The Dawn of Enterprise Architecture in the Department of the Air Force

Jeffrey W. Eggers
Air Force ISR Chief Architect
Defense Intelligence Senior Leader
UAF Summit 2024
March 20, 2024
VISION

- Optimize our force design and organizational structures
- Ensure integration across the force at both the mission and technical levels
- Develop capabilities cohesively across the mission areas
Approach

- Develop all future requirements and capabilities using UAF and SysML Models
- Develop an enterprise-level architecture framework
- Develop a common government architecture repository
## Levels of Architecture

<table>
<thead>
<tr>
<th>Enterprise</th>
<th>Mission, Organization, Force Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capability</td>
<td>Functions, Requirements, Investments</td>
</tr>
<tr>
<td>System</td>
<td>Detailed Design of Fielding Systems</td>
</tr>
</tbody>
</table>
Challenges

- Expense
- Senior Sponsorship
- Legacy Processes
- Herding the Cats
### Not the View for Senior Leaders

#### Summary & Overview Sm-Ov

<table>
<thead>
<tr>
<th>Environment En-Pm and Measurements Me-Pm and Risks Rk-Pm</th>
<th>Operational Constraints Op-Ct</th>
<th>Strategic Constraints St-Ct</th>
<th>Strategic Roadmaps: Deploy, Phasing St-Rm-D, -P</th>
<th>Operational Traceability Op-Tr</th>
<th>Services Traceability Sv-Tr</th>
<th>Personnel Traceability Pr-Tr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resources Information Model Rs-if</td>
<td>Services Constraints Sv-Ct</td>
<td>Services Roadmap Sv-Rm</td>
<td>Services Traceability Sv-Tr</td>
<td>Personnel Sequences Ps-Sq</td>
<td>Competence, Drivers, Performance Psm-Ct-C, -D, -P</td>
<td>Availability, Evolution, Forecast Psm-Rm-A, -E, -F</td>
</tr>
<tr>
<td>Resources Sequences Rs-Sq</td>
<td>Resources Information Model Rs-if</td>
<td>Resources Sequences Rs-Sq</td>
<td>Resources Information Model Rs-if</td>
<td>Resources Information Model Rs-if</td>
<td>Resources Information Model Rs-if</td>
<td>Resources Information Model Rs-if</td>
</tr>
<tr>
<td>Resources Processes Rs-Pr</td>
<td>Resources Processes Rs-St</td>
<td>Resources Processes Rs-St</td>
<td>Resources Processes Rs-St</td>
<td>Resources Processes Rs-St</td>
<td>Resources Processes Rs-St</td>
<td>Resources Processes Rs-St</td>
</tr>
<tr>
<td>Resources Connectivity Rs-CN</td>
<td>Resources Connectivity Rs-CN</td>
<td>Resources Connectivity Rs-CN</td>
<td>Resources Connectivity Rs-CN</td>
<td>Resources Connectivity Rs-CN</td>
<td>Resources Connectivity Rs-CN</td>
<td>Resources Connectivity Rs-CN</td>
</tr>
<tr>
<td>Resources Structure Rs-Sr</td>
<td>Resources Structure Rs-Sr</td>
<td>Resources Structure Rs-Sr</td>
<td>Resources Structure Rs-Sr</td>
<td>Resources Structure Rs-Sr</td>
<td>Resources Structure Rs-Sr</td>
<td>Resources Structure Rs-Sr</td>
</tr>
<tr>
<td>Resources Taxonomy Rs-Tx</td>
<td>Resources Taxonomy Rs-Tx</td>
<td>Resources Taxonomy Rs-Tx</td>
<td>Resources Taxonomy Rs-Tx</td>
<td>Resources Taxonomy Rs-Tx</td>
<td>Resources Taxonomy Rs-Tx</td>
<td>Resources Taxonomy Rs-Tx</td>
</tr>
</tbody>
</table>

#### Motivation Mv

<table>
<thead>
<tr>
<th>Architecture Principles Am-Mv</th>
<th>Taxonomy Tx</th>
<th>Structure Sr</th>
<th>Connectivity Cn</th>
<th>Processes Pr</th>
<th>States St</th>
<th>Sequences Sq</th>
<th>Information If</th>
<th>Parameters Pm</th>
<th>Constraints Ct</th>
<th>Roadmap Rm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture Development Method Am-Pr</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Dictionary Am-if</td>
<td>Architecture Parameters Am-Pm</td>
<td>Architecture Constraints Am-Ct</td>
<td>Architecture Roadmap Am-Rm</td>
</tr>
</tbody>
</table>

#### Taxonomy Tx

<table>
<thead>
<tr>
<th>Strategic Motivation St-Mv</th>
<th>Strategic Taxonomy St-Tx</th>
<th>Strategic Structure St-Sr</th>
<th>Strategic Connectivity St-CN</th>
<th>Strategic Processes St-Pr</th>
<th>Strategic States St-St</th>
<th>Strategic Information St-if</th>
<th>Strategic Constraints St-Ct</th>
<th>Strategic Roadmaps: Deploy, Phasing St-Rm-D, -P</th>
<th>Operational Traceability Op-Tr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic Coherence Op-Ct</td>
<td>Strategic Processes Op-Pr</td>
<td>Operational States Op-St</td>
<td>Operational Information Op-if</td>
<td>Operational Constraints Op-Ct</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

#### Structure Sr

<table>
<thead>
<tr>
<th>Operational Information Model Op-if</th>
<th>Operational Traceability Op-Tr</th>
<th>Services Traceability Sv-Tr</th>
<th>Personnel Traceability Pr-Tr</th>
<th>Resources Traceability Rs-Tr</th>
<th>Security Traceability Sc-Tr</th>
<th>Projects Traceability Pj-Tr</th>
<th>Standards Traceability Sd-Tr</th>
<th>Architecture Traceability Am-Tr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment En-Pm and Measurements Me-Pm and Risks Rk-Pm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Connectivity Cn

| Architecture View Am-Sr | Architectural References Am-CN | Architecture Development Method Am-Pr | - | - | - | - | - | - | - |

#### Processes Pr

<table>
<thead>
<tr>
<th>Architecture Motivation Am-Mv</th>
<th>Taxonomy Tx</th>
<th>Structure Sr</th>
<th>Connectivity Cn</th>
<th>Processes Pr</th>
<th>States St</th>
<th>Sequences Sq</th>
<th>Information If</th>
<th>Parameters Pm</th>
<th>Constraints Ct</th>
<th>Roadmap Rm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture Development Method Am-Pr</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Dictionary Am-if</td>
<td>Architecture Parameters Am-Pm</td>
<td>Architecture Constraints Am-Ct</td>
<td>Architecture Roadmap Am-Rm</td>
</tr>
</tbody>
</table>

#### States St

| Architecture View Am-Sr | Architectural References Am-CN | Architecture Development Method Am-Pr | - | - | - | - | - | - | - | - |

#### Sequences Sq

| Architecture View Am-Sr | Architectural References Am-CN | Architecture Development Method Am-Pr | - | - | - | - | - | - | - | - |

#### Information If

| Architecture View Am-Sr | Architectural References Am-CN | Architecture Development Method Am-Pr | - | - | - | - | - | - | - | - |

#### Parameters Pm

| Architecture View Am-Sr | Architectural References Am-CN | Architecture Development Method Am-Pr | - | - | - | - | - | - | - | - |

#### Constraints Ct

| Architecture View Am-Sr | Architectural References Am-CN | Architecture Development Method Am-Pr | - | - | - | - | - | - | - | - |

#### Roadmap Rm

| Architecture View Am-Sr | Architectural References Am-CN | Architecture Development Method Am-Pr | - | - | - | - | - | - | - | - |

#### Traceability Tr

| Architecture View Am-Sr | Architectural References Am-CN | Architecture Development Method Am-Pr | - | - | - | - | - | - | - | - |
Senior Leader View

ISR-T Internal Roles
- Collection Operations
- Collection Orchestration
- All-source Exploitation
- Problem-Centric Analysis
- Threat Training

New Warfighting Concepts
- Joint Warfighting Concept
- AF Future Operating Concept
- Artificial Intelligence, Automation
- Problem Centric Analysis

AF ISR-T Operational Roles
- Battlespace Characterization
- Collection Operations
- Targeting
- Intelligence Mission Data
- Intelligence Support to Acquisition

Future ISR-T Operational Roles
- Operations Planning
- Battlespace Characterization
- Targeting
- Direct Mission Support
- Threat Characterization
- Acquisition Intelligence

Intelligence Inputs to Capability Development
- Threat Forecasts
- ISR-T Support Needs
- ISR-T Architecture Compatibility

ISR-T Strategic Development Goals
- Global Disposition of Forces
- Multi-Agency Sensing Orchestration
- Accelerated Targeting
- Digital Information Environment

Capability Development Planning
- Operational Imperatives
- Funded ISR-T Programs
- ISR-T POM Initiatives
- Intel Community Requirements
- AF Requirements

Drivers
Goals
Plans
Current Effort:
Collaborative Architecture Working Group

- Unify ongoing requirements modeling efforts
- Stand up federated architecture repository
- Establish model framework and governance
- Model Air Force ISR development strategy
How You Can Help

- Develop views focused on leadership decision making
- Model to support professional analysis and simulation
- Develop standardized analysis products
- Listen...agree...come together