The Release of the Federal Segment Architecture Methodology (FSAM) and the Enterprise Architecture Segment Report

The ArchitecturePlus December 9th Seminar
Sponsored by: Federal CIO Council / Chief Architects Forum, and
Industry Advisory Council / EA SIG
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenters</th>
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<tbody>
<tr>
<td>8:30</td>
<td>Registration</td>
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<tr>
<td>9:00 – 9:15</td>
<td>Welcome and Announcements</td>
<td>• Ira Grossman, Chairman, Chief Architects Forum</td>
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<td>• Mike Dunham, Industry Advisory Council Architecture</td>
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<td>Shared Interest Group</td>
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<td>9:15 – 10:00</td>
<td>Unveiling of the final FSAM – summary of</td>
<td>Colleen Coggins, Chief Architect, Dept. of the Interior</td>
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<td>comments received, overview of website and online</td>
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<td>toolkit and discussion of future FSAM training</td>
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<td>opportunities</td>
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<td>10:00 – 10:30</td>
<td>Brief out of final template - Overview of OMG</td>
<td>Richard von Bostel, Chief Enterprise Architect, Dept. of Justice</td>
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<td>interactions for standardizing Segment Architecture</td>
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<td>Reporting Template as standard meta-model for</td>
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<td>tool vendors to incorporate</td>
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<td>10:30 – 10:40</td>
<td>Break</td>
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<td>10:40 – 11:10</td>
<td>Case Study: Initial feedback on using FSAM</td>
<td>Ken Clark, Office of the Program Manager, Information Sharing Environment (PM-ISE)</td>
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<td>11:10 – 11:45</td>
<td>Panel Discussion with Q&amp;A</td>
<td>• Colleen Coggins, Chief Architect, Dept. of the Interior</td>
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<td>• Richard von Bostel, Chief Enterprise Architect, Dept. of Justice</td>
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<td>• Ken Clark, Office of the Program Manager, Information Sharing Environment (PM-ISE)</td>
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<td>11:45</td>
<td>Wrap-up and Recognitions</td>
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<td>12:00</td>
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Unveiling of the Final FSAM

Colleen Coggins
Chief Architect
U.S. Department of the Interior
Introduction to the new FSAM

What is FSAM?
• The new Federal Segment Architecture Methodology (FSAM) is a step by step process for developing and using segment architecture that leverages existing “best practice” analysis techniques and easy to use templates to expedite architecture development

Who created FSAM?
• The Federal Segment Architecture Working Group (FSAWG) is a cooperative effort with the federal architecture community formed in January 2008 as a sub-team to the Architecture and Infrastructure Committee (AIC) and therefore, an element of the Federal CIO Council, at the request of the OMB Chief Architect
The FSAWG provided a collaborative work environment for federal agencies to establish a single, repeatable, best-of-breed approach to develop segment architecture

- 13 Federal organizations, including 2 cross-agency initiatives participated
  - 13 people on core team
  - 34 people on sub-team
- 10 best practice presentations delivered
- 18 assessed best practices considered
- 78 analytical techniques cataloged
  - Including 232 templates / examples

<table>
<thead>
<tr>
<th>Best Practices</th>
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<tbody>
<tr>
<td>• HUD - Segment Architecture Development Guidance / Work Product and Decision Templates</td>
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<tr>
<td>• DoD – DoDAF Version 2.0 (Draft)</td>
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<td>• DOI - Methodology for Business Transformation (MBT)</td>
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<td>• DOJ - Information Sharing Segment Architecture (ISSA)</td>
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<td>• PM-ISE - Information Sharing Environment EA Framework</td>
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<td>• PM-ISE - FEA Information Sharing Environment Profile</td>
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<td>• DHS – Information Sharing Environment</td>
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<td>• DOL - EA Quick Reference Guide</td>
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<td>• DOL - IT Investment Management Quick Reference Guide</td>
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<td>• DOL – STREAMLine Methodology</td>
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<td>• Treasury - Segment Architecture Analysis Guide</td>
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<td>• Treasury - Segment Architecture Process Guide</td>
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<td>• Treasury - Segment Architecture Roadmap</td>
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<td>• HRLOB – Segment Architecture Approach</td>
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<td>• EPA - OSWER Segment Architecture Line-of-Sight: From Architecture through Implementation</td>
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<tr>
<td>• HHS - HHS Architecture Development Methodology (ADM)</td>
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<td>• FEA - Security and Privacy Profile (v2) (Draft)</td>
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<td>• FEA - Records Management Profile</td>
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FSAWG leveraged a *Catalog and Analysis of Documents* to identify analysis techniques used in agency best practices.
Based on the “slicing and dicing”, the following criteria was used to select the best practice analytical techniques included in FSAM:

- Analytical Technique was used in an Agency Segment Architecture that was rated 4.0 or better
- Analytical Technique supports the concepts of the methodology
- Analytical Technique is not proprietary and can be shared publically
- In some cases, multiple agency artifacts were combined to develop a composite analytical technique and was branded as an FSAWG technique
FSAM is designed to help architects develop the core elements and attributes that are needed for a complete segment architecture.
Example Output: As-Is Key Information Sources and Qualitative Assessment (Step 3)

**Suggested Analytical Technique:**

**Authoritative Data Source (ADS) Candidate Qualitative Analysis Matrix**

Used to document the sources of information in the current state and determines the most trusted sources of data by information class and data entity.

<table>
<thead>
<tr>
<th>Candidate Data Source Name #1</th>
<th>Data Source Description</th>
<th>System Name(s)</th>
<th>Owning Organization Name</th>
<th>System Owner Name</th>
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<tbody>
<tr>
<td>Qualitative Assessment of Data</td>
<td>Dimensions</td>
<td>Description</td>
<td></td>
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<table>
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<tr>
<th>Accuracy</th>
<th>Completeness</th>
<th>Consistency</th>
<th>Precision</th>
<th>Timeliness</th>
<th>Uniqueness</th>
<th>Validity</th>
<th>Overall Score</th>
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<td>Score</td>
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**ADS Candidate Qualitative Assessment Summary Matrix**

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<tr>
<th>ADS Candidate Name</th>
<th>Qualitative Dimensions</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accuracy Score</td>
<td>Completeness Score</td>
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<td>Score</td>
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Example Output: Target Conceptual Solution Architecture (Step 4)

Suggested Analytical Technique: Target Systems and Services Interface Diagram

Used to describe the conceptual solution architecture by providing an integrated view of the combined segment system, service, and technology architectures.
FSAM includes requirements for security and privacy, including specific touch points for the NIST 800-39 Risk Management Framework

Task 2.2.3: Identify segment risks and impacts

*NIST 800-39, Sec. 3.2:* The first step in building an effective organization-wide information security program is to conduct a thorough analysis of the organization's mission and business processes informed by the organization's enterprise architecture...

Task 3.1.4: Analyze processes and determine high-level information requirements including organizational relationships

*NIST 800-39, Sec. 3.2:* Conducting the security categorization process as an organization-wide exercise helps ensure that the process accurately reflects the criticality, sensitivity, and priority of the information and information systems that are supporting organizational mission/business processes and is consistent with the organization's enterprise architecture.

Task 4.1.4: Determine adjustments necessary to the as-is conceptual solution architecture

*NIST 800-39, Sec. 3.3:* Security controls should be reflected in the FEA solution architectures and should be traceable to security requirements allocated to mission/business processes defined in the FEA segment architectures... See also NIST 800-53, FIPS 199, and FIPS 200.
For example, using the FSAM toolkit provides information that supports the preparation of C&A packages for segment systems

- Identification and analysis of overall segment information security risks
- High-level information security categorization
- Assessment of business processes for applicable security controls
- Classification of information exchanges and identification of appropriate security controls
- Identification of system certification and accreditation (C&A) security boundaries
- Assessment of system interfaces for applicable security controls
Execution the FSAM process results in information that supports other key management processes.
FSAM is structured with three levels of decomposition that describe the process steps in terms of more detailed activities and tasks.
FSAM outputs are designed to progressively elaborate the information required to define a segment architecture.

Core FSAM outputs provide the information necessary for EAAF reporting requirements.

Non-core FSAM outputs provide additional information that can be used to inform decision making related to the segment mission, business, and information needs.
The draft FSAM was released in September for a 30-day review, below are extracts from comments received:

• “The Federal Segment Architecture Methodology (FSAM) provides good guidance for developing segment architectures using sound management techniques…”

• “Process Step-At-A-Glance Tables – these are excellent for process sequence and identifying key stakeholders”

• “The FSAM is a remarkably good product in such a short period of time, and will significantly advance collaborative development and related goals.”

• “FSAM is clearly written, as evidenced by the FSAM Overview. FSAM’s inherent practicality and method decomposition are exemplary. FSAM’s concise templates contain essential elements for each artifact.”
Additional review questions and comments incorporated into FSAM v1.0

• **Describe how FSAM is to be used in cross-agency initiatives?**
  o FSAM should be followed to provide a target reference architecture built out to sufficient detail for agencies to integrate business and information services into their own environment

• **Questions were raised about the number of outputs**
  o FSAM was updated to clarify the value proposition for each output. Additional stakeholder views were added to demonstrate how FSAM outputs can be leveraged by other disciplines and downstream management processes (e.g., security, CPIC, etc.)

• **How do you prioritize and define segments?**
  o This is currently included in Practice Guidance and not in FSAM

• **Clarify what is core and recommended**
  o FSAM was updated to emphasize that “core” outputs are required for EAAF v3.0 reporting. Other “recommended” outputs provide additional information that supports business decision-making
FSAM Website and Online Toolkit
FSAM is structured using a step guidance document for each process step

- Step Description and Purpose
- Step Outcome
- Step At-A-Glance
- Activity Details
- Activity Short Description
- Activity Flow Chart with Tasks
- Activity Inputs
- Tasks
- Communication Considerations
- Activity Outputs
- Suggested Analytical Techniques (with examples and templates)

Step guidance documents are currently available via the CIO.gov website
Analytical techniques have been included in the FSAM with templates from Agency best practices.

Each suggested analytical technique table includes:

- Output name
- Core – (Y,N) Outputs that support population of Segment Architecture Template in EAAF Ver. 3.0.
- Associated FEA Layers
- Name of suggested analytical technique
- Link to the template/example
- Contributing Agency
An FSAM website and online toolkit is currently being finalized and will be released before the new year.
The FSAM online toolkit contains all information needed for you to use FSAM in your organization.

In the case studies section, there will be a link to a MAX collaboration space where organizations will be able to provide examples and case studies of implementing FSAM.

Several EA certification institutes that will be offering FSAM training.
FSAM Training
FSAM Training Materials and Opportunities

- Basic training and outreach materials will be available via the FSAM website
  - Overview Training Presentation
  - Training Participant’s Guide
  - FSAM Tri-Fold Brochure
  - Training Exercises
- Preliminary discussions are underway with the three EA certification institutions to provide FSAM training
Please hold all questions until the panel discussion