



F E D E R A L
S T U D E N T A I D

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Document Framework Data Collection Meetings for the FSA Enterprise Architecture

Version 1.0

Business-Technology Alignment
Task Order #85

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Introduction

The purpose of this document is to record the methodology, meetings and working sessions conducted to identify, collect, and categorize information that will be populated into the FSA Enterprise Architecture (EA) tool. The meetings, working sessions and data collection exercises were conducted between July 31, 2002 and September 15, 9 2002 and involved key FSA personnel and subject matter experts familiar with the specific areas.

Approach

The following approach was based on the IDEF3 (Integrated Definition) Data Collection Methodology and was used to gather the information used to populate the enterprise architecture tool: (See Appendix A for a list of IDEF methods). The following specific activities were completed using the approach:

- Use the Department of Education's framework as a guideline.
- Read existing documents, using each table of contents and index to locate needed information.
- Conduct Face-to-face meetings and working sessions with FSA subject experts.
- Use information already developed.
- Prepare missing descriptions, and shape them with the help of FSA's subject matter experts.

The meetings were documented in meeting notes, activities, data/objects lists, formal matrices of relationships, and as diagram sketches. Much of the information captured within the meetings is resident in the EA tool.

Types of Interviews Conducted

The purpose of these interviews was to gather information from subject matter experts who possess a deep understanding of the specific subject areas within FSA. There are two types of interviews that were conducted during the information gathering effort. They are as follows:

- (1) Fact Finding used to establish the content of the FSA EA or to help understand the existing environment.

- (2) Problem Identification used to assist with the establishment of the EA framework metamodel. This type of interview was used to validate the enterprise objects, their attributes, and relationships that exist between enterprise objects.

Types of Materials Used

The following documents and materials were used to provide additional information:

- The Mod Partner Wall, which contains ‘as-is’ and ‘to-be’ enterprise architecture artifacts.
- The FSA Net contents which includes Mod Partner deliverables, FSA documentation, and other data sources.
- The Department of Education framework and supporting descriptions.
- Project Deliverables
- Existing TEAF and FEAF frameworks

Review Cycle Procedures

The development of any model is a dynamic process, which requires the participation of the entire organization. Throughout the development of the framework, draft pieces of the model are created and distributed to others (project members, subject matter experts, etc.) for review and verification. These draft pieces are composed of diagrams, text, glossary or any other information pertinent to the development of the model.

It requires brief training and modest experience to correctly read and understand the models. Such knowledge and understanding is essential for quality assurance purposes.

At regular intervals during the evolution of a model, the master copy of the latest version is placed in the library. The master copy is updated with corrections and changes. The end effect of this process for organized teamwork is a high assurance that the final models and information are valid, well expressed, and that a consensus has been reached by those who have been included in the review cycle.

Appendix

Appendix A - FSA Enterprise Architecture Framework Interview Notes

Person(s) Interviewed: Karen Anderson, Bill Malyszka

Date: July 31, 2002

Purpose: Determine scope of project and goals for FSA Framework Implementation

Framework Area: All

| | Data | Business Function | Security | Network | People | Schedule | Strategy |
|------------------|------|-------------------|----------|---------|--------|----------|----------|
| Scope | | | | | | | |
| Enterprise Model | | | | | | | |

Objective: Describe the scope and goals of the project

Findings: The scope of this project is the implementation and population of the first two rows of the FSA Enterprise Architecture Framework in System Architect.. This involves the implementation of customizations to System Architect to support for first two rows of the FSA Framework. Additionally, the first two rows will need to be populated. The data will need to be delivered in an HTML format and the HTML produced needs to be customized to be more like the FSA standards. The basis for the FSA framework is the Dept. of Ed. Framework (source material provided) and this is a work in progress document. Training in the use of the tool and the framework will be needed. Additionally, a link between the Dept. of Ed. Tool (Ptech) and System Architect will be needed.

Outcomes: Appropriate customizations were possible in the time allotted. Adjusted the labor allocation per task of the project slightly to accommodate. Population of the framework was started by a Popkin consultant but will be continued by Karen and Bill. Training material was constructed around the tool customizations and the FSA Framework using FSA data as possible (from information in the Extranet). Training was provided at Popkin's Herndon facility. The link to Ptech will be further explored when the framework implementation is completed.

Person(s) Interviewed: Dave Elliot

Date: July 31, 2002

Purpose: Requirements gathering for FSA Framework structure

Framework Area: Network Column

| | Data | Business Function | Security | Network | People | Schedule | Strategy |
|------------------|------|-------------------|----------|---------|--------|----------|----------|
| Scope | | | | | | | |
| Enterprise Model | | | | | | | |

Objective: Identify what artifacts would be appropriate information about the network column in the FSA framework. Target areas to find information and examples and framework population.

Findings: A diagram in the form of a Communications Map (conceptual). Also, a way to capture and relate appropriate standards from the standards guide (see the appendix of the guide). Flow diagrams for messaging depicting System to System level interfaces. Also need some sort of diagram that gives a “big picture” view of the whole flow. A typical “Trunk” level system diagram.

Outcomes: Requirements met in the current implementation as appropriate to rows 1 and 2 of the framework. Some of this information and diagram products are more appropriate for row 3 to 5 in the framework but several suggestions will be implemented for Rows 1 and 2 per the projects scope. The thoughts are consistent with the products mentioned in the Dept. of Ed framework that is the source structure for the FSA framework.

Person(s) Interviewed: Elena Pienkowski

Date: August 1, 2002

Purpose: Requirements gathering for FSA framework structure

Framework Area: People Column

| | Data | Business Function | Security | Network | People | Schedule | Strategy |
|------------------|------|-------------------|----------|---------|--------|----------|----------|
| Scope | | | | | | | |
| Enterprise Model | | | | | | | |

Objective: Describe the information would be useful to capture in a EA (knowledge base) about FSA where people are concerned. Describe the information that would make up Row 1 of the people column. Describe the information would make up Row 2 of the People column.

Findings: Mapping of people (roles) to technology, skills/competencies, and work performed. Also, mapping of people (roles) to business objectives – a mapping of how roles contribute to business objectives.

- Stakeholders are internal and external, for example, Students, Schools, Financial Partners. For each of the stakeholders it would be good to collect information about their level of awareness of a business process. Level of awareness would be; aware, understanding, buy-in, commitment, sponsorship.
- Transactions that occur with stakeholders. For instance the information exchanged with and between stakeholders. Some ideas on players here are FSA, 10 regional offices, Dept. of Ed., Call Centers, etc. Also, in this cell an organization chart with a relationship to the business functions performed by an organizational unit would be needed.

Outcomes: All requirements were met in the framework and tool. Some relationships were implemented via matrices in SA.

Person(s) Interviewed: Ron Langcamp

Date: August 1, 2002

Purpose: Requirements gathering for potential use of FSA framework for reporting and accessing impact of change.

Framework Area: All

| | Data | Business Function | Security | Network | People | Schedule | Strategy |
|------------------|------|-------------------|----------|---------|--------|----------|----------|
| Scope | | | | | | | |
| Enterprise Model | | | | | | | |

Objective: Determine the areas where can a populated FSA framework help you in the area of requirements and reporting in relation to systems.

Findings: The Framework should collect information about the impact of change across systems, interfaces, business processes, hardware, software and data. The framework should be an aid to validate the impact analysis of a change request. The framework should provide a logical and physical view of the system.

Outcomes: Standard System Architect reporting techniques can be used to provide impact analysis based on framework data. Training covered the use of reporting.

Person(s) Interviewed: Jake Brody

Date: August 1, 2002

Purpose: Requirements gathering for FSA framework structure

Framework Area: Scheduling Column

| | Data | Business Function | Security | Network | People | Schedule | Strategy |
|------------------|------|-------------------|----------|---------|--------|----------|----------|
| Scope | | | | | | | |
| Enterprise Model | | | | | | | |

Objective: Describe the data that would be present in the Scheduling Column Row 1. : Describe the data that would be present in the Scheduling Column Row 2. Discuss where can we find more information?

Findings:

- Business Events that trigger processing by the organization, for instance FAS application comes out. Business Cycles would be captured such as Award Cycle, Application Cycle, etc. Business Events are tied to cycles – for instance the event triggers a cycle.
- Detail of Cycles. E.g., a student applies for a loan and kicks off a process – detail the cycle.
- The FSA extranet.

Outcomes: Implemented appropriate extensions to capture above and other artifacts found in the content on the extranet.

Person(s) Interviewed: John Bogasky.

Date: August 2, 2002

Purpose: Requirements gathering for FSA framework structure

Framework Area: Data Column, Business Function Column

| | Data | Business Function | Security | Network | People | Schedule | Strategy |
|------------------|------|-------------------|----------|---------|--------|----------|----------|
| Scope | | | | | | | |
| Enterprise Model | | | | | | | |

Objective: Describe what sort of information would be present in Column 1. Discuss the difference between Data Class and Data Entity (as detailed in Dept. of Ed. Framework). Describe the information would be captured in Column 2.

Findings:

- There is no difference between a Data Entity and a Data Class – a data class is a conceptual data entity. Data Areas are the major things such as Person, Loan, etc. Need a way to show Key Business Entities and how they are related. Need a way to understand the relationships between Data areas and the other column information.
- Business Functions (also called lines of business); business drivers; the business context (he drew a diagram of what he meant); operational concept diagram (similar to the one on the wall); Business Process Diagrams (there is no standard form for this).

Outcomes: Defined the need for a conceptual data model using data class as the “entity”. Many relationships were implemented – most via matrices in the tool. A diagram of exactly the same form as he drew was constructed for the business context diagram, the business process diagram is of the form that is most popular in SA among the commercial clients and is easiest to use.

Person(s) Interviewed: Andy Boots

Date: August 6, 2002

Purpose: Requirements gathering for FSA framework structure

Framework Area: Security Column

| | Data | Business Function | Security | Network | People | Schedule | Strategy |
|------------------|------|-------------------|----------|---------|--------|----------|----------|
| Scope | | | | | | | |
| Enterprise Model | | | | | | | |

Objectives: Describe the information that should be recorded in the Security Column of the framework. Discuss how is the “Security Architecture” relates to the rest of the Enterprise Architecture. Discuss where we look for more information regarding security including examples of the information you mention.

Findings:

- Security should not be a separate column in the framework but rather “baked into” the rest of the framework. Information privacy and ensuring the privacy of the stakeholders while providing information to those who need it to the degree they need it is most important. Processing the correct transactions is important. Security fits into risk management so an understanding of risks or threats is important. There are two aspects of security: mindset (e.g., awareness and practice) and technical (e.g., firewall). The framework seems to set security standards apart from standards – they

are the same thing, a security standard is a standard and should not be handled differently because it involves security.

- Baseline Security Requirements List on the Extranet. Also look at the Security Policy document.

Outcomes: Implemented all of the suggestions as well as reused the “Information Assurance Trust Model” from the Treasury Enterprise Architecture Framework (TEAF) currently being used by Customs. Customs is a Popkin client and was recently rated 5 out of 5 in EA maturity by the GAO.

Person(s) Interviewed: Katherine Pirnia, Jim Greene

Date: August 7, 2002

Purpose: Requirements gathering for FSA framework structure

Framework Area: Data Column

| | Data | Business Function | Security | Network | People | Schedule | Strategy |
|------------------|------|-------------------|----------|---------|--------|----------|----------|
| Scope | | | | | | | |
| Enterprise Model | | | | | | | |

Objective: Describe the information that would be found in the data column of the framework and where can we find sample data.

Findings: Standard Data Model diagrams, entities, relations, tables, etc. A Data class as defined in the framework should equal a subject area diagram. The consistent data products should be used for sample data. The data should be related to Data Flow diagrams and business functions.

Outcomes: Some of the information they mention is more of a row 3-5 construct but since SA provides full data modeling capability we are well positioned for this column of the framework in the next phase of the effort. A conceptual data model was constructed and associated with a Data Class per their requirements. Information in the consistent data products were used as sample data and populated into the framework with customization was complete.

Person(s) Interviewed: Denise Hill; Harry Feely

Date: August 8, 2002

Purpose: Requirements gathering for FSA framework structure

Framework Area: Strategy Column

| | Data | Business Function | Security | Network | People | Schedule | Strategy |
|------------------|------|-------------------|----------|---------|--------|----------|----------|
| Scope | | | | | | | |
| Enterprise Model | | | | | | | |

Objective: Describe the type of information would be found in the strategy column and what are some examples.

Findings: Row 1: Missions, Goals and Objectives related in that order. Example: Mission, no child left behind; Goal: Improve Customer Service; there are many objectives related. Strategic drivers would also be present and they can be related to all other artifacts in the framework. There are internal and external strategic drivers. Row 2 contains Strategic Plans, EA Principles, Governance Objectives, Business Cases and IT Business Cases. IT Business Cases MUST be related to a Business Case.

Outcomes: Implemented a diagram for Mission Hierarchy for relating missions and goals. Additionally, Implemented strategic drivers as a type of information that can be related to everything in the repository. IT Business Cases were implemented as a sub-definition to a Business Case.

Person(s) Interviewed: Stephanie Johnson, Jake Brody

Date: September 9, 2002

Purpose: To confirm design of framework in SA where Lines of Business and Business Functions were separate items.

To get more information for population of the framework

Framework Area: Business Function Column; Strategy Column

| | Data | Business Function | Security | Network | People | Schedule | Strategy |
|------------------|------|-------------------|----------|---------|--------|----------|----------|
| Scope | | | | | | | |
| Enterprise Model | | | | | | | |

Objectives: Describe the different lines of business and how do they differ from Business Functions. Discuss what is a good reference for a “Business Context” diagram. Identify

where can we find more information for architecture framework population. Discuss where we can find information pertaining to the FSA Strategy?

Findings:

- Started out saying there is no difference but after some discussion of framework in relation to Dept. of Ed Framework information it was decided that for FSA there was really only on line of business – “Loans”
- A simplified version of the “hairball” diagram that just has the nodes and connections but not the systems and data exchanges. The systems and data exchanges are being reengineered.
- The FSA Extranet
- The FSA Extranet

Outcomes: Lines of business are confirmed as different from Business Functions and this matches the framework developed to date in SA.

Much of the data necessary to populate the FSA framework is believed to be on the extranet.

Person(s) Interviewed: Andy Boots

Date: September 9, 2002

Purpose: Get additional information about the security architecture for population of the framework.

Framework Area: Security Column

| | Data | Business Function | Security | Network | People | Schedule | Strategy |
|------------------|------|-------------------|----------|---------|--------|----------|----------|
| Scope | | | | | | | |
| Enterprise Model | | | | | | | |

Objective: Describe how systems are accessed regarding security? Describe how business processes relate or map to security? Identify additional information regarding security architecture at FSA for the purpose of populating the framework.

Findings:

- Assessment document to be done by managers of the systems. The document is available on the extranet. The NIACP standard process is to be followed
- Currently they are not but should be.
- The FSA Extranet. Also, security policies are available on the extranet (we already have a copy for our source data)

Outcomes: We had at the time of the interview the security policies. Additional information seems to be available on the extranet. He voiced no concerns about what we had done so far.

Appendix B– IDEF

The Identification Method (IDEF) has several types of approaches. IDEF3 was the methodology used for collecting the FSA information for the framework.

| IDEF METHODS | |
|---------------------|--------------------------------------|
| IDEF0 | Function Modeling |
| IDEF1 | Information Modeling |
| IDEF1X | Data Modeling |
| IDEF2 | Simulation Model Design |
| IDEF3 | Process Description Capture |
| IDEF4 | Object-Oriented Design |
| IDEF5 | Ontology Description Capture |
| IDEF6 | Design Rationale Capture |
| IDEF7 | Information System Auditing |
| IDEF8 | User Interface Modeling |
| IDEF9 | Scenario-Driven IS Design |
| IDEF10 | Implementation Architecture Modeling |
| IDEF11 | Information Artifact Modeling |
| IDEF12 | Organization Modeling |
| IDEF13 | Three Schema Mapping Design |
| IDEF14 | Network Design |