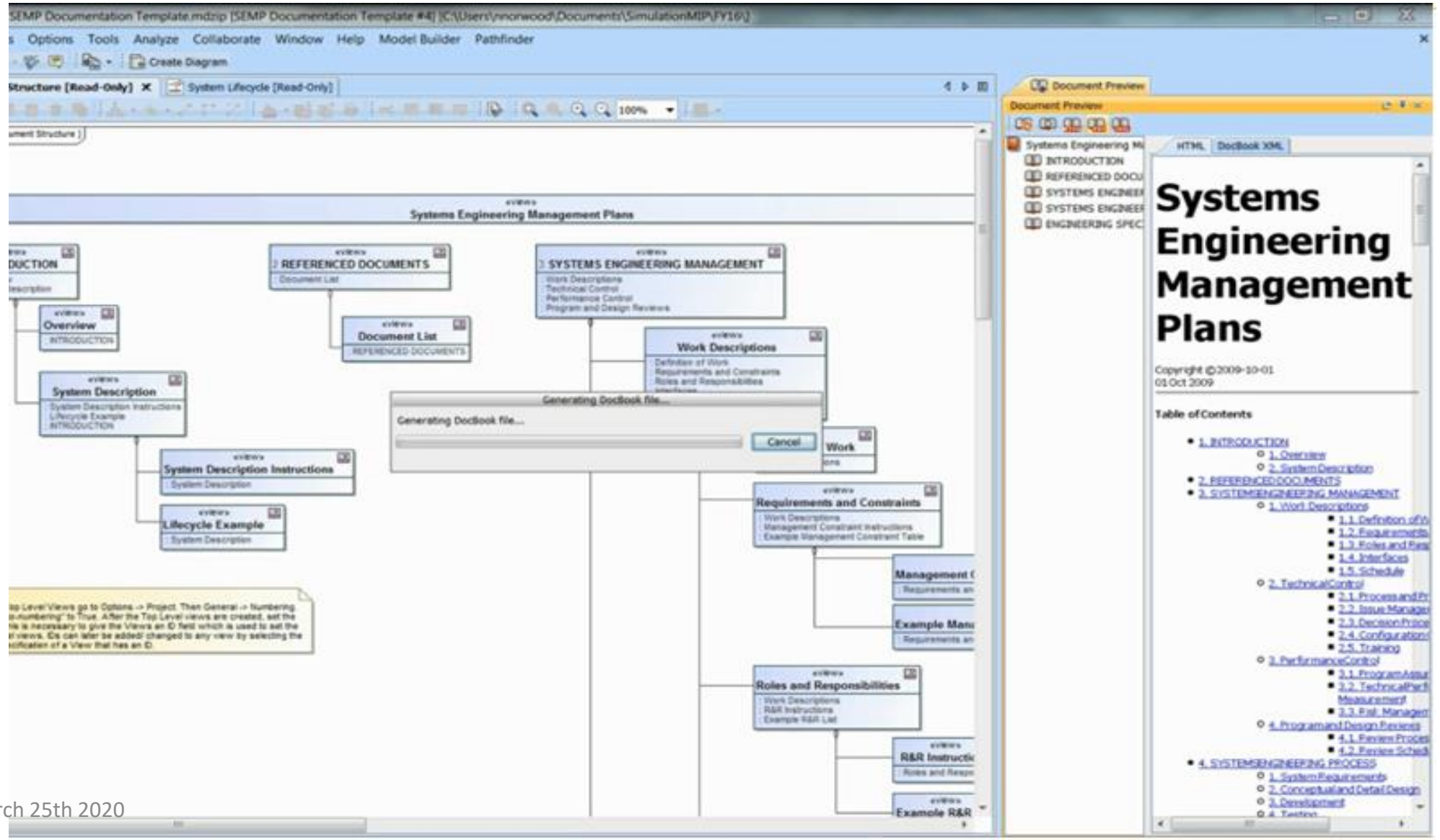
Define Reusable document templates (CDD, AoA Plan…)



Generate Required Documents and Reports

(Source: Laura Hart, MITRE 2017)

DOCUMENT GENERATION



GENERATED DOCUMENT CONTENT

Table of Contents

List of Figures

List of Tables

1. INTRODUCTION

1.1. Overview

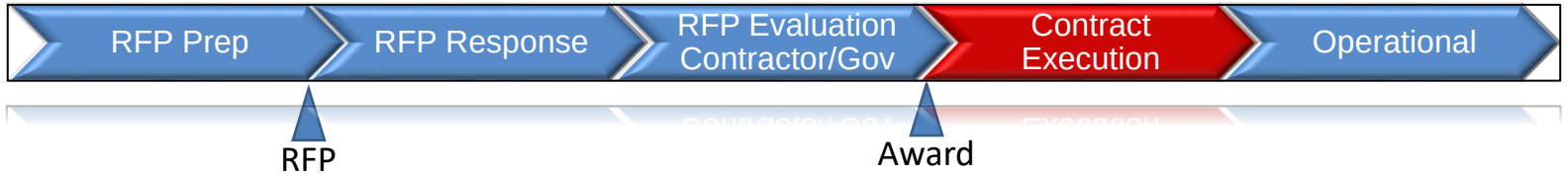
Describe the purpose and scope of the SEMP.

1.2. System Description

At a high level, describe the system to be created, to include the entire system lifecycle from concept to dismantlement/retirement.

Figure 1.1. Lifecycle Example

MBACQ: CONTRACT EXECUTION



During the RFP Contract Execution phase, the **GOV** will use the **MBAcq** process and evolving model(s) to:

- Collaboration with suppliers
- Monitor progress, maturity
- Assess change impact and manage risks

The evolving model is a source of collaboration

MBACQ: OPERATIONAL SYSTEM

During the Operational phase, the **GOV** and **supplier** will use the matured evolving set of models to:

- Support knowledge management and training
- Assess change impact and manage risks
- Provide the foundation for a digital twin

Living Knowledge Repository Supporting Data-driven decisions