U.S. Department of Education
Federal Student Aid

Lifecycle Management Methodology Stage Gate Review Process Description

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Lifecycle Management Methodology Stage Gate Review Process Description Approvals

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Section 1. Letter from the Acting Chief Operating Officer

Federal Student Aid Project Managers and Project Stakeholders,

Last fall, when Federal Student Aid released its Five-Year Strategic Plan, FY 2011-15, we renewed our commitment to serving our customers, students and families, by striving for operational excellence. Since that time, our organization has been working to implement the different tactics to meet our goals outlined in the Strategic Plan.

The keys to achieving these strategic goals are to ensure that Federal Student Aid aligns our priorities with the investments we make in our systems and processes, develop solutions in an effective and efficient manner, all while taking a responsible and reasonable approach to managing risk. An integral part of risk management within our project execution is ensuring that Federal Student Aid implements and adheres to a common enterprise methodology for managing, tracking, and governing projects with an IT component.

Last year, Federal Student Aid implemented the Project Management Toolkit, establishing the overall project delivery framework for all projects. Project Managers can tailor this framework to ensure effective and reasonable process requirements for project delivery.

Today, Federal Student Aid is taking further steps to ensure more effective and responsible management of projects by implementing the Lifecycle Management Methodology, or “LMM.” Effective immediately, all projects with an IT component are expected to adhere to the applicable elements and requirements of the Lifecycle Management Methodology. As a resource for any project with an IT component, the LMM adds and builds upon the standard project delivery methodology with guidance, processes, and tools that ensure appropriate and timely technology resource management throughout the project lifecycle. By having this support at logical points throughout the project, project teams can benefit from timely and effective engagement of appropriate technical resources, increasing the likelihood of avoiding unnecessary risk, costly delays, and duplications of work.

The added guidance, support, and tools that LMM brings to IT projects align with our strategic goals. I am proud to introduce the LMM and encourage you to review these methods. Together, we will work to implement these tools and processes to manage our projects that ultimately serve our customers, students and families. Thank you in advance for supporting the implementation of LMM. If you have any questions regarding LMM requirements or applicability to your project, please feel free to contact Mike Rockis at mike.rockis@ed.gov or Carole Kuriatnikova at carole.kuriatnikova@ed.gov .

James Runcie
Acting Chief Operating Officer
Federal Student Aid
(Email dated June 22, 2011)

Executive Summary

The purpose of this document is to describe Lifecycle Management Methodology (LMM) governance as represented by Stage Gate Review Processes for Integrated Project Teams (IPTs). The LMM is Federal Student Aid's (FSA's) project delivery and governance methodology for all Information Technology (IT) projects. While LMM governance is required for all projects, IPTs can tailor LMM to fit the project's unique risks and System Development Lifecycle (SDLC). IPTs and/or contractors are expected to provide traceability between the LMM and the SDLC that is used for any development project.

LMM's approach to solution delivery consists of seven project stages. Depending on the size, scope and complexity of the project, some stages may be conducted iteratively. Using this method offers an advantage over the single-release approach. By incorporating the results of multiple, smaller build and test iterations, it is possible to expedite new functionality into the production environment. Involving the customer throughout the iterations of the lifecycle while encouraging feedback throughout development will enable the IPT to take advantage of lessons learned collected during each stage.

Stage Gates are project control processes inserted throughout the development lifecycle to ensure the project is ultimately successful. A project is ready to move to the next stage when the IPT, SMEs, Stage Gate Review Bodies, Steering Committees and/or governing authorities are satisfied that the investment, will add planned value to the mission as stated in the business case, technical flaws have been avoided, identified risks have been mitigated or accepted, the system will perform as planned and the system complies with regulations and standards.

Section 1. Introduction

1.1 Scope

The LMM is FSA's documented process for management of all new IT projects. A project must:

- Be a planned endeavor with defined start and end points having the goal of creating a unique product or service;
- Be a unique product or service and have an IT component, as defined by the Clinger-Cohen Act of 1996, section 5002;
- Have approval by FSA's Investment Review Board or Operating Committee; and
- Have funding OR have committed FSA resources in the way of staff hours or FSA Information Technology Infrastructure.

The LMM consists of the following:

- A project management component;
- A technology management component; and
- An acquisitions component, when an acquisition is required.

The LMM applies to all FSA employees and contractors engaged in the development, acquisition, implementation, maintenance and disposal of IT solutions within FSA - regardless of cost, complexity and time constraints. Nothing in this methodology is meant to excuse or exempt contractors from satisfying all contract requirements. This document provides an overview of LMM governance through Management and Technical Review Stage Gate Processes.

Once a project is identified and staffed, one of the early processes requiring completion is Tailoring. The PM, working with the IPT, examines risks as they plan how to complete core deliverables, or artifacts, for each project stage. The IPT captures how to address acceptance criteria for artifacts using the Work Breakdown Structure Dictionary and Tailoring Plan (Tailoring Plan). Stage Gate Reviews are also discussed during tailoring to ensure the project schedule includes planning and coordination activities needed to verify project artifacts and processes have been satisfactorily completed and are acceptable from a quality perspective before the project receives authorization to proceed from one to the next stage of development.

Stage Gates are intended to assist the IPT in validating project risks have been mitigated or accepted, deliverables have been completed and deemed acceptable, and the objectives outlined in Section 4 of this document have been met. Findings are summarized and incorporated into the Stage Gate Review Package that is provided to the Review Body or Board along with a recommendation. The IPT is authorized to pass from one stage to another when activities from a stage have been deemed sufficient for continuation or when a determination is made to accept the identified risks.

The IRB will be responsible for the Stage Gate Executive Decision in the case of a Management Review Stage Gate. The ERB will be responsible for the Stage Gate Executive Decision for Technical Review Stage Gates 1A and 1B, (Preliminary and Detailed Design Reviews) and for additional Technical Review Stage Gates as requested. Technical Review Stage Gates 2 (Test Readiness Review), 3 (Requirements Review), 4 (Production Readiness Review), and 5 (Retirement and Disposal) are completed by Technical Review Stage Gate Review Bodies. The composition and executive decision for the Technical Review Stage Gate Review Body are outlined in Section 4, Detailed Stage Gate Review IPT Guidance.

Additional details regarding LMM are contained in the Lifecycle Management Methodology, and the Lifecycle Management Methodology Tailoring Plan Guidance.

1.2 Intended Audience

The table below identifies the target users of the LMM Stage Gate Review Process Description and the sections of the document most relevant for each user type.

Table 1-1: Intended Audience and Document Uses

Audience	Uses
Integrated Project Team (IPT)	Provides an introduction in Section 1. Roles, responsibilities and resources are described in Section 2. Section 3 provides governance process, description and structure information and Section 4 provides specific guidance for each Stage Gate.
Subject Matter Experts (SME) • Enterprise Architecture • Configuration Management • Design • Infrastructure • Project Management • Quality Assurance • Requirements • Security • Testing	Provides guidance on SME roles and responsibilities in Section 2 and Stage Gate governance process in Section 3. Section 4 provides specific guidance for each Stage Gate.
Stage Gate Review Process Owner	Provides guidance on Stage Gate roles and responsibilities in Section 2. The governance processes in Section 3 and specific guidance for each Stage Gate in Section 4 are owned by this key group.
Tailoring Team	Provides guidance on Stage Gate roles and responsibilities in Section 2 and Stage Gates in Section 3.
Steering Committee	Provides guidance on Stage Gate roles and responsibilities in Section 2 and Stage Gates in Section 3.
Technical Review Stage Gate Review Body	Provides an introduction in Section 1. Roles, responsibilities and resources are described in Section 2. Section 3 provides governance process, description and structure information and Section 4 provides specific guidance for each Stage Gate.
Engineering Review Board (ERB)	Provides an introduction in Section 1. Roles, responsibilities and resources are described in Section 2. Section 3 provides governance process, description and structure information and Section 4 provides specific guidance for each Stage Gate including Technical Review Stage Gates 1A and 1B.
Investment Review Board (IRB)	Provides an introduction in Section 1. Roles, responsibilities and resources are described in Section 2. Section 3 provides governance process, description and structure information and Section 4 provides specific guidance for Management Review Stage Gates 1, 2 and 3.
Lifecycle Management Methodology (LMM) Integrated Project Team (IPT) / LMM Team	Provides an introduction in Section 1. Roles, responsibilities and resources are described in Section 2. Section 3 provides governance process, description and structure information and Section 4 provides specific guidance for each Stage Gate.

1.3 Document Organization

This document comprises the following sections.

Executive Summary - Provides a high-level description of the document's purpose, scope and intended use.

Section 1 – Introduction: Provides a detailed description of the document's purpose and scope, intended audience, as well as reference information.

Section 2 –Roles, Responsibilities and Resources: Provides stakeholder roles and responsibilities and lists LMM references and guidance documents.

Section 3 – LMM Governance Process, Description and Structure: Provides an overview of the governance processes for management and Technical Review Stage Gates including process flows, description, purpose, decisions and outcomes.

Section 4 – Stage Gate IPT Guidance: Provides Stage Gate objectives, methods, process inputs, who attends, process outputs, who approves and quality standards or references for each Stage Gate.

Appendix A: Acronyms and Abbreviations

Appendix B: Glossary

Appendix C: Stage Gate Packages

Appendix D: LMM Overview

Appendix E: Artifacts

Appendix F: Stage Gate Decision Sign-Off Memorandum

Appendix G: Stage Gate Review Checklist

1.4 Authorization and Foundation

LMM supports Federal and Department regulations and policies. LMM's methods and processes incorporate the best practices as defined in the United States Chief Information Officer's 25 Point Implementation Plan to Reform Federal Information Technology Management. The LMM also incorporates many industry best practices and seeks to satisfy Strategic Goal C of the FSA FY2011-2015 Five Year Plan: "Develop efficient processes and effective capabilities that are among the best in the private and public sectors."

The Department of Education's (ED's) Lifecycle Management (LCM) Framework Directive (OCIO: 1-106) dated 12/02/2005 provides a baseline for all solution acquisitions across the Department. ED's LCM provides the framework to be used from the beginning stages of Planning through to Retirement. The LCM allows employees and contractors the flexibility to tailor these standard procedures to meet specific needs. The LMM is FSA's response to the Department's LCM. It uses the flexibilities built into the LCM to build processes that meet FSA's needs.

FSA's Strategic Investments Governance (SIG) Group will own and maintain the LMM; communicate it to the Business Units; and provide support for its implementation. FSA's Technology Office (TO) will maintain ownership of the Technical Review Stage Gates and support LMM tailoring efforts working with SIG and the IPT's.

1.5 References and Related Documents

The following are links to Federal regulations and policies that support the use and implementation of the LMM approach:

1. Clinger-Cohen Act of 1996 (Clinger-Cohen Act)
2. Office of Management and Budget (OMB) Circular A-123
3. OMB Circular A-130
4. U. S. Department of Education Lifecycle Management (LCM) Framework
5. Lifecycle Management Methodology (LMM)
6. Lifecycle Management Methodology Tailoring Plan Guidance
7. Lifecycle Management Methodology Work Breakdown Structure Dictionary and Tailoring Plan Template
8. Engineering Review Board Process Description
9. FSA Engineering Review Board Charter

1.6 Contact Information

The LMM Team can be reached via email at LMM@ed.gov.

Section 2. Roles, Responsibilities and Resources

2.1 LMM Stakeholder Roles and Responsibilities

The table below features stakeholders and presents a high-level summary of their roles with regard to the LMM Stage Gates. A detailed description of the roles and responsibilities for each group is located directly after the table.

Table 2-1: Stakeholder Roles and Responsibilities

Stakeholders	Roles and Responsibilities
Engineering Review Board	A body of FSA Technology Office Executives and Directors that oversees the progress of FSA IT Projects. The ERB is particularly critical to Technical Stage Gates 1A and 1B.
Integrated Project Team (IPT) **Core Team Composition** • Senior Project Manager • IT Project Manager • Business Project Manager • Contract Officer **Extended Team Composition** • Business Application Representative • Configuration Management • Design • Enterprise Architecture • Infrastructure • Requirements • Security (including ISSO) • Subject Matter Experts • Testing	A cross-functional team consisting of individuals from the organization who are responsible for delivering a specific product such as software or a system release, and ensure project LMM compliance is planned, scheduled and maintained. In the context of this document (and FSA generally), the IPT Core Team would include individuals committed to working together on the day-to-day activities of the project. In the case of Tier 1 projects, these individuals may be assigned full time to the project. This would include a Senior PM, an IT PM from the Technology Office, a Business PM and a Contract Officer. Normally, the Senior PM coordinates and presents at Management Review Stage Gates and the IT PM coordinates and presents at Technical Review Stage Gates. The Extended Team would include, but is not limited to, the Core Team, business application representatives, SMEs, security, testing, contractors, programmers and others who are not assigned full time but work closely with the team during all stages of the project. The TO QA Team is not included on the Extended Team because they interact with the project at key points throughout the lifecycle but not on a day-to-day basis even though they are involved during all stages of the project.
Investment Review Board	Renders go / no-go decision for project at the Management Review Stage Gates. Has final authority over project funding and disposition.

Stakeholders	Roles and Responsibilities
LMM Tailoring Team • Quality Assurance • Enterprise Project Management and Oversight (Group) • Technology Office Project Management Office	Assists new project teams tailoring LMM compliance expectations based on project size, scope and complexity. Validate LMM compliance expectations are established early for new project planning, are documented and are updated as the project progresses. As needed, the SMEs will provide guidance in the development of the LMM Tailoring Plan. Once the LMM Tailoring Plan is developed, the IPT submits the Plan to the LMM Tailoring Team for review and acceptance. Changes to the accepted plan should also be submitted to the LMM Tailoring Team using the LMM mailbox at mailto:lmm@ed.gov.
Lifecycle Management Methodology (LMM) Integrated Project Team (IPT) / LMM Team	The LMM IPT developed the methodology. As the project moves into the operations and maintenance stage, the IPT will be dissolved and the LMM Team will manage FSA's LMM.
Operating Committee	Provides high level guidance and support to the Project Sponsors.
Project Sponsor	Ensures project remains in accordance with the objectives of Federal Student Aid, provides support for project among executives and stakeholders and presents investment to IRB.
Stage Gate Review Process Owner	Provides expertise in their respective area of knowledge regarding Stage Gate design and objectives. They are responsible for defining the process and communicating what activities are required to ensure successful progression through the Stage Gate.
Steering Committee	Execute detailed review of projects artifacts and overall project status during the three Management Review Stage Gates.

Stakeholders	Roles and Responsibilities
Subject Matter Expert (SME) (including but not limited to the following areas of expertise) • Acquisitions • Business Analysis/Requirements Management • Configuration Management • Enterprise Architecture • Infrastructure • Project Management • Quality Assurance • Security • Solution Architecture/Design • Testing	Provides expertise, guidance and support in their respective area of knowledge to IPTs.
Technical Review Stage Gate Review Body	Execute detailed review of project artifacts and overall project status during the Technical Review Stage Gates.

2.1.1 Engineering Review Board[1]

The Engineering Review Board (ERB) is an official FSA decision-making body authorized to review, assess, formulate recommendations, and approve or reject IT-related solutions. The ERB is a technical decision-making framework leveraged by FSA to enhance visibility of FSA projects with IT components allowing for more proactive planning of required IT resources across the enterprise; improve systems integration within FSA's Enterprise Architecture (EA) and within the Department's EA as applicable for initiatives that affect FSA's infrastructure; provide accelerated responses to the needs of FSA IT projects; and aid in the maturity of FSA IT practices.

Membership of the ERB is comprised of key functional and technical subject matter experts within FSA TO. Others may be solicited to provide input to ERB members and are selected based upon their ability to provide relevant information on benefits related to proposed solutions.

Chaired by the Deputy Chief Information Officer and comprised of FSA Technology Office Directors, the ERB reviews Technical Stage Gate project reviews, assessments and recommendations and votes to make project recommendations, including "go/no-go" recommendations. The ERB Chairperson, with assistance from the ERB Secretary, organizes projects that have been reviewed by the Technical Stage Gate Review Body (EITASIG) for final review, facilitating data collection and analysis, organizing facts and findings, and making a final recommendation.

The ERB assists the FSA Technology Office and its Investment Review Board (IRB) in project level IT assessments and reviews adhering to FSA's governance of IT standards and policies, supporting leadership to deliver business value and anticipate changes to meet current and long-term needs of FSA Programs, ensuring and securing cost effective, sustainable systems to support FSA's business.

The ERB, in adherence with FSA's LMM and governance of IT standards, conducts project-level IT assessments and reviews, of and for:

- All Tier 1 projects as determined by ePMO; delivery of a new system release or series of releases
- Delivery of major enhancement and/or alteration of functionality to existing systems
- Technical analysis and assessment efforts consisting of reports or recommendations
- IT projects that are not aligned with the Target State Vision; IT projects with non-standard or new technology

[1] Engineering Review Board Process Description, dated March 16, 2012.

- IT projects with high data sensitivity; IT projects with package-based customizations or custom development; IT projects that impact intricate systems
- IT projects that are hosted outside of the Virtual Data Center and Tier 1, 2 or 3 projects, as specified by the ERB.[2]

The ERB is particularly critical to Technical Review Stage Gates 1A and B and serves as the decision-making authority for these Stage Gates, for which the ERB receives the stage report / analysis from the Technical Review Stage Gate Review Body and makes a determination as to whether or not the project should continue. The IT PM working with the IPT may request or be requested to deliver project briefings to the ERB in cases involving exceptional cost or risk.

The ERB will serve as the governing body responsible for performing stage gate reviews as defined in this document and is charged with applying uniform and repeatable review practices in achieving enterprise-wide systems integration.

ERB Business Goals -

- Enhancing visibility of FSA projects with Information Technology (IT) components allowing for more proactive planning of required IT resources across the Enterprise.
- Improving systems integration within FSA's Enterprise Architecture (EA) and within the Department's Enterprise Architecture as applicable for initiatives that affect FSA's infrastructure.
- Providing accelerated responses to the needs of FSA projects with IT components.
- Aiding in the maturity of FSA IT practices.

ERB Objectives -

- Ensuring technology scope and target solutions align with FSA's 5-Year Strategic Plan, FSA's TSV, and the tenets of FSA's EA.
- Supporting the CIO and the Technology Office in consultation with projects that require technical assistance in areas not addressed by the FSA Investment Review Board (IRB).
- Determining if a project with IT component is compliant with FSA's LMM and technical standards and guidelines.
- Communicating findings and recommendations to project team and owner. Making recommendations for further review(s).
- Providing go/no-go recommendations, based on review and assessment, to Investment Review Board (IRB), as needed.

2.1.2 Integrated Project Team

A cross-functional team consisting of individuals from the organization who are responsible for delivering a specific product (such as software, a system release, or process improvement) or service (such as a training program or externally hosted system) and ensuring project LMM compliance is planned, scheduled and maintained. The IPT is comprised of Core and Extended team members.

PMs, including the Senior PM, the IT PM, the Business PM, and the acquisitions contract officer or specialist, if applicable, collectively form the IPT Core Team. The Core Team is responsible for working together to manage the day-to-day activities of the project. Members of the Core Team are expected to clearly and unambiguously identify roles and responsibilities for the Core and Extended Teams at the start of the project. One key role that should be resolved as early as possible is identifying the Information System Security Officer (ISSO). The Senior PM is responsible for coordinating the Management Review Stage Gate activities and briefing on behalf of the IPT at the review. The IT PM is responsible for coordinating the Technical Review Stage Gate activities by working with the Stage Gate Process Owners and the IPT to develop a recommendation for the completion of reviews, identifying the

[2] FSA Engineering Review Board Charter dated March 2012.

composition of the review teams, coordinating the Technical Review Stage Gate activities and briefing on behalf of the IPT at the reviews.

Another key responsibility of the IPT is scheduling and coordinating the Stage Gate Reviews and ensuring project artifacts are completed and available as needed for stage gate process inputs. This role includes ensuring a balanced review occurs using the correct mix of subject matter expertise. The IPT should consider multiple discussions and meetings, if necessary, in advance of and during the review to clarify issues and facilitate a successful review that concludes with the Stage Gate Meeting.

The Extended Team would include, but is not limited to, the Core Team, business application representatives, SMEs, security, testing, contractors, programmers and others who are not assigned full time but work closely with the team during all stages of the project.

IPTs are also expected to work collaboratively and participate in meetings for critical aspects of the LMM process including Tailoring and Stage Gates.

2.1.3 Investment Review Board

The FSA Investment Review Board (IRB) approves, tracks, and reports on projects within FSA's project portfolio. The IRB is critical to the LMM because the IRB is the body that has final authority over project funding and disposition.

The core scope of the IRB's responsibility to select, control and evaluate FSA's investment portfolio in accordance with The Government Performance and Results Act (GPRA) of 1993, the Clinger-Cohen Act of 1996 and various directives and circulars issued by the Office of Management and Budget (OMB).

The scope and purpose of the IRB includes the following:

- Providing oversight of Federal Student Aid's investment management and ensure effective utilization of investment dollars and human capital;
- Overseeing investment funding decisions for all projects;
- Formally reviewing all initiatives, programs and projects (all investments);
- Allocating investment capital and operational funds;
- Optimizing efficient use of budget;
- Ensuring projects execute within organizational constraints (e.g., budget, human resource capacity, risk, enterprise architecture);
- Managing FSA's investment portfolio;
- Ensuring rigorous analysis of new projects;
- Enabling strict tracking and governance of in-flight projects (funds distribution at stage gate end, change requests in excess of $50K of approved funds);
- Monitoring major operational investments, adhering to Departmental Capital Planning and Investment Control policy; and
- Issuing and enforcing standards for portfolio, program and project management.

2.1.4 LMM Integrated Project Team (IPT) / LMM Team

The LMM IPT is responsible for developing and implementing the LMM. The LMM Team is responsible for maintaining the LMM and processes on behalf of the FSA enterprise.

2.1.5 LMM Tailoring Team

The LMM Tailoring Team consists of representatives from FSA Enterprise Project Management and Oversight Group (ePMO), TO QA Group, and the TO Project Management Office (PMO). The LMM tailoring team will help PMs tailor their specific project to the LMM in a manner that best ensures the

success of the project. As needed, the SMEs will provide guidance in the development of the LMM Tailoring Plan.

2.1.6 Project Sponsor

The Project Sponsor identifies a business need and is ultimately accountable for realizing the Business Case. The Project Sponsor presents at the FSA IRB and provides support for the project among executives and stakeholders. This position identifies Business and Technical leads to develop a risk profile, define and approve a project charter and establish a Business Case. The Sponsor also ensures project remains in accordance with FSA objectives.

2.1.7 Stage Gate Review Process Owner

Provide expertise, guidance and support in their respective area of knowledge to the IPTs. Stage Gate Review Process Owners are also responsible for defining the process and communicating what activities are required to ensure the IPT meets objectives resulting in the successful progression through the Stage Gate. Stage Gate Review Process Owners may be requested to present results of assessment at the Stage Gate Review Meeting.

2.1.8 Steering Committee

The Steering Committee is the review body that performs project assessments at Management Review Stage Gates 1, 2, and 3. This Review Body will be responsible for assuring that all project artifacts submitted by the IPT at the respective Stage Gates are accurate, assess whether or not the project continues to provide value to FSA, and make a recommendation via the Executive Sponsor and the Senior PM to the IRB regarding the future of the project.

2.1.9 Subject Matter Experts

SMEs are critical to the LMM and the success of FSA Projects. As part of the LMM initiative, SMEs are process owners for their area of expertise. While serving in a key advisory role to the enterprise, SMEs are not typically members of the IPT Core or Extended Teams and perform the following:

- Provide updated templates, exemplars, and guidance documents according to the Document Configuration Management update process and schedule.
- Answer questions, and provide expert advice, assessment and guidance to IPTs during preparation for the Tailoring and Stage Gate Reviews.
- Work with IPTs to schedule reviews so that qualified resources are available. As a follow up to the Tailoring Meeting and an input to the Stage Gate Review Meetings, PMs may request a SME quality review to validate that artifacts meet minimum expectations and are technically adequate to support the next lifecycle stage.
- While the LMM ideal state is 100% review, at a minimum, compliance reviews consist of verifying the proper template was used to create a work product; verifying reasonable (based on professional judgment and Project Tier) levels of detail are captured by a work product; and applying a sampling approach to validate work product.
- May be requested to participate in Tailoring, ERB, IRB or Stage Gate Review meetings.
- Enter feedback into the Lessons Learned Database.
- Support LMM training by reviewing and commenting on curricula or materials and participating in training delivery.
- Escalate concerns related to unresolved and exceptional risk through the SMEs Director and ERB to the IRB.

2.1.10 Technical Review Stage Gate Review Body

The Technical Review Stage Gate Review Body performs project assessments in support of Technical Review Stage Gates. As a part of the assessment, the Technical Review Stage Gate Review Body evaluates risks based on a review of project artifacts submitted by the IPT, determinates whether or not the project is technically sound, and makes a recommendation for continuation into the next stage; for remediation; or in some cases may refer the project to the IRB for assessment, remediation or for termination. The composition of the body will be different for each Stage Gate depending upon the expertise required.

2.2 LMM References and Guidance Documents

2.2.1 LMM Site

The Lifecycle Management Methodology Library found on the Employee Enterprise Business Collaboration (EEBC) platform provides project managers and other LMM stakeholders with a repository of LMM information. The site features key governance documents including the Lifecycle Management Methodology, the LMM Stage Gate Review Process Description, the Lifecycle Management Methodology Tailoring Plan Guidance, and the Lifecycle Management Methodology Work Breakdown Structure Dictionary and Tailoring Plan Template. The FSA Master Document Template, information on LMM Document Management, links to the Accessibility Enhancement Initiative Documents and the 508 Memorandum dated September 28, 2011, a link to the Lessons Learned Database and Guidance documents and artifact descriptions, templates, guidance, exemplars and Subject Matter Experts for each.

2.2.2 Documents

The documents below are appropriate references for the Lifecycle Management Methodology:

- Lifecycle Management Methodology
- Lifecycle Management Methodology Tailoring Plan Guidance
- Lifecycle Management Methodology Work Breakdown Structure Dictionary and Tailoring Plan Template
- Engineering Review Board Process Description
- FSA Engineering Review Board Charter

Section 3. LMM Governance Process, Description and Structure

The LMM approach to development consists of multiple project stages completed iteratively. Each stage has controls, referred to as Stage Gates. Stage Gates are critical processes to ensure the technology project is ultimately successful and does not move to the next stage until the IPT, SMEs, Stage Gate Review Bodies, Steering Committees and/or governing authorities are satisfied the investment, when delivered, will add planned value to the mission as stated in the business case, technical flaws have been avoided, identified risks have been mitigated or accepted, the system will perform as planned and the system complies with regulations and standards.

3.1 LMM Governance Steps

The LMM governance process consists of eight steps listed below.

Step	Description
1	Create an LMM Tailoring Plan for the project. Using the Tailoring Plan Guidance, ensure that all artifacts and stage gates are addressed so that the team can refer to this document as it begins more detailed project planning.
2	Initiate discussions with SMEs and Stage Gate Process Owners to ensure draft Tailoring decisions are fully coordinated and decisions are reflected in the final Tailoring Plan submitted for approval.
3	Send the final Tailoring Plan to the LMM Tailoring Team via the LMM mailbox. Following approval, the Tailoring Plan will be posted on EEBC and a communication will be sent to the PM.
4	Ensure the project schedule reflects agreed upon Tailoring Plan artifacts and Stage Gates.
5	Prepare for Stage Gate Reviews working with Stage Gate Review Process Owners, the IPT and SMEs (see Appendix G, Stage Gate Review Checklist).
6	Prepare for the Stage Gate Review and/or Meeting (see Appendix G, Stage Gate Review Checklist).
7	Participate in the Stage Gate Review Meeting and document decisions (see Appendix G, Stage Gate Review Checklist).
8	Perform post Stage Gate Review follow-up (see Appendix G, Stage Gate Review Checklist).

3.2 Types of Stage Gates

There are two types of Stage Gates:

- [3]**Management Review Stage Gate:** Governance review process to minimize project risks and ensure the proper initial Investment, Requirements, and Project Close Out Reviews occur. The Investment Review ensures projects are only approved to begin if they are supported by a strong business case and support mission critical change. Requirements Review ensures project development only moves forward after sufficient requirements have been gathered and documented from business owners and future end users. Project Close Out Review ensures no project is closed without proof of sufficient documentation, and the assurance that all lifecycle development steps and activities have been completed.
- **Technical Review Stage Gate:** Governance review process to minimize project risks and ensure the proper Design, Testing, Requirements, and Production Readiness and Retirement

[3] *Please refer to the IRB Governance Process Description for activities required prior to beginning detailed project planning and after implementation.*

and Disposal Reviews occur. These reviews challenge the IPTs to examine project documentation, design and functionality of the solution and ensure the project technical solution is aligned with the enterprise target state vision and architecture and are developed to meet the end user requirements as defined and approved.

During planning, the IPT ensures Stage Gates are included in the project schedule and discussed during the LMM Tailoring Meeting. In the case of a Management Review Stage Gate, the Senior PM coordinates regularly with the Steering Committee and coordinates scheduling of the Management Review Stage Gate via the FSA IRB mailbox. In the case of a Technical Review Stage Gate, the IT PM coordinates with the Stage Gate Review Process Owner to determine appropriate staffing and approvals for the Stage Gate Review.

Following the review and in preparation for the actual Stage Gate meeting, the Steering Committee and Stage Gate Review Body share their assessment with the IPT so that the Senior PM's Stage Gate slides speak to relevant points during the Management Review Stage Gate meeting and so that the IT PM's Stage Gate slides speak to relevant points during the Technical Review Stage Gate meeting. When risk mitigation strategies are identified, following completion of remediation activities, the IPT meets again with the same body to obtain approval that the mitigation strategies are acceptable for the project to pass through the Stage Gate.

While the LMM includes nine Stage Gates, IPTs are not precluded from conducting additional Stage Gates due to the degree of project risk involved.

3.3 Management Review Stage Gate Overview

The sections below describe the Management Review Stage Gate steps, the stakeholders involved, and the required inputs and outputs at each Management Review Stage Gate.

3.3.1 Management Review Stage Gate Description/Purpose

The high-level goal of the Management Review Stage Gate reviews is to ensure that a proposed or ongoing investment provides substantial value to FSA. The purpose of these reviews is to periodically analyze a project and determine if it warrants further effort and funding. The Management Review Stage Gate reviews serve as decision points which must be passed before work on the next stage of a project begins. Upon completion of the project review, the project's Steering Committee[4] will provide project analyses and recommendations via the Executive Sponsor and Senior PM to the IRB. The IRB serves as the final authority regarding the future of the project.

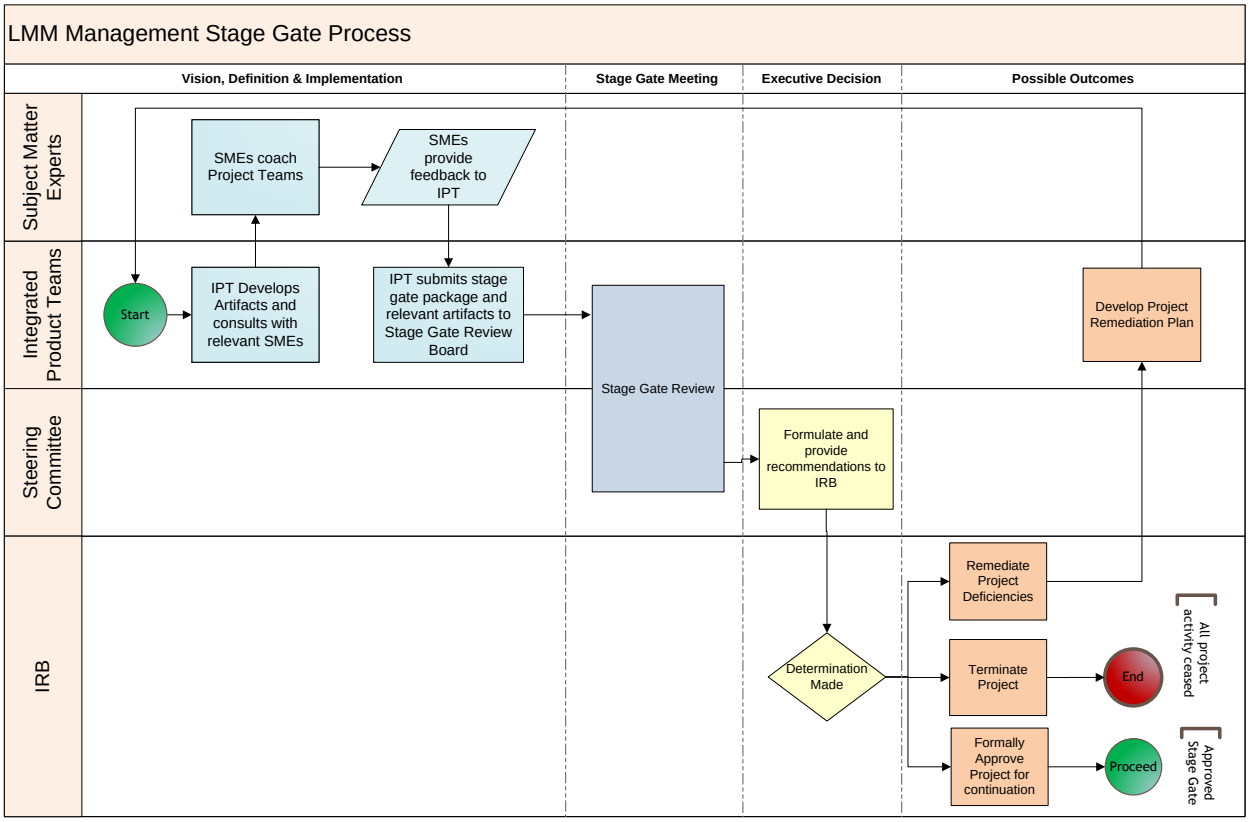
3.3.2 Management Review Stage Gate Structure

There are three Management Review Stage Gates that take place during the project lifecycle (assuming the project is not terminated at one of the first two Stage Gates). The Management Review Stage Gates are frontloaded to the early stages of the project lifecycle with the goal of terminating low-potential projects before significant time or money is allocated toward an effort. The first Management Review Stage Gate review takes place at the end of the Initiative Vision Stage and the second Management Review Stage Gate review takes place at the end of the Definition Stage. Together, these Stage Gate Reviews ensure that the project does not enter the time consuming and expensive development stage unless it truly has merit and the potential to improve FSA's mission delivery in support of the Strategic Plan. The third and final Management Review Stage Gate review occurs at the end of the Implementation Stage. Subsequent sections of this document will provide information specific to each Management Review Stage Gate.

[4] *Contact the Enterprise Project Management and Oversight (ePMO) if your project does not have a Steering Committee. They will help you determine membership in your Stage Gate Review Body.*

3.3.3 Management Review Stage Gate Process Flows

Figure 3-1, Management Reviews Stage Gates 1, 2 and 3 Process



Management Reviews Process

Stage Gate Preparation: The IPT will work with SMEs relevant to the Management Review Stage Gates to develop the artifacts/inputs that are assessed at each of these Stage Gates. The Senior PM will prepare the Stage Gate Template.

Management Review Stage Gate Meetings: The IPT meets with the project's Steering Committee to determine the project's viability to continue. The project team should request input from the following areas in preparation for the Management Review Stage Gates:

- Enterprise Project Management and Oversight (ePMO);
- QA Team (TO);
- Acquisitions Office; and/or
- CFO Representative.

During the Stage Gate meeting, the IPT Senior PM will present a summary of the project effort to date and discuss the stage-gate specific components of the project.

Stage Gate Decision and Outcomes: The Steering Committee, upon completion of the Stage Gate Review, will assess the project and document its feedback and recommendations. These findings and recommendations will be discussed with the IPT during the Stage Gate Meeting and submitted to the IRB, which serves as the final authority regarding the future of the project.

The IRB can render one of the following three decisions:

- Approve - Approve the continuation of the project as presented. Once approved, the approval decisions and the reasons behind the approval decisions are submitted to the contracting officer for formal documentation and the project can proceed to the next lifecycle stage.
- Recommend Project for Remediation - The IRB determines that the project is not fit to go forward in its current state and requires that the IPT remediate deficiencies. The IPT then develops a remediation plan and remedies the project before resubmitting for the Stage Gate.
- Terminate - The IRB determines that the project is not fit to go forward and elects to discontinue all project activity. The IRB documents the reasons for the disapproval and communicates to the Senior PM through the Project Sponsor why the project is being terminated.

3.4 Technical Review Stage Gate Overview

The sections below describe the Technical Stage Review Process steps, the stakeholders involved, and Review Body membership.

3.4.1 Technical Review Stage Gate Description/Purpose

The Technical Stage Gate Review ensures that investments do not suffer from technical flaws that could result in a product that does not meet customer requirements. The Technical Stage Gate Review also ensures that the investment will perform/operate as defined, as planned and in a manner compliant with Federal regulations and standards. This review serves as a decision point which must be passed before work on the next stage of a project begins.

The Technical Review Stage Gate review will result in the project being approved to pass to the next stage of development; the project being recommended for remediation; or the project being recommended to the IRB for termination.

- Approved - If approved, the approval decisions and the reasons supporting approval are submitted to the contracting officer for formal documentation to enable the project to proceed to the next lifecycle stage.
- Recommended for Remediation - If Recommended for Remediation, the project is sent back to the IPT to address issues/risks discovered during the Technical Review Stage Gate. Once the remediation plan is developed and risks are addressed, the project would then be considered again for approval to pass through the Stage Gate.
- Recommended for Termination - If Recommended for Termination, the ERB forwards a termination recommendation via the Chief Information Officer to the IRB. The IRB documents the reasons for the termination, makes the final decision, and communicates to the Senior PM via the Executive Sponsor the reasons for project termination.

3.4.2 Technical Review Stage Gate Structure

There are six Technical Review Stage Gates that take place during the project lifecycle (assuming the project is not terminated at an earlier Stage Gate). Technical Review Stage Gates 1A, 1B and 2 focus on system design and testing, while Technical Review Stage Gate 3 ensures that the final/complete set of requirements is incorporated successfully into the solution. Technical Review Stage Gate 4 takes the form of a comprehensive Production Readiness Review (PRR). Technical Review Stage Gate 5 is the final Stage Gate and assesses the solution's readiness to be retired and the organizational impact of retiring the solution.

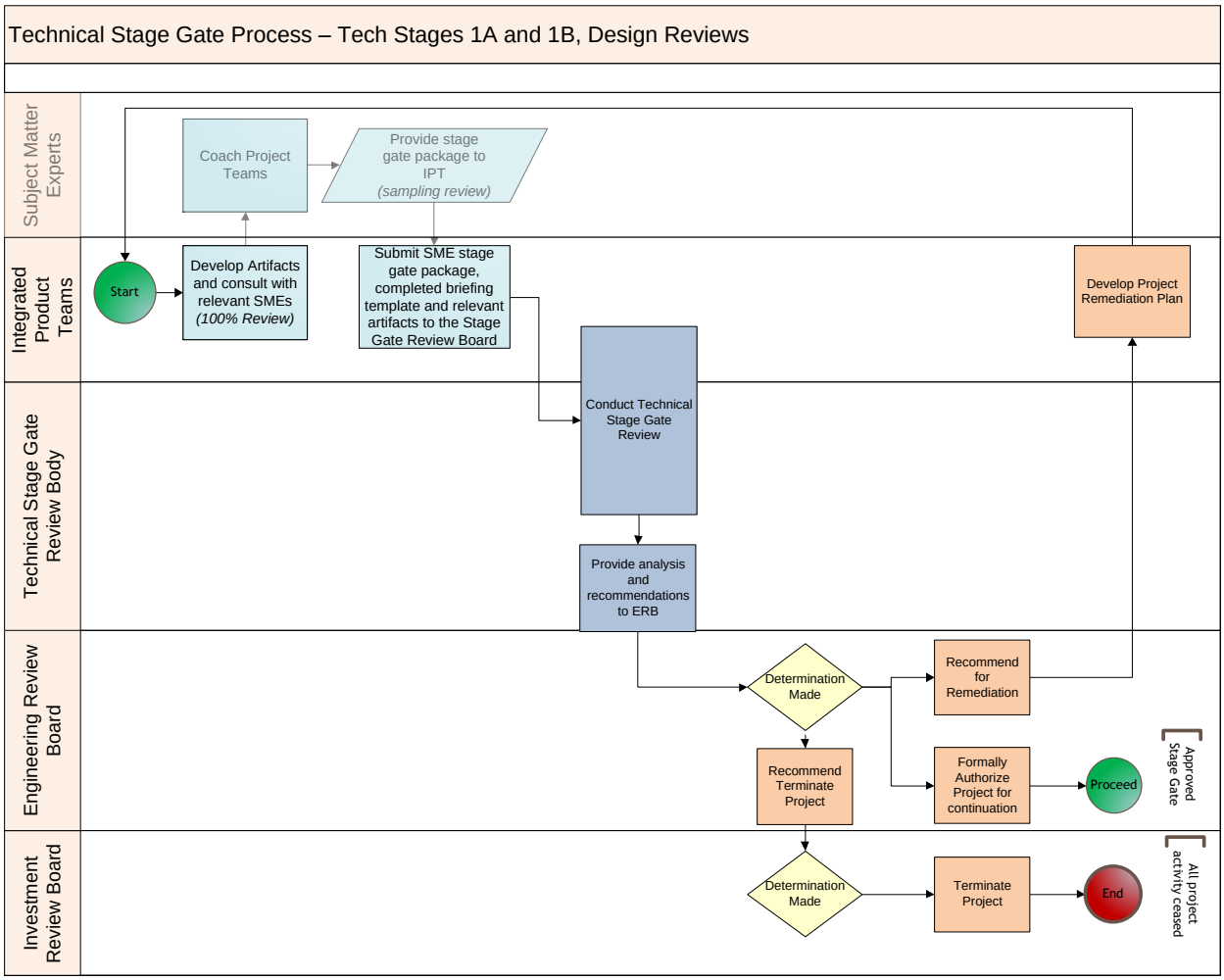
Technical Review Stage Gates begin with the preparation and submission of advanced Stage Gate Packages prepared by the IPT and review team. The Technical Review Stage Gate Review Body reviews the recommendations contained in the Stage Gate Package prior to the actual Stage Gate Meeting. Following presentations and discussions, decisions are captured in a decision document. A briefing is given by the Technology Office PM during Technical Review Stage Gates 1A and B involving the ERB.

IPTs are encouraged to identify and resolve project risks at the lowest level possible. In cases of exceptional risk, the IPT or Stage Gate Review Process Owner may initiate an ERB review through the

appropriate ERB member. This review will enable the ERB to accept the risks or refer the project to the IRB for additional review and possible termination.

3.4.3 Technical Review Stage Gates 1A and 1B – ERB Design Process Flows

Figure 3-2, Technical Reviews Stage Gates 1A and 1B Process



Design Reviews Process

Stage Gate Preparation: The IPT will work with SMEs relevant to the specific Stage Gate to develop the artifacts/inputs that are assessed at the Stage Gate. When the SMEs determine that the artifacts/inputs and the associated project activities have been completed adequately, the SMEs will provide the IPT with a stage gate package signifying that the necessary activities and artifacts have been completed and are of good quality. The IPT will then submit the SME stage gate package, LMM Artifacts and completed Stage Gate Presentation to the Stage Gate Review Board.

Technical Review Stage Gate Meetings – Engineering Reviews: The IPT will select from existing FSA resources/personnel on an as needed basis, Technical Review Stage Gate Review Body members to review projects for Technical Review Stage Gates 1A and 1B to focus on two fundamental criteria:

- Subject Matter Expertise required for review; and
- Personnel who are independent from the project being assessed.

The selected Technical Review Stage Gate Review Body members will thoroughly scrutinize and analyze the relevant, project artifacts submitted for review at the Stage Gate before the actual meeting takes place. During the Stage Gate meeting, the IPT will present a summary of the project effort to date, discuss the stage-gate specific components of the project, and address questions posed by the Technical Review Stage Gate Review Body.

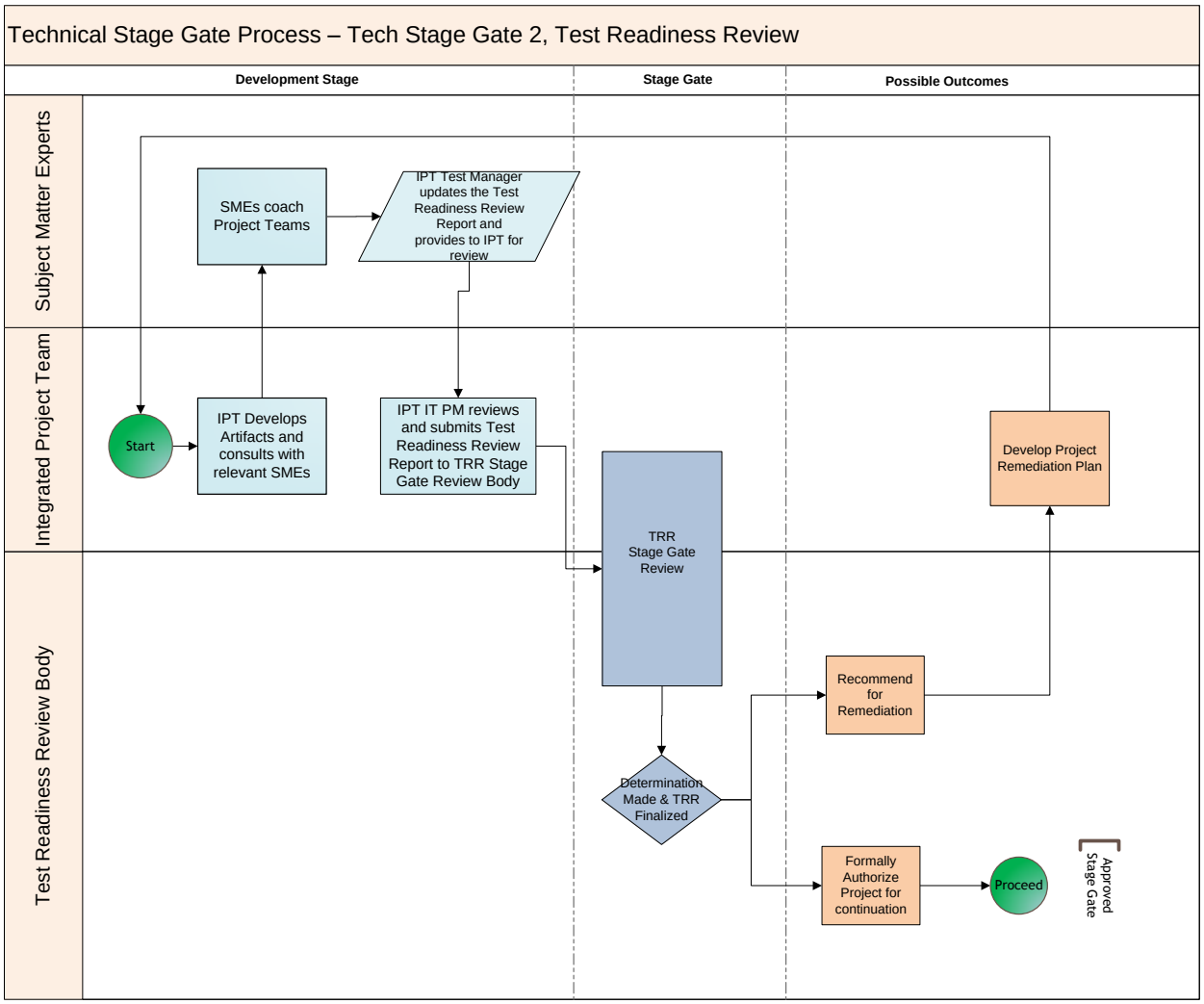
Stage Gate Decision and Outcomes: Upon completion of the Stage Gate Review, the Technical Review Stage Gate Review Body will assess the project and document feedback and recommendations. This analysis will be submitted to the ERB. The ERB will:

- Approve project for continuation into the next stage;
- Recommend the project for remediation; or in some cases may
- Refer the project to the IRB.

In cases where the Technical Review Stage Gate Review results are particularly problematic, the ERB may recommend to the IRB via the Chief Information Officer that project activity be discontinued. Such a termination assessment is made by the IRB and not a part of the Technical Stage Gate Review.

3.4.4 Technical Review Stage Gate 2 – Test Readiness Process Flow

Figure 3-3, Technical Review Stage Gate 2 Process



Test Readiness Review Process

Stage Gate Preparation: The IPT will develop and update artifacts/inputs and complete the work with SMEs relevant to the specific Stage Gate. When the SMEs determine that the artifacts/inputs, and project requirements have been met and activities completed adequately, the Test Lead will provide the IPT with the completed Test Readiness Review Report indicating completion of activities to ensure project risks have been mitigated or accepted. The FSA Test Lead will review the Report and submit it to the Test Readiness Review Body comprised of FSA resources/personnel on an as needed basis. Review members are selected based on two fundamental criteria:

- Subject Matter Expertise required for review; and
- Personnel who are independent from the project being assessed.

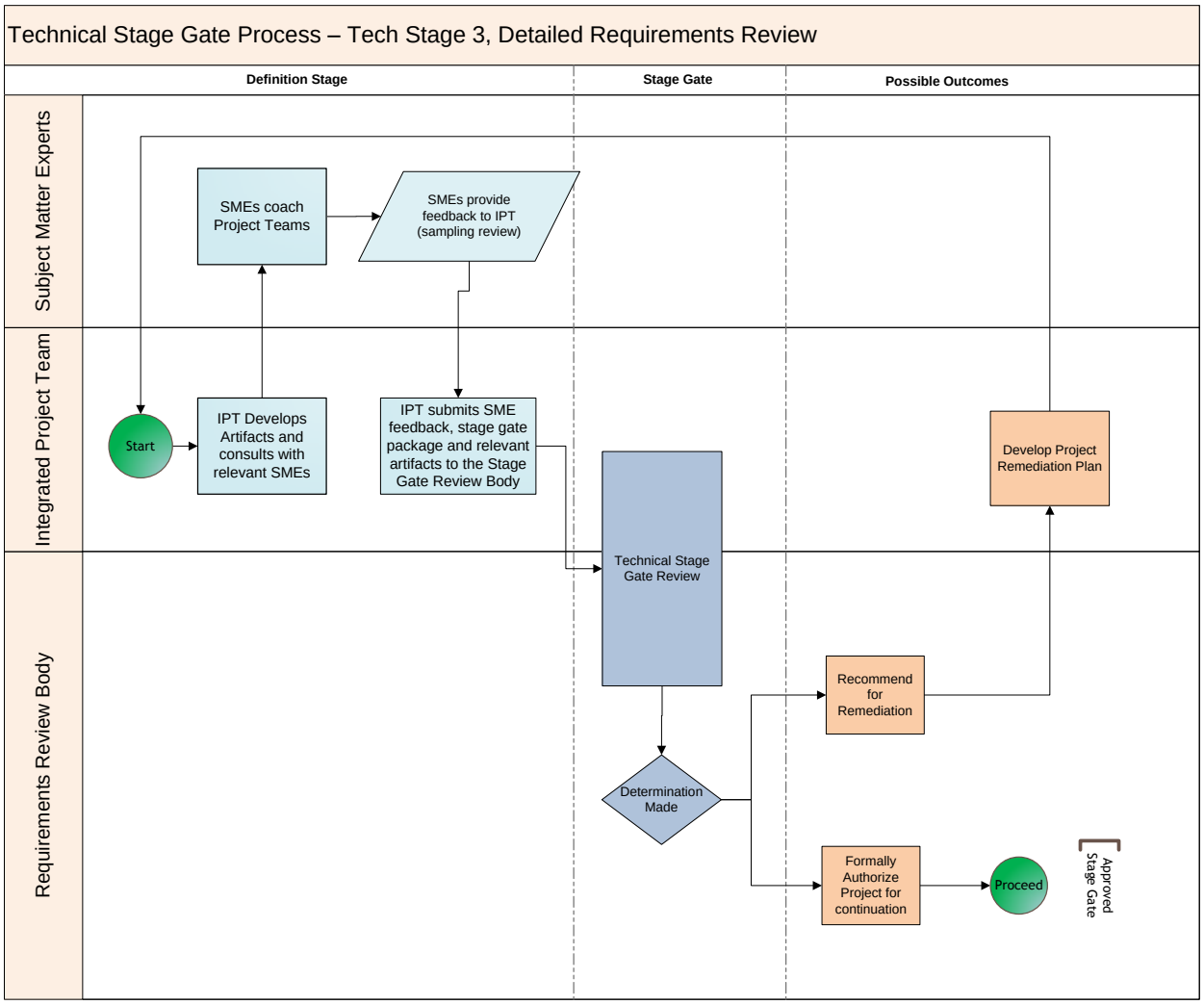
Technical Review Stage Gate 2 - Test Readiness Review: Technical Review Stage Gate 2 Test Readiness Review Body may include FSA Testing Subject Matter Experts, the project FSA Test Lead, FSA Technical Lead, FSA security experts, and other stakeholders. Stakeholders from each area responsible for TRR checklist items must attend TRR meetings. In preparing for this Stage Gate, a Pre-Test Readiness Review is recommended to be completed. Once the IPT determines that the artifacts/inputs, and project requirements have been met and activities completed adequately, the IPT

Test Manager will provide the Test Readiness Review Report to the Stage Gate Review Body and the Test Readiness Review is conducted. The Test Readiness Review will always occur but the Technical Review Stage Gate 2 Review Body may not always be involved. A determination based on project and product risks will be made in cases calling for the Test Readiness Review Board involvement.

Stage Gate Decision & Outcomes: If the project does not meet requirements, risks requiring remediation will be cited and the IPT will develop a Project Remediation Plan, remediate risks and repeat the Test Readiness Stage Gate. If required, refer its conclusions and recommendations to the Executive Board (ERB), either based on a pre-review determination that an Executive review is required, or based on significant concerns identified during the review, which warrant the added level of review. Approval to proceed to the Test Stage is indicated by a determination that the project meets requirements.

3.4.5 Technical Review Stage Gate 3 – Detailed Requirements Process Flow

Figure 3-4, Technical Review Stage Gate 3 Process



Requirements Review Process

Stage Gate Preparation: The IPT may consult with FSA SMEs regarding requirements management expectations and requirements artifacts at any time during Stage Gate Review preparation.

Prepare for Stage Gate: The IPT initiates working with FSA representatives for the Requirements Stage Gate Review Body to plan the Stage Gate activities based on:

- The LMM Tailoring Plan for the project;
- Product risks as initially defined for the project; and
- Product risks based on project progress and status to date.

If due to the complexity or risks associated with a project, a Technical Detailed Requirements Stage Gate is scheduled; review members are selected based on two fundamental criteria:

- Subject Matter Expertise required for review; and
- Personnel who are independent from the project being assessed.

The IPT compiles and submits all requisite documentation. Requirements Technical State Gate SMEs assess IPT inputs, obtain clarification whenever necessary and document their conclusions and feedback.

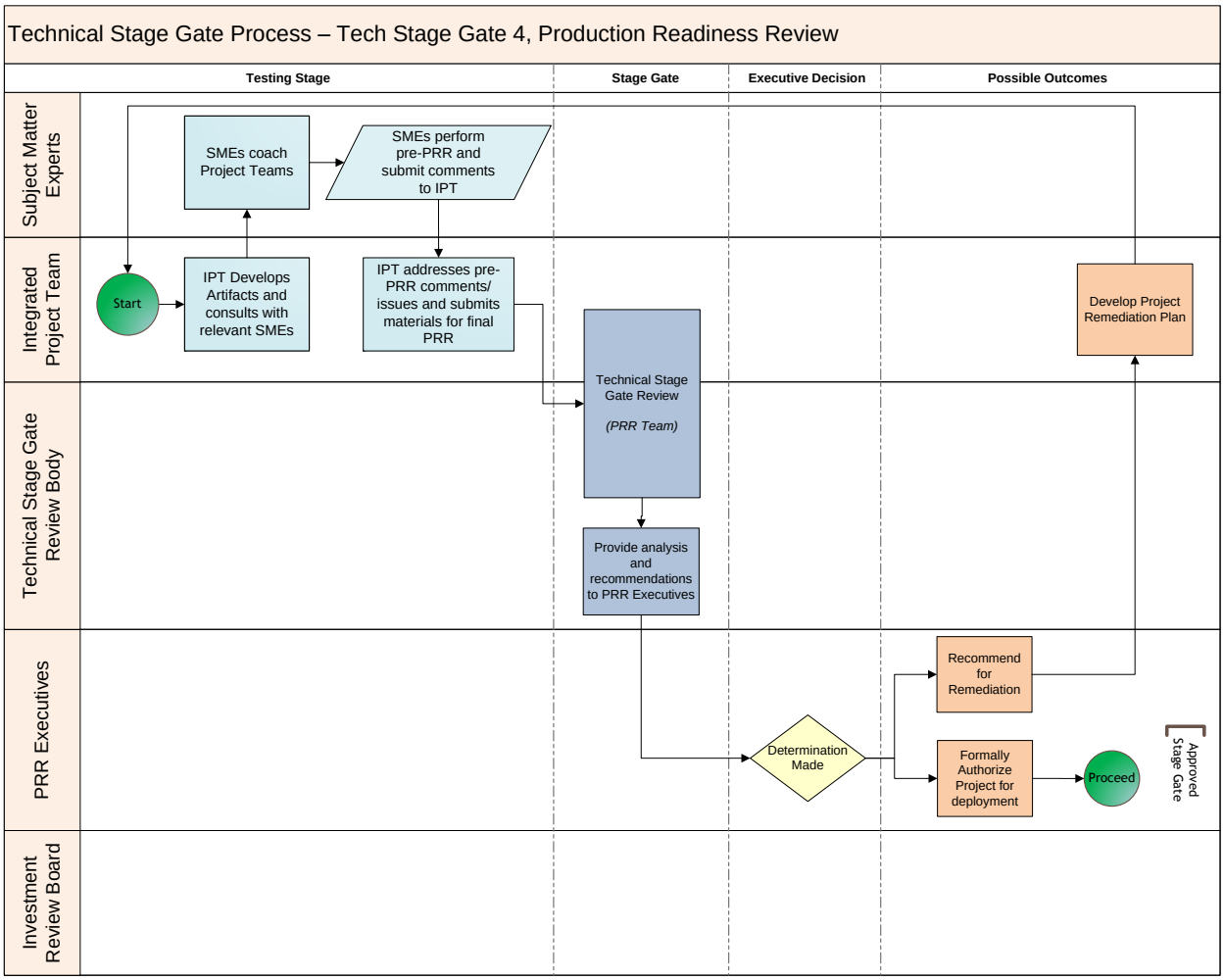
Technical Review Stage Gate Meeting(s) – Requirements Review: The Technical Review Stage Gate Review Body assembles to conduct a formal assessment of the project. The Body may assemble with or without IPT representatives present, but does meet with the IPT at least once to discuss findings. The IPT is offered the opportunity to present project status and artifacts to the Body and the SMEs present their conclusions based on their assessment. The Body assesses risks associated with project status, discusses lessons learned and risk mitigation options with the IPT, and makes a determination.

Stage Gate Decision and Outcomes: Upon completing its assessment, the Technical Review Stage Gate Review Body may:

- Refer its conclusions and recommendations to the Executive Board (either IRB or ERB), either based on a pre-review determination that an Executive review is required, or based on significant concerns identified during the review, which warrant the added level of review;
- Approve the project for continuation into the next stage outright;
- Recommend the project for remediation; or
- Refer the project to the IRB, in the event the Technical Review Stage Gate Body recommends project termination.

3.4.6 Technical Review Stage Gate 4 – Production Readiness Process Flow

Figure 3-5, Technical Review Stage Gate 4 Process



Production Readiness Review Process

The Production Readiness Review (PRR) Process is a quality review of system releases before each release is implemented in Federal Student Aid's (FSA) production environment. The PRR process is intended to keep FSA management informed of critical release activities and is intended to reduce the likelihood of new system releases causing unintended adverse impact to FSA's business or end-users.

Stage Gate Preparation: The IPT will work with SMEs relevant to the specific Stage Gate to develop the artifacts/inputs that are assessed at the Stage Gate. When the SMEs determine that the artifacts/inputs and the associated project activities have been completed adequately, the SMEs will provide the IPT with feedback signifying that the necessary activities and artifacts have been completed and are of good quality. The IPT will then submit the LMM Artifacts and Stage Gate Presentation to the Stage Gate Review Body.

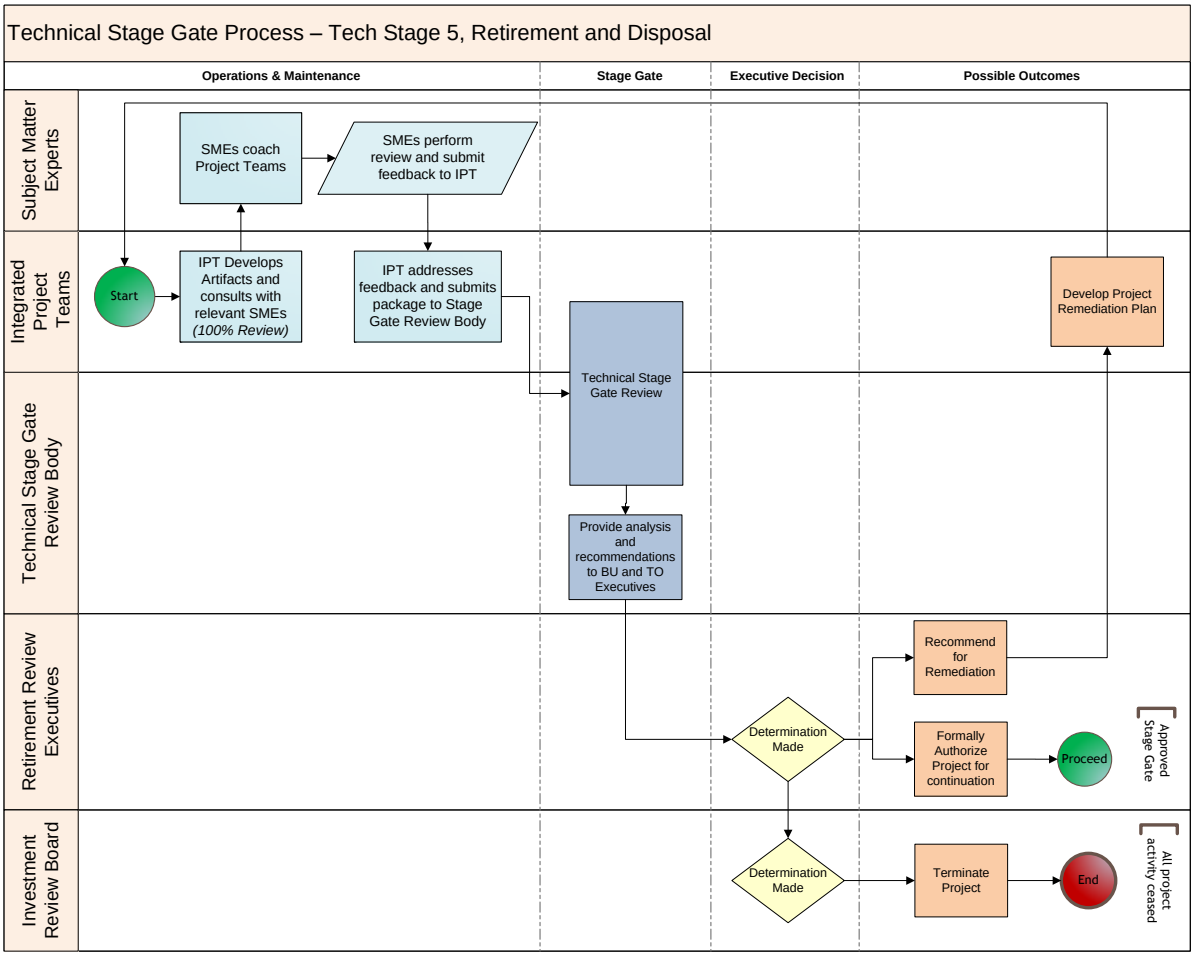
Technical Review Stage Gate 4 Meeting – Production Readiness Review (PRR): For Technical Review Stage Gate 4 – Production Readiness Review, the Technical Review Stage Gate Review Body is composed of FSA PRR Team personnel. The Review Body will assess all relevant documentation and project activities to date in order to analyze the solution's preparedness to go live.

Stage Gate Decision and Outcomes: Upon completion of the Stage Gate Review, the Technical Review Stage Gate Review Body will assess the project and document feedback and recommendations. This analysis will be submitted to the PRR Executive. The PRR Executive will render one of two decisions:

- Approve project for deployment and continuation into the next stage; or
- Recommend the project for remediation.

3.4.7 Technical Review Stage Gate 5 – Retirement and Disposal Process Flow

Figure 3-6, Technical Review Stage Gate 5 Process



Retirement and Disposal Review Process

Stage Gate Preparation: The IPT will work with SMEs relevant to the specific Stage Gate to develop the artifacts/inputs that are assessed at the Stage Gate. When the SMEs determine that the artifacts/inputs and the associated project activities have been completed adequately, the SMEs will provide the IPT with feedback signifying that the necessary activities and artifacts have been completed and are of good quality. The IPT will then submit the LMM Artifacts and Stage Gate Presentation to the Stage Gate Review Body.

Technical Review Stage Gate 5 Meeting – Retirement and Disposal: For Technical Review Stage Gate 5 – Retirement and Disposal Review, the Technical Review Stage Gate Review Body is composed of Business and Technology Office Executives. The Review Body will assess all relevant documentation and project activities to date in order to analyze the solution's preparedness to be retired and decommissioned.

Stage Gate Decision and Outcomes: Upon completion of the Stage Gate Review, the Technical Review Stage Gate Review Body will assess the project and document feedback and recommendations. This analysis will be submitted to the Retirement Review Body Executives. The Retirement Review Body Executives will render one of two decisions:

- Approve project for retirement and decommissioning; or
- Recommend the project for remediation.

Section 4. Detailed Stage Gate Review IPT Guidance

The following is a quick reference for preparing for, planning and delivering Stage Gates. The method, process inputs, attendance, process outputs, approvals and quality standards for each of the Stage Gates are included.

4.1 Management Review Stage Gate 1, Investment Review

The Initiative Vision and High Level Requirements artifacts are reviewed and the project is approved or rejected at this time. Receiving approval to proceed to the *Definition* stage signals successful completion of this Stage Gate.

Stage Gate Objective: Determine whether the proposed project truly responds to agency need(s) and if the project represents the most efficient method of meeting those needs. It is a comprehensive review of a project's business case. The purpose of the Stage Gate is to secure funding for the project to proceed from the initiative vision to the definition stage. This Management Review Stage Gate is also to ensure early TO review of the proposed solution, acquisition and high level requirements.

Representatives from the business unit, Technology Office, and Acquisitions are expected to assist in the development and review of the stage gate inputs. These representatives will likely be the core IPT. Preliminary Stage Gate review with the Project Steering Committee will result in recommendation via the Executive Sponsor and the Senior PM to the IRB for further action.

Note: The Technology Office representative's signature implies that the requirements have been subjected to a technical review as described in Technical Stage Gate 3 and that discussions have occurred between the Process Owner of Technical Stage Gate 3 and the IPT regarding details on how requirements will be elicited and documented to ensure requirements are testable.

Table 4-1: Management Review Stage Gate 1, Investment Review[5]

Task	Description
Method:	The Project Steering Committee will meet with the IPT and review the process inputs/artifacts listed below to assess whether or not the proposed initiative warrants further effort and funding.
Process Inputs[6]: (Information or Documents Required)	Tailoring Plan, Lessons Learned Reports, Outputs from Technical Requirements Review. Acquisition Strategy, Initiative Vision, Project Initiation Artifacts, Privacy Artifacts, Data Retention Schedule, Requirements Management Plan, High Level Requirements Document, Project Management Plan Artifacts, Project Monitoring Artifacts and Pre- and Post-Award Artifacts.
Who Attends:	• IPT • Project Steering Committee • Enterprise Project Management and Oversight Office • Technology Office QA

[5] Projects are required to complete an annual IRB review in support of the CPIC Select Process.

[6] *Process inputs are aligned with LMM Artifacts Summary and Activities. While a set number of artifacts and stage gates have been identified, there may be variances based on the type of project (e.g. Tier 1, 2, 3 projects). The LMM Tailoring Team and SMEs will work with IPTs on tailoring based on the needs and best interests of the project.*

Task	Description
Process Outputs: (Checklists, Memos or Documents)	A signed recommendation from the Project Steering Committee to the IRB to continue or stop the project. A formal decision memo signed by the Chair, IRB Project document updates. Updates to the Lessons Learned Database.
Who Approves?	Chair, IRB
Quality Standard Or References: (Reference and Date)	Enterprise WBS Dictionary

4.2 Management Review Stage Gate 2, Requirements Review

Stage Gate Objective: To determine that project requirements are accepted by the business sponsor and by the Technology Office as sufficient for entry into the development stage from the definition stage. This Stage Gate Review also requires validation that project deliverables have been accepted and that the project is being managed effectively. Representatives from the business unit, Technology Office, and Acquisitions are expected to assist in the development and review of the stage gate inputs. These representatives will likely be the core IPT.

The business sponsor's signature indicates business needs are accurately represented by requirements. The Technology Office representative's signature (Steering Committee Member) indicates that the requirements are technically adequate to support Development stage activities. If applicable, the Contract Officer signature indicates project contract deliverables have been accepted.

Note: The Technology Office representative's signature implies that the requirements have been subjected to a technical review as described in Technical Stage Gate 3.

Table 4-2: Management Review Stage Gate 2, Requirements Review

Task	Description
Method:	The Project Steering Committee will meet with the IPT and review the process inputs/artifacts listed below to assess whether or not the proposed initiative warrants further effort and funding.
Process Inputs[7]: (Information or Documents Required)	Updated Tailoring Plan and Outputs from Management Stage Gate 1 and Technical Requirements Review, Acquisition Strategy, Initiative Vision, Project Initiation Artifacts, Privacy Artifacts, Data Retention Schedule, Requirements Management Plan, High Level Requirements Document, Project Management Plan Artifacts, Project Monitoring Artifacts and Pre- and Post-Award Artifacts, ISSO Appt. Letter, External Data Exchange Artifacts, Master Test Plan, UI Specification Document, Data Migration Plan, Implementation/Transition Management Plan, Continuity of Services Artifacts and Configuration Management Plan.
Who Attends:	• IPT • Project Steering Committee • Enterprise Project Management Office • Technology Office QA
Process Outputs: (Checklists, Memos or Documents)	A signed recommendation from the Project Steering Committee via the Executive Sponsor and the Senior PM to the IRB to continue or stop the project. A formal decision memo signed by the Chair, IRB. Project document updates. Updates to the Lessons Learned Database. Updates to the Tailoring Plan.

[7] *Process inputs are aligned with LMM Artifacts Summary and Activities. While a set number of artifacts and stage gates have been identified, there may be variances based on the type of project (e.g. Tier 1, 2, 3 projects). The LMM Tailoring Team and SMEs will work with IPTs on tailoring based on the needs and best interests of the project.*

Task	Description
Who Approves?	Chair, IRB
Quality Standard Or References: (Reference and Date)	Enterprise WBS Dictionary

4.3 Technical Review Stage Gates 1A and 1B, ERB Design Reviews

Stage Gate Objective: The purpose of Technical Review Stage Gates 1A and 1B is to verify that a system's technical solutions are in compliance with FSA's technical, architectural and target state vision objectives and the project is ready to pass from technical design to build/construct/test in the development stage.

Stage Gate 1A is defined by the Preliminary Design Document (PDD) and the User Interface Design Document (UIDD). The Preliminary Design effort will normally consist of an initial draft that will be reviewed by appropriate technical personnel. Comments will be collected, collated and provided back to the IPT team for their review, comment, and incorporation into the next iteration. Depending on the complexity of the technology and implementation effort, there may be several iterations of the document. After FSA has received the Final PDD, the TO Enterprise IT Architecture Strategic Information Group (EITA) will field a technical team to conduct a TQC assessment. The results of the TQC assessment will be provided to the ERB for review and determination to proceed.

Stage Gate 1B is defined by the Detailed Design Document (DDD). The process and steps are identical to the Preliminary Design review. Detailed Designs normally require several iterations before finalization at which time another TQC effort will assess the design characteristics and provide a qualitative and quantitative score.

Table 4-3: Technical Review Stage Gate 1A and 1B, Engineering Design Reviews

Task	Description
Method:	The Technology Office EITA will meet with the IPT and review the process inputs/artifacts listed below and related information to assess whether or not the system is technically compliant with FSA's architectural, security, data and technical standards. EITA will compile a technical analysis package for the Engineering Review Board (ERB) to support their assessment of the projects technical solution and compliance with FSA standards. The ERB will conduct a formal Stage Gate Review with the IPT and receive a project overview briefing prepared by the IT PM for the IPT. The ERB will authorize the project IPT to continue with Development Stage – Build activities based on the recommendations contained in the ERB Engineering Design Package consisting of a Cover Page, the outcome of the formal TQC assessment, the IT PM Project Bi-Weekly Status Summary Report, the IV&V memorandum, and the ERB Decision. The Stage Gate decision is based on the Design Package and responses to questions from the ERB members. If ERB authorization to proceed is not provided, a remediation strategy will be created and followed before the IPT can return for a follow-up Stage Gate Review.

Task	Description
Process Inputs[8]: (Information or Documents Required)	Updated Tailoring Plan and Outputs from Management Stage Gate 2. Technical Requirements Review, Acquisition Strategy, Initiative Vision, Project Initiation Artifacts, Privacy Artifacts, Data Retention Schedule, Requirements Management Plan, High Level Requirements Document, Project Management Plan Artifacts, Project Monitoring Artifacts and Pre- and Post-Award Artifacts, ISSO Appt. Letter, External Data Exchange Artifacts, Master Test Plan, UI Specification Document, Data Migration Plan, Implementation/Transition Management Plan, Continuity of Services Artifacts, Configuration Management Plan, Preliminary Design Document, Requirements Traceability Matrix, Detailed Design Document, Test Suites, Training Plan, Security Risk Assessment Artifacts, Solution Source Code and Deployable Packages, and Operations and Maintenance Plan. Documentation produced by the IPT and reviewed by EITA:
Who Attends:	• Designated ERB Members • Designated TO staff including the VDC Manager, Chief Information Security Officer, and the Enterprise QA Manager • IPT, including System Technical Lead, Test Lead, Information System Security Officer (ISSO) System Owner, and Application/Business Owner
Process Outputs: (Checklists, Memos or Documents)	ERB Engineering Design Package consisting of a Cover Page, the IT PM Project Bi-Weekly Status Summary Report, the TQC Document, the IV&V memorandum, and the Risk Summary Report. IPT PM produces a Briefing with an ERB Decision indicating authority to proceed; OR a Project remediation recommendation indicating the project will develop and address risks identified in a Remediation Plan prior to returning to these Stage Gates. Project document updates. Updates to the Lessons Learned Database. Updates to the Tailoring Plan.
Who Approves?	Chair, ERB and IPT representatives from the Business Unit and Technology Office

[8] *Process inputs are aligned with LMM Artifacts Summary and Activities. While a set number of artifacts and stage gates have been identified, there may be variances based on the type of project (e.g. Tier 1, 2, 3 projects). The LMM Tailoring Team and SMEs will work with IPTs on tailoring based on the needs and best interests of the project.*

Task	Description
Quality Standard or Reference:	FSA – LMM Overview , Version 1.0 (03-31-11) Technical Standards or Policies Applied by the TO EITA • **Target State Vision - Compliance Assessment Standards:** FSA Target State Vision Documents and Guidelines • **1A - Technical Compliance Assessment Standards:** Preliminary Design Document Template Preliminary Design Document Exemplar User Interface Design Template User Interface Design Exemplar Other FSA published standards • **1B - Technical Compliance Assessment Standards:** Detailed Design Document Template Detailed Design Document Exemplar

4.4 Technical Review Stage Gate 2, Test Readiness Review

Stage Gate Objective: Test Readiness Reviews are required for all projects for each iteration of testing and for each stage of testing. The degree of rigor assigned to a Test Readiness Review Stage Gate is determined by the project size, scope and complexity. The purpose of Test Readiness Reviews is to provide management with an assessment of the readiness of the development maturity, test environment, test data, test processes, deliverables and other dependencies to ensure the system is ready to pass from build/construct to formal system testing and that known risks have been documented, accepted or mitigated.

Table 4-4: Technical Review Stage Gate 2, Test Readiness Review

Task	Description
Method:	The Test Readiness Review Body will meet with the IPT and review the Test Readiness Review checklist to assess and verify whether or not development requirements, artifacts, inputs, and project requirements have been met and activities completed.
Process Inputs:[9] Information or Documents Required	Updated Tailoring Plan and outputs from Technical Stage Gates 1A and B. Acquisition Strategy, Initiative Vision, Project Initiation Artifacts, Privacy Artifacts, Data Retention Schedule, Requirements Management Plan, High Level Requirements Document, Project Management Plan Artifacts, Project Monitoring Artifacts and Pre- and Post-Award Artifacts, ISSO Appt. Letter, External Data Exchange Artifacts, Master Test Plan, UI Specification Document, Data Migration Plan, Implementation/Transition Management Plan, Continuity of Services Artifacts, Configuration Management Plan, Preliminary Design Document, Requirements Traceability Matrix, Detailed Design Document, Test Suites, Training Plan, Security Risk Assessment Artifacts, Solution Source Code and Deployable Packages, and Operations and Maintenance Plan.
Who Attends:	• Enterprise Testing Team • IPT (PMs, representatives from requirements, development, test, and security teams) • FSA Test Lead, FSA Technical Lead, Business Owner Representatives and Technology Office QA • CO and/or COTR (optional)

[9] *Process inputs are aligned with LMM Artifacts Summary and Activities. While a set number of artifacts and stage gates have been identified, there may be variances based on the type of project (e.g. Tier 1, 2, 3 projects). The LMM Tailoring Team and SMEs will work with IPTs on tailoring based on the needs and best interests of the project.*

Process Outputs: (Checklists, memos or documents)	Signed decision memo outlining: • Decision to proceed; or • Decision to delay requires mitigation strategies for completion prior to resubmission for approval; findings reported to ERB for decision when delay impacts costs and major delays in the project schedule. Completed TRR Report with Findings. Project document updates. Updates to the Lessons Learned Database. Updates to the Tailoring Plan.
Who Approves:	Enterprise Testing Senior Manager, IPT FSA Technical Lead, and/or the Senior Business Representative, depending on the project and product risks.
Quality Standard or References:	Enterprise Test Management Standards Requirements Standards Configuration Management Standards Enterprise Technical Standards Security Standards

4.5 Technical Review Stage Gate 3, Detailed Requirements Review

Stage Gate Objective: The purpose of Stage Gate 3 is to get agreement from key stakeholders that the requirements are ready for use by the solution delivery teams, and are sufficient to move from definition to the design stage of the project.

Note: Technical Review Stage Gate 3 focuses on detailed requirements, and presumes that successful technical reviews of the High Level Requirements took place during Management Review Stage Gate 1. As noted in Management Stage Gate 2, a technical review as described below feeds Management Stage Gates 1 and 2 regarding the Technology Office representative's signature.

Table 4-5: Technical Review Stage Gate 3 – Detailed Requirements Review

Task	Description
Method:	Technical Review Stage Gate 3 occurs for each iteration. First round feeds conclusions to Management Review Stage Gate 2. Subsequent rounds, if any, are stand-alone reviews that also consider overall project progress. While the Review Body varies, the TASS group, Business Analysts, TO personnel with business domain knowledge and non-TO personnel may be used to staff the Requirements Technical Review Stage Gate Body. Representatives work with the IPT to plan the Stage Gate activities based on: (1) the LMM Tailoring Plan for the project; (2) product risks as initially defined for the project; (3) the outcomes of Management Review Stage Gate 1; and (4) product risks based on project progress and status to date. The Review Body determines whether an Executive review will be required. Stage Gate SMEs assess IPT inputs, obtain clarification when necessary and document their conclusions. The Body assesses risks associated with the state of product artifacts and overall project status, discusses lessons learned and risk mitigation options with the IPT, and makes a determination.
Process Inputs[10]: (Information or Documents Required)	Updated Tailoring Plan and outputs from Management Stage Gates 1 and 2 and Technical Stage Gates 1A and B and 2 particularly as they pertain to: (a) quality and completeness of High Level Requirements; and (b) rationale for iterations and releases, Acquisition Strategy, Initiative Vision, Project Initiation Artifacts, Privacy Artifacts, Data Retention Schedule, Requirements Management Plan, High Level Requirements Document, Project Management Plan Artifacts, Project Monitoring Artifacts and Pre- and Post-Award Artifacts, ISSO Appt. Letter, External Data Exchange Artifacts, Master Test Plan, UI Specification Document, Data Migration Plan, Implementation/Transition Management Plan, Continuity of Services Artifacts, Configuration Management Plan, Preliminary Design Document, Requirements Traceability Matrix, Detailed Design Document, Test Suites, Training Plan, Security Risk Assessment Artifacts, Solution Source Code and Deployable Packages, and Operations and Maintenance Plan.
Who Attends:	The Technical Review Stage Gate Review Body members outlined under Method above, assemble in one or more meetings to conduct a formal assessment of product artifacts. The Body may assemble with or without IPT representatives present, but does meet with the IPT at least once to discuss findings. The IPT is offered the opportunity to present during the meeting. The Review Body may ask questions and presents conclusions based on their assessment.

[10] *Process inputs are aligned with LMM Artifacts Summary and Activities. While a set number of artifacts and stage gates have been identified, there may be variances based on the type of project (e.g. Tier 1, 2, 3 projects). The LMM Tailoring Team and SMEs will work with IPTs on tailoring based on the needs and best interests of the project.*

Task	Description
	If an Executive Review has been recommended, then this takes place following completion of the Review Body assessment.
Process Outputs: (Checklists, Memos or Documents)	Signed decision memo. Upon completing its assessment, the Technical Review Stage Gate Review Body may: Refer its conclusions and recommendations to the ERB (for possible escalation to the IRB), either based on a pre-review determination that an Executive review is required, or based on significant concerns identified during the review, which warrant the added level of review (such as if recommending project suspension / termination, approve the project for continuation to the next stage, or recommend the project for remediation. Project document updates. Updates to the Lessons Learned Database. Updates to the Tailoring Plan.
Who Approves?	Approval level is based on project and product risks. This discussion is held between the IPT and Stage Gate Owner during Tailoring.
Quality Standard or Reference:	Technical Quality Control Framework – Scoring Master Template Detailed Requirements Document LMM Template and Exemplar User Interface Specification LMM Template and Exemplar Requirements Traceability Matrix LMM Template and Exemplar

4.6 Technical Review Stage Gate 4, Production Readiness Review

Stage Gate Objective: The purpose of the Technical Review Stage Gate 4, Production Readiness Review is to verify the system's readiness to be deployed into FSA's production environment. This Stage Gate serves as the final, formal and documented decision point before a system passes from testing into implementation and enters FSA's production environment to be exposed to end-users.

Table 4-6: Technical Review Stage Gate 4 – Production Readiness Review

Task	Description
Method:	The Stage Gate Review Body will meet with the IPT and review the process inputs/artifacts listed below and related information to assess whether or not the system is ready to enter FSA's production environment.
Process Inputs[11]: (Information or Documents Required)	Updated Tailoring Plan and outputs from Technical Stage Gates 1A and B and 2. Acquisition Strategy, Initiative Vision, Project Initiation Artifacts, Privacy Artifacts, Data Retention Schedule, Requirements Management Plan, High Level Requirements Document, Project Management Plan Artifacts, Project Monitoring Artifacts and Pre- and Post-Award Artifacts, ISSO Appt. Letter, External Data Exchange Artifacts, Master Test Plan, UI Specification Document, Data Migration Plan, Implementation/Transition Management Plan, Continuity of Services Artifacts, Configuration Management Plan, Preliminary Design Document, Requirements Traceability Matrix, Detailed Design Document, Test Suites, Training Plan, Security Risk Assessment Artifacts, Solution Source Code and Deployable Packages, Operations and Maintenance Plan, Test Reports, Solution User Manual, Authority to Operate Letter and Briefing and Release Version Description Document.. In addition to providing documentation, certain key activities must be completed prior to entering this Stage Gate. These activities include: • Completion of all phases of testing (System, Inter-System, Performance, 508 and UAT). • Completion of updates to security and privacy documentation, to include final publication of a System of Records Notice (SORN) if applicable. • Completion of vulnerability scanning activities for development, test, stage, and any other non-production system environment. • Recording of vulnerability scan results in OVMS and remediation of findings as directed by the Technology Office, Cyber Security Team. The IPT has conducted an Operational Readiness Review within the project team to determine that the system/release is ready to enter production.
Who Attends:	Technology Office staff, including VDC Manager, Chief Information Security Officer, Enterprise QA Manager, Technology Office Management designee. IPT, including PM, System Technical Lead, Test Lead, Information System Security Officer (ISSO) System Owner, and Application/Business Owner. Additional members

[11] *Process inputs are aligned with LMM Artifacts Summary and Activities. While a set number of artifacts and stage gates have been identified, there may be variances based on the type of project (e.g. Tier 1, 2, 3 projects). The LMM Tailoring Team and SMEs will work with IPTs on tailoring based on the needs and best interests of the project.*

Task	Description
	of the project team and support contractors may be included at the discretion of the IPT. The team should have sufficient personnel to answer technical questions about the release that is being implemented. Depending on the scope of the release, attendance from the Operating Committee Member responsible for the system and the Chief Information Officer may be required.
Process Outputs: **(Checklists, Memos or Documents)**	Completed PRR Sign-off Decision; or Mitigation strategies for completion prior to resubmission for approval. Project document updates. Updates to the Lessons Learned Database. Updates to the Tailoring Plan.
Who Approves:	All of the following approvals are required for PRR. • Application/Business Owner • System Owner • Release Project Manager • System Technical Lead • Test Lead • Information System Security Officer (ISSO) • Operating Committee Member for impacted business area – High Risk Releases Only • VDC Manager • Chief Information Security Officer • Enterprise QA Manager • Technology Office Management designee (director) • Chief Information Officer – High Risk Releases Only
Quality Standard or Reference:	FSA Production Readiness Review (PRR) Process Description. Version 11 (07-26-11)

4.7 Management Review Stage Gate 3, Project Close out Review

Stage Gate Objective: The purpose of this Stage Gate is to ensure that the system is functioning properly post implementation, that the system is ready to proceed from implementation to the operations and maintenance stage, as well as to document final lessons learned and perform project closeout.

Table 4-7: Management Review Stage Gate 3, Project Close Out Review

Task	Description
Method:	The Project Steering Committee will meet with the IPT and review the process inputs/artifacts listed below to assess whether or not the project can be closed out and validate that plans are in place for continuing management of the product.
Process Inputs:[12] Information or Documents Required	Updated to Tailoring Plan and Outputs from Technical Stage Gate 4, Approval of First Live Batch, Final IV&V Approval, Project Closeout Report, Closing Process Checklist and Project Archives Report. Acquisition Strategy, Initiative Vision, Project Initiation Artifacts, Privacy Artifacts, Data Retention Schedule, Requirements Management Plan, High Level Requirements Document, Project Management Plan Artifacts, Project Monitoring Artifacts and Pre- and Post-Award Artifacts, ISSO Appt. Letter, External Data Exchange Artifacts, Master Test Plan, UI Specification Document, Data Migration Plan, Implementation/Transition Management Plan, Continuity of Services Artifacts, Configuration Management Plan, Preliminary Design Document, Requirements Traceability Matrix, Detailed Design Document, Test Suites, Training Plan, Security Risk Assessment Artifacts, Solution Source Code and Deployable Packages, Operations and Maintenance Plan, Test Reports, Solution User Manual, Authority to Operate Letter and Briefing, and Release Version Description Document.
Who Attends:	• IPT • Project Steering Committee • Enterprise Project Management Office • Technology Office QA
Process Outputs: (Checklists, Memos or Documents)	• A signed recommendation from the Project Steering Committee via the Executive Sponsor and the Senior PM to the IRB to continue or stop the project. • A formal decision memo signed by the Chair, IRB. • Updates to the Lessons Learned Database. • Updates to the Tailoring Plan.
Who Approves?	Chair, IRB

[12] *Process inputs are aligned with LMM Artifacts Summary and Activities. While a set number of artifacts and stage gates have been identified, there may be variances based on the type of project (e.g. Tier 1, 2, 3 projects). The LMM Tailoring Team and SMEs will work with IPTs on tailoring based on the needs and best interests of the project.*

Task	Description
Quality Standard **Or References:** (Reference and Date)	Enterprise WBS Dictionary

4.8 Technical Review Stage Gate 5, Retirement and Disposal Review

Stage Gate Objective: The purpose of this Stage Gate is to ensure that a FSA system and system components are properly retired, decommissioned, sanitized and archived according to NIST, Department of Education and FSA guidelines, policies standards and procedures before passing from operations and maintenance to the retirement stage.

Table 4-8: Technical Review Stage Gate 5 – Retirement and Disposal Review

Task	Description
Method:	The Stage Gate Review Body will meet with the IPT and review the process inputs/artifacts listed below and related information to assess whether or not the system is ready for retirement. The System Retirement and System Disposal Plans are inputs and will be reviewed for sufficiency. A decision memo will be issued outlining the decision.
Process Inputs:[13] Information or Documents Required	Updated Tailoring Plan. Acquisition Strategy, Initiative Vision, Project Initiation Artifacts, Privacy Artifacts, Data Retention Schedule, Requirements Management Plan, High Level Requirements Document, Project Management Plan Artifacts, Project Monitoring Artifacts and Pre- and Post-Award Artifacts, ISSO Appt. Letter, External Data Exchange Artifacts, Master Test Plan, UI Specification Document, Data Migration Plan, Implementation/Transition Management Plan, Continuity of Services Artifacts, Configuration Management Plan, Preliminary Design Document, Requirements Traceability Matrix, Detailed Design Document, Test Suites, Training Plan, Security Risk Assessment Artifacts, Solution Source Code and Deployable Packages, Operations and Maintenance Plan, Test Reports, Solution User Manual, Authority to Operate Letter and Briefing, Release Version Description Document, Security Certification & Accrediation & Post Implementation Evaluation Report, Operational Analysis, and.Retirement and Disposal Artifacts. Service Request.
Who Attends: Authorized Federal Decision Makers	Integrated Project Leads (BU, PMO, ACQ & TO) and the Technical Review Stage Gate Review Body.
Process Outputs: Checklists, Memos or Documents	Completed System Retirement, Decommissioning & Repurposing, System Disposal Plans, change requests, BU, ACQ & TO acceptance of completed Service Request and signed decision outlining: Decision to proceed; or mitigation strategies for completion prior to resubmission for approval. Project document updates. Updates to the Lessons Learned Database.
Who Approves?	BU Executive and TO Executives and/or designees.

[13] *Process inputs are aligned with LMM Artifacts Summary and Activities. While a set number of artifacts and stage gates have been identified, there may be variances based on the type of project (e.g. Tier 1, 2, 3 projects). The LMM Tailoring Team and SMEs will work with IPTs on tailoring based on the needs and best interests of the project.*

Task	Description
Quality Standard or Reference: Reference and Date	System Retirement, Decommissioning & Repurposing and System Disposal Plan Guides.

Appendix A. Acronyms and Abbreviations

ED	U.S. Department of Education
EPMO	Enterprise Project Management and Oversight (Group)
CO	Contracting Officer
CPIC	Capital Planning and Investment Control
EBC	Enterprise Business Collaboration
EQTCM	Enterprise Quality & Technical Change Management (Group)
ERB	Engineering Review Board
FSA	Federal Student Aid
IPT	Integrated Project Team
IRB	Investment Review Board
IT	Information Technology
OMB	Office of Management and Budget
PM	Project Manager
PMO	Project Management Office
LCM	Lifecycle Management (Framework)
LMM	Lifecycle Management Methodology
MSG	Management Stage Gate
PRR	Production Readiness Review
QA	QA (Team)
SDLC	System Development Lifecycle
SIG	Strategic Investments Governance
SME	Subject Matter Expert
TO	Technology Office
TQC	Technical Quality Controls
TSG	Technical Stage Gate
WBS	WBS

Appendix B. Glossary

Term	Definition
Complex Project	A complex (tier 1) project typically crosses several functional areas, is over $1 million for a 3-year period, and meets other high risk factors.
Definition Stage	Integrated Project Team develops detailed requirements based on the objectives, purpose, scope and high level requirements documented in the Initiative Vision stage.
Development Stage	Activities consist of designing, building, testing and performing revisions and rebuilding or modifying the solution during subsequent iterations.
Employee Enterprise Business Collaboration	Intranet site that houses LMM artifacts https://fsa.share.ed.gov/lmm/SitePages/LMM%20Welcome.aspx
Engineering Review Board	A body of FSA Technology Office Executives and Directors that oversees the progress of FSA IT Projects. It is particularly critical to Technical Review Stage Gate 1 since the ERB receives the stage report / analysis from the Technical Review Stage Gate Review Body and makes a determination as to whether or not the project should continue.
Exemplar	A sample of a completed work product template that provides a project team with sufficient information, level of detail and data organization that will meet the minimum deliverable expectations of Federal Student Aid.
Exhibit 300	Funding request document describing an investment's business case, financials, performance measures, SRM and TRM mappings.
Implementation Stage	Once the solution has gone live, it enters the Implementation stage, which consists of conducting security reviews, implementing the solution and training end users. During this stage, the solution is closely monitored to ensure that it functions properly and truly meets the needs of the stakeholders.
Initiative Vision Stage	Establishes project objectives, purpose, scope and high level requirements.
Integrated Project Team	The Senior Project Manager, IT Project Manager, Business Project Manager, and acquisitions specialist (if acquisitions are necessary) collectively form the core of the Integrated Project Team (IPT). The extended IPT consists of other project members and stakeholders.
Investment Review	Ensures projects begin only if they are supported by a strong business case and support a mission critical area.
Investment Review Board	The Investment Review Board approves, tracks, and reports on projects within FSA's project portfolio. It is critical to the LMM because it is the governing body that has ultimate control over project funding at FSA.
Management Review Stage Gate	Governance process used to minimize project risk by reviewing and analyzing a project to determine if it is worthy of further effort and funding. The three Management Review Stage Gates include Investment Reviews, Requirements Reviews, and Project Close-Out Reviews.
Operations and Maintenance Stage	Ensures reliable operation of the solution after Implementation through maintenance and implementation of necessary enhancements.
Production Readiness Review	Ensures a system is ready to be deployed into a production environment.

Term	Definition
Project Tier	A risk-based categorization of projects based on input factors such as cost, duration, complexity, resource and procurement needs, etc. The result is one of three categories: simple (tier 3), standard (tier 2), or complex (tier 1).
Retirement Stage	Ensures that a Federal Student Aid system and system components are properly retired, decommissioned, sanitized and archived according to NIST, Department of Education and Federal Student Aid guidelines, policies standards and procedures.
Simple Project	A simple (tier 3) project typically affects a single unit within a business area, estimated to cost under $500 K, and has minimal risk.
Stage Gate	Helps ensure the solution is being developed according to requirements and that the project is properly managed and is maintaining the necessary documentation. (See Management Review Stage Gate and Technical Review Stage Gate)
Standard Project	A standard (tier 2) project typically affects a single business area, is estimated to cost between $500 K – $1M, and meets other average risk factors.
Subject Matter Expert	Provide guidance to project teams relevant to the SMEs area of expertise. Before the Project Manager submits artifacts for official Stage Gate review, SMEs review the artifacts and provide feedback. When requested, SMEs can render project-specific analysis and expertise to the various review bodies.
Tailoring Plan	An approved baseline of expectations that focus on the artifacts that an IPT will produce throughout the life of a project.
Technical Quality Control	Framework that describes the process for assuring that architectures meet the Federal Student Aid design standards.
Technical Review Stage Gate	Governance process used to minimize product risk by ensuring solution will perform as planned in a manner compliant with Federal regulations and standards and will not suffer from technical flaws. The five Technical Review Stage Gates include Design Reviews, Test Readiness Reviews, Detailed Requirements Reviews, Production Readiness Reviews, and Retirement and Disposal Reviews.
Testing Stage	Consists of performing functional, integration, regression, performance, and user acceptance testing.

Appendix C. Stage Gate Packages

Stage Gate	Description	Owner	References
MSG 1	IRB Funding	Daria Adams	**Work Breakdown Structure Dictionary** **Decision Memo (see Appendix F)** **Contact Owner for IRB Briefing Template or Questions**
MSG 2	Requirements	Daria Adams	**Work Breakdown Structure Dictionary** **Decision Memo (see Appendix F)** **Contact Owner for Requirements Template or Questions**
TSG 1A	Preliminary Design	Patrick Fedorowicz	**TQC Framework, v2.0 dated 8/24/2009** **IV&V Handbook version 4.0 dated 9/17/2008** **Design Template** **IPT Design Template** **Contact Owner for Questions**
TSG 1B	Detailed Design	Patrick Fedorowicz	**TQC Framework, v2.0 dated 8/24/2009** **IV&V Handbook version 4.0 dated 9/17/2008** **Design Template** **IPT Design Template** **Contact Owner for Questions**
TSG 2	Test Readiness	Karen Edwards	**Enterprise Test Management Standards, ver. 3.0 dated 11/8/2010** **Test Management Standards Templates** **Enterprise Test Management User**

Stage Gate	Description	Owner	References
			Guide, ver. 1.01 dated 11/10/2010 **Briefing Template (optional)**[14] **Contact Owner for Questions**
TSG 3	Detailed Requirements	Catherine Connor	**TQC Framework, v2.0 dated 8/24/2009** **Contact Owner for Briefing Template or Questions**
TSG 4	Post Readiness	Trey Wiesenburg	**PRR Process and Briefing Template, ver. 11 dated 7/28/2011** **Contact Owner for Questions**
MSG 3	Project Close Out	Daria Adams	**Work Breakdown Structure Dictionary** **Decision Memo (see Appendix F)** **Contact Owner for Briefing Template**
TSG 5	Retirement and Disposal	Wanda Broadus	**System Retirement Plan** **System Disposal Plan** **Briefing Template** **Contact Owner for Questions**

[14] Contact Stage Gate Process Owner before beginning work on Briefing.

Appendix D. LMM Overview

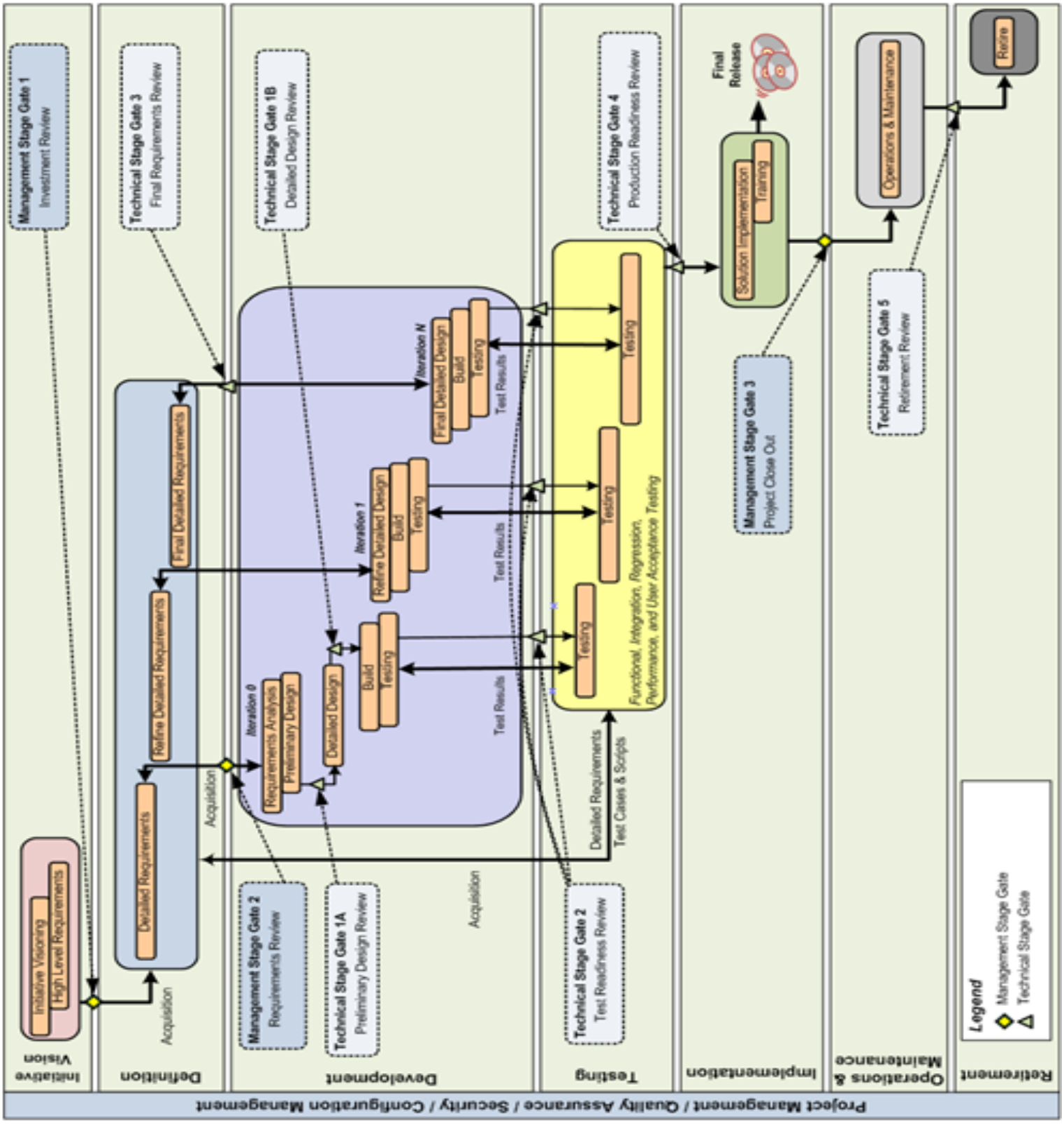


Figure D-1, LMM Overview (single release with three design, build and test iterations)

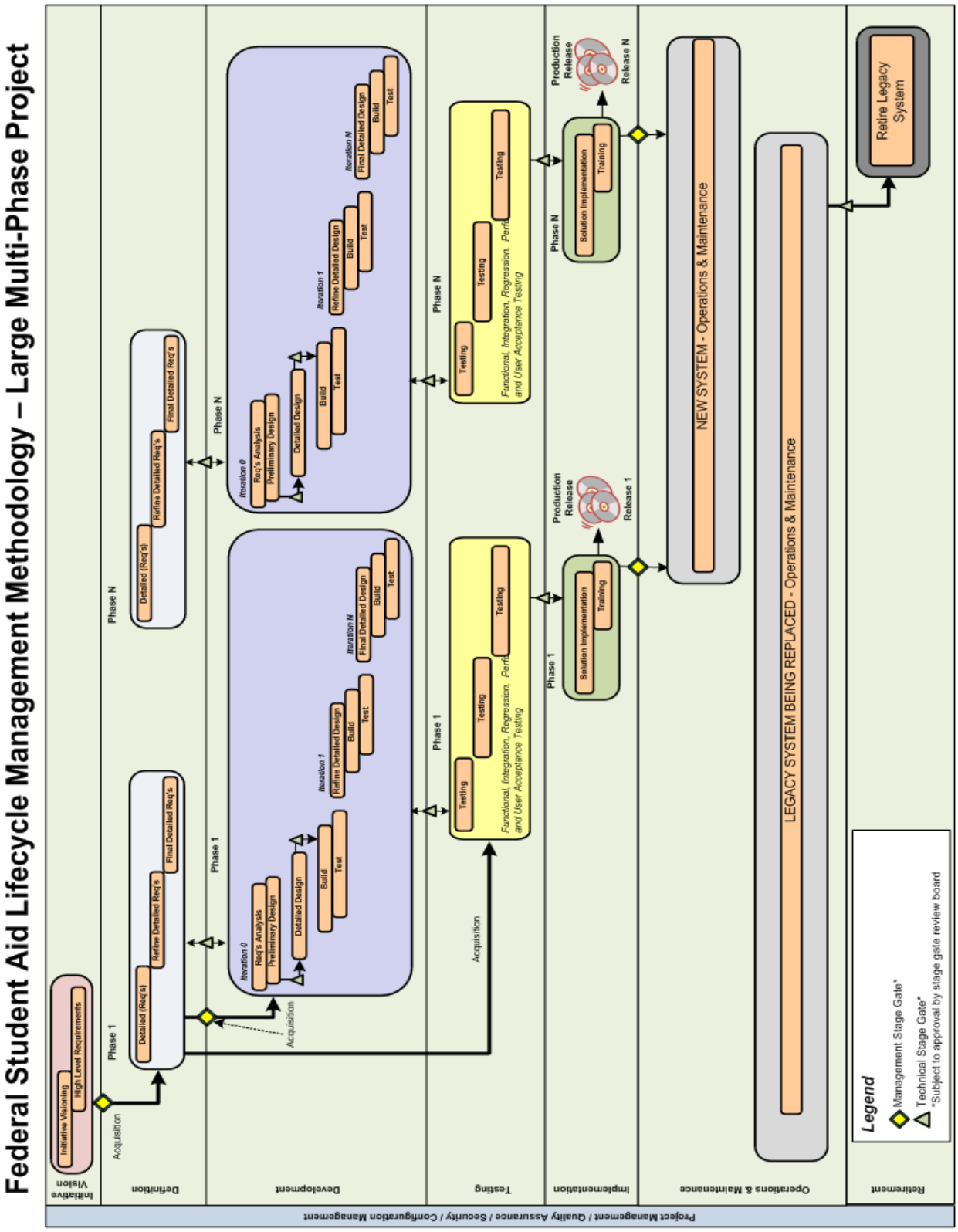
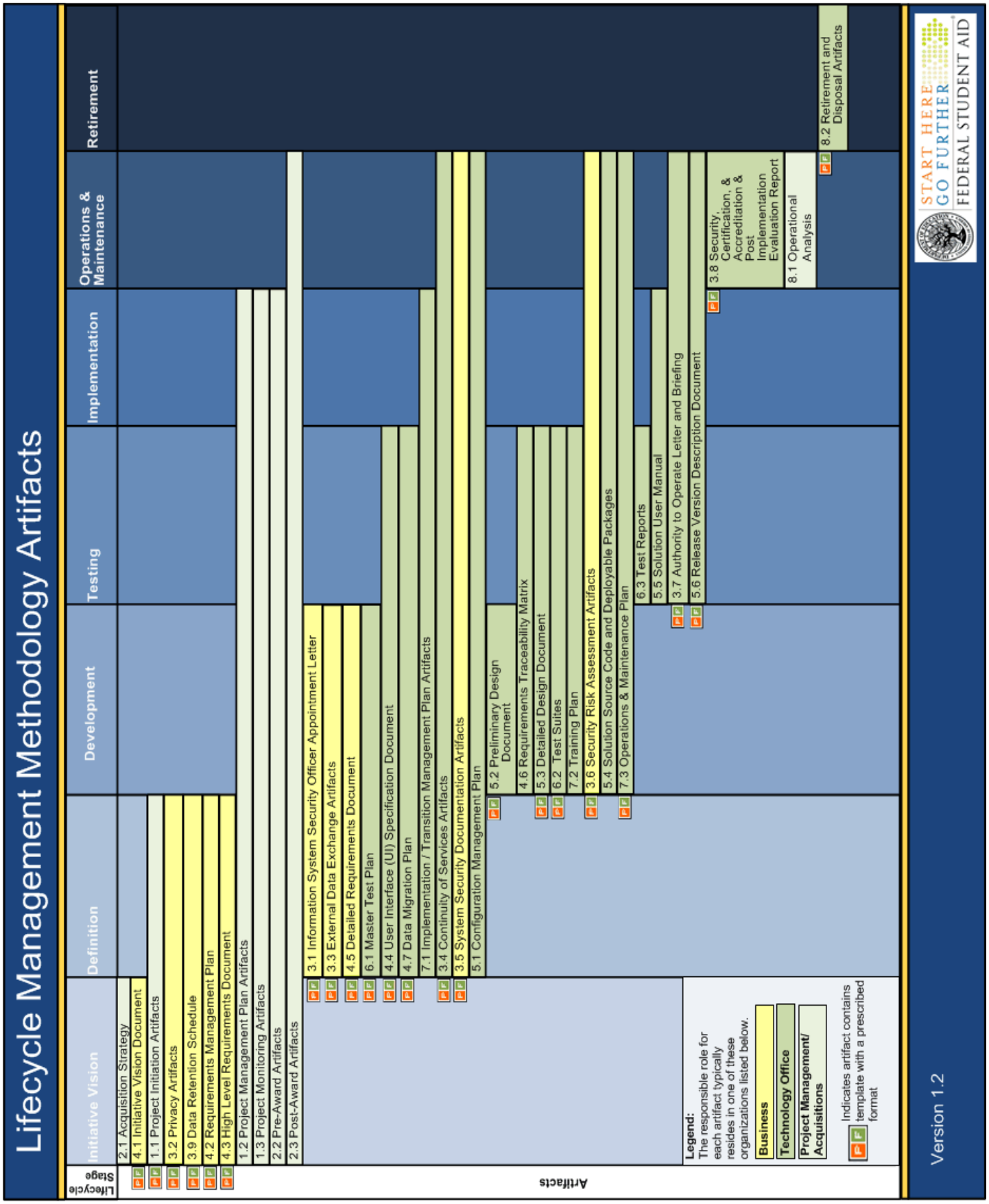


Figure D-2, LMM Overview (two releases, each with three design, build and test iterations)

Appendix E. Artifacts


Lifecycle Management Methodology Artifacts
Lifecycle Stage
Initiative Vision
Definition
Development
Testing
Implementation
Operations & Maintenance
Retirement
Artifacts
2.1 Acquisition Strategy
4.1 Initiative Vision Document
1.1 Project Initiation Artifacts
3.2 Privacy Artifacts
3.9 Data Retention Schedule
4.2 Requirements Management Plan
4.3 High Level Requirements Document
1.2 Project Management Plan Artifacts
1.3 Project Monitoring Artifacts
2.2 Pre-Award Artifacts
2.3 Post-Award Artifacts
3.1 Information System Security Officer Appointment Letter
3.3 External Data Exchange Artifacts
4.5 Detailed Requirements Document
6.1 Master Test Plan
4.4 User Interface (UI) Specification Document
4.7 Data Migration Plan
7.1 Implementation / Transition Management Plan Artifacts
3.4 Continuity of Services Artifacts
3.5 System Security Documentation Artifacts
5.1 Configuration Management Plan
5.2 Preliminary Design Document
4.6 Requirements Traceability Matrix
5.3 Detailed Design Document
6.2 Test Suites
7.2 Training Plan
3.6 Security Risk Assessment Artifacts
5.4 Solution Source Code and Deployable Packages
7.3 Operations & Maintenance Plan
6.3 Test Reports
5.5 Solution User Manual
3.7 Authority to Operate Letter and Briefing
5.6 Release Version Description Document
3.8 Security, Certification, & Accreditation & Post Implementation Evaluation Report
8.1 Operational Analysis
8.2 Retirement and Disposal Artifacts
Legend:
The responsible role for each artifact typically resides in one of these organizations listed below.
Business
Technology Office
Project Management/ Acquisitions
Indicates artifact contains template with a prescribed format
Version 1.2
START HERE GO FURTHER
FEDERAL STUDENT AID

Appendix F. Stage Gate Decision Sign-Off Memorandum

[Date]

This memorandum certifies that [system name, release number] has undergone review at [Stage Gate type and number] and that known risks have been disclosed to FSA Management. By signature below, the Stage Gate Review Body Members certify that they have performed a comprehensive review of the relevant Stage Gate LMM artifacts / inputs and have developed an analysis / recommendation document detailing the initiative's suitability to pass through [Stage Gate X].

Name_____ **Date**_____

Title_____

Name_____ **Date**_____

Title_____

Name_____ **Date**_____

Title_____

The document featuring the Stage Gate Review Body's review findings, analysis and recommendation should be attached to this sign-off memorandum and sent to the appropriate FSA Governance Body and/or personnel.

Appendix G. Stage Gate Review Checklist

Preparation for the Stage Gate Review:

- Project Manager on behalf of the IPT checks with the Stage Gate Process Owner early in the process to ensure resources are available to perform the review.
- Project Manager schedules the review(s) with the Stage Gate Process Owners.
- IPT completes core deliverables and required artifacts as outlined in the Tailoring Plan.
- Project Manager discusses the Stage Gate Review Package and sign-off memorandum with the Stage Gate Owner(s) in advance of the review. Discussion points to be presented at the Stage Gate Review Meeting are agreed upon.
- Project Manager provides a read-ahead packet to the Stage Gate Review Body containing core deliverables/artifacts.

Preparation for the Stage Gate Review Meeting:

- Project Manager schedules the Stage Gate Review Meeting, invites all relevant participants, reserves room and arrange for minutes to be captured.
- IPT creates a presentation package for presentation by the Project Manager during the Stage Gate Meeting. Briefing should respond to the Stage Gate Review Package Assessment produced by the Stage Gate Review Body.
- Stage Gate Owner and PM discuss and decide on signatures, if needed, for Decision Sign-Off.
- Stage Gate Process Owner and PM send out Stage Gate Review Package Assessment and the Project Package at least 48 hours in advance to those attending the Stage Gate Review Meeting.

Holding the Stage Gate Review Meeting:

- Stage Gate Review Process Owner or representative attends to present and answer questions.
- Project Manager attends to present Project Package and answer questions.
- Recommendations discussed. Decision made. Sign offs obtained.
- Minutes taken.

Post Stage Gate Review Follow-up:

- Minutes or assessment report distributed.
- Decision furnished to IPT and LMM Teams.
- IPT works to develop remediation plan and remediate or, with approval, proceeds through gate to the next project stage.