



# ***Definition Phase Procedures***

***Version 1.1***

***May 2011***



## Version History

Version Number	Implemented By	Revision Date	Approved By	Approval Date	Description of Change
1.0	Chris Niedermayer	December 20, 2010			Final Version 1.0
1.1	Chris Niedermayer	May 26, 2011			Updates to styles and quality assurance review



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# 1. Definition Phase

The Department of Housing and Urban Development’s (HUD) Project Planning and Management (PPM) Life Cycle is the rigorous application of sound investment project management principles and best practices for organizing and managing information technology (IT) projects. As a component of HUD’s overarching Information Technology Management (ITM) Framework, it provides the context for the HUD IT governance process and describes the interdependencies between project management, investment management, and capital planning components.

The PPM Life Cycle covers all aspects of a project from the initial development of an idea through to its decommissioning. Because there is wide variance in the methods, techniques, and tools needed to support an IT solution, the PPM Life Cycle is flexible and can be tailored to address the needs and requirements of each individual project regardless of its size. It aims to capture the minimum level of detail necessary to ensure project success. Each project, working in conjunction with the Office of the Chief Information Officer (OCIO), captures decisions around PPM Life Cycle tailoring in the *Project Process Agreement (PPA)*, which documents the reasons for using, combining, or skipping specific artifacts applicable to the project.

The PPM Life Cycle applies to all HUD IT projects, including but not limited to:

- New projects
- Major enhancements to existing projects
- Projects associated with operations and maintenance investments
- High-priority, fast-track IT projects
- New commercial-off-the-shelf (COTS) product acquisitions

There are seven major phases of the PPM Life Cycle; artifacts have been created for each phase. These artifacts are interrelated, either rolling up other artifacts, or building upon a concept to define a lower level of detail.

This document addresses the processes and related procedures for the Definition Phase, the second phase in the PPM Life Cycle.



PPM Life Cycle: Definition Phase

The purpose of this document is to:

- Provide a detailed description of the Definition Phase
- Identify the tasks and activities that take place during the Definition Phase
- Give guidance and templates on completing the tasks and activities required to exit the Definition Phase
- Detail the roles and responsibilities associated with completing each of the tasks and activities for the Definition Phase



## 1.1 Definition Phase Description

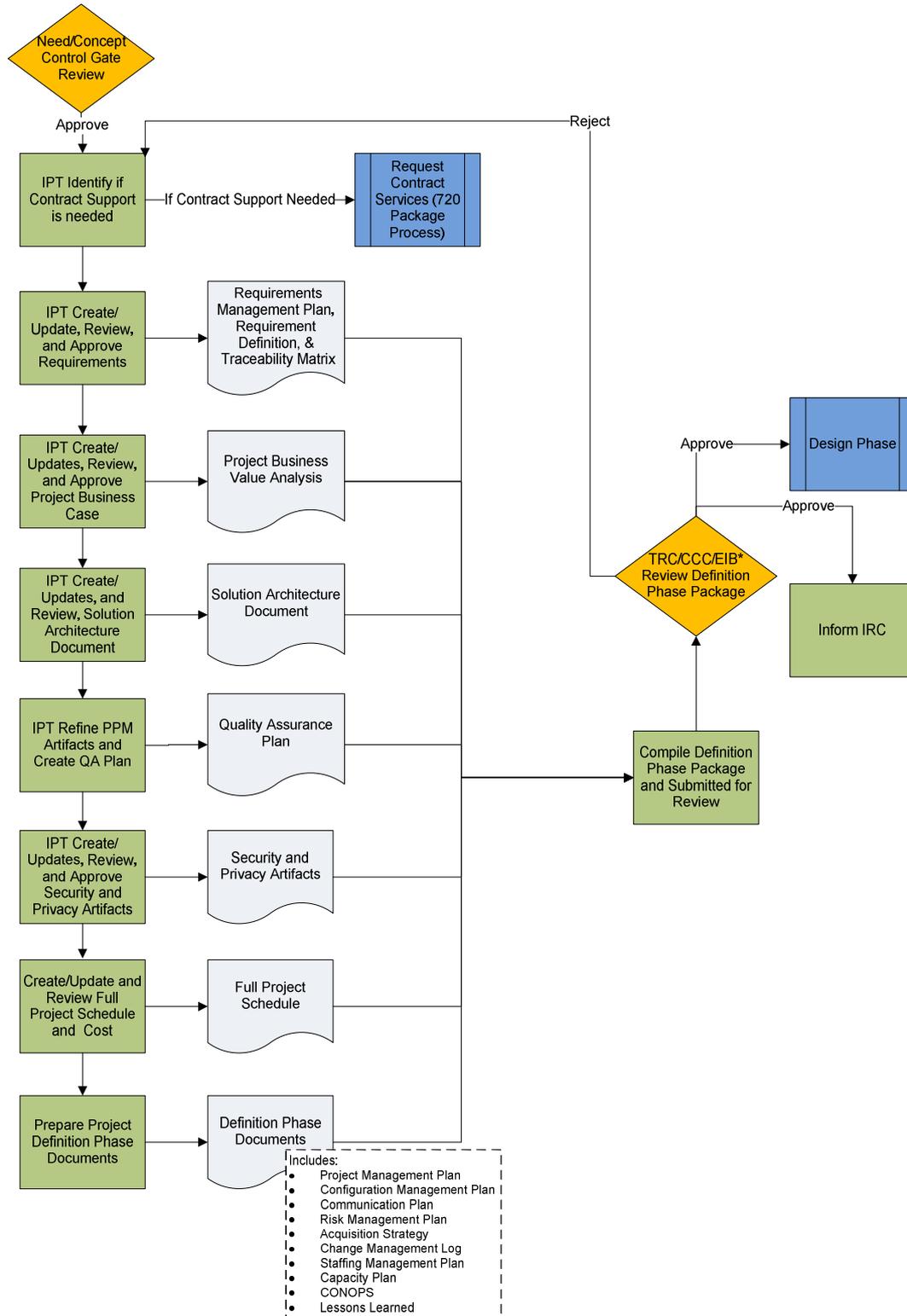
In the Definition Phase the integrated project team (IPT) decides whether to build a solution, configure a commercial or government off-the-shelf capability, or utilize a service provided by an external commercial or government entity to meet the identified business needs. Note that this decision is made at the end of the Definition Phase.

During the Definition Phase, the IPT documents detailed business and functional requirements, alternatives and benefit cost analyses, and a detailed project schedule for the project. A high-level *Solution Architecture* document is created and approved through applicable enterprise architecture (EA), capital management, IT systems security, and cost accounting procedures. The project baseline is established and approved at the Definition Phase control gate review. In addition, the specific route through the rest of the PPM is determined, including the development methodology and acquisition approach. By completing upfront planning and management tasks, each project maintains a direct line of sight to HUD's strategic goals and technical architecture. Before the Definition Phase can begin, the governance body (ies) must have approved the project out of the Need/Concept Phase.

Once the artifacts are created, the IPT compiles them into a Definition Phase package and submits it to the TRC for the final Definition Phase control gate review. Approved project proposals are deemed full-fledged projects and move into the next phase of the PPM Life Cycle: Design Phase.



### 1.1.1 High-Level Task Process Flow





### 1.1.2 Entry Criteria/Input

Before the Definition Phase can begin, the governance body (ies) must have reviewed the Need/Concept Phase package and given approval for the project to begin the Definition Phase. The Need/Concept Phase package varies depending on the size and complexity of the project, and may include:

- *Work Request*
- *Project Schedule* (at least through the Definition Phase)
- *Total Cost of Ownership Estimate* (at least through the Definition Phase)
- *Project Process Agreement* (at least through tier 2)
- *Integrated Project Team Charter*
- *Project Charter*
- Security and privacy artifacts

### 1.1.3 Control Gate Review Criteria

In order to pass through the Definition Phase control gate, the project team receives approval of the Definition Phase package from the governance body (ies). The Definition Phase package varies depending on the size and complexity of the project, and may include:

- Request for Contract Services (*HUD 720 Package*), if necessary
- *Requirements Management Plan*
- *Requirements Definition* document
- *Requirements Traceability Matrix*
- *Solution Architecture* document
- *Project Business Value Analysis*
- *Quality Assurance Plan*
- *Project Process Agreement* (Tiers 1, 2, and 3)
- Security and privacy artifacts
- Full *Project Schedule* (Work Breakdown Structure)
- *Project Management Plan*
- *Risk Management Plan*
- *Risk Management Log*
- *Acquisition Strategy*
- *Change Management Log*
- *Configuration Management Plan*
- *Communications Management Plan*
- *Staffing Management Plan*
- *Capacity Plan*
- *Concept of Operations*
- *Lessons Learned*
- Decision by TRC/CCC/EIB to proceed to Design Phase

### 1.1.4 Tasks

The following tasks take place in the Definition Phase:

- T2-1 Procure Resources and Assemble Team, Update *Integrated Project Team Charter*
- T2-2 Create/Update, Review, and Accept Requirements



- T2-3 Create, Review, and Approve *Project Business Value Analysis*
- T2-4 Create/Update, Review, and Approve *Solution Architecture*
- T2-5 Refine PPM Customization and Create *Quality Assurance Plan*
- T2-6 Create/Update, Review, and Approve Security and Privacy Artifacts
- T2-7 Update and Review *Project Schedule (WBS)* and *Total Cost of Ownership Estimate*
- T2-8 Prepare Additional Project Definition Phase Artifacts
- T2-9 Compile and Submit Definition Package for Go/No Go Decision



## 1.2 Definition Phase Task Descriptions

### T2-1 Procure Resources and Assemble Team, Update Integrated Project Team Charter

#### ***What Happens?***

The personnel needed to complete the tasks in the Definition Phase are assembled along with the necessary templates and guidelines that are used during this phase.

#### ***Who Does What?***

If contract resources are to be procured for the Definition Phase, the IPT develops a spend plan based on Office of the Chief Financial Officer (OCFO) requirements and guidelines. This spend plan documents the use of government and contract personnel, money for training, and other services and products that may be necessary to complete the Definition Phase. Upon the spend plan's approval, a Project Cost Accounting System (PCAS) number is assigned to the project, and the IT project manager (PM) and business PM then request that the chief information officer (CIO) assign a government technical representative (GTR) and/or government technical monitor (GTM) to the project.

The GTR or GTM, with the help of the IPT, prepares the Request for Contract Services, more commonly known within HUD as the *HUD 720 Package*, for work that is completed through the Definition Phase. The participants use the *Total Cost of Ownership Estimate*, the preliminary *Project Schedule (WBS)*, the signed *Project Process Agreement*, and the approved *Project Charter* to create the *HUD 720 Package*. If contract resources are used in the Definition Phase, the *HUD 720 Package* is completed prior to any further progress in the Definition Phase.

The *HUD 720 Package* (including the statements of work, *Total Cost of Ownership Estimate* and identified contractor team skills) is passed on to the GTR/GTM and the IPT. These individuals then negotiate and approve the contractor proposals following the steps in the Federal contracting guidelines and task order guidelines.

When a proposal is accepted, it is sent to the OCFO, GTR/GTM, and the contractors to be signed. Once signed, the OCFO and GTR/GTM use the instructions found in the Federal contracting guidelines to issue the task order(s).

The system development lead, lead solution architect, IT PM and requirements lead review the completed project artifacts and use the *Project Schedule (WBS) Template Instructions* to determine which groups/individuals are needed for the project. When the required team members are identified, the team members are assigned and notified of their responsibilities by the IT PM.

The IPT updates the *Integrated Project Team Charter* if any new members or sub-groups are identified or responsibilities are transferred.

#### ***What Comes in?***

- Approved Need/Concept Phase package

#### ***What Controls Need to be Used?***

Utilize the PPM Life Cycle controls listed below when creating the relevant artifacts:

- Request for Contract Support (*HUD 720 Package*) guidelines



- Federal contracting guidelines

**What is Produced?**

Work Products	Responsibilities		Must Create	Should Create	Should Update	Must Update	Must Complete
Request for Contract Services (HUD 720 Package)	Responsible	GTR/GTM		X <sup>1</sup>			
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					
IPT Charter	Responsible	Business PM, IT PM				X	
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					

**Detailed Tasks:**

The following defines the detailed sub-tasks that take place within this task:

- T2-1.1 Request a GTR/GTM for the project** - The project sponsor and IT PM requests that a GTR or GTM be appointed to the project to facilitate all contract service tasks.
- T2-1.2 Draft the HUD 720 Package** - The GTR/GTM works closely with the business and IT PMs to prepare the *HUD 720 Package*. Within the package, the GTR/GTM prepares and reviews the statement of work (SOW), *Total Cost of Ownership Estimates*, working capital fund worksheets, Section 508 compliance supplements, justification documents, contract reporting requirements, and technical evaluation factors. The GTR/GTM follows the *HUD 720 Package* guidelines while completing this task. As previously stated, if contract resources are used in the Definition Phase, the *HUD 720 Package* must be finalized and complete prior to progressing any further in the Definition Phase.
- T2-1.3 Follow necessary hierarchy of review for HUD 720 Package** – The GTR/GTM submits the *HUD 720 Package* for approval through the proper channels. Approvals are obtained from the GTR/GTM supervisor, business office, Office of the Chief Procurement Officer (OCPO), the chief financial officer, the assistant secretary from the applicable business area(s), and any other required stakeholders.
- T2-1.4 Assemble Integrated Project Team and update Integrated Project Team Charter** – The system development lead, solution architecture lead, IT PM, requirements lead, and the IPT assign team members to the project using the *Project Schedule* (WBS) as a guide. The *Integrate Project Team Charter* is updated to include all new or updated roles and responsibilities.

<sup>1</sup> If contract resources are to be utilized in the Definition Phase, the *HUD 720 Package* must be completed prior to progressing any further in the Definition Phase.



## T2-2 Create/Update, Review, and Accept Requirements

### ***What Happens?***

The project's requirements are created, reviewed, and accepted.

### ***Who Does What?***

The requirements lead, in conjunction with the business PM, IT PM, customer relationship coordinator (CRC), lead solution architect, IT security specialist, system development lead, and any additional IPT members, determines the project's functional and non-functional requirements. The participants use the information in the issued task orders, statement(s) of work, and the approved *Project Charter* to identify the requirements.

The IT PM assists the requirements lead who uses the functional/non-functional requirements to create/update the requirements artifacts (*Requirements Definition, Requirements Management Plan, and Requirements Traceability Matrix*) using the framework in the respective template instructions.

The requirements lead, along with the IPT, uses the guidelines and checklists set forth in the requirements template instructions and checklists to review and approve the artifacts.

If the *Requirements Definition* document and/or *Requirements Management Plan* need to be modified, they are sent back to the requirements lead for updates.

If artifacts are approved and accepted they move into the next task.

### ***What Comes in?***

- Approved HUD 720 Package
- Approved Need/Concept Phase package

### ***What Controls Need to be Used?***

Utilize the PPM Life Cycle controls listed below when creating the relevant artifacts:

- *Requirements Definition Template*
- *Requirements Management Plan Template, Requirements Management Plan Checklist, and Requirements Management Plan Template Instructions*
- *Requirements Traceability Matrix Template and Requirement Traceability Plan Template Instructions*



**What is Produced?**

Work Products	Responsibilities		Must Create	Should Create	Should Update	Must Update	Must Complete
<i>Requirements Management Plan</i>	Responsible	Requirements lead	X				
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					
<i>Requirements Definition</i>	Responsible	Requirements lead	X				
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					
<i>Requirements Traceability Matrix</i>	Responsible	Requirements lead	X				
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					

**Detailed Tasks:**

The following defines the detailed sub-tasks that take place within this task:

**T2-2.1 Identify functional and non-functional requirements** – The requirements lead, business PM, IT PM, CRC, lead solution architect, IT security specialist, system development lead, and any additional IPT members, define the project's functional and non-functional requirements using issued task order(s), statement(s) of work, and the approved *Project Charter*. The IT PM and requirements lead create the *Requirements Management Plan* using the *Requirements Management Plan template, checklist, and instructions*.

**T2-2.2 Create requirements artifacts** - The IT PM and requirements lead create the *Requirements Definition* and the *Requirements Traceability Matrix* from the functional and non-functional requirements identified in task T2-2.1. These artifacts comply with the *Requirements Definition* and *Requirements Traceability Matrix Template Instructions*.

**T2-2.3 Conduct peer review** – The requirements lead, project sponsor, and IPT review the *Requirements Definition, Requirements Management Plan, and Requirements Traceability Matrix* following the respective template checklists and template instructions. Approved requirements are moved to task T2-3. Rejected requirements are sent back to task T2-1 for updating by the requirements lead.



## T2-3 Create/Update, Review and Approve the Project Business Value Analysis

### ***What Happens?***

The Need/Concept Phase artifacts are updated, the current situation is defined, and the analysis of alternatives is completed.

### ***Who Does What?***

#### *Project Charter*

The IPT updates the *Project Charter* created in the Need/Concept Phase, if necessary, based on the requirements identified in task T2-2 and any additional changes or newly available information.

#### *Project Business Value Analysis*

The business PM, with the help of the rest of the IPT, defines the current business processes by developing data flows, customer interaction points, diagrams, and abstracts.

The IT PM, with the help of the rest of the IPT and enterprise architect (EA), defines the current technology landscape (diagrams describing the infrastructure, applications, data centers, etc.) supporting the business process.

The IT PM, business PM, and supporting members of the IPT perform a detailed analysis of alternatives that identifies the scope, approach, impacts, timeframes, benefits, and costs for each considered solution. The analysis of alternatives contains a comprehensive list of the evaluation criteria, detailed review of each potential solution, and an overall summary and trade-off analysis. A minimum of three alternatives (including the status-quo) are identified and analyzed during this task in addition to analyzing the status quo (current) state.

The IPT identifies and documents any assumptions or constraints made within the *Project Business Value Analysis*.

The IPT and project sponsor<sup>2</sup> use the procedures set forth in the *Project Business Value Analysis Template Instructions* to conduct a peer review and approve the *Project Business Value Analysis*.

If the artifacts are approved and accepted in the peer review they move into the next task.

### ***What Comes in?***

- Approved Need/Concept Phase artifacts
- Approved *HUD 720 Package*
- *Requirements Management Plan*
- *Requirements Definition*
- *Requirements Traceability Matrix*

### ***What Controls Need to be Used?***

Utilize the PPM Life Cycle controls listed below when creating the relevant artifacts:

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<sup>2</sup> The project sponsor must approve each artifact prior to submission to the governance bodies.



- Federal and Departmental IT policies and standards
- *Project Charter* Template, Checklist, and Instructions
- *Project Business Value Analysis* Template, Checklist, and Instructions

**What is Produced?**

Work Products	Responsibilities		Must Create	Should Create	Should Update	Must Update	Must Complete
<i>Project Charter</i>	Responsible	Business and IT PM	X				
	Accountable	IPT					
	Consulted	QA Team					
	Informed	TRC/CCC/EIB					
<i>Project Business Value Analysis</i>	Responsible	Business and IT PM				X	
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					

**Detailed Tasks:**

The following defines the detailed sub-tasks that take place within this task:

**T2-3.1 Update Project Charter** – The business and IT PM update the *Project Charter* created in the Need/Concept Phase with any new information obtained through gathering requirements and procuring resources.

**T2-3.2 Define the current situation** – The business and IT PM work in conjunction with the rest of the IPT to identify current business processes and systems. The current situation analysis includes data flows, customer interaction points, diagrams (describing infrastructure, applications, data centers, interfaces and other topics), and abstracts.

The business PM and IT PM document the current situation in Section 2 of the *Project Business Value Analysis*.

**T2-3.3 Identify and document the alternatives for the solution** – The IPT performs a detailed analysis of alternatives. The analysis of alternatives contains a comprehensive list of the evaluation criteria including a cost/benefit methodology, a detailed review of each solution, and an overall summary of the alternatives. The review identifies the market analysis, functional and architectural alternatives, delivery timeframes, impacts to existing processes, estimated lifecycle costs, and benefits, for each considered solution.

The analysis of alternatives identifies and recommends the desired alternative solution to meet the business need. A minimum of three alternatives are identified and analyzed during this task.

The business PM and IT PM document the analysis of alternatives in Section 3 of the *Project Business Value Analysis*.

**T2-3.4 Identify and document assumptions and constraints** – The IPT identifies and documents any assumptions or constraints in Section 4 of the *Project Business Value Analysis*.



**T2-3.5 Conduct peer review** – The IPT and project sponsor<sup>3</sup> review and approve the *Project Business Value Analysis* using the *Project Business Value Analysis* template, checklist, and instructions. Approved *Project Business Value Analyses* are moved to task T2-4. Rejected *Project Business Value Analyses* remain at task T2-3 for revisions.

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<sup>3</sup> The project sponsor must approve each artifact prior to submission to the governance bodies.



## T2-4 Create/Update, Review, and Approve the Solution Architecture

### ***What Happens?***

The *Solution Architecture* document is created, reviewed, and approved.

### ***Who Does What?***

The lead solution architect, system development lead, database administrator, and records manager define the logical data architecture and create the conceptual/logical data model and the records management models (paper and electronic). The business and IT PM use the information to update the *Requirements Management Plan*, *Requirements Definition* document, *Project Charter*, and *Project Business Value Analysis*. The products comply with the instructions in the HUD enterprise architecture standards and guidelines and the Federal record management guidelines.

The lead solution architect, system development lead, and Section 508 coordinator create the application layers, component/service models, and system models. The application layers and models are created using the information in the *Requirements Management Plan*, *Requirements Definition* document, *Project Charter*, and *Project Business Value Analysis*. The products comply with the instructions in the HUD enterprise architecture standards and guidelines and requirements from Section 508 of the Rehabilitation Act of 1973.

The network manager, lead solution architect, customer relationship coordinator, telecommunication manager, requirements lead, and system development lead create the production models (capacity and storage), network models, and middleware models (content manager, application server, portal server, etc.). The participants use the approved *Requirements Definition* document, *Requirements Traceability Matrix*, *Project Charter*, and *Project Business Value Analysis* to create the aforementioned models. The lead solution architect and EA representative ensure that the models comply with the HUD enterprise architecture standards and guidelines.

The lead solution architect, requirements lead, system development lead, network manager, and IT security specialist create the security models (software, network, system boundary, etc.). The participants use the information in the accepted *Requirements Management Plan*, *Project Charter*, and *Project Business Value Analysis*. The lead solution architect and EA representative ensure that the products comply with the HUD enterprise architecture standards and guidelines and the Federal IT security standards and guidelines.

The lead solution architect creates the draft *Solution Architecture* document, which outlines the architecture the project is to use. The architecture document complies with Section 508 requirements, Federal IT security standards and guidelines, Federal records management guidelines, HUD enterprise architecture standards and guidelines, and the *Solution Architecture Template Instructions*.

The system development lead, lead solution architect, the project sponsor, and other members of the IPT review the draft *Solution Architecture* document. These individuals follow the procedures in the aforementioned controls to determine if the proposed architecture meets the needs of the project and complies with HUD standards and policies.<sup>4</sup>

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<sup>4</sup> If the groups involved in the review determine that the drafted *Solution Architecture* Document needs to be changed because it does not meet the project's estimated architectural needs, the document is sent to the previous step to be updated.



If the *Solution Architecture* document is approved, the requirements lead, lead solution architect, IT PM and system development lead use it, along with the *Project Charter*, and the *Project Business Value Analysis* to update the *Requirements Traceability Matrix*.

**What Comes in?**

- Approved Need/Concept Phase artifacts
- Approved HUD 720 Package
- Requirements Management Plan
- Requirements Definition
- Requirements Traceability Matrix
- Project Business Value Analysis

**What Controls Need to be Used?**

Utilize the PPM Life Cycle controls listed below when creating the relevant artifacts:

- Federal records management guidelines
- Federal Section 508 guidelines
- Federal IT security standards and guidelines
- HUD enterprise architecture standards and guidelines
- *Solution Architecture Template, Checklist, and Template Instructions*
- *Requirements Management Plan Template, Checklist, and Template Instructions*
- *Requirements Definition Template*
- *Requirements Traceability Matrix Template*

**What is Produced?**

Work Products	Responsibilities		Must Create	Should Create	Should Update	Must Update	Must Complete
<i>Solution Architecture</i>	Responsible	Lead solution architect	X				
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					
<i>Requirements Traceability Matrix</i>	Responsible	Business and IT PM				X	
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					

**Detailed Tasks:**

The following defines the detailed sub-tasks that take place within this task:

**T2-4.1 Define logical data architecture** – The lead solution architect, system development lead, database administrator, and records manager define the logical data architecture and create the conceptual/logical data model and the records management models (paper and electronic). The



participants use the information provided in the review to update the *Requirements Management Plan*, *Project Charter*, and *Project Business Value Analysis*. The products comply with the instructions in the HUD enterprise architecture standards and guidelines and the Federal records management guidelines.

- T2-4.2 Create logical software architecture** – The lead solution architect, system development lead, requirements lead, and Section 508 coordinator create the application layers, component/service models, and system models. The application layers and models are created using the information in the *Requirements Management Plan*, *Project Charter*, and *Project Business Value Analysis*. The products comply with the instructions in the HUD enterprise architecture standards and guidelines and Federal Section 508 guidelines.
- T2-4.3 Create logical hardware/network/middleware architecture** – The lead solution architect, network manager, requirements lead, telecommunication manager and the system development lead create the solution’s hardware/network/middleware architecture, network models, and middleware models (content manager, application server, portal server, etc.) using the approved *Requirements Management Plan*, *Project Charter*, and *Project Business Value Analysis*. The lead solution architect ensures that the products comply with the HUD enterprise architecture standards and guidelines.
- T2-4.4 Create/Update Solution Architecture Document** – The lead solution architect creates the *Solution Architecture* document using the conceptual/logical data model, the paper and electronic record management models, the application layers, and the component/service system, server, network, middleware, and security models. The document complies with the instructions in the Section 508 guidelines, Federal records management guidelines, Federal IT security standards and guidelines, the *Solution Architecture Template*, and HUD enterprise architecture standards and guidelines.
- T2-4.5 Conduct peer review** – The lead solution architect, system development lead, project sponsor, and any additional IPT members review the draft *Solution Architecture* document. If the peer review identifies required changes, the *Solution Architecture* document is updated.
- T2-4.6 Update Requirements Traceability Matrix** – The requirements lead, lead solution architect, IT PM, and solution development lead use the approved *Solution Architecture* document to update the *Requirements Traceability Matrix*. The *Requirements Traceability Matrix* complies with the *Requirements Traceability Matrix* template and template instructions.



## T2-5 Refine PPM Customization and Create Quality Assurance Plan

### ***What Happens?***

Project customization is refined, dependent on changes in the size and scope of the project. The *Project Process Agreement* is updated and *Quality Assurance Plan* is created.

### ***Who Does What?***

The system development lead and IT PM reassess the project size and, if applicable, re-tailor the PPM Life Cycle by reviewing the information in the approved *Project Process Agreement* from the Need/Concept Phase and *Solution Architecture* document.

In addition, the IPT tailors Tier 3 of the *Project Process Agreement* through the Deployment Phase or refine the section to reflect new information discovered in earlier tasks of the Definition Phase.

The quality assurance team, solution development lead, and IT PM review the revised *Project Process Agreement*. These groups use the *Project Process Agreement Template Instructions* as a reference in determining if the project's customization approach has been properly defined and that the artifacts and tasks listed are sufficient for the project given its size, complexity, and scope.

The quality assurance team and IT PM use the *Quality Assurance Template Instructions* to create the *Quality Assurance Plan*. Once the *Quality Assurance Plan* is completed, the quality assurance team, the IT PM, and the business PM distribute it to the appropriate IPT members according to the instructions stated in the *Quality Assurance Plan Template*, the *Quality Assurance Plan Checklist*, and the *Quality Assurance Plan Template Instructions*.

### ***What Comes in?***

- Approved Need/Concept Phase artifacts
- Approved *HUD 720 Package*
- *Requirements Management Plan*
- *Requirements Definition*
- *Requirements Traceability Matrix*
- *Project Business Value Analysis*
- *Solution Architecture* document

### ***What Controls Need to be Used?***

Utilize the PPM Life Cycle controls listed below when creating the relevant artifacts:

- *Quality Assurance Plan* Template, Checklist, and Template Instructions
- *Project Process Agreement Template Instructions*



**What is Produced?**

Work Products	Responsibilities		Must Create	Should Create	Should Update	Must Update	Must Complete
<i>Project Process Agreement</i>	Responsible	Business and IT PMs					
	Accountable	Project sponsor				X	
	Consulted	IPT					
	Informed	TRC/CCC/EIB					
<i>Quality Assurance Plan</i>	Responsible	QA team and IT PM					
	Accountable	Project sponsor	X				
	Consulted	IPT					
	Informed	TRC/CCC/EIB					

**Detailed Tasks:**

The following defines the detailed sub-tasks that take place within this task:

**T2-5.1 Reassess the project type (small, medium, large) and customize artifact creation** – The IPT recalculates the type of the project based on new information about the cost, exposure, and interoperability following the instructions in the *Project Process Agreement Template Instructions*, if necessary.

Based on the newly defined project type, the IPT re-assesses the *Project Process Agreement* artifacts identified in Tier 1 (through the Definition Phase) and the level of governance oversight identified in Tier 2 of the *Project Process Agreement*.

In addition, the IPT completes Tier 3 of the *Project Process Agreement* (artifact tailoring through the Deployment Phase section) if it was not completed in the Need/Concept Phase, or refine this section to reflect new information discovered in earlier tasks of the Definition Phase.

**T2-5.2 Review customization decisions** – The quality assurance team, assisted by the IPT, reviews the updated *Project Process Agreement* using the associated checklist and template instructions.

If any disputes arise during the review of the project customization, the IT PM provides the quality assurance team’s feedback to the IPT for review and action. The IT PM escalates unresolved issues to the next level of management for resolution.

**T2-5.3 Create Quality Assurance Plan** – The quality assurance team and the IT PM create the *Quality Assurance Plan* following the instructions found in the *Quality Assurance Plan Template Instructions* and using the approved *Project Process Agreement*.

**T2-5.4 Conduct peer review** – The system development lead, the quality assurance team, and the IT PM review the *Quality Assurance Plan* and update it as needed.

**T2-5.5 Distribute Quality Assurance Plan** – The quality assurance team and the IPT distribute the completed *Quality Assurance Plan* to the appropriate parties within the OCIO in accordance with the *Quality Assurance Plan Template Instructions*.



## T2-6 Create/Update, Review, and Approve Security and Privacy Artifacts

### ***What Happens?***

The project's initial security and privacy measures are created, updated, reviewed, and approved.

### ***Who Does What?***

The business PM, IT PM, IT security specialist, and system development lead create/update the security and privacy artifacts.

The IT security specialist and the IT PM conduct an assessment of threats and vulnerabilities and complete the security and risk assessment in the Cyber Security and Assessment Management System (CSAM) tool following the Federal and HUD security and privacy standards and guidelines.

The IT security specialist and IT PM complete the *Security Plan* and *E-Authorization* in CSAM following the Federal and HUD security and privacy standards and guidelines.

The privacy lead and IT PM complete the *Privacy Impact Assessment* (PIA) following the Federal and HUD security and privacy standards and guidelines.

The IPT conduct a peer review following the Federal IT security and privacy standards and guidelines and HUD IT security and privacy policies, standards, and guidelines.

### ***What Comes in?***

- Approved Need/Concept Phase artifacts
- Approved *HUD 720 Package*
- *Requirements Management Plan*
- *Requirements Definition* document
- *Requirements Traceability Matrix*
- *Project Business Value Analysis*
- *Solution Architecture* document
- *Project Process Agreement* (Tier 1, 2, and 3)
- *Quality Assurance Plan*

### ***What Controls Need to be Used?***

Utilize the PPM Life Cycle controls listed below when creating the relevant artifacts:

- HUD IT security and privacy standards and guidelines
- Federal IT security and privacy standards and guidelines
- CSAM guidelines and procedures
- *Privacy Impact Assessment Template*



**What is Produced?**

Work Products	Responsibilities		Must Create	Should Create	Should Update	Must Update	Must Complete
Security Risk Assessment	Responsible	IT security specialist	X				
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB/CISO					
Security Plan	Responsible	IT security specialist	X				
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB/CISO					
E- Authorization form	Responsible	IT security specialist	X				
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB/CISO					
Privacy Impact Assessment	Responsible	Privacy lead	X				
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB/Privacy Officer					

**Detailed Tasks:**

The following defines the detailed sub-tasks that take place within this task:

- T2-6.1 Create Security Risk Assessment** – The IT security specialist, business PM, and IT PM conduct an assessment of threats and vulnerabilities and complete the security and risk assessment in CSAM following the Federal and HUD security and privacy standards and guidelines.
- T2-6.2 Create Security Plan** – The IT security specialist and IT PM complete the *Security Plan* in CSAM following the Federal and HUD security and privacy standards and guidelines.
- T2-6.3 Create E-Authorization** – The IT security specialist and IT PM complete the *E-Authorization Form* in CSAM following the Federal and HUD security and privacy standards and guidelines.
- T2-6.4 Create Privacy Impact Assessment** – The privacy lead and IT PM create/update the project’s *Privacy Impact Assessment*. The artifact complies with the *Privacy Impact Assessment* checklist and template instructions, and Federal and HUD IT security standards and guidelines.
- T2-6.5 Conduct peer review** – The IPT conducts a peer review following the Federal and HUD security and privacy impact policies, standards, and guidelines. The relevant IPT members complete any necessary revisions.



## T2-7 Update Full Project Schedule (WBS) and Total Cost of Ownership Estimate

### ***What Happens?***

The full *Project Schedule* (WBS) and *Total Cost of Ownership Estimate* are created, updated and reviewed by various members of the OCIO who are in turn overseen by OCIO senior management.

### ***Who Does What?***

The IT PM and solution development lead update the full *Project Schedule* (WBS) for tasks through the Deployment Phase at the level of detail necessary to support successful implementation. The *Project Schedule* (WBS) is created using the information from the *Requirements Management Plan*, *Quality Assurance Plan*, *Project Business Value Analysis*, *Solution Architecture* document, security and privacy artifacts, and the *Project Schedule* (WBS) template, checklist, and template instructions.

The IT PM and IPT update the *Total Cost of Ownership Estimate* based on the new information identified through the creation of the full *Project Schedule* (WBS), using the information from the requirements artifacts, *Quality Assurance Plan*, *Project Business Value Analysis*, *Solution Architecture* document, and security and privacy artifacts. The IT PM provides the updated *Project Schedule* (WBS) and *Total Cost of Ownership* to the IPT for review.

The IT PM and solution development lead gather comments and questions from the IPT and review/update the draft *Project Schedule* using the process laid out in the *Project Schedule* (WBS) template, checklist, and template instructions.<sup>5</sup>

### ***What Comes in?***

- Approved Need/Concept Phase artifacts
- Approved HUD 720 Package
- *Requirements Management Plan*
- *Requirements Definition*
- *Requirements Traceability Matrix*
- *Project Business Value Analysis*
- *Solution Architecture* document
- *Project Process Agreement* (Tier 1, 2, and 3)
- *Quality Assurance Plan*
- Security and privacy artifacts

### ***What Controls Need to be Used?***

Utilize the PPM Life Cycle controls listed below when creating the relevant artifacts:

- *Project Schedule* (WBS) *Template*, *Checklist*, and *Template Instructions*
- *Total Cost of Ownership Estimate Template*

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<sup>5</sup> If changes need to be made to the *Project Schedule*, it is sent back to the previous step to be updated by the IT PM and system development lead.



**What is Produced?**

Work Products	Responsibilities		Must Create	Should Create	Should Update	Must Update	Must Complete
<i>Project Schedule (WBS)</i>	Responsible	IT PM, system development lead, business PM					
	Accountable	Project sponsor				X	
	Consulted	IPT					
	Informed	TRC/CCC/EIB					
<i>Total Cost of Ownership Estimate</i>	Responsible	IT PM, business PM					
	Accountable	Project sponsor				X	
	Consulted	IPT					
	Informed	TRC/CCC/EIB					

**Detailed Tasks:**

The following defines the detailed sub-tasks that take place within this task:

- T2-7.1 Update full Project Schedule (WBS)** – The IT PM and the solution development lead update the full *Project Schedule (WBS)* using the *Project Schedule (WBS)* template, checklist, and template instructions, *Quality Assurance Plan*, *Project Business Value Analysis* and *Solution Architecture* document as references.
- T2-7.2 Calculate project total cost** – The IPT reviews the *Project Schedule (WBS)*, requirements artifacts, *Quality Assurance Plan*, *Project Business Value Analysis*, *Solution Architecture* document, and security and privacy artifacts to determine the complete project cost. The IT PM uses the *Total Cost of Ownership Template* to calculate the total cost of the project.
- T2-7.3 Conduct peer review** – The full *Project Schedule (WBS)* and *Total Cost of Ownership Estimate* are reviewed by IPT. The IPT forwards the comments/questions/suggestions for the *Project Schedule (WBS)* and cost estimates to the IT PM who updates the *Project Schedule (WBS)* and cost estimates using the guidelines set forth in the *Project Schedule (WBS)* and *Total Cost of Ownership Template Instructions*.



## T2-8 Prepare Additional Project Definition Phase Artifacts

### ***What Happens?***

The *Project Management Plan*, *Risk Management Plan*, *Risk Management Log*, *Acquisition Strategy*, *Change Management Log*, *Configuration Management Plan*, *Communication Management Plan*, *Staffing Management Plan*, *Capacity Plan*, *Concept of Operations (CONOPS)*, and *Lessons Learned* document are created as necessary.

### ***Who Does What?***

The IPT defines, coordinates, and integrates all subsidiary planning artifacts into the *Project Management Plan*. If the project is small and does not require separate documents to be developed for each aspect of the project planning, all components mentioned below in this task can be consolidated into the *Project Management Plan*. If the project is large, however, each subsidiary plan must be created separately to provide enough detail and the location of the subsidiary plan included in the *Project Management Plan* as reference. The *Project Management Plan* is developed using the steps laid out in the *Project Management Plan* template, checklist, and template instructions.

The IPT uses all the aforementioned artifacts to create the *Risk Management Plan* and *Risk Management Log* following the processes in the *Risk Management Plan* template, checklist, and template instructions, and the *Risk Log Template*.

The IPT and procurement office representative develop the *Acquisition Strategy* following the *Acquisition Strategy Template*.

The IPT uses any submitted *Request for Change Forms* to create/update the *Change Management Log*. The *Change Management Log* is updated whenever there is a potential change to the scope, schedule, resources, etc. for the project. The *Change Management Log* is filled out using the *Change Management Log Template*.

The IPT uses the steps laid out in the *Configuration Management Plan* template, checklist, and template instructions to create the *Configuration Management Plan*.

The IPT uses the steps laid out in the *Communication Management Plan* template, checklist, and template instructions to create the project's *Communication Plan*.

The IPT uses the *Total Cost of Ownership Estimate*, *Project Schedule (WBS)*, and the steps laid out in the *Staffing Management Plan* template, checklist, and template instructions to create the project's *Staffing Management Plan*.

The IPT uses the steps laid out in the *Capacity Plan* template, checklist, and template instructions to create the project's *Capacity Plan*.

The IPT uses the requirement artifacts, *Project Schedule (WBS)*, *Project Business Value Analysis*, and the steps laid out in the *Concept of Operations (CONOPS) Template* to create the *CONOPS*.

The IPT holds a meeting with all participants of the project phases (Need/Concept and Definition Phases) to identify and document the lessons learned for the planning phases of the project. The *Lessons Learned* document is created by using the *Lessons Learned Template*.



All artifacts developed throughout this task are reviewed by the IPT. The IPT follows the respective templates, checklists, and template instructions to determine if the proposed artifacts meet the needs of the project and comply with HUD and Federal standards and policies.

**What Comes in?**

- Approved Need/Concept Phase artifacts
- Approved HUD 720 Package
- Requirements Management Plan
- Requirements Definition
- Requirements Traceability Matrix
- Project Business Value Analysis
- Solution Architecture document
- Project Process Agreement
- Quality Assurance Plan
- Security and privacy artifacts
- Full Project Schedule (WBS)
- Total Cost of Ownership Estimate

**What Controls Need to be Used?**

Utilize the PPM Life Cycle controls listed below when creating the relevant artifacts:

- Project Management Plan template, checklist, and template instructions
- Risk Management Plan template, checklist, and template instructions
- Risk Management Log Template
- Acquisition Strategy template and checklist
- Change Management Log Template
- Configuration Management Plan template, checklist, and template instructions
- Communication Plan template, checklist, and template instructions
- Staffing Management template, checklist, and template instructions
- Capacity Plan template, checklist, and template instructions
- Concept of Operations (CONOPS) Template
- Lessons Learned Template

**What is Produced?**

Work Products	Responsibilities		Must Create	Should Create	Should Update	Must Update	Must Complete
<i>Project Management Plan</i>	Responsible	Business and IT PMs	X				
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					
<i>Risk</i>	Responsible	Business and IT PMs	X				



**Definition Phase Procedures**

Work Products	Responsibilities		Must Create	Should Create	Should Update	Must Update	Must Complete
<i>Management Plan and Log</i>	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					
<i>Acquisition Strategy</i>	Responsible	Business and IT PMs		X			
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					
<i>Change Management Log</i>	Responsible	IT PM		X			
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					
<i>Configuration Management Plan</i>	Responsible	Business and IT PMs	X				
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					
<i>Communication Management Plan</i>	Responsible	Business PM		X			
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					
<i>Staffing Management Plan</i>	Responsible	Business and IT PMs	X				
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					
<i>Capacity Planning</i>	Responsible	IT PM		X			
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					
<i>CONOPS</i>	Responsible	IT PM		X			
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					



Work Products	Responsibilities		Must Create	Should Create	Should Update	Must Update	Must Complete
Lessons Learned	Responsible	Business and IT PMs	X				
	Accountable	Project sponsor					
	Consulted	IPT					
	Informed	TRC/CCC/EIB					

**Detailed Tasks:**

The following defines the detailed sub-tasks that take place within this task:

- T2-8.1 Create Project Management Plan** – If the project does not require separate documents for any aspect of the project planning, the IPT can incorporate the relevant information into the *Project Management Plan*. If the project is large, however, the IPT must create each subsidiary plan mentioned below separately to provide enough detail and reference the location of the plan in the *Project Management Plan*. The *Project Management Plan* is developed using the steps laid out in the *Project Management Plan* template, checklist, and template instructions.
- T2-8.2 Create Configuration Management Plan** – The IPT uses the steps laid out in the *Configuration Management Plan* template, checklist, and template instructions to create the *Configuration Management Plan*.
- T2-8.3 Create Communication Plan** – The IPT uses the steps laid out the *Communication Management Plan* template, checklist, and template instructions to create the project’s *Communication Plan*.
- T2-8.4 Create Risk Management Plan** – The IPT creates the *Risk Management Plan* and *Risk Management Log* using the *Risk Management Plan* template, checklist, and template instructions.
- T2-8.5 Create CONOPS** – The IPT uses the requirement artifacts, *Project Schedule (WBS)*, *Project Business Value Analysis*, and the steps laid out the *CONOPS* template to create the CONOPS.
- T2-8.6 Create Capacity Plan** – The IPT uses the steps laid out the *Capacity Plan* template, checklist, and template instructions to create the project’s *Capacity Plan*.
- T2-8.7 Create Staffing Management Plan** – The IPT uses the *Total Cost of Ownership Estimate*, *Project Schedule (WBS)*, and the steps laid out the *Staffing Management Plan* template, checklist, and template instructions to create the project’s *Staffing Management Plan*.
- T2-8.8 Create Acquisition Strategy** – The IPT and procurement office develop the *Acquisition Strategy* using the *Acquisition Strategy* template and all previously developed acquisition artifacts.
- T2-8.9 Create Change Management Log** – The IPT uses any submitted *Request for Change Forms* to create/update the *Change Management Log*. The *Change Management Log* is updated whenever there is a potential change to the scope, schedule, resources, etc for the project. The *Change Management Log* is filled out using the *Change Management Log* template.
- T2-8.10 Create Lessons Learned** – The IPT takes the full *Project Schedule (WBS)*, *Total Cost of Ownership Estimate*, and *Quality Assurance Plan* and use the instructions in the *Lessons Learned Template* to create the complete *Lessons Learned* document.



**T2-8.11 Conduct peer review** – The IPT reviews the artifacts developed throughout this task. The IPT follows the respective templates, checklists, and template instructions to determine if the proposed artifacts meet the needs of the project and comply with HUD and Federal standards and policies. If the peer review determines that changes need to be made, the appropriate members of the IPT complete the revisions.



## T2-9 Compile and Submit Definition Package for Go/No Go Decision

### ***What Happens?***

The completed and reviewed project documents are compiled into the Definition Package Phase and are presented to the governance bodies for a Go/No Go control gate decision.

### ***Who Does What?***

The IPT compiles the Definition Phase project documentation into the Definition Phase package. The package includes the following:

- Request for Contract Services (*HUD 720 Package*), if necessary
- *Requirements Management Plan*
- *Requirements Definition* document
- *Requirements Traceability Matrix*
- *Solution Architecture* document
- *Project Business Value Analysis*
- *Quality Assurance Plan*
- *Project Process Agreement* (Tiers 1, 2, and 3)
- Security and privacy artifacts
- Full *Project Schedule* (Work Breakdown Structure)
- *Project Management Plan*
- *Risk Management Plan*
- *Risk Management Log*
- *Acquisition Strategy*
- *Change Management Log*
- *Configuration Management Plan*
- *Communications Management Plan*
- *Staffing Management Plan*
- *Capacity Plan*
- *Concept of Operations*
- *Lessons Learned*
- Decision by TRC/CCC/EIB to proceed to Design Phase

Along with this package, the IPT submits a formal request to the TRC for the IT governance bodies to review and approve the project.

The TRC decides whether a project will move into the Design Phase, allow the project to proceed subject to certain conditions, or reject the project based on the outcome of artifact reviews. If the project is rejected the IPT follows the appeals process to re-submit the project for review.

If the project requires additional oversight from the CCC and/or the EIB, the TRC provide them the project documentation along with a completed *Control Gate Review Decision Form* containing the TRC's recommendation.

### ***What Comes in?***

- *HUD 720 Package* (if necessary)
- *Requirements Management Plan*



- *Requirements Definition*
- *Requirements Traceability Matrix*
- *Concept of Operations (CONOPS)*
- *Project Business Value Analysis*
- *Solution Architecture*
- *Quality Assurance Plan*
- *Project Process Agreement (Tiers 1,2, and 3)*
- *Security and Privacy Artifacts*
- *Full Project Schedule (Work Breakdown Structure)*
- *Project Management Plan*
- *Communications Plan*
- *Risk Management Plan and Log*
- *Configuration Management Plan*
- *Change Management Log*
- *Capacity Plan*
- *Acquisition Strategy*
- *Lessons Learned Document*

### ***What Controls Need to be Used?***

Users of the PPM Life Cycle utilize the controls listed below when creating the relevant artifacts:

- Definition Phase Go/No Go Decision meeting guidelines

### ***What is Produced?***

- Approved Definition Phase package
- Decision by TRC/CCC/EIB to proceed to Design Phase

### ***Detailed Tasks:***

The following defines the detailed sub-tasks that take place within this task:

**Assemble Definition Phase Package** – The IPT compiles the Definition Phase package and submits it to the TRC along with a formal request for a review of the completed artifacts and approval for the project to advance into the Design Phase.

**T2-9.1 Obtain Definition Phase decision** – The TRC reviews the Definition Phase package and:

- Approves the project into the Design Phase,
- Approves the project with conditions, or
- Rejects the project

If the project requires additional oversight from the CCC or EIB as identified in Tier 2 of the *Project Process Agreement*, the TRC communicates with the chair of the appropriate body and provides the necessary documentation for review.

**T2-9.2 Resolve any conditions for project approval** – If the TRC, CCC, or EIB have approved the project with conditions, the IPT adjudicates their comments and re-submits the changes for approval prior to moving onto tasks in the Design Phase.