

# ENTERPRISE ARCHITECTURE

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## EXECUTIVE SUMMARY

An OIG contractor (KPMG) performed a limited review of the Commission's enterprise architecture. Although the work was terminated early, KPMG prepared an Enterprise Architecture (EA) Management Maturity Scorecard (as of April 15, 2004) which we shared with the Office of Information Technology. The scorecard showed the extent of the Commission's progress and compliance with EA guidelines and best practices (as mandated by the Clinger-Cohen Act, the Office of Management and Budget, the Government Accountability Office, and the Federal Chief Information Officers' Council).

The Commission has taken several steps towards developing and documenting an "As-Is" architecture in accordance for the most part with the Federal Enterprise Architecture (FEA). We are recommending that the Office of Information Technology (OIT) obtain business owner validation and support of the current "As-Is" EA state; establish a communication strategy to introduce EA successfully throughout the Commission; establish EA program plan provisions to ensure adequate compliance with project management processes, configuration management, quality assurance, risk management, and security policies and procedures; and complete an "As-Is" architecture with parallel mappings to the requirements of the FEA Reference Models.

## SCOPE AND OBJECTIVES

In October 2003, we initiated an audit to assess the Commission's progress in establishing an enterprise architecture (EA) as mandated by the Clinger-Cohen Act, the Office of Management and Budget (OMB), and the Federal government's Enterprise Architecture Project Management Office (FEAPO). The objectives of the audit were to determine the:

- Extent to which the Commission developed and documented an "as-is" and "to-be" EA and migration strategy, and complied with Federal EA guidelines and requirements;
- Maturity level of the Commission's EA management processes using the Government Accountability Office's (GAO) and the Federal Chief Information Officer (CIO) Council's EA guidelines; and
- Effectiveness of the Commission's management controls and processes to manage its EA efforts.

To perform the audit, we contracted with KPMG, LLP. However, in April 2004, we discontinued the audit for contractual reasons that were determined to be in the Commission's best interests.

The audit was performed in accordance with generally accepted government auditing standards.

## AUDIT RESULTS

Although this audit was not completed, the work performed provides useful management information. The Office of Information Technology can integrate this information into its implementation and design of EA management processes and controls.

We provided OIT with an EA Management Maturity Scorecard (as of April 15, 2004) of the Commission's progress and compliance with the EA guidelines and best practices (as mandated by the Clinger-Cohen Act, OMB, GAO, and the Federal CIO Council). The scorecard was based on the audit work performed by KPMG.

Below, we synopsize our understanding of the Commission's progress to implement an enterprise architecture and establish EA management controls, processes, and best practices that comply with Federal EA requirements. Our conclusions are based on the limited work performed by KPMG discussed above. Additional audit work might have modified our conclusions.

### **Objective 1: Determine the extent to which the Commission developed and documented an "as-is" and "to-be" EA, migration strategy, and whether the Commission was in compliance with Federal EA guidelines and requirements.**

The Commission has taken several steps towards developing and documenting an "As-Is" architecture. The "As-Is" architecture appears to be in accord for the most part with the FEA, as follows:

- Business Reference Model (BRM) – The Commission's Business Reference Model identifies the lines of business, functions, sub-functions, and processes of the Commission and appears to be in accord with the BRM v2.0 descriptions.
- Technical Reference Model (TRM) – The Commission's Technical Reference Model identifies the current network infrastructure systems in the TRM domain (Service Access & Delivery, Service Platform and Infrastructure, Component Framework Service Area, Service Interface and Integration).
- Service Reference Model (SRM) – The Commission's SRM efforts consist of the Information Resource Catalog (IRC). While the Commission's Service Reference Model is not compliant with the FEA's SRM, we understand that OIT has begun to link the Information Resource Catalog to the Service Reference Model.

- Data Reference Model - a Logical Data Model (LDM) is under construction; a benchmark analysis with the related FEA Data Reference Model was not conducted (the DRM has not yet been released).
- Performance Reference Model - planned initiatives for developing a Performance Reference Model include consideration of performance measures from the Government Performance and Results Act (GPRA); however, this initiative has not yet started.

The Commission's current focus is on developing the "As-Is" architecture model. To accomplish this, business owners need to provide feedback to validate the model. In addition, completion of the applicable FEA reference models would also be helpful.

The Commission's plan to complete a "To-Be" and migration strategy depends upon the accuracy and completeness of the "As-Is" architecture. At the time of the audit, OIT had not yet set a date for completion of the "To-Be" architecture and migration strategy.

**Objectives 2 & 3: Determine the maturity level of the Commission's EA management processes using GAO's and the Federal CIO Council's EA guidelines; and effectiveness of the Commission's management controls and processes to manage its EA efforts.**

The Commission's enterprise architecture work has several achievements. Some areas require further development.

The EA effort started in January 2001 and began with only limited OIT resources and contractor assistance. The focus has been on building an "As Is" state with limited involvement from the business units. As part of gathering EA information, interviews with over 90% of mission areas have been conducted; however, the results have not been verified with the business owners.

OIT has established an EA Intranet web site for internally disseminating EA information. It has also employed the DesignBank software for its version management and has developed a web based application, Securities and Exchange Commission Enterprise Architecture Repository (SECEAR) to satisfy management, management information, and repository needs. OIT is developing and plans to complete development of the EA in accordance with the FEA.

To enhance the utility of the EA, OIT needs to take the following steps:

- Obtain business owner validation and support of the current "As-Is" EA state;
- Establish a communication strategy to introduce EA successfully throughout the Commission;

- Establish EA program plan provisions to ensure adequate compliance with project management processes, configuration management, quality assurance, risk management, and security policies and procedures; and
- Completion of the "As-Is" architecture with parallel mappings to the requirements of the FEA Reference Models.

### **Recommendation A**

To improve the Commission's Enterprise Architecture, OIT should implement the actions described immediately above.