

# **Federal Enterprise Architecture Reference Model Maintenance Process**

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**A Joint Proposal of the:**



**Architecture and Infrastructure Committee**

**and**



**Federal Enterprise Architecture Program Management Office**

**June 2005**



## Federal Chief Information Officers Council

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June 22, 2005

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TO: The Office of Management and Budget (OMB)  
FROM: Architecture and Infrastructure Committee (AIC)  
SUBJECT: Federal Enterprise Architecture (FEA) Reference Model Maintenance Process

For the FEA to “driv[e] government transformation, and giv[e] federal agencies the management tool they need to focus technology on the citizen and on the right business results,” a transparent, iterative, and collaborative process for maintaining and updating the FEA reference models must be implemented. The CIO Council AIC in partnership with OMB, has identified recommendations for maintaining and evolving the FEA reference models.

The proposal that follows reflects the efforts of a task team that was formed under the AIC governance subcommittee. This task team delineated the main phases and steps of a maintenance process and the roles of various stakeholder groups. After the completion of an initial draft process, the proposal, along with a comment sheet was distributed among the AIC community for agency comment and review. Thereafter a special meeting of the Chief Architects Forum was convened so that more input could be solicited. The input that was received was reviewed and incorporated into the proposal accordingly.

As we have seen to date through the efforts of the Data Reference Model working group, there is much to be gained by tapping the energy and diverse expertise of practitioners through an open and collaborative process.

We look forward to working in concert with OMB to evolve the FEA reference models.

Very Respectfully,

Ren Cahoon and Kim Nelson  
Co-Chairs AIC  
Federal CIO Council

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## EXECUTIVE SUMMARY

The Chief Information Officers (CIO) Council, Architecture and Infrastructure Committee (AIC), in its advisory role, has assumed responsibility for recommending a process for maintaining the Federal Enterprise Architecture (FEA) reference models. This recommendation is being provided to the Office of Management and Budget (OMB) Federal Enterprise Architecture Program Management Office (FEA PMO), as input to assist their decision on how best to maintain and refresh the reference models over time. OMB reviewed the AIC's initial recommendation and decided to pursue a joint proposal as detailed in this paper.

As noted in FEA Reference Model documentation, *“The FEA is about driving government transformation, and giving federal agencies the management tool they need to focus technology on the citizen and on the right business results.”* The proposed maintenance process ensures that this management tool is effective. Through effective execution of the maintenance process, the value and usefulness of reference models to agencies and OMB will increase.

A number of considerations drove development of the FEA reference model maintenance process, as summarized below.

- **Collaborative** – Provides opportunities for stakeholders to have a voice in the evolution of the reference models, both through the submission of recommended revisions and through involvement in decision-making processes
- **Transparent** – Allows stakeholders to understand how the process works and to know how specific revisions are progressing throughout the process
- **Effective** – Results in the desired outcome, notably reference models that are valid, accepted, and useful to users
- **Efficient** – Ensures an effective maintenance process with minimal burden on government resources

Moreover, the proposed maintenance process:

- aligns with the budget cycle to ensure continuity and to ensure that the models can be used to aid in developing architectures that can be used for determining investments;
- is agile, recognizing that some reference models will require more frequent updates than others;
- promotes stability of the models, recognizing that revisions have significant implications and repercussions for the reference model users.

The five high-level phases of the maintenance process are below:

- **Submission** - Submitters suggest revisions/modifications to the reference model(s) by completing a standardized on-line form. Additionally, during this phase the AIC will attempt to engage agencies in discussion on strategic and directional changes for the models.
- **Evaluation** - Submissions are evaluated by the Reference Model Revision Assessment Team based on evaluation criteria. The submissions are scrubbed and direction is provided to the AIC and OMB for a joint review session. The AIC assesses the submissions and makes a recommendation to OMB. OMB, particularly the Administrator for E-Gov and IT then approves or rejects the submissions.

- **Revision** - Upon approval, the OMB selects a process owner who convenes a team responsible for revising the reference model. The revised model is distributed to agencies, the OMB, and the AIC for review, and final revisions are made based on feedback.
- **Final Approval** - The OMB reviews the final version of the reference model based on several key characteristics and either approves the reference model or returns the reference model to the process owner for further refinement. It is the Administrator for E-Gov and IT that approves the final recommended changes for release.
- **Rollout** - OMB accepts the final reference model by determining when the model will be released, developing the communication plan, releasing the model, and executing the communication plan.

The proposed maintenance process allows agencies to revise the reference models to meet their requirements, as well as evolve and transform the Federal government into a more citizen-centered, customer-focused government.

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## 1.0 INTRODUCTION

### 1.1 PURPOSE

The purpose of this paper is to recommend a process for maintaining and evolving the Federal Enterprise Architecture (FEA) reference models. The reference models are critical enablers to developing the FEA for the purposes of identifying potential improvements, cost reductions, and collaboration opportunities across the Federal government. As such, the continued maintenance of the reference models is critical to the implementation and usage of the FEA.

The development of the FEA reference models was conducted through an iterative and collaborative process focusing on building from existing best practices and engaging government and industry experts as appropriate. Through the development of a formal FEA reference model maintenance process, the CIO Council's AIC and OMB are helping to ensure that a standard process is in place for maintaining the reference models. Supporting the maintenance and evolution of the reference models requires a process that:

- aligns with the budget cycle to ensure continuity and that the models aid in developing architectures that can be used for determining investments
- is agile, recognizing that some reference models will require more frequent updates than others
- promote stability of the models, recognizing that revisions have significant implications and repercussions for the reference model users.

This paper recommends a formal process for maintaining the FEA reference models with the understanding that the OMB is the ultimate owner of the FEA reference models and is responsible for developing and implementing the process. In addition to recommending a maintenance process, this paper also addresses key considerations in implementing a maintenance process.

### 1.2 INTENDED AUDIENCE

The ideas presented in the paper are intended for the following organizations:

- **AIC** - Advisory committee responsible for developing policy, direction and guidance for the FEA to drive business process improvements, investment management, and technical decisions.
- **EA Practitioners** - Persons at Federal agencies charged with implementing and managing an EA for their organizations.
- **OMB** - As the Office overseeing the preparation of the federal budget and to supervise its administration in Executive Branch agencies, OMB has an inherent interest in the FEA as a management blueprint.

### 1.3 SCOPE

This document provides a recommended process for modifying and extending the FEA reference models. It is intended to apply to all current FEA reference models: Performance Reference Model (PRM), Business Reference Model (BRM), Service Component Reference Model (SRM), Data and Information Reference Model (DRM), and Technical Reference Model (TRM).

The following maintenance topics are discussed in this paper:

- An overall process for maintaining the reference models.
- Stakeholder roles and responsibilities for the maintenance process.
- Types of revisions that are handled by the maintenance process.
- Additional considerations that should be examined as the maintenance process is implemented.

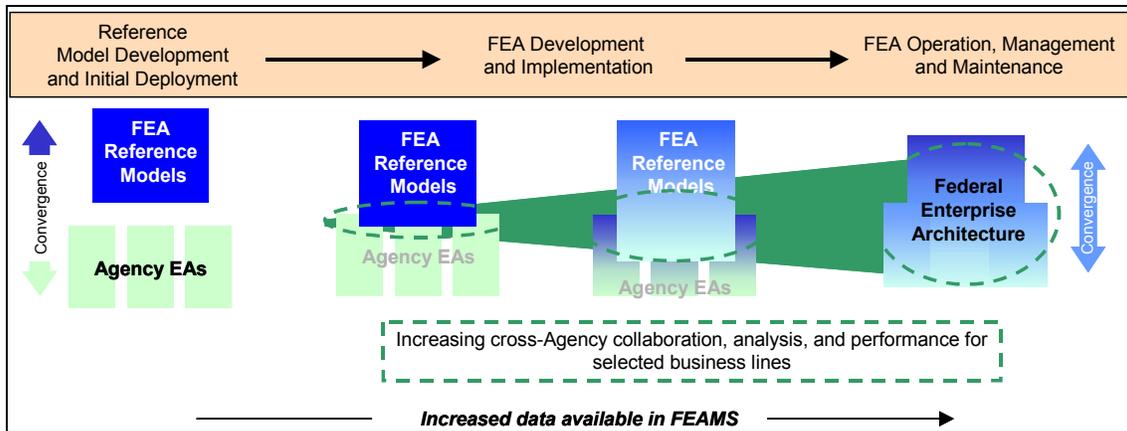
## 1.4 BACKGROUND

The FEA is a comprehensive, business-driven blueprint that serves to inform executive-level decision-making and allows for increased collaboration and resource sharing across Federal agencies. The reference models provide the tools and framework needed to link mission needs, information requirements, and information technology capabilities. The reference models are a taxonomy, developed to provide a greater degree of transparency into the asset and information base of agencies through classification. The reference models can facilitate agency EA development and through the convergence of agency EAs, the outgrowth of a Federal Enterprise Architecture.

Key FEA reference model activities to date include:

- Development of reference models:
  - BRM, versions 1.0 and 2.0;
  - PRM, version 1.0;
  - SRM, version 1.0;
  - TRM, version 1.1;
  - DRM, version 1.0, the next version of the DRM is underway.
- Identification of priority government-wide Lines of Business (LOBs) with potential savings of \$3 billion.
- Integration of the reference model framework requirements into OMB Circular A-11.
- Emergence of Line of Business Owners to conduct more targeted improvement analysis.

Given that all of the reference models have been released, it is time to move from the conceptual development and initial deployment phases of the FEA into full implementation and operation states. This convergence is shown in **Figure 1**.



**Figure 1. FEA Vision – Convergence.**

As movement is made toward the operational and maintenance stage of the FEA, the Federal Enterprise Architecture Management System (FEAMS) [[www.FEAMS.gov](http://www.FEAMS.gov)] will need to be populated with more information and used by OMB and agencies to assist with analysis. The OMB in conjunction with the General Services Administration (GSA) and the AIC will work to enhance tools, such as FEAMS, in support of EA collaboration (see “Enabling Citizen-Centered Electronic Government 2005-2006 OMB Action Plan – March 2005).

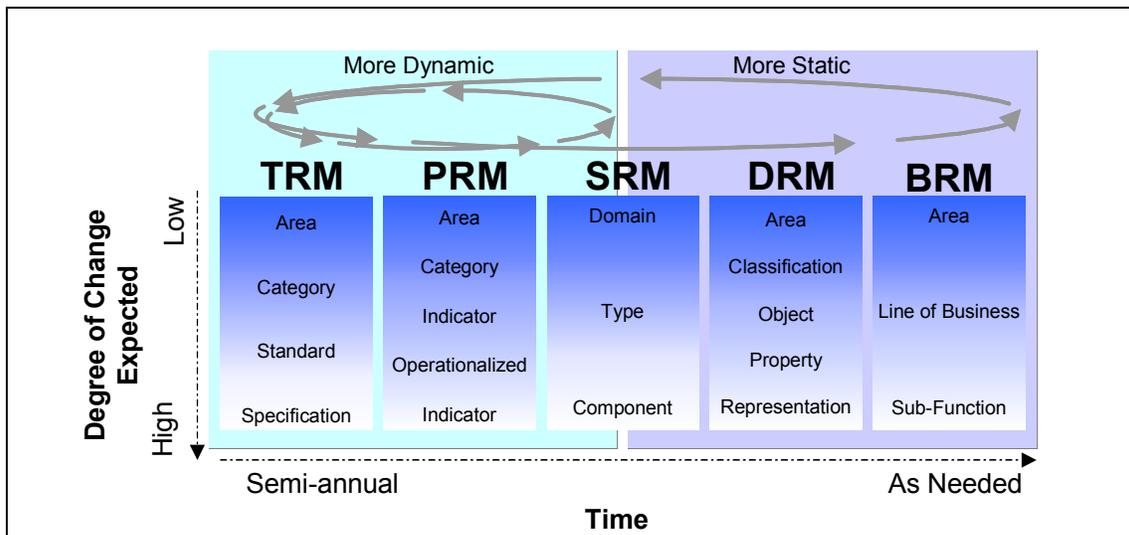
As agencies have begun using and integrating the reference models within their enterprise architectures, the need for a repeatable, open process for revising and maintaining the reference models has increased. Agencies want to have a voice in shaping future versions of the models to better reflect the realities of their business and their architectures. There is currently no clearly documented reference model maintenance process. However, the OMB has identified the establishment of a governance framework as a strategic initiative in the 2005-2006 OMB Action Plan. The proposed maintenance process can assist in that endeavor.

## 2.0 REQUIREMENTS FOR EVOLVING THE REFERENCE MODELS

Based on the development of the current reference models, the future evolution of the reference models will likely be driven by:

- Additional stakeholders “weighing-in” as agencies increasingly use and integrate the reference models within their enterprise architectures.
- The need to further integrate each model with other key processes (e.g. the PRM with the PART process) and with other related reference models (e.g. building the linkages between BRM Sub-functions and SRM Service Domains based on standard service and business patterns).
- Advances in the vision for how the FEA should evolve, increasing maturity of underlying architectural concepts (e.g. Service Oriented Architecture), and advancements in industry (e.g., TRM service standards and specifications).

Supporting and documenting how to maintain and evolve the reference models requires an approach that is consistent, yet accounts for the inherent and unique characteristics of each reference model. For example, rapid technical innovations and advancements require frequent assessment and updating of the TRM. By comparison, the long-standing and evolutionary nature of government programs means that the BRM will require less frequent updates. Figure 2 graphically demonstrates this concept.



**Figure 2. FEA Reference Model Maintenance.**

As illustrated in **Figure 2**, each model is expected to change more at the lowest level of granularity and less at the higher levels of granularity. For example, Service Specifications within the TRM will change as technology matures and standards reach mainstream usage, while the TRM Service Areas that are used to group that technology will change minimally over time. It is for this reason that the “layered” approach of building the reference models was and will continue to be a sensible approach. Using this approach, reference models will appear stable to those less interested in the details, such as agency executives or key decision-makers, and change as needed at the lower levels to ensure they are current and usable for IT project managers, solution architects, and contractors. Such an approach is also an effective way to ensure the currency, validity, and integrity of the information in the reference models (e.g. ineffective or out of date Service Components should no longer be included in the SRM and will be phased out

accordingly). More substantial changes such as bundling components and patterns with the SRM will require new views or “lenses” that leverage the underlying foundation of the models.

The proposed maintenance process represents a delicate balance between the need to quickly develop the reference models so they are accurate, current and robust and the need for the reference models to remain stable, allowing agencies to maintain an up-to-date EA mapped to the FEA reference models. Additionally, the proposed maintenance process balances the resource limitations of agencies, the AIC and the OMB. Coordinated resources from across the government and industry are necessary in order for the process to be successful and beneficial to the entire Federal EA community.

The cost associated with initially executing the proposed maintenance process will likely be higher than subsequent years due to the high volume of revision/modification submission requests expected during the first two years of instituting a formal maintenance process. In Year 1, as is detailed in Section 3.0 of this document, it is proposed that the process be annual for all of the reference models. However, during Year 2, it is likely that given the varying degrees of granularity within each of the reference models, changes may need to occur on a semi-annual basis for dynamic models, and perhaps every two years for those that are more static. The frequency of change can be determined on a per model basis after the first iteration of implementing the proposed process.

Additionally, “fast-track” processes will need to be established in Year 1 of implementation. Certain modifications or revisions are more imperative than others and have a greater impact on a wider array of agencies. These types of submissions substantiate methodical deliberation by a representative community. However, in instances where it can be ascertained that a revision submission warrants a “fast track” designation due to either the simplicity or value of the change, an expedited process must be instituted.

The fast track submission designation must be an option at the time of the original submission. Criteria for qualifying a submission for a “fast-track” process will need to be developed. Fast track submissions warrant ample discussion and documentation prior to a formal submission. As such, fast track submissions will require a pre-consultation with the OMB and appended documents that clearly provide a plausible basis for the assertion that the proposed revision/modification will address the criteria necessary for establishing the designation. A fast track submission must include the supporting documentation necessary to adequately assess the submission against the criteria without being too voluminous, but sufficient in that it does not refer to information that is located elsewhere.

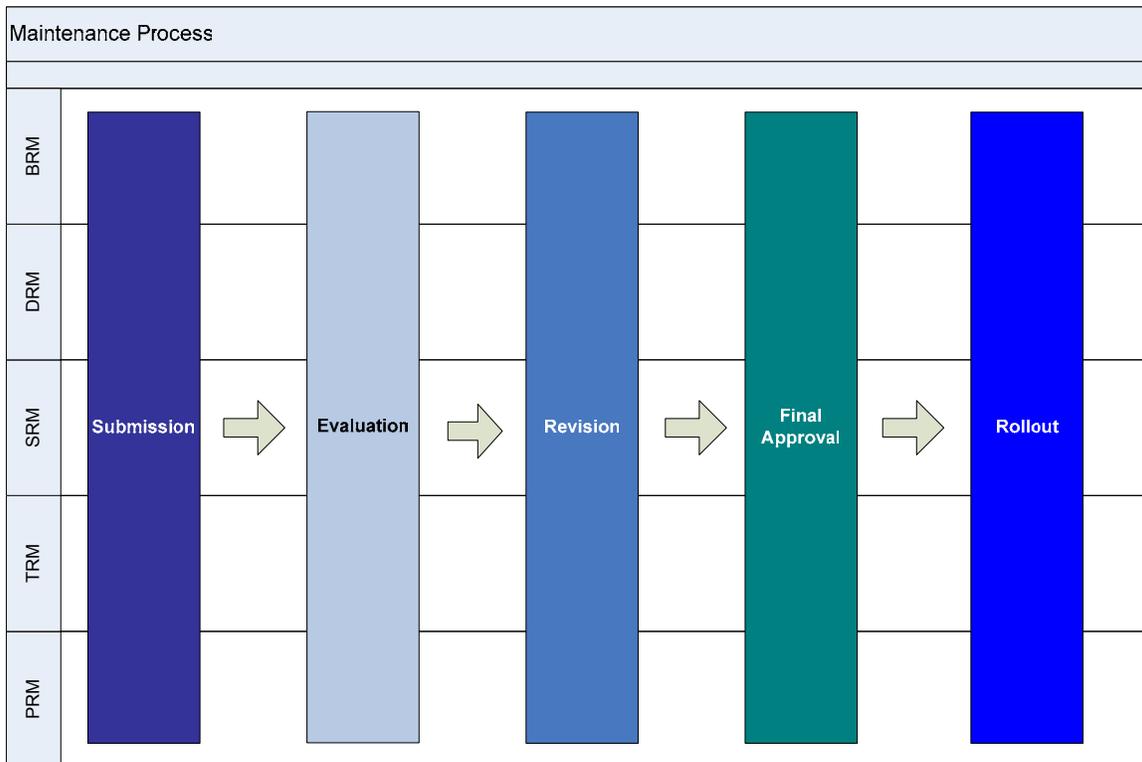
A review team composed of AIC, OMB, and potentially consultants and/or industry experts (this may or may not be the same RM Revision Assessment team as described in Section 3.0 of this document) would need to determine if the submission warrants the fast track designation. Notification on that designation should occur within a 30 day time period. This entails an expedited review, which substantially engages the submitting organization.

### 3.0 MAINTENANCE PROCESS

A number of considerations drove development of the proposed FEA reference model maintenance process, as summarized below:

- **Collaborative** – Provides opportunities for stakeholders to have a voice in the evolution of the reference models, both through the submission of recommended revisions and through involvement in decision-making processes
- **Transparent** – Allows stakeholders to understand how the process works and to know how specific revisions are progressing throughout the process
- **Effective** – Results in the desired outcome, notably reference models that are valid, accepted, and useful to users
- **Efficient** – Ensures an effective maintenance process with minimal burden on government resources

The proposed overall reference model maintenance process consists of five high level processes used to maintain the PRM, BRM, SRM, DRM, and TRM. The model in **Figure 3** depicts the 5 main high level processes that occur during the maintenance process. It also illustrates that all five models include these same five high level steps during the maintenance process.



**Figure 3. High Level Maintenance Process.**

- **Submission** - Submitters suggest revisions/modifications to the reference model(s) by completing a standardized on-line form. Additionally, during this phase the AIC will attempt to engage agencies in discussion on strategic and directional changes for the models.

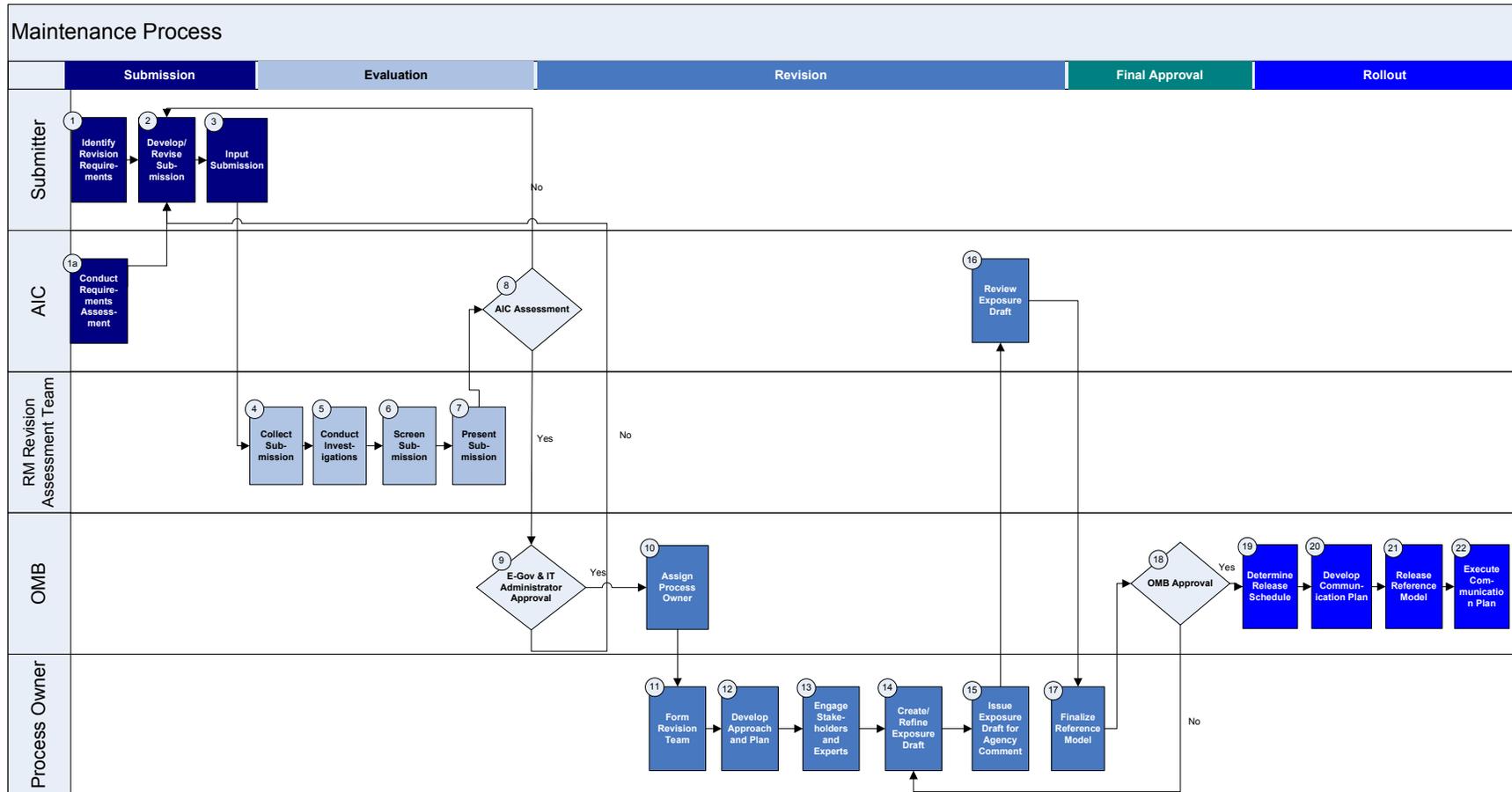
- **Evaluation** - Submissions are evaluated by the Reference Model Revision Assessment Team based on evaluation criteria. The submissions are scrubbed and direction is provided to the AIC and OMB for a joint review session. The AIC assesses the submissions and makes a recommendation to OMB. OMB, particularly the Administrator for E-Gov and IT then approves or rejects the submissions.
- **Revision** - Upon approval, the OMB selects a process owner who convenes a team responsible for revising the reference model. The revised model is distributed to agencies the OMB, and the AIC for review, and final revisions are made based on feedback.
- **Final Approval** - The OMB reviews the final version of the reference model based on several key characteristics and either approves the reference model or returns the reference model to the process owner for further refinement. It is the Administrator for E-Gov and IT that approves the final recommended changes for release.
- **Rollout** - OMB accepts the final reference model by determining when the model will be released, developing the communication plan, releasing the model, and executing the communication plan.

The lower level process description includes detailed sub-processes and identifies the parties involved in the entire Reference Model Maintenance Process. The parties involved are shown in **Table 1**.

Responsible Parties	Summary of Involvement
OMB	Serve as managers of the reference models, responsible for ultimate approval, supply resources for process, designate liaisons to the Reference Model Revision Assessment Team
Submitters	Serve as submitters of potential modifications to the reference models, supply resources for process, and provide feedback on reference model revision exposure drafts
AIC	Engage agencies in a dialogue on prospective strategic and directions changes to the models, Provide recommendations on the submissions for a final approval by OMB, review exposure drafts of revised model(s)
Reference Model Revisions Assessment Team	Provide feedback and an initial assessment on submissions to AIC and OMB
Process Owners	Form and lead a revision team, which will consist of agency representatives, including individuals from OMB and the AIC membership, and provide necessary resources for the revision process

**Table 1. Maintenance Process Responsible Parties.**

**Figure 4** provides a “snapshot” of the low level process and the involved parties. The roles of the parties and each step in the process are defined in the sections that follow.



**Figure 4. Detailed Maintenance Process.**

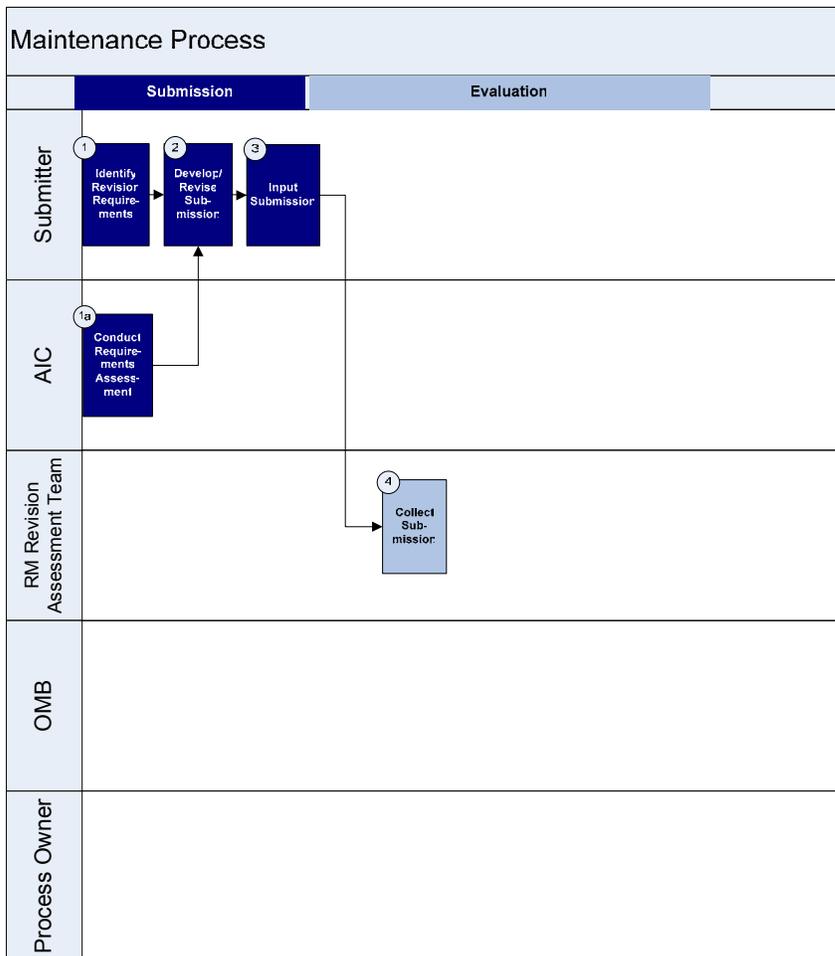
### 3.1 SUBMISSION

There are several sources of input to the process, either a Federal agency, the offices within OMB, the AIC, the Chief Architects Forum (CAF), and those leading and participating in E-Government initiatives, Lines of Business (LOB), and SmartBUY initiatives. In all cases, the “submitter” is a Federal employee. However, the Industry Advisory Council (IAC), other industry experts and communities of interest can provide input to the AIC, which in turn, if warranted can submit recommended modifications. Irrespective of the submitter, the process is the same. After identifying a revision/modification, the submitter, uses the Federal Enterprise Architecture Reference Module Decision Support System (mentioned in more detail in section 3.1.2) to enter his/her proposed change. This documents the area of the model needing improvement, suggestions for improvement and other necessary information. The reference model submission form will be based on International Organization for Standardization (ISO) 11179 standards. ISO 11179 is a standard that guides the process of recording metadata. This applies in describing the content of web forms. An XML schema could be developed to add in standardizing the submission process.

It is not the intent of this paper to propose how agencies should internally coordinate the development of submissions. In some instances, an agency may wish to have an internal review of potential submissions, screened through a central body (e.g. Architecture Review Board) or office (e.g. Office of the Chief Information Officer). In other cases, the agency may wish to have a less formal process whereby any agency employee may independently complete a submission. However, it is highly recommended that an individual be identified to ensure continuity, most likely the Chief Architect. If a person is not identified, and the Chief Architect does not make the submission, he or she will be contacted via email about the submission.

To assist in engaging agencies in a dialogue on the reference models, the AIC and its respective subcommittees, communities of practice, and forums will conduct a requirements assessment through a series of meetings aimed at providing input on strategic changes to the models. Also, the AIC could consider surveying the user community to determine the degree to which the models are meeting agency and cross-governmental needs. The underlying intent of the AIC’s involvement during the submission phase is to encourage agencies to participate in the maintenance process, while concurrently capturing useful input on how the reference models need to evolve over time to improve their usefulness.

The submission process is depicted graphically in **Figure 5** and the steps are detailed below.



**Figure 5. Submission Process.**

### 3.1.1 Step #1 Identify Revision Requirement

The FEA reference model maintenance process begins when a Federal employee identifies a prospective revision/modification in a reference model. Revisions may vary from relatively simple grammatical or content changes to substantive changes. The proposed changes may take the following forms:

- **Editorial Changes** – address grammar, spelling, sentence structure and flow, and semantic choices. These are intended to improve the clarity and readability of the document. (Ex. Change “their” to “there.”)
- **Additions to Reference Model Elements** – address the need to add elements within the existing structure of a reference model. (Ex. Add a new Line of Business or Sub-Function to the BRM).
- **Deletions to Reference Model Elements** – address the need to delete elements within the existing structure of a reference model. (Ex. Delete an outdated service specification or product from the TRM).
- **Redefining Reference Model Elements** – address the need to redefine elements within the existing structure of a reference model. (Ex. Change the definition of a Measurement Category in the PRM).

- **Reorganizing Reference Model Elements** – address the need to combine or shift elements within the existing structure of a reference model. (Ex. Shift an SRM service component from one service category to another).
- **Structural/Conceptual Changes** – address more fundamental changes to a single reference model. These may include:
  - Addition of new layers in a reference model’s hierarchy (Ex. Add a “Function” layer in the BRM between Line of Business and Sub-Function).
  - Re-definition of the relationships within a reference model (Ex. Allow many-to-many relationships between Lines of Business and Sub-Functions in the BRM).
  - Other structural or conceptual changes to either the reference model or the text within the reference model document.
- **Cross-Layer Changes** – address changes that impact multiple reference models (Ex. Tighten linkages between BRM Sub-functions and SRM Service Domains based on standard service and business patterns).

### 3.1.2 Step #1a Conduct Requirements Assessment

The AIC and its respective subcommittees, communities of practice, and forums will conduct a requirements assessment through a series of meetings aimed at providing input on strategic changes to the models. AIC monthly joint meetings, the CAF, as well as the GSA-sponsored Collaboration Expedition Workshops, the Extensible Markup Language (XML) Community of Practice (COP), and other COPs may serve as formal communication venues for the dialogue. The underlying intent of the AIC’s involvement during the submission phase is to encourage agencies to participate in the maintenance process, while concurrently capturing useful input on the degree to which the models are meeting the needs of agencies. Input from these meeting will be provided to the Reference Model Revision Assessment Team.

### 3.1.3 Step #2 Develop/Revise Submission

The Federal Enterprise Architecture Reference Model Decision Support System (DSS) is used to develop/revise a submission. To support the management, maintenance and evolution of the FEA Reference Models this system allows for implementation of an online comment and submission tool that would be available for selected users from the Federal CIO Council or the OMB website. Similar to TurboTax, and as illustrated in **Figure 6**, the proposed system would provide stakeholders with an intuitive and process-driven approach that presents targeted and prioritized questions for a specific reference model.

The screenshot shows the Chief Information Officers Council website. At the top, there is a logo for the CIO Council, the text 'Chief Information Officers Council', a search bar, and the date 'Today: 04.27.2005'. Below this is a navigation menu with links: HOME, ABOUT THE COUNCIL, CALENDAR OF EVENTS, DOCUMENTS, LINKS, FAQs, CONTACT US, and COMMUNITIES. The main content area is divided into two sections. The first section is titled 'Federal Enterprise Architecture Update Submission Form' and contains a welcome message and a 'MORE INFO' button. The second section is titled 'Select Reference Model' and is labeled 'STEP 1 of 6'. It contains a list of reference models with radio buttons: Performance Reference Model (PRM), Business Reference Model (BRM), Service Component Reference Model (SRM), Technical Reference Model (TRM), and Data Reference Model (DRM). To the right of this list is an 'ONLINE GUIDANCE' section. The sidebar on the right contains links to 'Committees', 'Features', 'FEA Update Submission Form', 'The Solutions Exchange', 'ICGI', 'Communities of Practice', and 'CIO Council Member Login' with a 'LOGIN' button. At the bottom of the page, there are links for 'Webmaster', 'Privacy Statement', 'Accessibility Statement', 'Plug-Ins', 'FirstGov.gov', and 'eGov.gov'.

**Figure 6: Selection of Reference Model**

As illustrated in **Figure 7**, questions would be based on a common set of criteria for each reference model and presented in a manner by which context can be added to the specific question. For instance, instead of asking stakeholders to generally and widely comment on the Service Component Reference (SRM) Model, questions are targeted toward the intent, goal and outcome.

Chief Information Officers Council

Today: 04.27.2005

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★ SRM - Change Justification STEP 2 of 6

Please choose the primary intent of this submission relative to the change or changes you are requesting.

- Modification to verbiage
- Addition of Service Domain, Type or Components
- Deletion of Service Domain, Type or Component

Please describe why you would like to change the SRM. Please be as specific as possible. 500 characters maximum.

**ONLINE GUIDANCE**

Please select the most appropriate category that best justifies your proposed change.

Please describe in detail the justification for your proposed change. For example, Dept of ABC and five (5) other agencies are currently using a re-usable components to support payroll processing activities...

Please answer the following questions by choosing Yes, No, or ? which indicates you are unsure.

	Yes	No	?
Can this component be used outside your agency?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is this component widely used in industry?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is your proposed change supported by an external community or a government-wide initiative? (e.g., Records Mgmt Profile, GeoSpatial Profile)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Committees

- Best Practices
- Architecture & Infrastructure Committee
- IT Workforce

Features

- CIO University
- Membership Listings
- The Small Agency CIO Council
- FEA Update Submission Form
- The Solutions Exchange
- ICGI
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**Figure 7: Targeted and Prioritized Questions for a Specific Reference Model**

Information captured during and throughout this process will be saved in a centralized database by which the AIC and the OMB can begin prioritizing changes and subsequent evolutions of the FEA reference models.

There are several benefits to this approach and the implementation of the proposed system. These include, but are not limited to:

**Common Criteria** – by structuring questions on a common set of criteria tailored to each reference model, and potentially weighting questions and responses, the AIC and the OMB can more accurately assess questions and answers and prioritize changes based on market and stakeholder demand. Common criteria tailored to each reference model will allow the AIC and the OMB to compare “oranges to oranges.”

**Decision Support** – as comments, criteria and questions will be stored in a centralized database, the AIC and the OMB can perform decision analysis more efficiently and effectively. Decision support tools can now be employed to help prioritize changes and provide the AIC and the OMB with business intelligence to support the reference model update process.

**Process Automation** – the implementation of the recommended system will allow the AIC and the OMB to automate the comment process and reduce the time and effort in comment consolidation. Further, through an automated process, the AIC and the OMB can provide greater clarity and context to questions relative to government-wide initiatives, emerging strategies, and innovation.

**Increase Comment Geography** – by releasing the system on the Internet, the AIC and the OMB can increase the number of comments by engaging stakeholders who are directly involved in the mission or program.

To better facilitate submissions, the online form will have criteria specific to each reference model. Please reference examples of such criteria in **Figure 8**:

Reference Model	Criteria
BRM	<ol style="list-style-type: none"> <li>1. Is the proposed change a modification to an existing business line, function, or sub-function? <ul style="list-style-type: none"> <li>• What are the other agencies that are affected by the proposed change?</li> <li>• How would the proposed change improve the sharing of information across multiple agencies?</li> <li>• Please provide the names and contact information for each agency impacted by the proposed change.</li> </ul> </li> <li>2. Is the proposed change an addition to the BRM? <ul style="list-style-type: none"> <li>• How does the proposed change improve the sharing of information across multiple agencies?</li> <li>• Is it a business line, function, or sub function change?</li> <li>• What is the rationale for the proposed change?</li> </ul> </li> </ol>
DRM	<p><i>(Note: Given the DRM is currently being revised by the DRM working group, sample criteria are not included at this time)</i></p>
SRM	<ol style="list-style-type: none"> <li>1. At what level would this component align and support other areas of both your agency’s EA and the FEA (e.g. EA Business Process level, FEA BRM Sub function level)?</li> <li>2. Is the recommended change/addition cross-cutting in nature or tightly aligned to agency-specific business processes? Please explain.</li> <li>3. Is your proposed change supported by an external community or a government-wide initiative (e.g. Records Management Profile, Geo-spatial Profile)?</li> <li>4. Is your proposed change supported by a major or minor investment (i.e., Exhibit 300)</li> </ol>
TRM	<ol style="list-style-type: none"> <li>1. Is the proposed change something that the government or industry has already built a community around? Does it have a respective governing body or working group (e.g., OASIS, Federal Community of Practice, ET.gov)</li> <li>2. What is the industry status of this proposed technology (e.g. emerging, mature, and legacy)?</li> <li>3. Is the proposed change proprietary to a single vendor?</li> </ol>

Reference Model	Criteria
	<ol style="list-style-type: none"> <li>4. What benefits will the government receive by adopting the proposed change (e.g. Will it serve to increase information sharing capabilities)?</li> <li>5. What is the degree of impact that the proposed technology will have (e.g. government-wide, LOB initiative, your organization)?</li> <li>6. Do multiple vendors supply products that embed/enable this proposed technology component?</li> <li>7. Does this change align to one or more approved or planned investment requests? If so, identify the investments and whether they are E-Gov, cross-agency, or intra-agency?</li> </ol>
PRM	<ol style="list-style-type: none"> <li>1. Does the proposed revision help produce enhance performance information to improve strategic and daily decision-making? If so, how?</li> <li>2. Does the proposed change improve the alignment – and better articulate the contribution of – inputs to outputs and outcomes, thereby creating a clearer “line of sight” to desired results? If so, how?</li> <li>3. Does the proposed revision identify performance improvement opportunities that span traditional organizational structures and boundaries? What other organizational structures besides your own may be impacted?</li> <li>4. Does the change/modification improve integration with other Federal performance-based initiatives (such as GPRA or PART)?</li> <li>5. Which measurement area (Business Results, Customer Results, Process and Activities Results, Technology Results) does the proposed change impact?</li> <li>6. What is the specific page number and location of the proposed the change?</li> </ol>

**Figure 8: FEA Reference Model Criteria for Revisions**

### 3.1.4 Step #3 Input Submission

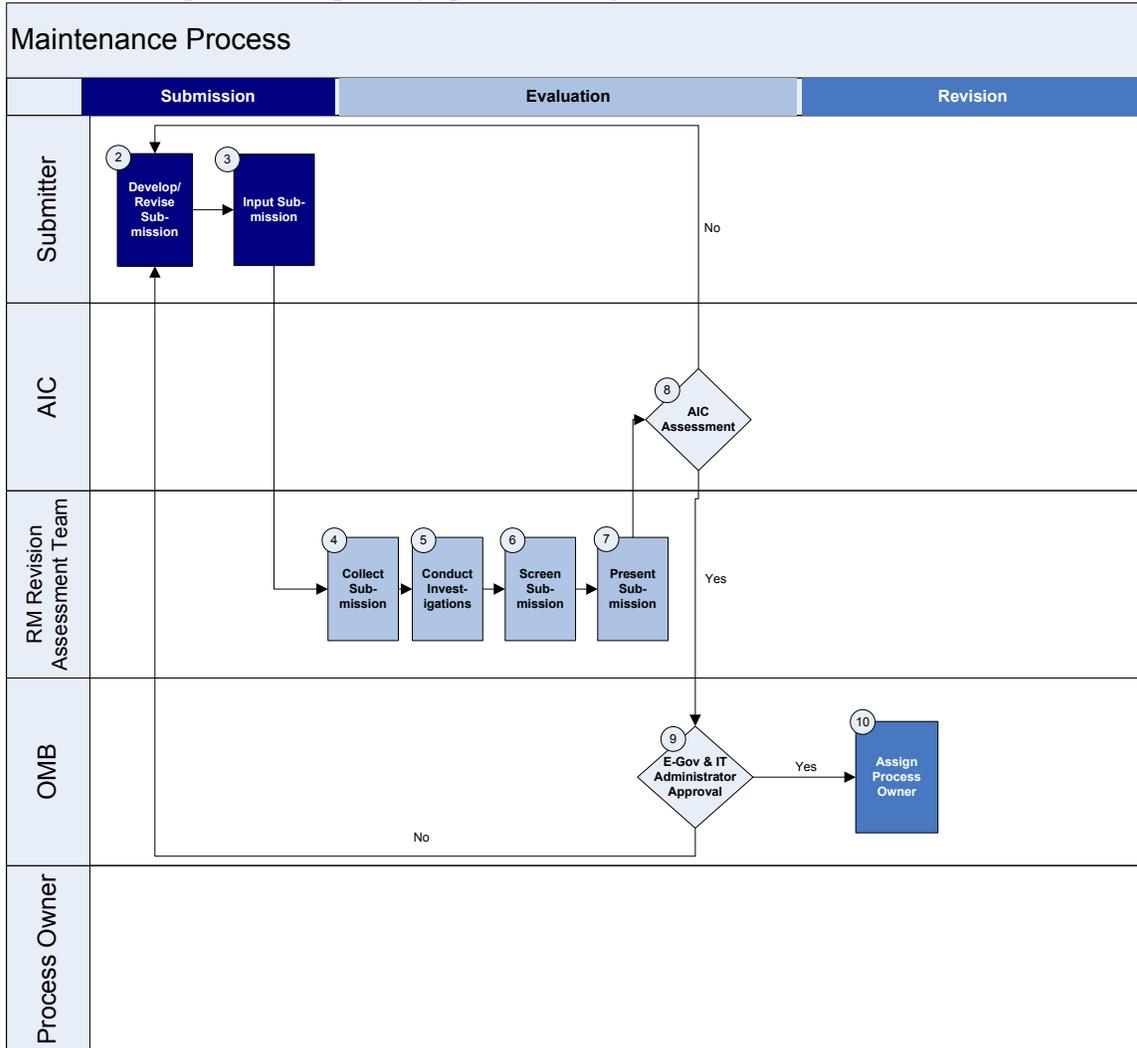
The web-based submission form contains the format used to capture all of the relevant information. After including all of the necessary information on the form, the submission is saved in the Federal Enterprise Architecture Reference Model Decision Support System (DSS). This repository will be managed by the Reference Model Revision Assessment Team. The functionality necessary to store submissions should be added to an existing repository, already in use by members of the AIC.

## 3.2 EVALUATION

There will be a joint review session between the OMB and the AIC where the Reference Model Revision Assessment Team will present submissions to be considered. Prior to the annual joint review session between the OMB and the AIC, the Reference Model Revision Assessment Team is responsible for collecting the submissions and conducting an investigation to ensure that all necessary information is included with the submissions and to make note of submissions that offer conflicting revisions. Understanding the interrelationships between and within the models is imperative. The Reference Model Revision Assessment Team could potentially use the FEA Reference Model Ontology to test the consistency within the models and to assess the impact of a particular modification.

The Reference Model Revision Assessment Team screens each submission based on evaluation criteria. Submissions that pass the screen are then distributed to members of the AIC and the OMB and presented at the joint review session. After the submissions are presented, the AIC ranks the submissions based on the high-level evaluation criteria. Based on these rankings, the AIC makes recommendations to the OMB on the importance of each submission. If the ranking is too low, the submission will be sent back to be refined.

The evaluation process is depicted graphically in **Figure 9**.



**Figure 9. Evaluation Process.**

### 3.2.1 Step #4 Collect Submission

The submissions will be evaluated and considered for the reference model revision process. In preparation for the annual evaluation of submissions, the Reference Model Revision Assessment team is responsible for collecting all submissions in the Federal Enterprise Architecture Reference Model DSS.

### 3.2.2 Step #5 Conduct Investigation

The Reference Model Revision Assessment Team investigates all of the submissions to ensure the submissions are complete and all relevant details have been provided. If the team feels additional information is necessary, they will work with the submitter to ensure all information is included in the submission.

In addition to ensuring that individual submissions contain the proper information, the Reference Model Revision Assessment Team needs to consider all of the submissions to ensure that the submissions are harmonized. In instances of conflict, the Team will bring the conflicting submissions to the attention of the submitting parties and the OMB.

### 3.2.3 Step #6 Screen Submission

Once the Reference Model Revision Assessment Team has all of the necessary information for each submission, the team screens all submissions based on the following evaluation criteria:

- **Validity** – On a scale of 1 to 5, how valid/sound is the recommended modification in terms of the conclusion following the premise?
- **Impact/Value** – On a scale of 1 to 5, how substantive or valuable is the modification? To what degree does this change add value over the status quo? To what degree does the modification/revision advance the overall usability of the models? How applicable are the revisions multiple agencies?
- **Implementation Ease** – On a scale of 1 to 5, what is the ease of implementing the proposed revision?

The Reference Model Revision Assessment Team scores each submission based on the criteria.

### 3.2.4 Step #7 Present Submission

The Reference Model Revision Assessment Team is responsible for developing a packet to include all submissions, as well as information regarding conflicting submissions and the results from the team's initial screening (based on the evaluation criteria). The packet should be sent to members of the AIC and the OMB prior to the joint review session. In presenting the evaluated submissions to both the AIC and the OMB, a dialogue is fostered between the two organizations regarding the likelihood of approving each submission.

### 3.2.5 Step #8 AIC Assessment

After the approved submissions are presented, the members of the AIC will rank the submissions. At the joint review session, it is highly recommended that each agency send a representative with the authority to vote on recommendations. In the event an AIC member is unable to be present at the joint review session, the member may designate a representative to attend the meeting and vote in his/her absence.

Ballots and copies of submissions are handed out to each voting member. For each submission, the member rates how well the particular submission addresses each of the evaluation criteria

individually by marking 1 through 5 – 1 meaning the submission does not address the evaluation criteria and 5 meaning the submission completely addresses the criteria.

The average score for each of the submission evaluation criteria is computed and submissions that score an average of 3 or higher on all three evaluation criteria - validity, impact and implementation ease – are moved forward in the revision process by the AIC. Those submissions that score an average below 3 on all three evaluation criteria are sent back by the AIC to be revised. Higher average scores denote the AIC's sense of prioritization.

Submissions sent back by the AIC do not adequately meet the evaluation criteria and should be revised if the submitting party feels the submission should be considered a second time. Submissions approved by the AIC are then forwarded to the OMB for their approval.

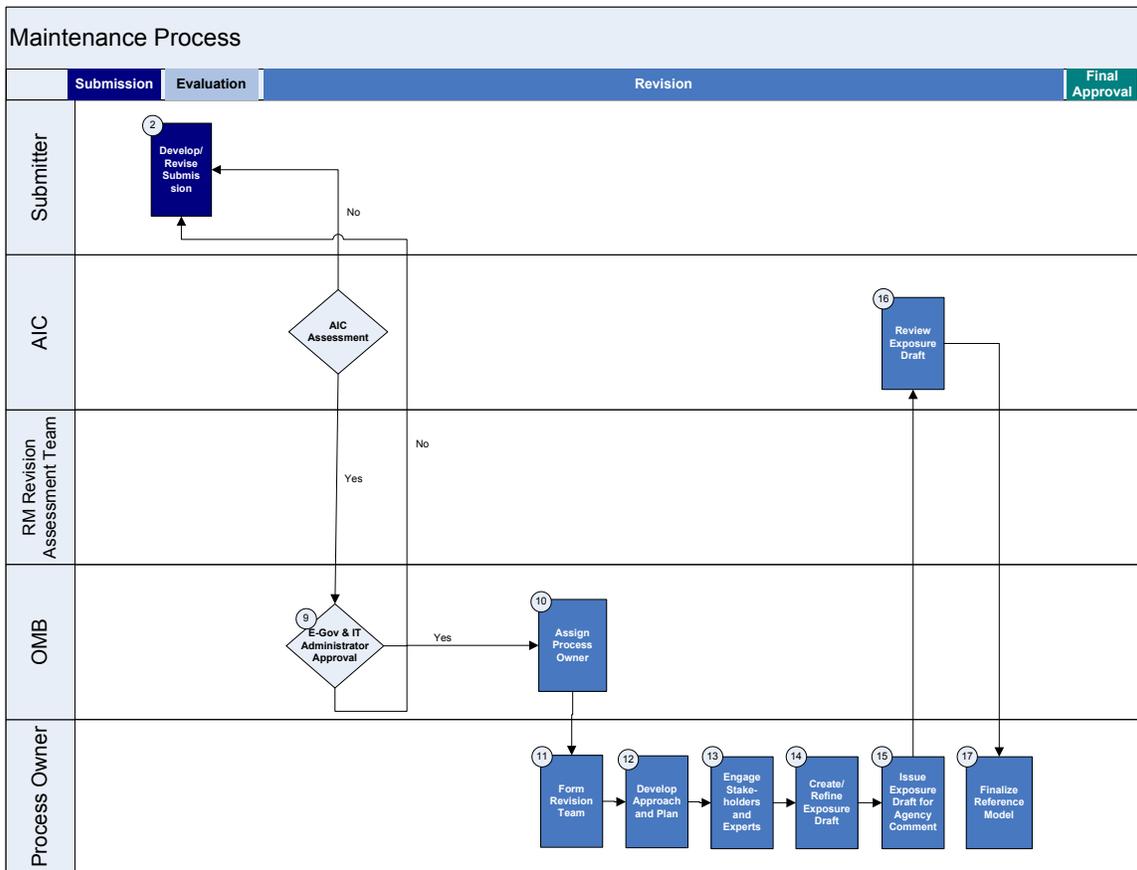
### **3.2.6 Step #9 E-Gov & IT Administrator Approval**

OMB will review the submitted changes and recommendations from the AIC and approve for release to a Process Owner. The OMB begins their review of the submissions concurrent with the AIC. However, a decision is not made until recommendations have been received by the OMB. After reviewing the submissions and receiving the AIC recommendations, OMB approves, approves with exception or rejects the submission. By approving with exception, OMB approves the submission but with minor changes. Submissions rejected by the OMB are not considered for revision and an explanation is provided to the submitter.

## **3.3 REVISION**

The revision process includes the steps necessary to revise the reference models. After approving the submission, the OMB is responsible for selecting a process owner to support the revision process. Regardless of the process owner selected, the revision process follows the same basic set of steps. The process owner will engage industry experts, as appropriate, and develop the approach and plan used to guide the revision process. Under the leadership of the process owner, an exposure draft of the revised reference model is created and a draft is submitted to the OMB for review. After reviewing the exposure draft, the OMB distributes the draft to agency CIOs and solicits feedback. The OMB reviews and consolidates the feedback and the revision team considers the consolidated feedback when creating the final version of the reference model.

The revision process is depicted graphically in **Figure 10** and the steps are detailed below.



**Figure 10. Revision Process.**

### 3.3.1 Step #10 Assign Process Owner

After approving the submissions, the OMB needs to determine the process owner. In determining the process owner, the OMB should consider the types of submissions being addressed. There are three primary process owner categories – a lead agency, the OMB or a community of practice. Each of these is described briefly below:

**Lead Agency** – The OMB may attempt to engage a single agency to lead a revision effort. The lead agency will determine whether it is willing to undertake the effort. A lead agency takes ownership of the revision process if the agency believes it can have a significant impact on the revision and can benefit from the changes proposed in the submissions. For example, Executive Order 13356 required DHS to share counterterrorism data while preserving individual privacy. The Metadata Program Manager of DHS was already engaged in detailing revisions to the DRM that were necessary to share data. The necessary changes were significant enough to warrant a new version of the DRM and thereby a working group was convened with DHS serving as the lead agency. As is the case with the DRM, the lead agency commits to providing in-kind resources and project management leadership.

**OMB** – The OMB will take ownership of the revision process if they are best suited to guide the revision and can provide the necessary resources.

**Community of Practice (COP)** – A domain or community of practice should take ownership of the revision process when an organization within the government is united with the belief that a reference model needs to be revised and the organization is willing to guide the revision.

A community of practice is a group of individuals who share work practices, interests, or aims. They collaborate to improve their knowledge within the community related to a specific topic area. An example of a Community of Practice is the XMLCOP. A COP could be a process owner when their knowledge of the particular subject matter could strengthen the revision process.

The OMB should consider “bundling” submissions for process owners. Bundling implies that submissions that are similar would be packaged together. The OMB may want to consider bundling submissions by reference model or by a particular aspect of a reference model. As warranted, however, the OMB can assign each submission to a separate process owner.

### **3.3.2 Step #11 Form Revision Team**

After the OMB determines the process owner, the process owner is responsible for convening the revision team. This team is comprised of members not only from the process owner’s organization, but also from the enterprise architecture community, including members of the reference model assessment team. The process owner is responsible for ensuring that relevant government stakeholders are represented and that the revision team possesses the appropriate expertise for revising the reference model. The OMB will advise the process owner regarding potential candidates for the revision team.

Throughout the process, there is open dialogue between the OMB and the process owner, and the revision team to ensure that the approach and plan will actively meet the needs of the greater EA community. A representative from the OMB assigns a designee to liaise with the revision team.

### **3.3.3 Step #12 Develop Approach and Plan**

After being assembled, the revision team crafts the approach and plan for the revision effort. The revision team has discretion in crafting the approach and plan in whatever format is most appropriate for its needs. However, it should minimally encompass the following elements:

- Team structure / roles and responsibilities
- Objectives and success measures
- Key activities and milestones, with due dates and responsible parties
- Coordination approach and meeting schedule
- Plan for engaging outside stakeholders (e.g. state and local government, industry), if appropriate
- Decision-making process

### **3.3.4 Step #13 Engage Stakeholders and Experts**

Once the approach and project plan has been finalized, the revision team needs to involve stakeholders and experts from the EA community to the degree necessary. The stakeholders and experts may represent both government and private industry. These experts should add technical

input to the reference model revision process and help guide the revision team through the revision process.

### **3.3.5 Step #14 Create/Refine Exposure Draft**

Based on the submissions approved by the OMB, the revision team executes the project plan and incorporates the proposed revisions into the reference model. While developing the revised reference model, the process team should continuously involve and solicit input from stakeholders. After the revision team has executed their project plan and completed all of the revisions to the reference model, the team should consider using the federal enterprise architecture reference model ontology as a method to help expose inconsistencies or conflicts in and between the reference models. The team then prepares an exposure draft that includes all of the revision team's changes to the reference model.

### **3.3.6 Step #15 Issue Exposure Draft for Agency Comment and Review**

After the revision team has completed the exposure draft, agencies and the OMB have an opportunity to formally add their input and make revisions to the exposure draft as necessary. The OMB should ensure that the exposure draft meets all OMB criteria, as well as any other Federal government criteria pertaining to the FEA reference models. The OMB should document their changes and incorporate the changes into the exposure draft.

### **3.3.7 Step #16 Review Exposure Draft**

The AIC will review the exposure draft once it is issued by the process owner for comment. A special meeting of the Committee will be convened to discuss the draft, so that consolidated committee comments and input may be provided to the process owner for incorporation into the end product.

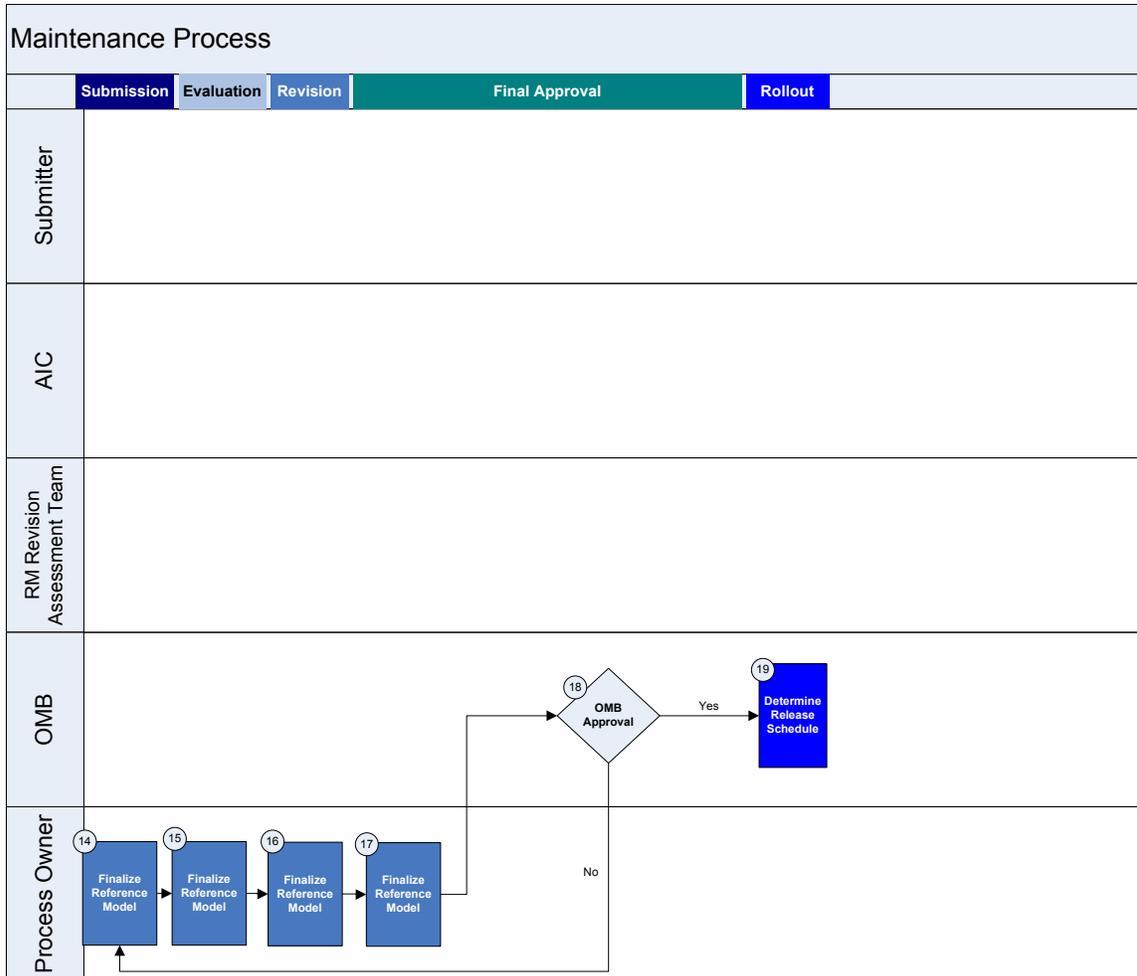
### **3.3.8 Step #17 Finalize Reference Model**

After the revision team receives the consolidated feedback from agencies and OMB, the team reviews all agency feedback and revises the reference model as appropriate. The revision team uses the same process and involves the same individuals during this step of the revision process that helped create the exposure draft. In addition, the revision team may engage the agencies that provided comments, particularly when comments received conflict with one another. The revision team submits their final revision to the OMB.

## **3.4 FINAL APPROVAL**

In the final approval process, the OMB reviews the final version of the reference model from the revision team and either approves the reference model or returns the reference model to the revision team for further refinement.

The final approval process is depicted graphically in **Figure 11** and the steps are detailed below.



**Figure 11. Final Approval Process.**

### 3.4.1 Step #18 OMB Approval

After receiving the reference model from the process owner revision team, the OMB reviews the final reference model to ensure that changes to the reference model improve the model’s usefulness and value. In reviewing the model, the OMB ensures several key characteristics of the reference models:

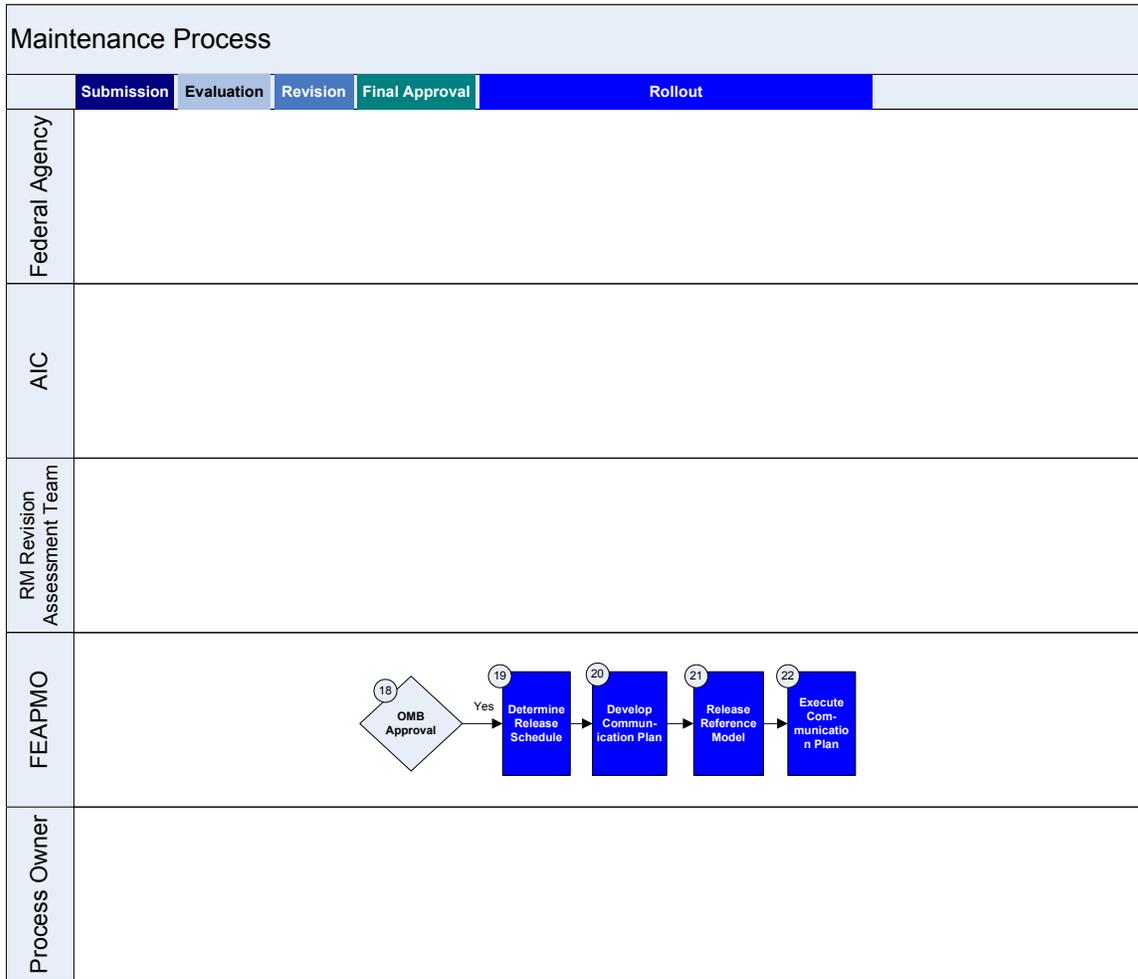
- **Alignment** - aligns with overall FEA vision
- **Stability** - the quality, state, or degree of being stable after revisions are made
- **Consistency (semantics)** - agreement or harmony of parts or features between each reference model and consistent use of language throughout the process
- **Integrity** - the quality or state of the model being complete or undivided after the revision
- **Flexibility** - ability of models to adapt to changing requirements
- **Precision** - the degree of refinement with which a revision can be administered

The OMB either approves the reference model for publication or returns it to the revision team for further refinement.

### 3.5 ROLLOUT

The OMB executes the rollout process after approving the final reference model. In the rollout process, the OMB ensures that the reference model is released at the proper time with the necessary communication and guidance.

The rollout process is depicted graphically in **Figure 12** and the steps are detailed below.



**Figure 12. Rollout Process.**

#### 3.5.1 Step #19 Determine Release Schedule

After the revised reference model has been approved, the OMB decides when the revision is released, based on consideration of impact to the agencies, budget cycle, and other timing considerations (e.g. potentially releasing multiple reference model revisions simultaneously).

### **3.5.2 Step #20 Develop Communication Plan**

The OMB decides how the approved reference model is released and what additional communications may be required to support its release. Communications may include stakeholder briefings, press releases, training sessions, and numerous other channels and strategies.

### **3.5.3 Step #21 Release Reference Model**

When appropriate, the OMB releases the reference model. The OMB determines the most effective method of delivering the reference model to agencies.

### **3.5.4 Step #22 Execute Communication Plan**

Both before and after the new reference model is released, the OMB executes the communication plan to ensure that agencies are familiar with the changes to the models and the guidance accompanying the models. Additionally, the OMB determines if additional guidance is necessary for agencies to understand and effectively implement the revised reference model.

## 4.0 AREAS FOR FURTHER STUDY

This paper proposes a high level maintenance process that involves multiple steps, stakeholders, and decision points, and is flexible enough to accommodate the different needs associated with maintaining the reference models. When the maintenance process is implemented and used, stakeholders will need to make decisions that will have an impact on the operations of the process and the end result. Areas of further study that will enhance the proposed process are noted below.

### 4.1 DEVELOPMENT OF A FAST TRACK PROCESS

As recommended, an expedited process will need to be established in Year 1 of implementation. Fast track processes for reviewing submitted revisions/ modifications to the reference models may be warranted as based on an evaluation against established criteria. Maintenance of and revisions to the models needs to be timely, which is not always conducive to a fully collaborative process. It is likely that many of the steps outlined in the full maintenance process would remain the same under “fast-tracking.” However, the steps would simply be conducted by a subset of the responsible parties outlined in this document with a shortened review and approval time.

### 4.2 PROCESS CYCLE AND TIMING

The cycle and timing of the proposed maintenance process needs to be solidified. Given that the reference models serve as an organizing framework for structuring information that assists with making IT investment decisions, there is a strong case for initially aligning the process with the annual budget cycle during the first year of implementation. It is viewed as critical that agencies have ample time to incorporate reference model changes into their EA’s.

During Year 1 implementation, submissions would need to be received from agencies by September 5, 2005. Over the summer months, the AIC and its respective subcommittees, forums, and communities of practice could hold strategic meetings on the evolution of the models. The Revision Assessment Team would then examine the submissions during the month of September and prepare for an AIC evaluation meeting to be held in mid-October. From October-December, reference model process owner teams would convene and begin revising the models. AIC and agency reviews of exposure drafts would occur in early January, so that the revised models could be approved and rolled out by no later than early February 2006.

As the maintenance process evolves following Year 1 implementation, consideration should be given to various factors that affect agencies’ and the OMB’s resources. The maintenance process should be staggered with the resource intensive processes of the budget cycle, but the revised reference models should be released in time for the changes to be incorporated into the following budget cycle. It may be advantageous to coordinate the maintenance process with the OMB Exhibit 300 instruction re-write.

Different evaluation and revision cycles may lend themselves better to different reference models and should be considered. For the maintenance process to build consistency, the process should remain cyclical but flexible to accommodate resource strains and scheduling conflicts. The intent is to continue to shorten the cycle so that the reference models remain relevant and can be readily used by agencies and the OMB.

### **4.3 ROLES AND RESPONSIBILITIES**

The recommended process will continue to evolve by further delineating roles and responsibilities. Given that success of the process is based on the aforementioned parties assuming distinct roles and responsibilities, it is recommended that further attention be given to workload considerations and compatibility issues, especially as they pertain to the Evaluation and Revision phases of the Maintenance process. In instances where structured charters already exist, changes will need to be incorporated to reflect the newly assumed responsibilities and operating procedures under the Maintenance Process. The composition of the Reference Model Revision Assessment Team will need to be determined, along with the role they will assume throughout the entire process. It has been suggested through agency input that the revision assessment team be comprised of representatives from 5 groups, which are in effect communities of practice around each of the models. Also it has been suggested that the assessment team involve dedicated full-time resources, as well as those who are involved on a part-time basis.

Additionally, consideration should be given to determining the appropriate points along the process to involve industry experts and EA and capital planning and investment control (CPIC) vendors.

### **4.4 JOINT REVIEW SESSION MATERIALS**

The Reference Model Revision Assessment Team is responsible for developing a packet that contains all of the submissions for each reference model. The content of this packet will need to be determined. The level of detail should be adequate enough to make educated assessments, while being cognizant of time constraints. The submission packets are intended to be assessed by the AIC at one meeting, which will be a joint review session. The packet submitted to the joint review session will be made available to individuals within the Federal Government.

### **4.5 LEVERAGING “LESSONS LEARNED” FROM THE DATA REFERENCE MODEL WORKING GROUP**

The “lessons learned” from the DRM working group’s efforts should be used to inform the FEA Reference Model maintenance process. As communities of interest become more conversant with each other and the interdependencies of the reference models are readily understood, process implementation will become less daunting, yet balanced with sufficient rigor and sequencing.

## 5.0 CONCLUSION

Without a coordinated approach, the vision of a Federal Enterprise may not be fully realized. The development of the FEA maintenance process is crucial in advancing the enterprise architecture efforts of the Federal Government as various stakeholder groups contribute to the continuous review and refinement of the FEA reference models.

The process that has been laid out in this paper focuses on the importance of collaboration within the government in an effort to reach agency's full value realization from Enterprise Architecture. Allowing agencies to voice their concerns and even pose potential changes, will in the future change EA from being a compliance-based activity to an incentive based activity that agencies will want to buy into. Their participation in the process will ensure that changes will affect their agencies in a positive manner. Not only will more agencies become more involved, but more agencies will begin to communicate with each other, as well as those who are engaged in budgetary and program decision-making. Opportunities to collaborate, will only ensure sharing of ideas and programs, addressing the crux of Enterprise Architecture and the rudimentary belief that through sharing, agencies can minimize cost and maximize resources.

**APPENDIX A - RELATIONSHIP OF THIS MAINTENANCE APPROACH TASK TO OTHER CROSS-GOVERNMENT EFFORTS**

The following table highlights some of the current activities of AIC and OMB that have a vested interest in the implementation of the reference model maintenance process.

Activity/Project	Source/Reference	Description
Guide the Development of the Security and Privacy Profile	2005-2006 OMB Action Plan, February 2005	Having concluded Phase I of the Security and Privacy Profile, this task focuses on ensuring adequate acceptance and socialization for the initiative. Validating the current concept, and improving where necessary so as to ensure a more valued product encapsulates Phase II activities
Launch a Records Management Profile	2005-2006 OMB Action Plan, February 2005	The OMB will work with NARA and the AIC to complete and launch a Records Management Profile in the FEA. The Records Management Profile would provide a methodology using relevant FEA reference model information (i.e., context and conditions) to help business owners accurately determine information and records categorization and establish an appropriate set of information and records management controls resulting in seamless and transparent use of information.
Create a Geospatial Profile	2005-2006 OMB Action Plan, February 2005	The OMB is supporting geospatial efforts through its FEA reference models and contribution towards establishing a Geospatial Profile. The purpose of this profile is to provide a consistent framework that can be applied within and across agencies to identify the geospatial implications across lines of business. The OMB is working with the geospatial community to further public and government use of geospatial information.
Support the Identification of New Lines of Business	2005-2006 OMB Action Plan, February 2005	The OMB will continue to collaborate with government-wide task forces, using EA principles and proven best practices to proactively identify new, business-driven common solutions. Potential common solutions are not limited to technical/systems solutions, and may entail the development of new policies, standards and guidelines.
Support the IT Security Line of Business	2005-2006 OMB Action Plan, February 2005	As a result of the OMB's analysis of the FY 2006 budget data, OMB established the IT Security Line of Business to propose common solutions and architecture strengthening the ability of all agencies to identify vulnerabilities, defend against threats and

Activity/Project	Source/Reference	Description
		manage resulting risks.
DRM Working Group	2005-2006 AIC Task	<p>The following is the outline of the DRM scope of work:</p> <ul style="list-style-type: none"> <li>▪ Revise DRM Volume 1 through open participation and thorough examination of the responses to the revision. (1) Respond to all comments (2) Add a glossary (3) Make Volume 1: Complete, Consistent and Cohesive</li> <li>▪ Complete Volumes 2, 3, and 4</li> <li>▪ Create implementation profiles of the DRM</li> <li>▪ Foster broad Government support and Vendor adoption of the DRM</li> </ul>
FEA Reference Model Ontology	GSA	The Federal Enterprise Architecture Reference Model Ontology (FEA-RMO) is a domain specific ontology of FEA reference models. FEA-RMO directly translates the Performance, Business, Service Component, and Technical reference models into their executable representation in OWL-DL.
Engineer the FEA to Standardize Linkages between reference models	2005-2006 OMB Action Plan, February 2005	The reference models need to explicitly connect with elements of other reference models to move analytics beyond the analysis conducted today. This will enable OMB to uncover hidden patterns across reference models suggesting reuse opportunities not intuitively obvious. The OMB will use data mining and analytics to infer relationships between the various reference models.
CORE.gov Steering Committee	AIC Components Subcommittee Effort	The overall purpose of the CORE.GOV Steering Committee is to provide input and direction regarding the continual improvement of CORE.GOV, including the development of a governance process for the registering of components.

**APPENDIX B – CHIEF ARCHITECTS FORUM MEETING  
SUMMARY OF COMMENTS**

Commenters	
FAA	FEMA
IAC EA SIG	NDU
EPA	SiCOP
USDA	DoEd
GSA	IC CIO
NASA	HUD
Commerce	OMB
NOAA	DOI
AIC	OSD
CAF	DOE
FBI	NRC
NWS	

Comments on FEA RM Maintenance Process	
Comment	Action/modification
OMB Approval process may take longer	This may be the reality; but will be addressed by OMB
The process must be cognizant of the the inter-relationship between(e.g. BRM to the SRM) and within the models (e.g. standards w/in the TRM)	Sentence was added regarding inter-relationship and across the models w/in models in the evaluation section of the paper (page 20).
Consider involving the EA tool and CPIC tool vendors in the process	See page 30.
Consider developing and XML schema for comment provision	Sentence added on page 13.
A fast-track process is critical	Already noted in paper.
As a part of the Revision Assessment Team consider having a blend of part-timers and full-timers on the revision assessment team.	Incorporated on page 30.
The Revision Assessment team could meet every week to review submissions, as opposed to waiting for critical mass.	This recommendation will be forwarded to OMB as an alternative .
The submission form should reflect free formed text and be structured	This recommendation will be forwarded to OMB to aid in developing the submission form.
The fact that is process is supported by volunteers makes it vulnerable.	To be addressed by OMB
"Rules of Engagement" to address how to rectify conflicting submissions is important.	Upon adoption of the process, this will be addressed. This recommendation will be forwarded to OMB
Process needs to consider the number of submissions and be modified accordingly. (e.g. what's the demand?)	The idea that the number of submissions impacts the process is addressed in the paper. This recommendation will be forwarded to OMB
Agency will need time to adapt to the changes; thereby careful consideration must be given to the frequency of change. The stability of the models is important	Sentences to this effect are contained in the report and the stability of the models is stressed.
The Revision Assessment Team could use the RM ontology to ensure consistency across the models and be used for a basis of change.	This idea is supported in the Evaluation Section. See page 20.
The RM ontology could serve as an integrated artifact, instead of having multiple documents detailing the reference models.	This recommendation will be forwarded to OMB
There must be transparency into the process and decisions. It would be helpful if the rational behind why certain submissions were accepted or rejected and why particular changes were made was published and shared.	This is the intent behind the evaluation process and will be shared with OMB as a recommendation

Comments on FEA RM Maintenance Process	
Comment	Action/modification
The process needs to consider the profiles, the EA glossary, and other efforts that require maintenance and evolution.	This recommendation will be forwarded to OMB
Consider and incorporate the "lessons learned" from the DRM Working Group into this process	This is definitely intended. The recommendation will be forwarded to OMB
Consider having the revision assessment team be comprised of representatives from 5 groups, which are in effect communities of practice around each of the models	Incorporated on page 30
Institutionalize the roles of individuals in the process and work to ensure that agencies recognize the cross-agency contribution as a part of their jobs.	This recommendation will be forwarded to OMB
Be sure that the process can accommodate innovative, substantive changes to the models	This is the intent and discussions around such innovative changes
Need to see operational and administrative aspect of the Governance Process	Once the process is adopted, the intent will be to detail these aspects upon implementation. This recommendation will be forwarded to OMB.
Consider during year 1 implementation that it may take two cycles to work out	This recommendation will be forwarded to OMB
Consider releasing changes to the models every 2 years as opposed to every year	This recommendation will be forwarded to OMB
Incorporate a discussion around reference model changes as part of the Quarterly CAF Meeting and/or monthly CAF meetings	This concept is included when referencing the AIC and its respective forums, COPs, and subcommittees; however the suggestion is not detailed in the report. This recommendation will be forwarded to OMB.
SRM Criteria contained in process report need to be more high-level. They appear too detailed	Detailed criteria more appropriate for CORE.gov were removed. See page 18.
Changes to the models must be reflected in the posted documents that are on egov website, not simply a memo	This recommendation will be forwarded to OMB for their consideration.
Agencies must receive models and guidance in Jan/Feb to incorporate into EA and align with CPIC process	Incorporated on page 29
Ensure coordination with the rewrite of Exhibit 300 instructions	Incorporates on page 29
120 day revision period may be too long	Duly noted. 120 days is the ceiling and would only be necessary when structural/substantive modifications are made to the models. This will be forwarded to OMB for their consideration.
Consider pursuing online submission form (Decision Support System) soon after adoption of process, but do know let the system hold up the process. Could use an interim database if necessary	Duly noted and will be forwarded to OMB.
Suggest an additional step in the process, called something like Strategic Oversight, that provides high-level vision, evolution strategy, direction and guidance, sets and owns the evaluation criteria for submissions, key characteristics for review, "fast-track" criteria, mechanism for conflict resolution, acts as CCB (with established CCB charter) etc. Probably would be done by oversight board chaired by OMB. Right now this seems to be partially addressed during the "Submission" process, but it should really be something separate and specifically identified since it is so important.	Such oversight will occur throughout. The idea is not incorporated in the report as its own phase, but is definitely intended. This is something that could potentially be done by the AIC governance subcommittee or a subset thereof with OMB involvement. The recommendation will be forwarded to OMB for their consideration.
It might be useful to poll stakeholders (with a web-based survey for example) regarding key issues in addition to the AIC meetings suggested. This is a broader way of determining whether models are meeting the needs of the agencies.	Idea incorporated on page 13
"Impact" criterion addresses 2 distinct ideas "impact" and "value". Suggest have both included and as 2 separate criteria.	For the time being, criteria is noted as Impact/Value. Upon adoption and implementation determination can be made as to whether the criteria should be separate, per the suggestion.

## APPENDIX C – ACRONYM LIST

AIC - Architecture and Infrastructure Committee  
BRM - Business Reference Model  
CAF – Chief Architects Forum  
CIO - Chief Information Officer  
COP – Community of Practice  
DRM - Data and Information Reference Model  
EA - Enterprise Architecture  
FEA - Federal Enterprise Architecture  
FEAMS - Federal Enterprise Architecture Management System  
OMB - Federal Enterprise Architecture Program Management Office  
GPRA – Government Performance Results Act  
IAC – Industry Advisory Council  
ISO - International Organization for Standards  
LOB - Lines of Business  
OMB - Office of Management and Budget  
PART – Performance Assessment Rating Tool  
PRM - Performance Reference Model  
RM – Reference Model  
SRM – Service Component Reference Model  
TRM = Technical Reference Model  
XML – Extensible Markup Language