



BTA
BUSINESS TRANSFORMATION AGENCY

BEA Development Methodology

2 March 2007

Version History

Version	Publication Date	Author	Description of Change
1.0	March 15, 2006	BEA Architecture Development Team	Initial Release
1.1	September 15, 2006	BEA Architecture Development Team	Made minor updates
1.2	March 2, 2007	BEA Architecture Development Team	Updates for BEA 4.1 Deliverable



Table of Contents

Index of Figures	iii
1. Introduction.....	1
2. Background.....	1
2.1. BEA Scope	1
2.2. Governance Structure	2
3. BEA Development Approach	2
3.1. BEA Content Development	2
3.2. Integrated Development Team	4
3.3. BEA Release Cycle.....	6
3.4. Laws, Regulations, and Policies	7
4. BEA Development Management	8
4.1. Configuration Management	8
4.2. Quality Assurance.....	8
4.3. Independent Verification and Validation (IV&V).....	9
4.4. Risk Management and Communication	9
4.5. Decision Memoranda.....	9
4.6. Training.....	10
5. BEA Development Process.....	11
5.1. Develop Scope for the Release.....	11
5.1.1. Kick-Off Release	11
5.1.2. Develop AV-1	12
5.1.3. Create and Approve Parent Change Requests	12
5.2. Plan the Release	12
5.2.1. Create Child Change Requests	12
5.2.2. Update Integrated Schedule.....	12
5.2.3. Approve Child Change Requests	12
5.3. Develop the Release.....	12
5.3.1. Conduct Pre-Workshop Activities.....	13
5.3.2. Conduct Workshop Activities	13
5.3.3. Develop Supporting Products	13
• BEA Release Summary.....	13
• LRP Repository	13
• HTML.....	13
5.3.4. Conduct Product Review	13
5.3.5. BEP Approval.....	13
5.4. Conduct Integration and Acceptance Reviews	14
5.4.1. Integration and HTML Review.....	14



- Integration Review 14
- HTML Review 14
- 5.4.2. BEP Acceptance Review 14
- 5.5. Package and Deliver the Release 15
- 6. Using Technology to Support the Release 15**
 - 6.1. Document Control Tool 15
 - 6.2. Issue Tracking Tool 15
 - 6.3. BTA Portal 15
 - 6.4. Architecture Development Toolset 16
 - 6.5. Requirements Capture Tool..... 17
 - 6.6. Architecture Artifacts Reporting Tools..... 17
- 7. Summary..... 18**
- Appendix A: Acronym List..... A-1**
- Appendix B: Reference Documents B-1**

Index of Figures

- Figure 1: BEA Spiral Development 3
- Figure 2: Uses of BEA Products to Answer Questions 4
- Figure 3: BEA Development Roles and Responsibilities 5
- Figure 4: Sample BEA Release Timeline..... 7
- Figure 5: Roles and Related Documents Matrix 10



1. Introduction

The purpose of this document is to describe the overall process and approach for developing the Business Enterprise Architecture (BEA), one of the primary tools used to drive transformation within the Department of Defense (DoD) Business Mission Area (BMA). This document represents a compilation of ideas and best practices that have been tried and tested across the architecture development lifecycle and describe the current methodology to develop the BEA. Supporting details on how to execute the processes outlined in this document can be found in one or more source documents: the Architecture Product Guide (APG), BEA Configuration Management Plan, or the web-based End-to-End (E2E) Architecture Development Process (the E2E process includes detailed procedures, forms, and templates). This documentation, as well as any emerging Decision Memoranda approved by BTA leadership, provides the guidance for BEA development. Guidance regarding development and usage of the BEA in the overall context of DoD business transformation is presented in the Business Transformation Guidance (BTG).

2. Background

The BEA is a set of integrated DoD Architecture Framework (DoDAF) products, including All View, Operational View, System View, and Technical Standards View products. The BEA defines the Department's business transformation priorities, the business capabilities required to support those priorities, and the combinations of systems and initiatives that enable these capabilities. The major milestones for the systems and initiatives that are critical to achieving DoD transformation priorities are outlined in the Enterprise Transition Plan (ETP). Although the ETP is a separate document, the BEA and the ETP are integrated and cross referenced at the appropriate common touch points. Together, the BEA and ETP are tools that help ensure solution sets are comprehensive, deliver the most value to the warfighter, and affect interoperability within the DoD.

In response to the March 2005 realignment of the Business Management Modernization Program (BMMP), the scope and purpose for the BEA were fine tuned and focused on a set of six Business Enterprise Priorities (BEPs) that span five Core Business Missions (CBMs). Previous versions of the BEA were either too narrowly focused on obtaining a clean audit opinion or too broadly focused on all of DoD's BMA processes to be an effective tool for transformation. By focusing on a defined set of Business Enterprise Priorities, BEA provides the foundation to accelerate outcome-based architecture development and implementation going forward. This document reflects the current approach for developing the BEA and incorporates the lessons learned and identified during the successful development of subsequent releases of the BEA..

2.1. BEA Scope

The scope of the BEA, defined by six BEPs, permits the BEA to evolve in a controlled and consistent fashion. The BEP definitions are found in the BEA AV-2. The current set of BEPs includes:

- Acquisition Visibility
- Common Supplier Engagement
- Financial Visibility
- Materiel Visibility
- Personnel Visibility
- Real Property Accountability

BEA development is focused on providing tangible outcomes for a limited set of priorities focused on answering the following four questions known as the “Golden Questions”:

- Who are our people? What are their skills? Where are they located?
- Who are our industry partners, and what is the state of our relationship with them?



- What assets are we providing to support the warfighter, and where are these assets deployed?
- How are we investing our funds to best enable the warfighting mission?

The BEP goals, objectives, and capabilities required to meet transformation objectives are derived from the Golden Questions and frame the content of the BEA. Sample derivative questions are listed below:

1. Who are our personnel (e.g., active, reserve, guard, civilian)?
2. What is the member's/employee's service/organization? (Army, Navy, Air Force, Marine Corps)
3. How many members/employees are in theater?
4. Who are our suppliers?
5. What products and services do they provide?
6. Where are our suppliers located?

2.2. Governance Structure

The overall governance structure for achieving business transformation is described in Section 3 of the BTG, which outlines the roles and responsibilities of the Under Secretary of Defense Principal Staff Assistants (PSAs), the BTA, Components, and Program Managers in achieving business transformation. Further clarification of roles and responsibilities is provided in BTG Table 4-1, Management Roles for Business Transformation. A view of this governance structure from the perspective of BEA development follows.

- The PSAs, as Core Business Mission owners, are responsible for collaborating with the Components and the BTA to identify and define the BEPs and associated Business Capabilities. PSAs also assign accountability for addressing capability gaps in the form of programs. Collectively, this information provides the overall scope for the BEA.
- The BTA Transformation Priorities and Requirements Directorate (TP&R) is responsible for identifying capability gaps and coordinating content inputs to the BEA and ETP from within the BTA, across the Office of the Secretary of Defense (OSD), and from the Components. TP&R also provides support in maintaining the centralized Laws, Regulations, and Policies (LRP) Repository for alignment with the BEA. The PSAs within OSD manage the DoD enterprise laws, regulations, and policies. The CBM owners within TP&R are required to manage, maintain and validate changes to the authoritative sources that impact the BEA.
- The BTA Defense Business Systems Acquisition Executive (DBSAE) provides enterprise system information for incorporation in the BEA and ETP.
- The BTA Warfighter Support Office Directorate (WSO) is responsible for collaborating with the Joint Staff and combatant commands to identify urgent enterprise business issues impacting the warfighter.
- The BTA Transformation Planning and Performance Directorate (TP&P) is responsible for building and integrating the BEA and ETP and ensuring that the content from TP&R is correctly reflected in the architecture.
- The Defense Business Systems Management Committee (DBSMC) approves each BEA and ETP release.
- The Investment Review Boards (IRBs), on behalf of the PSAs, use the BEA to assess modernization investments relative to their impact on end-to-end business process improvements that support the Warfighter needs.
- The Components and Program Managers use the BEA to ensure alignment with enterprise requirements.

3. BEA Development Approach

3.1. BEA Content Development

The DoDAF is DoD's architecture framework. BEA products are developed based on DoDAF Version 1.0, 1.5 and reference drafts of DoDAF Version 2.0. BEA products are developed using a spiral approach to architecture development. A spiral approach allows the architecture to evolve through the successive application of



business analysis and modeling. Cycles of analysis occur, each building on the previous one, until development is complete. A cycle equates to the development of the products for an individual BEP or planned capability improvement. These products are then integrated across BEPs and the current BEA baseline is updated. Although the DoDAF allows for 26 architecture products, the BEA only consists of a selected set of DoDAF architecture products. Over time, this product set may be extended. The necessary and sufficient set of DoDAF products to the meet current BEA objectives and the development sequence deployed during each BEA release is presented in **Figure 1: BEA Spiral Development**.

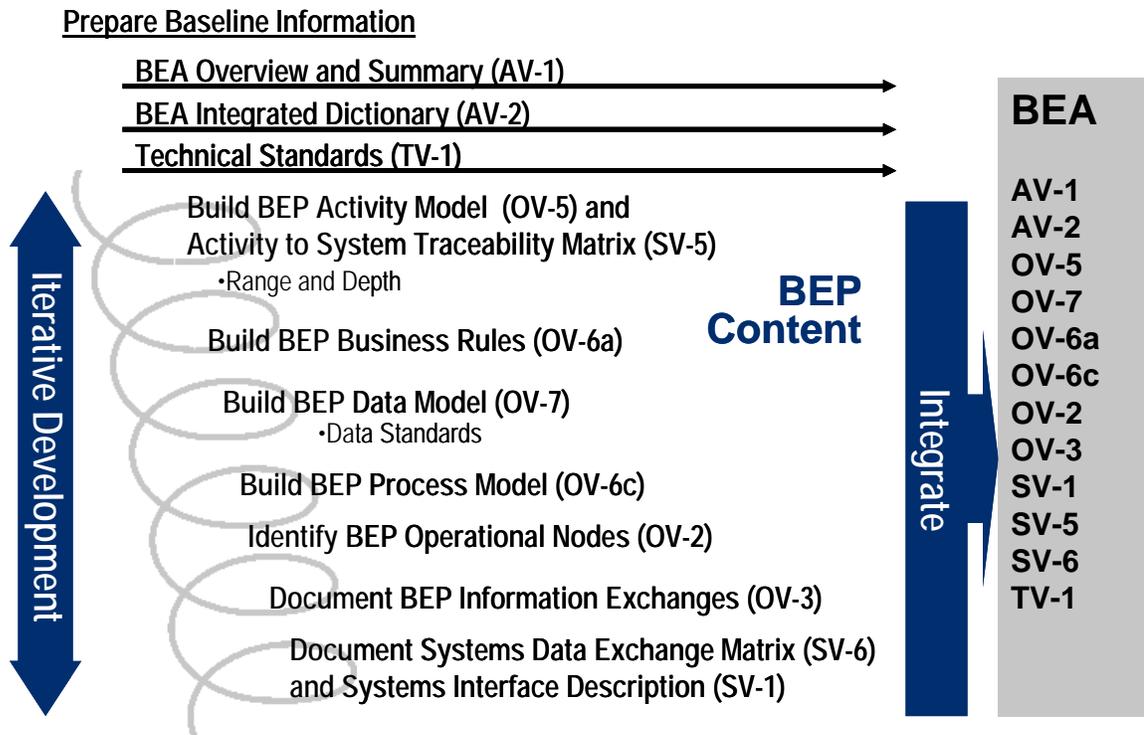
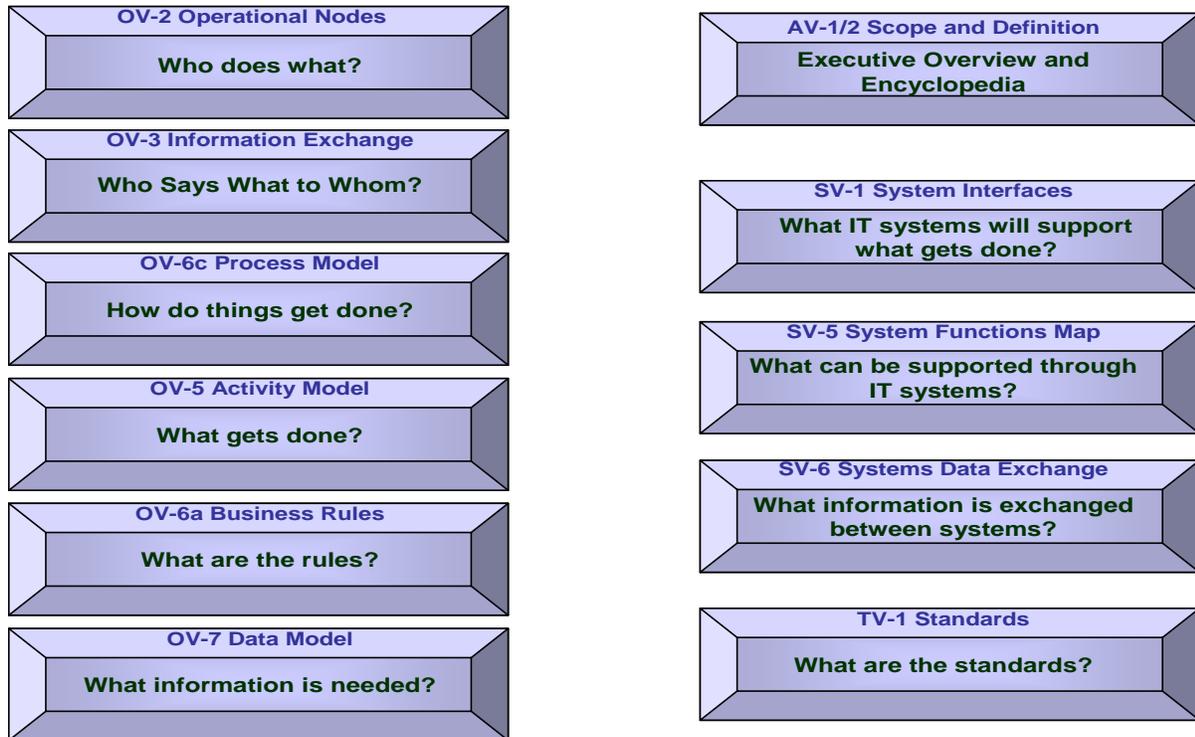


Figure 1: BEA Spiral Development

This set of BEA products provide transformation planners and implementers with answers to the questions presented in **Figure 2: Uses of BEA Products to Answer Questions**.



Figure 2: Uses of BEA Products to Answer Questions



3.2. Integrated Development Team

BEA development is accomplished through a collaborative effort between two primary groups: content providers and architecture builders. BEA content is provided by BEP representatives both within and outside of the BTA TP&R team. For those BEP representatives that are organizationally outside of the BTA, TP&R serves as the coordinator for ensuring appropriate scope and participation is provided for each BEA release. The BTA TP&P team is responsible for translating the content provided by BEP representatives into DoDAF products that conform to the BEA product guidelines while managing the release schedule and ensuring architecture integration with the ETP.

Collaboration among these two groups occurs at various levels and through multiple forums.

- **BEP Leadership** A BEP Lead is identified for each of the Business Enterprise Priorities to lead the content development effort and approve BEP content for each release. Supporting each BEP is a Coordinator role from both the government and contractor support teams. A BEP “Lead of Leads” is designated to coordinate issue resolution across the BEP efforts and to work closely with the BTA Chief Architect to manage the BEA release scope and schedule.
- **BEP Teams** Integrated product development teams comprised of content providers and architecture builders are established for each BEP or planned capability improvement. Team members include appropriate BEP representatives, BTA support (e.g., TP&P ETP members), contractor support, and other support staff, to include representatives from the Independent Verification and Validation (IV&V) team.

The specific roles and responsibilities for developing the BEA are described in **Figure 3: BEA Development Roles and Responsibilities**.



Figure 3: BEA Development Roles and Responsibilities

Role	Responsibility
Architect Lead	Determine resource allocation across Architecture development team. Coordinate technical analysis and approve Parent and Child Change Requests (CRs). Provide technical oversight and provide recommendations on impact to architecture based on approved plan for each deliverable
Architecture Verification Reviewer	Performing and documenting the results of independent reviews of the architecture products and provide feedback in a timely period
BEP Lead	Identifying and authorizing work on new planned capability improvements to be included in the BEA
BEP Subject Matter Expert	Providing business expertise for development and functional verification of the BEA
BTA Chief Architect	Establishing the proposed architecture content and acting as the final arbiter for release content issues, delegating responsibilities for coordinating technical analysis and resource allocation across the Product Team Leads, and approving Parent and Child Change Requests (CRs)
BTA Coordinator	Managing the Change Requests, defining architecture content changes, and participating in HyperText Markup Language (HTML) and Integration reviews
BTA Management	Establishing release content and managing the contract
BTA Support Staff	Supporting decision-making forums via meeting planning, facilitation, and documentation of meeting minutes; collecting and managing information on the physical and electronic BEA Information Hub team work space
Build Team	Providing architecture tool support, developing HTML, and generating and delivering the BEA CD
Configuration Management (CM) Team	Supporting the configuration management tools
Data Repository (DR) Team	Supporting the network, servers, license management and installation of software to support BEA development
Independent Verification & Validation (IV&V) Reviewer	Monitoring and measuring compliance to standards and assessing both architecture integration and usability
Modeler	Developing and updating the BEA products per the Child CR with content guidance from BEP Subject Matter experts, using the development methodology and conforming to the established guidelines
Note Taker	Document SME content representation and architecture decisions made during and outside the workshops
Product Team Lead	Leading the definition and review of architecture content
Quality Assurance	Documenting and developing -processes related to E2E- Architecture and workshop procedures. Monitoring and measuring process compliance and architecture quality
Technical Scribe	Documenting decisions made during the product development workshop in the Technical Scribe Notes document
Test Coordinator	Planning and coordinating Integration Review, HTML Review and BEP Acceptance Review
Transition Planning Lead	Leading the development of the Enterprise Transition Plan, including integrating with the BEA
Workshop Facilitator	Prepare the workshop agenda with the BEP Lead, Capability SME, Capability Coordinator and manage the execution of the workshop



3.3. BEA Release Cycle

Previously the BEA has been released on a semi-annual basis. Going forward all future releases are planned to occur annually, beginning with the BEA 5.0 release in March 2008. The decision to move to an annual release, concurrent with the March 15 release of the BTA Congressional Report, allows services and programs one year to address and align to the most current release of the architecture and BTA's integrated Congressional Report, while also corresponding with the Investment Review Board's (IRB) Fiscal Year appropriation decision schedule.

Planning for each release begins with the identification of specific gaps or business capability improvements to be addressed in a future release of the BEA. Potential content is determined from multiple sources that may include:

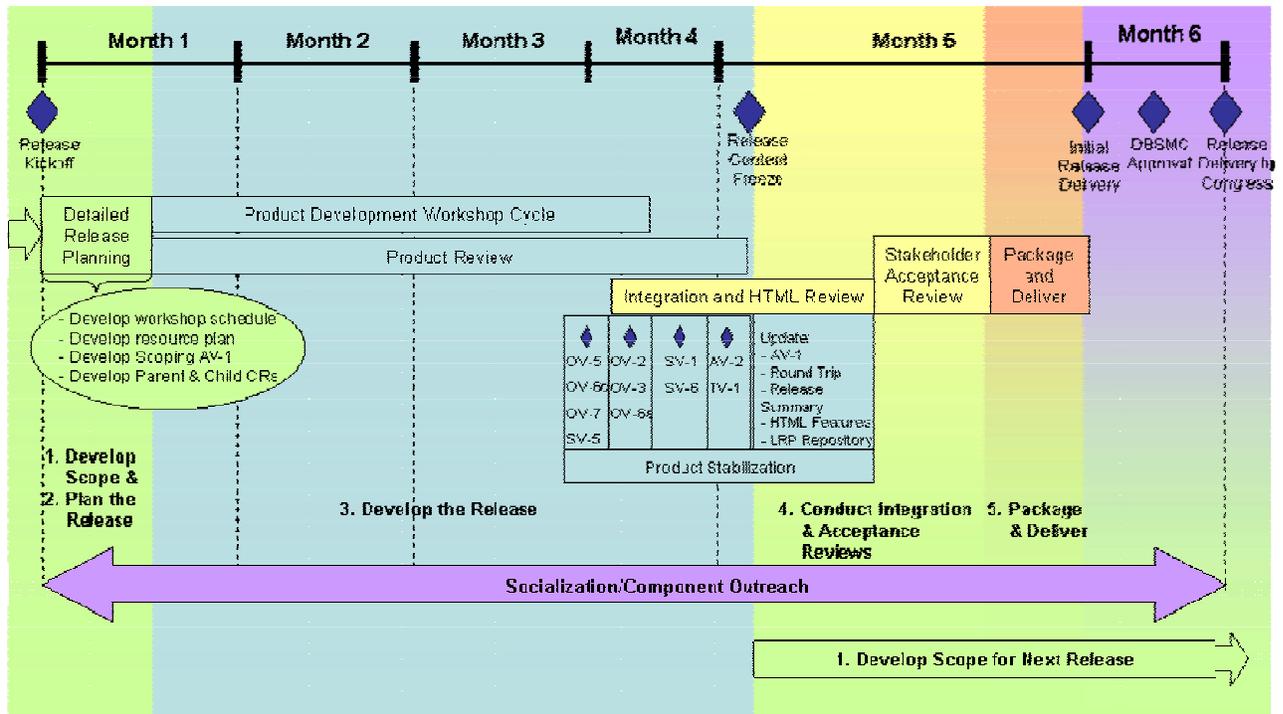
- Emerging or existing functionality from each BEP
- Planned capability improvements addressing BEP capability gaps
- Identification or modification of DoD Enterprise systems or initiatives
- Integration of existing architecture products from a technical or content perspective
- Deferred Change Requests (CRs) from previous releases
- Findings and Recommendations from the AV-1s
- Changes to Laws, Regulations, or Policies
- Revisions to BEA-related guidance information, such as the DoDAF or the BEA System Compliance Criteria
- Visualization enhancements to the BEA
- Development or revision of supplementary products

All of these sources are examined and prioritized by PSAs and BTA Leadership in order to determine the scope for the next release. To further enhance the stability of the architecture, Entry/Exit Criteria are required to ensure each proposed content improvement has value for business transformation and to ensure the recommended improvements are aligned with the Objectives, Goals and Mission of the BTA. This development process requires each proposed content improvement to be described in terms of its value to the transformation efforts of the DoD, the level of effort required to articulate a solution to the gap, and the measures that will be used to validate the integration and completeness of the work effort. The proposed content improvements for the next BEA release are provided in detailed Entry Criteria forms to better enable BEA scoping and planning decisions. At the end of the development cycle the work that was planned is reviewed against work accomplished to determine if the Exit Criteria have been met for each content improvement planned at the beginning of the release cycle.

The key milestones for previous releases and the approximate timeframes for key activities within the high-level release process are presented in **Figure 4: Sample BEA Release Timeline**. This timeline has been used as a template for detailed release planning as the scope for the BEA is determined. An updated timeline will be provided in future versions of this document to reflect the annual release cycle that will be implemented starting with the BEA 5.0 release.



Figure 4: Sample BEA Release Timeline



An overview of the high-level release process, listed below, is presented in section 5. BEA Development Process.

1. Develop Scope for the Release
2. Plan the Release
3. Develop the Release
4. Conduct Integration and Acceptance Reviews
5. Package and Deliver the Release

In order to optimize the time available for BEA content development, the identification of high-level scope and preliminary planning for a subsequent release begins during the integration and acceptance review phase. This corresponds with the effort to refine the AV-1 at the conclusion of product development to identify gaps in the architecture and incorporate findings and recommendations for future architecture content.

3.4. Laws, Regulations, and Policies

Compliance requirements include mandatory laws, regulations, and policies for DoD personnel, processes, and systems. Compliance requirements can be federal or DoD specific and are not discretionary. The BEA Laws, Regulations, and Policies (LRP) include requirements that are mandated by various offices within the OSD and apply to the entire enterprise. Policies that govern the business functional areas are covered in the BEA. During the development of the BEA Process Models, specific constraining requirements within these laws, regulations, and policies are identified and related to the objects within the BEA Process Model that they constrain. These are demonstrated in the architecture via three architecture products:

- OV-5 Controls traced to constraints
- OV-6a Business Rules traced to constraints
- OV-6c BPM Processes traced to constraints



4. BEA Development Management

Enabling the approach to BEA development is the application of several management practices and engineering disciplines that span the release cycle:

- Configuration Management
- Quality Assurance
- Independent Verification and Validation (IV&V)
- Risk Management and Communication
- Decision Memoranda
- Training

These enablers are critical to maintaining the quality of the architecture products and ensuring that the resulting BEA is a useful tool for transformation.

4.1. Configuration Management

BEA development follows a rigorous configuration management discipline to ensure that all changes to the architecture and supporting products are documented and integrated. The architecture configuration management process is based on the use of the following configuration mechanisms that are recorded and managed in a configuration management tool:

- Parent Change Requests (CRs) identify a planned capability improvement such as adding new capabilities or addressing identified architecture gaps. Parent CRs may also address technical cleanup issues, as well as suggested content refinement. Parent CRs are formally approved for release at the conclusion of BEP Acceptance Review.
- Child Change Requests are created for each architecture product that is impacted by the work effort scoped by the Parent CR. Both Parent and Child CRs require appropriate signatures, as described in the End to End (E2E) Architecture Development Process Business Rules Definitions, before updates can be made to the baseline architecture products.
- Child Tickets track content and technical defects found during Integration Review and BEP Acceptance Review.
- HTML Tickets are used to track defects found in the HTML code during HTML Review and BEP Acceptance Review.
- Suggestion Tickets are used to document suggestions and problems outside the scope of the release or outside the formal review period.

The Configuration Management (CM) tool serves as the authoritative source repository for CRs and tickets and eliminates the need for tracking multiple spreadsheets.

4.2. Quality Assurance

Quality Assurance reviews are performed throughout the BEA release work effort to ensure that quality is built into the architecture products as they evolve. The BEA Quality Assurance Team performs program-wide quality management activities that include the following:

- Developing and implementing processes and procedures
- Providing training to prevent non-conformances and foster quality products
- Evaluating BEA processes and procedures against industry standard methods to identify areas for improvement
- Monitoring and measuring process compliance and architecture quality, capturing lessons learned, and providing feedback to management



4.3. Independent Verification and Validation (IV&V)

As a participating member in workshops, BEP Lead meetings, and other BEA development forums, IV&V is embedded in the BEA development process to verify architecture integration and fitness for use. Through the review of intermediate work products and provision of real-time feedback during workshops as well as off-line suggestions about approach, priority, and content, the value of IV&V is realized throughout the process rather than as a stand-alone event at the end. Additionally, IV&V prepares suggestion tickets to formally document their feedback; suggestion tickets are recorded in the configuration management tool previously mentioned.

4.4. Risk Management and Communication

Risk management planning and effective communications are essential to keeping BEA development on schedule, under budget, and ensuring the BEA is a quality product. Several management techniques are used during the development process. Standard recurring meetings have been instituted that are used to communicate current status, issues, risks, and priorities involving scope, schedule, and resources, as well as to communicate recommended or approved changes to a process or procedure. Standard meetings include, but are not limited to:

- **Stand-Up Meetings:** Stand-Up Meetings are scheduled daily or as needed as the first order of the day during BEA release development. The focus of these meetings is to track day-to-day operational progress and address any resulting issues. Participants include designated BEP representatives, BTA Coordinators, Product Team Leads, BTA Chief Architect, Architecture Lead, BTA Support Staff, and representatives from other impacted BTA directorates.
- **BEP Lead Meetings:** BEP Lead Meetings are scheduled at least weekly during the BEA development cycle. The purpose of these meetings is to share current release status and to raise and resolve any schedule, resource, or content-related issues. Participants include BEP Leads and their designated representatives, BTA Coordinators, BTA Chief Architect, Architecture Lead, BTA Support Staff, and representatives from other impacted BTA directorates.
- **Product Development Workshops:** Product Development Workshops are scheduled as needed to develop content based on the scope for each release and result in real-time integration of products across the enterprise. The workshop teams are structured specific to the needs of each BEP, and include cross-functional, cross-BEP participation, BTA Product Modelers, Technical Scribes, Workshop Facilitator, and BTA Support Staff as required.
- **Integration Meetings:** Integration Meetings are scheduled as workshop products are completed to facilitate the review and approval of products developed for Child CRs, focusing on those with cross BEP/CBM impact. There is the assumption that consensus on integration items presented has been gained during previous Workshops. Only the parts of diagrams and definitions that have a cross BEP/CBM impact are to be reviewed. Representatives at the meeting include BEP Leads, Transition Planning Lead, BTA Chief Architect, Architecture Lead, and other key BTA development and support staff.
- **ETP Integration Review Sessions:** ETP Integration Review Sessions are conducted for each BEP during the integration phase to ensure that the complimentary and supporting information in the ETP is synchronized with the architecture. Participants include BEP representatives, ETP representatives, BTA Chief Architect, Architecture Lead, and BTA Support Staff.

In addition to scheduled team meetings, information collection that supports risk management analysis such as release schedule status, weekly meeting calendars, action item status, meeting minutes, and presentation materials is maintained at a physical information kiosk and posted to an electronic team work space.

4.5. Decision Memoranda

In the course of developing a BEA release, product content and development issues may arise due to gaps in or differing interpretations of documented BEA guidance, as well as options to be chosen when applying the DoDAF. When this occurs, Decision Memoranda are developed to codify decisions made to ensure that BEA development efforts stay focused and aligned. Prior to approval, Decision Memoranda are reviewed and vetted with the BEP representatives. At the conclusion of each development cycle, any existing Decision Memoranda are



incorporated in the appropriate guidance documentation. Consequently, Decision Memoranda have a life cycle of no more than six months.

4.6. Training

Role-based training is provided as needed in a “just-in-time” fashion to all participants in BEA development on the processes and procedures throughout the BEA development lifecycle. In addition, several BTA-related documents are available that provide process and procedure guidance. The table in

presents the BTA-related documents with relevance to specific BEA development roles.

Figure 5: Roles and Related Documents Matrix

BEA Development Roles & BTA - Related Documents	Business Transformation Guide	BEA Development Methodology	Enterprise Transition Plan	BEA Federated Strategy	Architecture Product Guides	Decision Memoranda	BEA Product Checklists	Configuration Management Plan	Version Manager Users' Guide	Architecture Verification Orientation Briefing	E2E Process Model and associated Procedures
Architecture Lead	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Architecture Verification Reviewer		✓			✓	✓	✓	✓	✓	✓	✓
BEP Lead	✓	✓	✓		✓	✓					✓
BEP Subject Matter Expert	✓	✓	✓		✓	✓					✓
BTA Chief Architect	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BTA Coordinator	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BTA Management	✓	✓	✓	✓							✓
BTA Support Staff	✓	✓	✓	✓		✓					✓
Build Team		✓			✓		✓	✓	✓		✓
Configuration Management (CM) Team		✓				✓		✓	✓		✓
Data Repository (DR) Team		✓				✓		✓	✓		✓
Modeler	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Note Taker		✓			✓		✓		✓		✓
Independent Verification &	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓



BEA Development Roles & BTA - Related Documents	Business Transformation Guide	BEA Development Methodology	Enterprise Transition Plan	BEA Federated Strategy	Architecture Product Guides	Decision Memoranda	BEA Product Checklists	Configuration Management Plan	Version Manager Users' Guide	Architecture Verification Orientation Briefing	E2E Process Model and associated Procedures
Validation (IV&V) Reviewer											
Product Team Lead	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Quality Assurance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Technical Scribe		✓			✓	✓	✓		✓	✓	✓
Test Coordinator		✓			✓	✓	✓	✓	✓	✓	✓
Transition Planning Lead	✓	✓	✓	✓		✓			✓		✓
Workshop Facilitator		✓				✓					✓

5. BEA Development Process

The high-level process performed within each BEA release cycle consists of the following activities:

1. Develop Scope for the Release
2. Plan the Release
3. Develop the Release
4. Conduct Integration and Acceptance Reviews
5. Package and Deliver the Release

This section presents an overview of the BEA development process. Detailed information for performing each activity and associated business rules and procedures are available on the End to End Architecture Development Process. For the approximate time frames for performing the high-level processes reference Figure 4: Sample BEA Release Timeline.

5.1. Develop Scope for the Release

Each release begins with the receipt of prioritized gaps or business capability improvements for the BEA and a high-level timeline for release activities. The major tasks performed during scope development follow.

5.1.1. Kick-Off Release

Upon receipt of prioritized gaps or business capability improvements, a Kick-Off Meeting is conducted to review the following with all roles participating in the release:

- Release Scope
- What Worked
- What's New



- Interim Activities
- Release Schedule
- Release Team
- Next Steps

5.1.2. Develop AV-1

Following the Kick-Off Meeting, a BEP Overview and Summary Information (AV-1) document is developed to describe the scope of planned changes with respect to each BEP. The structure and content of the BEP AV-1 is based on the DoD Architecture Framework (DoDAF) guidelines and includes the BEP purpose and viewpoint, BEP context, and information about the scope of work to be performed for the release. The Entry Criteria forms are completed to identify the proposed capability improvements to be added or refined during the release. Each planned capability improvement represents a collection of capabilities that support or achieve a desired outcome. While the collection of capabilities may impact multiple BEPs, one BEP team is designated as the lead for developing that portion of the AV-1 and ensuring that the content is incorporated in the BEA. The BEA AV-1 is developed from the BEP AV-1 documents to provide a total overview of the BEA release. Near the conclusion of product development, the AV-1 is updated to incorporate BEP findings and recommendations.

5.1.3. Create and Approve Parent Change Requests

As BEP planned capability improvements are solidified, a Parent Change Request is created and approved to track and manage each planned capability improvement planned for the release. Parent CRs require the signature of the responsible BEP Lead or the BEA Chief Architect for approval. Changes that impact the ETP also require the signature of the ETP lead.

5.2. Plan the Release

The detailed plan for a release is developed after the scope identified in the Entry Criteria is approved. Based on the functional scope and architecture products impacted by each planned capability improvement (i.e., Parent CR), resource requirements for BEP functional experts and BTA modeling support are identified. Given the spiral development process employed for the BEA, an architecture product may need to be updated by multiple Parent CRs. Workshops must be carefully planned to provide a stable baseline for sequential changes and to optimize resource utilization. The major tasks performed during release planning follow.

5.2.1. Create Child Change Requests

A Child CR is created for each product that needs to be updated to implement the changes defined for each Parent CR.

5.2.2. Update Integrated Schedule

Through a process of balancing resources against scope requirements, a detailed schedule is developed for each Parent CR that identifies the start and stop dates for development and product review of each Child CR. If too much content has been proposed for the available time and resources, this process feeds back to scoping to adjust the release content. Alternatively, time and resources are adjusted to accommodate the prioritized scope.

5.2.3. Approve Child Change Requests

Approval of Child CRs indicates agreement on the schedule and resources to develop the BEA release. Child CRs require the signature of the responsible BEP Lead or the BEA Chief Architect for approval, as well as other key roles as outlined in the E2E Architecture Development Process. This step represents “authority” to do the work.

5.3. Develop the Release

Architecture development begins once the Child CRs have been approved and is conducted by BEP Teams working in parallel to develop BEP-specific DoDAF products. As cross-BEP touch points and/or shared objects are addressed, BEP teams work collaboratively to ensure consensus and real-time integration. The major tasks performed during release development follow.



5.3.1. Conduct Pre-Workshop Activities

Pre-Workshop activities are an opportunity for BEP Leads, if desired, to assemble teams, brief team members on BEA/BTA processes and procedures, and provide other guidance as necessary. Pre-Workshop activities may be conducted to develop draft architecture products for review and refinement during product development workshops. To accomplish this, BEP Leads may reach out to the subject matter expert community for their input. Where applicable, the results of CBM-led Business Process Reengineering (BPR) efforts are brought forward for incorporation in the BEA. Pre-Workshops may be used to familiarize other BEP Teams with the content to identify impacts.

5.3.2. Conduct Workshop Activities

Once the BEP Leads have conducted pre-workshop activities, workshop activities begin. Architecture products are reviewed and refined during workshops based on the spiral development process outlined in Figure 1: BEA Spiral Development. During the product development workshops, diagrams are marked up and scribe notes are collected during each workshop to record discussions and decisions. After each workshop, modelers analyze decisions, identify impacts to other architecture products, apply changes to the architecture repository, and prepare questions for the next day's session. The workshop concludes when the participants agree the updated diagrams and definitions match the decisions documented in the scribe notes and the product meets the objectives defined in the Child CRs.

5.3.3. Develop Supporting Products

In addition to the work products specifically listed in the DoDAF, supporting products that provide management perspective and architectural context are also developed. Supporting products include the BEA Release Summary, the LRP Repository, and the HTML.

- **BEA Release Summary**

At the conclusion of each release, a summary document is developed that explains the changes between the current and previous release as well as any new supporting products or visualization features being delivered. Architecture configuration management statistics are also provided that, over time, will provide a guide as to the size and impact of change from one release to another.

- **LRP Repository**

With each BEA release, a series of Laws, Regulations, and Policies Baseline reports are delivered as well as a repository database of all of the source documents as a tool for the functional community to use. These supplemental reports cover those laws, regulations, and policies that are mapped into the BEA, which remains the authoritative source for laws, regulations, and policies. The LRP Repository is delivered with the BEA to provide users with the current set of compliance constraints and their linkages to the BEA. The scope of each baseline includes all authoritative constraint information delivered in that version of the BEA, as well as any additional authoritative source updates approved by the Core Business Mission areas.

- **HTML**

HTML is developed to format and present the integrated BEA in a more user friendly version than the core architecture development tool. HTML requirements (identified during scoping) provide guidance for new web content or navigation capabilities (for example, linking System definitions to the ETP). Draft HTML is used during Product Review. Critical to HTML development is creating the linkage with the ETP.

5.3.4. Conduct Product Review

After an architecture product is completed in a workshop, a Product Review is conducted. Participants include the Product Leads and representatives from Architecture Verification and IV&V. Product checklists and architecture reporting tools are used to review the completed product for architectural integrity and conformance to modeling guidelines.

5.3.5. BEP Approval



After an architecture product has completed the Product Review, it is presented to the BEP leads for approval during an integration meeting. In preparation for the integration meeting, review packages focusing on the parts of diagrams and definitions that have cross BEP/CBM impact are made available to the BEP Leads prior to the scheduled integration meeting. Subsequent BEP approval during the integration meeting results in associated Child CRs being moved to “Awaiting Integration” state.

5.4. Conduct Integration and Acceptance Reviews

As products are completed and approved by the BEP Leads (i.e., Child CRs at “Awaiting Integration” state), selected product sets enter integration and acceptance review. This is accomplished in two phases: 1) Integration and HTML Review and 2) BEP Acceptance Review. At the conclusion of the BEP Acceptance Review, the BEP Leads vote to accept or reject the planned release. The major tasks performed for integration and acceptance reviews follow.

5.4.1. Integration and HTML Review

The BEA is delivered in two formats; Telelogic System Architect and HTML. During integration and HTML review, both formats are examined to ensure the quality and usability of the products to be included in the release as follows.

- **Integration Review**

The BEA is a fully integrated architecture. Integration Review includes a technical review and a functional review of the updated BEA and supporting products. The technical review verifies proper linkages between architecture products. The functional review verifies that diagrams and definitions accurately reflect intended outcomes based on the scope of the release. Functional reviews are performed using a BEP scenario, or “thread”. Each BEP scenario is defined by the ability to answer one or more of the “Golden Questions” or its derivative question. Functional reviews are accomplished by walking a scenario through the OV-6c process model and associated products to prove that a BEP can use the BEA to answer its Golden or derivative questions. During Integration Review, linkages to the ETP are also verified via ETP integration sessions. Child Tickets are opened to document any defects or deficiencies against each architecture product. Once a problem is resolved, the Child ticket submitter must verify the resolution. Integration Review is complete when all Child CRs for the release have been reviewed and all Child Tickets have been closed or deferred.

- **HTML Review**

The purpose of HTML Review is to test the usability of the HTML and to verify that it meets requirements defined in the HTML specification. HTML Tickets are opened to document any defects or deficiencies identified. Once a problem is resolved, the HTML ticket submitter must verify the resolution. HTML Review is complete when all HTML functions have been reviewed and all HTML tickets have been closed or deferred.

5.4.2. BEP Acceptance Review

At the completion of Integration and HTML Reviews, the planned release is presented to the BEP Leads or designees for an acceptance review period, during which the final HTML version of the BEA is reviewed for accuracy. This activity culminates in an Acceptance Review session during which BEP Leads, BTA Architects, and applicable Product Leads vote to accept the architecture products that combine to form the BEA release. The votes are recorded in **Figure 6: Voting Matrix** that serves as the formal approval for each Parent CR.

Figure 6: Voting Matrix



Required Signature	Lead Name	CR Name and #	CR Name and #	CR Name and #
EF	[REDACTED]			
CE	[REDACTED]			
FF	[REDACTED]			
MF	[REDACTED]			
PF	[REDACTED]			
BEA	[REDACTED]			
BEA Architecture Lead	[REDACTED]			
BEA Product Lead	See Resource Workbook [REDACTED]			
Transition Planning Lead	[REDACTED]			
TRANSITION Architecture Lead	[REDACTED]			

During this period, the BEA is also socialized with appropriate stakeholders, such as PSAs, CBM Leadership, and Component representatives.

5.5. Package and Deliver the Release

At this point in the release cycle, the BEA has been accepted by the BEPs and is pending DBSMC acceptance. The BEA HTML is then integrated with other deliverables, to include the ETP, and tested. At the successful conclusion of testing, the BEA is packaged and delivered on a Compact Disc (CD) and delivered to the DBSMC for ultimate acceptance. Upon DBSMC acceptance, the new release is posted to the BTA web site.

6. Using Technology to Support the Release

Several key technologies are critical for the development of the BEA. These include a document control tool, an issue tracking tool, the BTA Portal, an Architecture Development Tool Set, a requirements capture tool, and the architecture artifacts reporting tools.

6.1. Document Control Tool

A document control tool is required for version control of the BEA artifacts and BEA-related products. It is the repository where the history of changes made to each artifact is recorded. Each delivered artifact is checked into the tool and assigned a version label with the BEA release number. Daily updates are retained on a weekly basis. The Data Repository (DR) Team provides IT support and the Configuration Management (CM) Team provides daily operational support.

6.2. Issue Tracking Tool

An issue tracking tool is required to document and manage the status of defects, changes, and issues identified during the BEA development process. This tool allows a user to document issues or requested changes to architecture products, to establish priorities, to assign ownership, to track issues from submission to resolution, and to maintain history. The tool also allows monitoring of states on all items as they progress through the various stages of the process. The issue tracking tool provides a single point of control for communication among team members on the status of recorded issues. It also provides additional functions that permit generation of queries and reports. The DR Team provides IT support and the CM Team provides daily operational support.

6.3. BTA Portal



Located on the BTA Portal are the BTA Team Workspaces. The purpose of a team workspace is to facilitate collaboration and communication between team members. Access privileges and content resident within team workspaces are managed by designated content managers and team leaders.

Some specific uses for the team workspaces are:

- Sharing, collaborating on, and retaining versions of documents
- Delegating and sharing tasks
- Sharing and targeting information to a smaller, more focused group
- Managing meetings
- Accessing Integration Packages
- Creating convenience URL links to internal and external references such as the BTA Web or other Workspaces

The following are examples of active team workspaces that were created to support the BEA:

- The BEA Information Hub is a one-stop shop for the management of and access to information regarding the current BEA development effort.
- The BEA HTML is a centralized workspace to support the development of the HTML that will be delivered as the BEA.
- The E2E Process workspace provides access to information about the process, procedures, and forms used to develop the BEA.
- The AV-1 Documents for Review workspace provides for housing and managing versions of BEP and BEA AV-1 Products. Workspace Pages are used to organize AV-1 documents beginning with BEA 3.0.

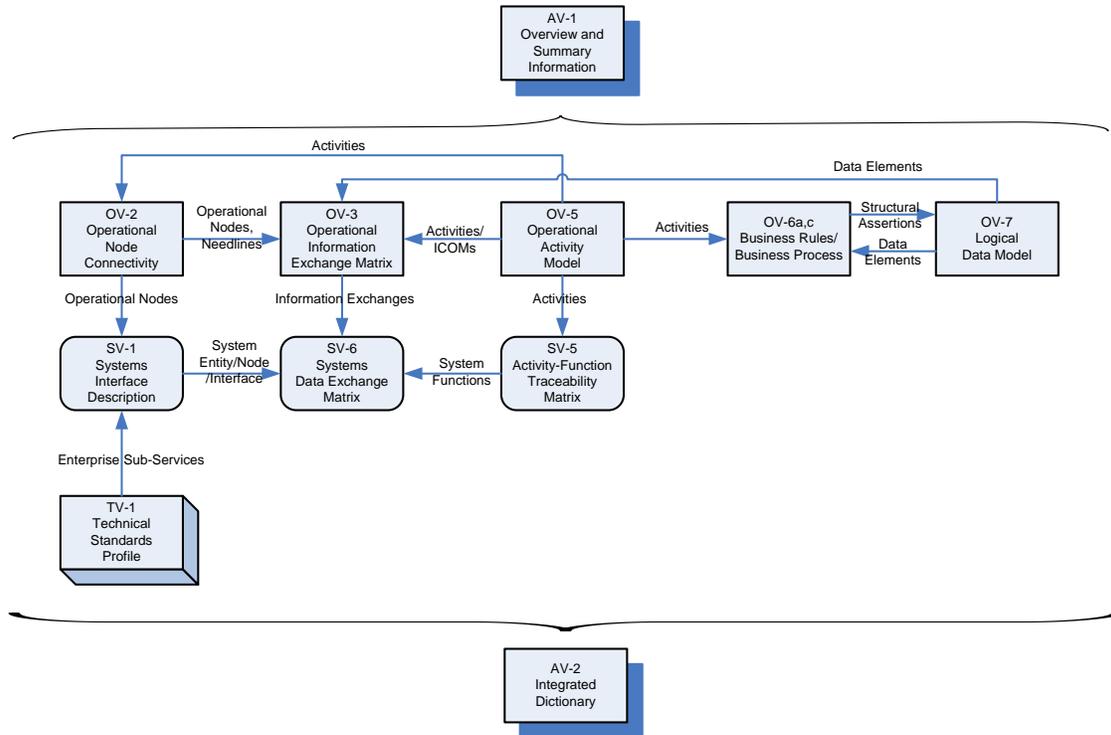
6.4. Architecture Development Toolset

An architecture development toolset is used to produce DoD Architecture Framework (DoDAF) products. The definitions, techniques, and standards to produce the DoDAF products are contained in the Architecture Product Guidelines (APG) document. The APG is a complement to this document.

Figure 7: BEA DoDAF Products depicts the BEA DoDAF products with linkages and the main data exchanges or flows. The shapes of the products designate the type of product, i.e., All View, Operational View, System View or Technical Standards View.



Figure 7: BEA DoDAF Products



6.5. Requirements Capture Tool

The requirements capture tool and the architecture development toolset interface allows information to be transferred between these tools. Once in the requirements capture tool, information can be linked to compliance constraints utilizing the integrated tool functionality. Elements of Laws, Regulations, and Policies (constraints) are associated with appropriate architectural elements (such as Business Process Modeling (BPM) Processes) in the BEA. Once associations are made, gap reports are produced showing existing processes without constraints. This interface is refreshed after each new encyclopedia is updated.

Utilizing the results of this interface and additional data, controls can be associated with architecture objects. Reports can then be generated which include architecture object/control associations for the BEA and by BEP and any gap among architecture objects and controls.

6.6. Architecture Artifacts Reporting Tools

Several architecture artifacts reporting tools are provided to assist modelers in developing the BEA.

The electronic BEA Analysis and Reporting Tool (BART) is a set of reports available from a custom-built web application that are designed to check a target encyclopedia for compliance to modeling guidelines.

The Encyclopedia Compare Report is a set of reports available from a custom-built web site that compares definitions and diagram characteristics between two target encyclopedias to confirm that updates to the BEA were made correctly.

The BEA Thread Tool provides detailed mappings of selected related BEA artifacts. The Thread Tool allows users to create ad hoc reports that follow the relationships between BEA objects to quickly and accurately identify possible gaps and to analyze the impact of changes throughout the architecture.

These reporting tools are organized by architecture product and object. Reports can be run by modelers, primarily during development, product review, and integration review to analyze integration issues and address the impact of proposed changes.



7. Summary

This BEA Development Methodology (BDM) is a living document that outlines the methodology and repeatable process used to refine the BEA. At the conclusion of each BEA release, the BDM and related documents are reviewed and updated to incorporate any lessons learned and Decision Memorandums developed during the release. The intent is not to continuously reinvent the process and approach to developing the BEA, but to refine the methodology as appropriate to adjust to real-time learning that supports the BTA's desire to be a transformation leader.



Appendix A: Acronym List

Acronym	Description
APG	Architecture Product Guide
BART	BEA Analysis and Reporting Tool
BEA	Business Enterprise Architecture
BEP	Business Enterprise Priority
BMA	Business Mission Area
BMMP	Business Management Modernization Program
BPM	Business Process Modeling
BPR	Business Process Reengineering
BTA	Business Transformation Agency
BTG	Business Transformation Guidance
CBM	Core Business Mission
CM	Configuration Management
CR	Change Request
DBSAE	Defense Business Systems Acquisition Executive
DBSMC	Defense Business Systems Management Committee
DM	Decision Memorandum
DoD	Department of Defense
DoDAF	DoD Architecture Framework
DOTMLPF	Doctrine/Policy, Organization, Training, Materiel, Leadership, Personnel, Facilities
DR	Data Repository
E2E	End to End Architecture Development Process
ETP	Enterprise Transition Plan
HTML	HyperText Markup Language
IRB	Investment Review Board
IV&V	Independent Verification and Validation
LRP	Laws, Regulations, and Policies
OSD	Office of the Secretary of Defense
PSA	Principal Staff Assistant
TP&P	BTA Transformation Planning and Performance Directorate
TP&R	BTA Transformation Priorities and Requirements Directorate



Appendix B: Reference Documents

No.	Referenced Document	Date
1	BEA Architecture Product Guide (APG)	2 March 2007
2	BEA Configuration Management Plan https://cmtoolsbmmp.dfas.mil/BMMP/Release_Management/Configuration_Management/Plans Note: Requires access to Version Manager	30 November 2006
3	BEA Federated Architecture Strategy & Technical Roundup	In Progress
4	Business Transformation Guidance (BTG), Version 1.0 https://spsbmmp.dfas.mil/sites/EA/af/BEP%20Publications%20for%20Use/1/BTG%20(Document%20and%20Comment%20Matrix)/Business%20Transformation%20Guidance.pdf	21 June 2006
5	DoD Architecture Framework (DoDAF) Version 1.0	9 February 2004
6	End-to-End (E2E) Architecture Development Process Share Point site: https://spsbmmp.dfas.mil/bea_eval/E2E_Proc_Master/iwp/default.htm	November 2006
7	Enterprise Transition Plan http://www.dod.mil/dbt/products/March_2007_BEA_ETP/index.html	15 March 2007
8	Version Manager Users' Guide https://cmtoolsbmmp.dfas.mil/BMMP/Release_Management/Configuration_Management/Procedure/PVCS_VM Note: Requires access to Version Manager	19 July 2006

