Description of document:	Three (3) Department of the Treasury manuals: Information Technology (IT) Manual (2002), Enterprise Life Cycle (ELC), Enterprise Life Cycle Guidance Manual (2017), Information Technology Capital Planning And Investment Control Guide (2016)
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DEPARTMENT OF THE TREASURY
WASHINGTON, D.C.

June 21, 2019

Re: FOIA Case 2017-02-204

VIA EMAIL

This is the Department of the Treasury's (Treasury) final response to your Freedom of Information Act (FOIA) request dated February 19, 2017. You requested "a digital or electronic copy of the Treasury Information Technology Manual, the Information System Life Cycle Manual, and the Capital Planning and Investment Control Policy Guide." Your request has been processed under the provisions of the FOIA, 5 U.S.C. § 552. The enclosed responsive documents are deemed fully releasable and no exemptions have been claimed. There are no fees assessed at this time since allowable charges fell below the threshold for search and duplication.

If you would like to discuss this response you may contact Paul Levitan, the FOIA Public Liaison, for assistance via email at FOIAPL@treasury.gov, or via phone at (202) 622-8098.

A FOIA Public Liaison is a supervisory official to whom FOIA requesters can raise questions or concerns about the agency's FOIA process. FOIA Public Liaisons can explain agency records, suggest agency offices that may have responsive records, provide an estimated date of completion, and discuss how to reformulate and/or reduce the scope of requests in order to minimize fees and expedite processing time.

If additional questions arise concerning this action, please contact Samuel Giovannucci at (202) 622-1391; or via email at FOIA@treasury.gov. Please reference FOIA Case 2017-02-204 when inquiring about this request.

Sincerely
Paul Levitan
Digitally signed by Paul Levitan
Date: 2019.06.21 06:50:27 -04'00'
Paul Levitan
Director, FOIA & Transparency

Enclosure

Department of the Treasury

Information Technology (IT) Manual

Office of the Chief Information Officer

Current as of June 7, 2002
(See Change Notices for Update Information)

Department of the Treasury

Information Technology (IT) Manual – Change Notice

1. Insert Appendix B.2, The CSIO Notification/Approval Requirement table identifies Treasury programs that should be used when procuring IT systems, equipment or services. This table also provides thresholds when a user must obtain authorization from the Department, Corporate Systems Management (CSIO) or to provide notification. This table has been updated to match current telecommunications programs that are now in place (such as DTS2 and the DOTTS replacement - the Treasury Telecommunications Solutions BPA program)- 6/02.

2. Remove Appendix F Table, replaced by Appendix B.2 above – 6/02.

Preface

The Department faces revolutionary change in information management and information technology. The Department must embrace new ways of doing business and understand the need to manage technology expenditures as investments. To do this, we must innovate our policies, practices, and procedures. I envision an environment in which information management and technology are fully integrated with the capital planning and investment management processes.

I have directed my staff to develop this new framework to document the programs, services, policies, responsibilities, and procedures of the business lines of the Office of the Chief Information Officer. The Government Performance and Results Act (GPRA) of 1993, the Paperwork Reduction Act of 1995 and the Information Technology Management Reform Act (ITMRA) of 1996, also known as the Clinger-Cohen Act, and most significantly, the Government Paperwork Elimination Act (GPEA) of 1999 mandate changes to dramatically improve the way Federal government acquires, manages, and implements information technology. Through these legislative efforts, agencies have the authority and the responsibility to make measurable improvements in mission and program performance and delivery of services to the public through the strategic application of information technology. The Clinger-Cohen Act created a direct link to GPRA and requires agencies to:

(1) Integrate IT planning with the agency's strategic business planning and
(2) Identify the cost-benefit and the risk of their IT investments to program performance

This is the first attempt to place business lines in one area. This manual is a living document and will be continuously updated as regulations and the business model of the Office of the Chief Information Officer evolves. If you have recommendations for changes, they will be welcomed.

/signed/ James J. Flyzik August 16, 2001

Deputy Assistant Secretary for Information Systems/CIO Date

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OVERVIEW OF THE INFORMATION TECHNOLOGY (IT) FUNCTION

Treasury Chief Information Officer (CIO)
The Treasury CIO is the principal advisor to the Secretary regarding acquisition of information technology (IT) and management of information resources for the Department. The CIO is supported by the Office of the Treasury CIO as mandated by the provisions of the Clinger-Cohen Act. The Office of the CIO is tasked with providing comprehensive support to the Secretary in driving the Department's IT strategic planning and decision-making processes.

The Office of the CIO's responsibilities include:
- Developing an integrated Departmental IT architecture
- Promoting effective information resources management processes
- Monitoring and evaluating performance of IT programs
- Promoting development of IT skills and competencies
- Promoting the use of innovative technologies in support of the Treasury mission

Bureau CIO
Each bureau CIO is the principal advisor to the respective bureau head regarding investment of IT and management of information resources for the bureau. In addition, each bureau CIO advises the Treasury CIO regarding the effective use of IT to accomplish the missions of the bureaus and the Department. Each bureau's CIO is supported by the bureau's Office of the CIO as mandated by the provisions of the Clinger-Cohen Act. Bureau CIO Offices not only manage and oversee their own IT policies and operations, but also participate actively in the Department-wide IT strategic planning and decision-making processes.

Treasury CIO Council
The Treasury CIO Council supports the Treasury CIO in promoting IT investments within and across the Department and provides the voice of the customers across a range of IT management issues. The Council's missions include:

- Developing strategic focus and priorities for Department-wide initiatives and programs
- Recommending policies and standards for IT applications, products, and services
- Reviewing and promoting new technologies and IT opportunities
- Providing leadership and guidance on IT issues impacting Treasury
- Promoting exchange and collaboration among Treasury and other Government entities on major IT initiatives

Capital Investment Review Board (CIRB)
Proper planning and management of information technology (IT) and non-IT capital investments are mandated by Congress and by Executive guidance. The Clinger-Cohen Act requires each

agency to establish a "process for maximizing the value and assessing and managing the risks of the information technology acquisitions of the executive agency." Furthermore, Executive Order 13011, "Federal Information Technology," issued July 19, 1996, states that executive agencies shall "implement an investment review process that drives budget formulation and the execution for information systems." To accomplish these mandated activities, the Department has established the CIRB. The Board will accomplish its responsibilities by working closely with counterpart investment review boards (or similar processes) established in each bureau. Additional information on the CIRB is available in Appendix A of this document as well as on the TreasNet homepage.

Bureau IRB

The Treasury CIO issued a memorandum dated December 16, 1996, entitled "Treasury Guidance on the Implementation of the Information Technology Management Reform Act of 1996 (ITMRA - now the Clinger-Cohen Act)." Bureaus were informed of the mandate in ITMRA to establish and maintain an IT Investment Portfolio and the requirement to establish internal control mechanisms and procedures for review and approval of IT investments. As a result, bureaus are required to create a Bureau IRB that conforms to the general guidelines set forth by Office of Management and Budget (OMB) and have a repeatable process in place for selecting, controlling, and evaluating the IT systems in their Investment Portfolios.

Chapter 1. PLANNING

Introduction

The Office of Management and Budget's Capital Programming Guide (July 1997) states: "There is an un-severable connection between planning and budgeting, a connection through which an agency decides what to do and how to do it well. A plan connotes a series of actions contemplated and results desired. A budget should present the resources to be allocated and the results expected. Thorough planning is particularly critical when managing within limited budgets."

Information Technology (IT) planning encompasses both strategic and operational perspectives. IT planning is required by the Clinger-Cohen Act, originally known as the Information Technology Management Reform Act (ITMRA) of 1996, and must support the agency's strategic plans required by the Government Performance and Results Act (GPRA). IT planning is also linked to the bureau's Enterprise Architecture (EA).

Through various efforts and task forces, the Department has committed to improving planning processes, activities and data requirements. The Department's efforts to improve will also require bureau commitment to improve their own processes and procedures. This chapter will provide an introductory explanation of the direction, purpose, concepts and requirements for the proposed improvements. When the final improved process, approach and requirements are agreed to, this chapter will be updated accordingly.

1.1 Strategic Planning

1.1.1. Purpose

This section states responsibilities, policies and activities related to IT strategic planning. IT strategic planning helps organizations focus on goals and objectives and provides a road map and destination for the organization, both in terms of IT and the organization's business goals.

1.1.2. Policy

The Department of the Treasury has developed a five-year strategic IT plan that was approved by bureau heads, the Departmental Offices (DO), and the Office of Inspector General (OIG). The strategic plan must also be updated at least every three years in conjunction with the GPRA business plans.

1.1.3. Requirements

Strategic IT planning considers the organization's long-term GPRA and IT goals. The plan should also address objectives and strategies of Departmental IT initiatives and explain how they will be achieved. The GPRA or business strategic plans are normally presented as the organization's Strategic Plan.

The IT strategic plan sets the broad direction and goals for managing information within the agency and supporting the delivery of services to customers and the public. It should be derived from and relate to the business or GPRA plan. The IT strategic plan typically contains an IT mission statement, an assessment of the current environment, a description of the target IT environment (the EA), and broad strategies for moving into the future.

1.1.4. Procedures and Processes

An improved strategic IT planning process requires a renewed look at how IT fits into the Department's architectural framework, the GPRA planning process, and must be consistent with an organization's EA – which itself must support and link to the GPRA plans and goals. Consequently, each of these efforts must be closely coordinated and developed.

GPRA became law in 1993 and has been integrated into Treasury budget submissions since Fiscal Year (FY) 1996. In the FY 1999 President's Budget, GPRA requirements for a strategic plan and performance measures were fully integrated into Treasury bureau budget submissions. Under the Clinger-Cohen Act, the CIO must now report on how IT systems are being used to achieve performance goals. This is consistent with GPRA requirements to report on how budgetary resources are used to accomplish performance goals.

When considering an IT strategic plan, the organization cannot ignore the EA (discussed in much greater detail in Chapter 2). An EA is a conceptual and coherent blueprint that describes the structure of information system components, their inter-relationships, and the architectural principles and guidance governing their design and evolution over time in an organization. An EA is represented in terms of component architecture. These components are information, functional, work and infrastructure, which collectively model the organization's business operations. Two of the primary products are a "Target Architecture" which details where an organization wants to be in a given number of years, and a "Transition Plan" which details how the organization will achieve its target architecture.

The Department's goal is to strengthen the link between strategic IT plans, the GPRA plans, and EAs. The specific requirements and processes to improve the links will be described in an update to this chapter.

1.2 IT Capital Planning

An annual IT Capital Plan is required by both OMB Circular A-11, Part 3 - Guide to Planning, Budgeting and Acquiring Fixed Assets and OMB Circular A-130. An IT Capital Plan is necessary to demonstrate progress towards strategic goals and objectives and the EA, as well as provide justification for new funding.

1.2.1. Purpose

This section states responsibilities, policies and activities related to IT capital planning. IT capital planning begins where strategic planning ends. During IT capital planning, the organization develops a realistic implementation approach for achieving its vision based on its available resources.

1.2.2. Policy

The Department of the Treasury requires each of its offices and bureaus to establish and annually submit their IT Capital Plan which will be approved by their respective CIO and IRB.

1.2.3. Requirements

An IT Capital Plan is the implementation plan for the budget year. The IT Capital Plan reflects the goals of the organization's Annual Performance Plan, the organization's Government Paperwork Elimination Act (GPEA) Plan, EISA, and organization's business planning processes. The Department of the Treasury's IT Capital Plan is submitted annually to OMB with the agency annual budget submission.

The Department of the Treasury's IT Capital Plan consolidates the bureau IT Capital Plans. An IT Capital Plan includes the following components:

(i) All IT Capital Asset Plans (exhibit 300s) for major information systems or projects. Major information systems are systems that are in operation, under development or in planning. This component must also demonstrate how the agency manages its other IT investments, as required by the Clinger-Cohen Act.

(ii) The Report on Financial Management Activities and the agency's Financial Management Plan (Exhibit 52 data) and the Agency IT Investment Portfolio (Exhibit 53 data). The IT Investment Portfolio covers major, significant and small/other projects. Definitions for these terms may be found in OMB Circular A-11.

(iii) The provision and explanation of the criteria used to select the investments into the portfolio, a discussion of how it will control and manage the investments, and a

discussion of how it will evaluate the investments based on planned performance versus actual accomplishments. These requirements are normally met through the provision of bureau Capital Planning and IRB documentation.

(iv) A component that includes a summary of the security plan from the agency's five-year plan as required by the Paperwork Reduction Act, Government Information Security Act and OMB Circular A-130. The plan must demonstrate that IT projects and the EISA include security controls for components, applications, and systems that are consistent with the organization's Enterprise Architecture; include a plan to manage risk; protect privacy and confidentiality; and explain any planned or actual variance from National Institute of Standards and Technology (NIST) security guidance.

1.2.4. Procedures and Processes

The Department of the Treasury requires the use of the Information Technology Investment Portfolio System (I-TIPS) to submit Capital Asset Plans (300s), the Report on Financial Management Activities and the agency's Financial Management Plan (Exhibit 52 data) and the Agency IT Investment Portfolio (Exhibit 53 data).

To accurately and effectively comply with Capital Asset Plan requirements, the Department of the Treasury encourages Information Technology offices to work together with Budget, Asset Management, Strategic Planning and Procurement offices.

1.3 Performance Measurement

1.3.1. Purpose

This chapter states responsibilities, policies and activities related to IT performance measurement. Performance measurement is a critical tool to analyze the success of a program, as well as validate the accomplishment of strategic and operational goals and objectives.

1.3.2. Policy

It is the Department's policy that IT performance measures and a performance measurement approach, approved by the bureau or office head, will be established in DO, each bureau, and the OIG.

1.3.3. Requirements

A performance measurement approach is required so the bureaus and the Department can measure progress towards mission objectives, business objectives, and determine the success of the IT investments. Performance measures must relate to and align with goals and objectives

listed in the bureau or Department Strategic Plan. Specific IT goals should be clear, measurable specifications about the end result of IT investments.

All major systems will have appropriate performance measures and measurement approaches. Bureaus and offices should develop criteria for evaluating the execution of its IT plans. For example, an organization can develop performance standards to be used as quantifiable measures during the implementation effort. Performance standards should be reviewed annually to determine whether the implementation schedule is realistic and to identify any problem areas. These criteria may differ for each stage of the planning cycle.

1.3.4. Procedures and Processes

Bureaus implementing a performance measurement program should adhere to the following principles:

- IT contributions to mission performance are measured in terms of improved efficiency (cost savings), effectiveness (improved productivity), and increased quality
- IT strategic goals support the bureau's and Department's strategic goals
- IT performance measures actually measure the efficiency and effectiveness improvements that IT contributes to agency/program outcomes or outputs and therefore support or are linked with program performance
- A baseline for IT activities must be determined so that goals can be set and measured relative to that baseline
- To measure contributions to mission performance, clear and objective bureau goals and indicators to measure achievement must exist
- Business and IT managers accept joint responsibility for planning IT participation and measuring achievement of results
- Performance measures address specific IT investments in support of specific programs as well as the bureau and the Department IT architecture
- Measures that are selected are the most effective and not too numerous
- Performance measures are used to learn and make changes based on the actual results

1.4 Information Technology Investment Portfolio System (I-TIPS)

The Information Technology Investment Portfolio System (I-TIPS) is being used by federal agencies, including the Department of Treasury, to assist managers and staff involved in IT capital planning and investment control (CPIC) activities. I-TIPS was developed to help agencies comply with requirements outlined in GPRA, PRA, and the Clinger-Cohen Act.

The Department and the bureaus are using I-TIPS to streamline and provide decision support and documentation capabilities for IT CPIC processes. The Department recognizes that I-TIPS is simply one tool in a suite of tools that are implemented as part of a comprehensive investment management process and culture change. Further, the Department also realizes that I-TIPS integrates the planning, budgeting, procurement, and program office disciplines into one suite of data, thus inviting each member of the Integrated Project Team to participate in the project life cycle process from cradle to grave.

I-TIPS' robust set of functionality are used to document costs, risks, and expected returns, and to determine the appropriate mix of IT investments with regard to these and other organizational and technological considerations including the Enterprise Architecture. Specifically, I-TIPS:

- Provides government managers and staff with ready and shared access to up-to-date information about individual IT capital planning initiatives, a particular type of initiative, or about their entire IT investment portfolio.
- Enables managers and staff to quickly assess the impacts on their organizations overall IT capital investment portfolio of adding, modifying, deferring, or canceling IT initiatives.
- Helps organizations focus on critical organizational missions, goals, and objectives. It also directly supports organizational efforts to improve information dissemination and service delivery; fulfill OMB reporting requirements; minimize IT infrastructure and operating costs; and reduce risks associated with IT investments.

For more information on I-TIPS, please refer to ***www.itips.gov, as well as the Treasury CIO Homepage, intranet.cio.treas.gov and click on TIMEX.***

In producing operational IT plans, agencies should account for major systems - operational, under development, and proposed new initiatives. Consistent with OMB's guidance in their *Capital Programming Guide* (July 1997), and the General Accounting Office's *Assessing Risks and Returns: A Guide for Assessing Federal Agencies' IT Investment Decision-making* (February 1997), the Department and bureaus are to develop IT investment processes that consist of planning, budgeting, procurement, and management-in-use, and evaluation phases and activities. Through the strategic IT planning process, the Department and the bureaus are to review the entire IT portfolio to assess its alignment with bureau mission needs, priorities, strategic direction and major process reengineering.

Chapter 2. INFORMATION TECHNOLOGY ENTERPRISE ARCHITECTURE

Introduction

Treasury, along with many other Federal agencies, is approaching a challenging era of restrictive funding, workforce downsizing, and ever increasing workloads. Information management and information technology, used wisely, will be two of the greatest force multipliers available to the Department in the present and foreseeable future. The Department of the Treasury issued the Treasury Information System Architecture Framework and related documents in 1997. In July 2000, the Department updated these architectural guidance documents by publishing the Treasury Enterprise Architecture Framework (TEAF). This document serves as the Department's guidance for developing an information system architecture.

The TEAF provides:

- A common understanding of the Treasury information technology vision
- Guidance to the Treasury bureaus concerning the development and evaluation of information systems architecture
- A unifying concept, common principles, common terminology, and common standards for Treasury information systems
- A context for identifying and resolving policy, management, and strategic technical issues
- A context for strategic planning and budget formulation of Treasury information systems
- A template for the development of enterprise architectures (EA).

IT architectural work groups under the Federal CIO Council have recently issued a comprehensive set of documents to guide Federal architectural activities. These three documents are:

Federal Enterprise Architecture Framework (FEAF), Version 1.1, September 1999;
Architecture Alignment and Assessment Guide, October 2000; and
A Practical Guide to Federal Enterprise Architecture, February 2001.

Together, these documents represent the latest thinking in the Federal architecture community about:

defining Federal IT enterprise architectures,
integrating EA with an IT capital planning process, and
outlining the steps necessary to develop an IT enterprise architecture.

These documents are useful supplements to Treasury's TEAF document. All of these documents, along with other guidance documents for Federal IT activities, can be found in the documents section under "Architecture" at the Federal CIO Council Homepage, http://cio.gov.

2.1 Purpose

The purpose of this chapter is to highlight minimum criteria established for a bureau EA required by the TEAF.

2.2 Policy

The policy described in this chapter applies to all Treasury bureaus and offices. Treasury bureaus and offices should use the information provided here in their information systems investment decision criteria. Treasury bureaus and offices are encouraged to work with the Office of Information Technology Policy and Strategy (OITPS), IT Strategic and Capital Planning, of the Office of the Deputy Assistant Secretary for Information Systems/CIO when making an information system investment decision.

Because the Department of the Treasury considers this information essential to Treasury's success in building adaptive, interoperable, and scalable enterprise information systems, OITPS will request regular and frequent updates on the plans and progress of the Treasury bureaus and offices as they design and develop their EA.

2.3 Requirements

The Office of Management and Budget (OMB) has issued policy guidance on IT architectures: Memorandum 97-02, "Funding Information Systems Investments," October 25, 1996; Memorandum 97-16, "Information Technology Architectures," June 18, 1997; and Memorandum 00-07, "Incorporating and Funding Security in Information Systems Investments," February 28, 2000. In addition, OMB's Circular A-130, "Management of Federal Information Resources," contains specific requirements for agencies to develop enterprise architectures.

OMB Memorandum 97-02 requires that agency investments in major information systems should be consistent with the Federal, department, agency, and bureau Information Technology Architecture (ITA). OMB Memorandum 97-02 states that investments in major information systems proposed for funding in the President's budget should: be consistent with Federal agency and bureau information architectures, integrate agency work processes and information flows with

technology to achieve the agency's strategic goals, reflect the agency's technology vision and year 2000 compliance plan, and specify standards that enable information exchange and resource sharing, while retaining flexibility in the choice of suppliers and in the design of local work processes.

OMB Memorandum M-97-16 transmits guidance to Federal agencies on the development and implementation of ITAs. The ITA describes the relationships among the work the agency does, the information the agency uses, and the IT that the agency needs. OMB Memorandum 97-16 states that an ITA is the documentation of the relationships among business and management processes and information technology that ensure: alignment of the requirements for agency-sponsored information systems (as defined in OMB Circular A- 130) with the processes that support the agency's missions and goals; adequate interoperability, redundancy, and security of information systems; the application and maintenance of a collection of standards by which the agency evaluates and acquires new systems.

OMB Memorandum 00-07 directs Federal agencies to ensure that IT capital investment processes include consideration of security issues. Furthermore, OMB requires that security should be built into and funded as part of the system architecture. Agencies should make security's role explicit in information technology investments and capital programming. These actions are entirely consistent with and build upon the principles outlined in OMB Memorandum 97-02. Accordingly, investments in the development of new or the continued operation of existing information systems, both general support systems and major applications, proposed for funding must be tied to the agency's information architecture. IT proposals should demonstrate that the security controls for components, applications, and systems are consistent with and an integral part of the information technology architecture of the agency.

Finally, OMB Circular A-130, "Management of Federal Information Resources," outlines the major IT planning and management requirements for Federal agencies, including enterprise architecture. A-130 says that the agency's capital planning and investment control process must build from the agency's current enterprise architecture and its transition from current architecture to target architecture. Each agency's enterprise architecture must be documented and provided to OMB at its initial stage as well as when significant changes are incorporated. Furthermore, agencies must ensure consistency with Federal, agency, and bureau enterprise architectures. Consistency should be demonstrated through compliance with agency business requirements and standards, as well as identification of milestones, as defined in the enterprise architecture.

2.4 Procedures and Processes

Treasury bureaus and offices will use the requirements, principles, guidelines, and framework identified in the guidance documents referenced in the introduction to develop and document the architecture for their information systems. These guidance documents will continue to evolve as Treasury works to incorporate requirements from oversight agencies.

In compliance with laws and regulations, Treasury has established the TEAF as the framework to develop and document business processes and their mapping to information system architectures. Business owners should utilize their EA to make all tactical and strategic business decisions related to information systems.

Chapter 3. INVESTMENT IN INFORMATION TECHNOLOGY

Introduction

This chapter describes the processes and procedures involved in investment in information technology and capital planning. The chapter integrates the principles and techniques for planning, budgeting, acquisition, and management of IT investments into a single process to ensure that IT investments contribute to achieving Treasury strategic goals and objectives. Treasury will have a process that addresses project prioritization, risk management and other challenges posed by the acquisition and management of IT investments. An effective process uses long range planning and a disciplined budget process as the basis for managing the portfolio of IT investments to achieve performance goals with the maximum benefit and least risk to the government.

The Clinger-Cohen Act requires the establishment of an IT investment management infrastructure that has clear lines of authority, responsibility and accountability. The Treasury CIO, in partnership with the bureau CIOs, must develop a process to manage their IT Investments. This process ensures that IT projects submitted for funding are compared against a uniform set of screening criteria to determine whether the IT projects meet minimal requirements and to identify the organization level at which the projects should be reviewed. The costs, benefits, and risks of all IT projects whether proposed, under development, or operational, are then assessed and the projects compared against each other and ranked or prioritized. The ranking criteria includes cost, risk and benefit factors, as well as an assessment of how well the project meets mission needs. A bureau's IT investment portfolio should also contain IT projects for every type of investment technology, including mission critical, cross-functional, infrastructure, and administrative.

3.1 Purpose

Recent legislative acts have focused on improving management processes, including the selection and management of IT resources. The Clinger-Cohen Act introduced more structure into organizations' selection and management of IT projects. The Act requires a process for maximizing the value and assessing the risks of IT acquisitions. The IT investment process is to be integrated with the processes for making budget, financial, and program management decisions.

The IT investment and capital planning process should match the bureau's organizational structure. The overriding objective of the process is for senior managers to be able to systemically minimize the risks and maximize the benefits of the IT investments. While each phase of the process has its own requirements for successful execution, there are three overall organizational attributes critical to success. These common, critical attributes are:

- Senior management involvement
- Overall mission/program focus
- Comprehensive portfolio approach to IT investments.

3.2 Policies

All investments in information technology shall conform to current laws, regulations, and policies governing acquisition, including the Clinger-Cohen Act, Federal Acquisition Regulations (FAR), Paperwork Reduction Act (PRA), OMB Circulars and Bulletins, Federal Information Processing Standards, Federal Telecommunications Standards, and Department of Treasury Acquisition Regulations (DTAR). Specifically, investments in information technology should:

a. Support core/priority mission functions that need to be performed by the Federal government

b. Be undertaken by the bureau because no private sector or governmental alternative source can efficiently support the function

c. Support simplified or otherwise redesigned work processes that reduce costs, improve effectiveness, and make maximum use of commercial-off-the-shelf (COTS) technology

d. Demonstrate a projected return on investment that is equal to or better than alternative uses of available public resources. Return on investment may include mission performance in accordance with GPRA measures, reduced cost, increased quality, speed, or flexibility; and increased customer and employee satisfaction. Return on investment should be adjusted for such risk factors as the project's technical complexity, the bureau's management capacity, the likelihood of cost overruns, and the consequences of under-performance

e. Be consistent with Federal, Treasury, and bureau information architectures which: integrate bureau work processes and information flows with technology to achieve the bureau's strategic goals, reflect Treasury's technology vision, and specify standards that enable information exchange and resource sharing, while retaining flexibility in the choice of contractors and in the design of work processes

f. Reduce risk by avoiding or isolating custom-designed components to minimize the potential adverse consequences on the overall project, using fully tested pilots,

simulations, or prototype implementations before going to production; establishing clear measures and accountability for project progress, and, securing substantial involvement and buy-in throughout the project from the program officials who will use the system

g. Be implemented in phased, successive increments as narrow in scope and brief in duration where practical, each of which solves a specific part of an overall mission problem and delivers a measurable net benefit independent of future pieces

h. Employ an acquisition strategy that appropriately allocates risk between government and contractor, effectively uses competition, ties contract payments to accomplishments, and fully leverages commercial technology

3.3 Requirements

The Clinger-Cohen Act was designed to put the government's technology decisions in a true business context. For the first time, major IT decisions are being analyzed for the return on investment and the competitive edge they provide. The key to this approach is capital planning which is a critical element in creating a successful business, both in the public and private sector. After it is determined that an investment in information technology is required, bureau managers are required to ask the following questions about the potential investment:

- Should the bureau be doing this work at all?
- Can someone else (government agency or private sector) do the work better?
- If not, is the work organized and being done the best way possible?

Once it is determined that an IT investment is necessary to fulfill a bureau's mission, program and strategic goals, the bureau must develop the functional requirements that the IT investment must meet and the alternatives and related costs and benefits of the alternatives. A feasibility study may be needed as part of this process.

3.4 Responsibilities

a. The Deputy Assistant Secretary for Information Systems/CIO (DASIS/CIO) has a major leadership role and focuses on overall Treasury business improvement through information technology planning, management, investment, and evaluation. The CIO is the focal point for

assuring that the IT emphasis within Treasury is on meeting Treasury's mission, goals and objectives through sound IT strategic and capital planning, leveraging of Department-wide IT, and effective performance measurements of major systems results. The CIO oversees all capital planning activities related to IT investments in Treasury's programs and businesses. The CIO is responsible for:

(1) Providing advice and other assistance to the Secretary and other senior managers to acquire and manage IT to ensure all IT investments deliver a substantial benefit to the Department and/or a substantial return on investment to the taxpayer and ensure information resources are managed in a manner that implements the policies and procedures of the Clinger-Cohen Act and the Paperwork Reduction Act of 1995

(2) Developing, maintaining, and facilitating the implementation of a sound and integrated IT architecture framework for evolving or maintaining existing IT and acquiring new IT to achieve the Treasury's strategic, IT, and information management goals and objectives

(3) Monitoring and evaluating the performance of IT programs/projects, and advising on whether to continue, modify, or terminate the IT program or project

(4) Establishing and ensuring the continued execution of an IT capital planning process consistent with Clinger-Cohen Act and OMB guidelines to monitor and evaluate the performance of Treasury IT programs for periodic reporting on the progress of IT projects against defined costs, schedules and milestones, and on periodic evaluations of project performance as measured against predefined outcome goals

(5) Facilitating the CIRB by providing methodologies, procedures, analyses, and information needed to make key business, funding and technical decisions pertaining to the selection, continuation, and termination of IT investments

b. The Deputy Chief Financial Officer (DCFO) and the Deputy Assistant Secretary for Strategy and Finance are members of the CIRB and oversee all financial management, strategic planning, and budget activities relating to the programs and operations of the Department. They are also responsible for:

(1) Managing the Department's strategic plan

(2) Integrating the Department's IT budget, financial and program management decisions into the Department's strategic plan

(3) Reviewing the Department's IT investments, paying particular attention to programmatic outcomes and quantifiable measures of the benefits, risks, and costs and performance measures against the Department's strategic plan

(4) Ensuring coordination across Treasury programs with the strategic plan

c. The Capital Investment Review Board (CIRB) is the oversight organization for capital and IT investments and is responsible for:

(1) Establishing policies and guidelines to prioritize, manage, and acquire major capital investments in accordance with the Clinger-Cohen Act, and GAO and OMB guidelines

(2) Reviewing and approving/disapproving bureau capital and IT investments and ensuring bureau compliance with Department and Federal Government IT investment policies

(3) Managing the acquisition of IT investments that cross more than one bureau and IT investments for administrative systems

(4) Ensuring that large investments support Treasury mission and programs and develop performance measures for those investments

(5) Designating investments to be included in the Department's IT portfolio

d. The Bureau Chief Information Officers, as it relates to their respective bureaus and offices, are responsible for:

(1) Ensuring that IT investments are justified by mission, program, and information needs and documented in sufficient detail so that management decisions to approve or disapprove them can be based on objective evaluations of their value to the bureau and Department

(2) Acquiring IT investments only after documentation of a requirements analysis, analysis of alternatives, cost-benefit analysis, and when applicable, feasibility study, market analysis, and risk analysis have been completed. Retaining the documentation as long as the IT investment described is in active service to document the decision-making process to interested parties. Ensuring that the retention period for these records does not conflict with already existing requirements for record retention

(3) Ensuring that IT investments comply with the Treasury TEAF, all mandatory Federal Information Processing Standards (FIPS) and Federal Telecommunications Standards (FED-STDs). Voluntary FIPS, FED-STDs and other recognized standards and

guidelines should be followed to the extent they are determined to be cost-effective and appropriate for the intended use

(4) Documenting all major IT investments in the IT Strategic Plan and fund in the appropriate organizational budget

(5) Reviewing, selecting, prioritizing, approving, controlling, and evaluating all IT investment requests originating within their bureau

(6) Seeking, acquiring, and implementing commercial-off-the-shelf (COTS) solutions to IT requirements (where practical), including reengineering their processes to avoid software application development

(7) Ensuring that IT resources are acquired in accordance with procedures in this chapter. Bureaus and offices should contact the Office of Information Technology Policy and Management for assistance in documenting IT investments

(8) Establishing and chairing the bureau's investment review board and referring appropriate IT investments for review to the CIRB

e. The Bureau Investment Review Board is responsible for:

(1) Developing the bureau capital and IT portfolio and ensuring that bureau capital investments comply with Federal government and Department policies, programs, and procedures

(2) Ensuring that the process for approving IT investments is simplified, clear, and understandable and taking into account the size, scope, cost, complexity, and importance of the IT

(3) Reviewing and recommending all IT investment requests before referring them to the Department for approval

A key goal of the Clinger-Cohen Act is for organizations to have processes and information in place to help ensure that IT projects are being implemented at acceptable costs, within reasonable and expected time frames, and are contributing to tangible observable improvements in mission performance.

3.5 Procedures and Processes

Once it is determined that an IT investment is necessary to fulfill a bureau's mission, program and goals, a program manager must determine the functional requirements that the IT investment must meet. The requirements must address the statements under the policy section of this chapter. For large or complex projects, feasibility study and/or market analysis may be necessary to provide a preliminary determination of needs and the alternative IT strategies for meeting those needs.

The Office of Management and Budget (OMB) Circular A-130 requires agencies to prepare and update as necessary throughout the information system life cycle, cost/benefit analyses for all information systems at a level of detail appropriate to the size of the investment. The purpose of such an analysis is to ensure that the most effective alternative that satisfied information system requirements is chosen. Without such an analysis, it is not possible for systems managers to fully evaluate alternatives to satisfy their systems requirements. Requirements analyses, including cost/benefit evaluations of overall information resources performed over the information system life cycle, are fundamental to sound information resources management. These evaluations, along with other studies, provide managers and users with the information necessary to make informed decisions about the most efficient and cost effective alternatives to pursue and to enable them to better allocate and commit limited information technology resources.

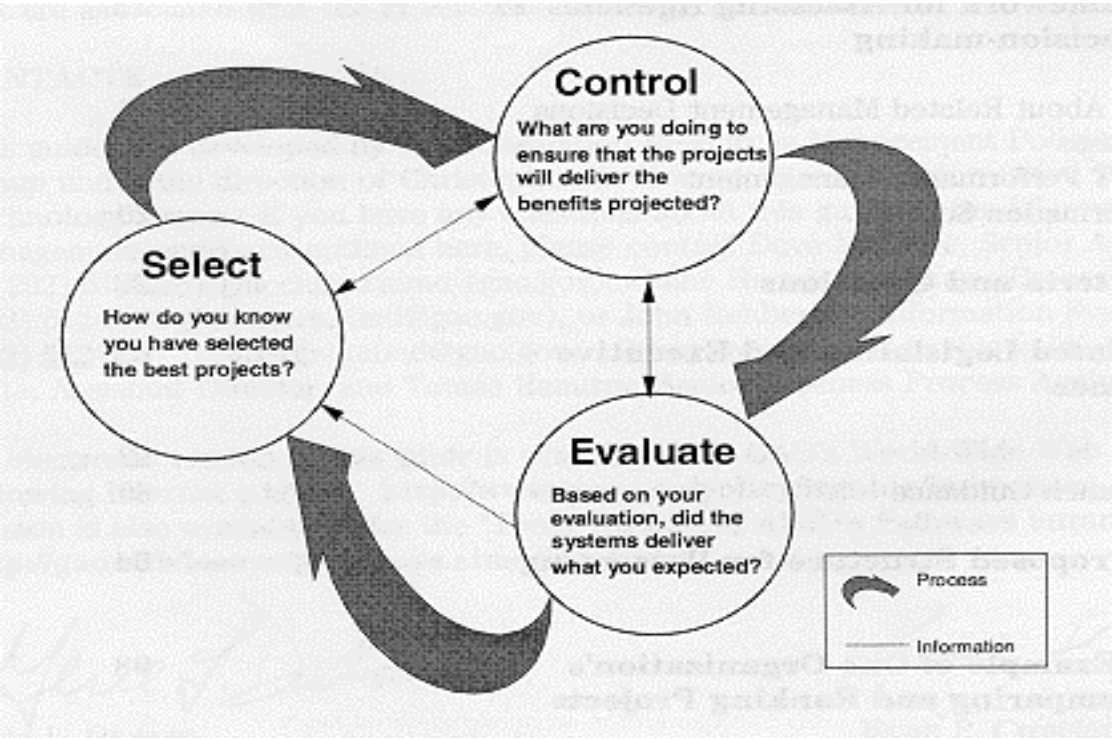
Appendix B contains the procedures to conduct a requirements analysis, analysis of alternatives, and cost-benefit analysis and Appendix C contains procedures to conduct a feasibility study.

IT Investment Processes

For the past several years, Treasury requested close to $2 billion a year for information technology. This spending for IT resources represents a critical investment of the public's tax dollars. Creating a government that works better and costs less, particularly in an era of reduced budgets and downsizing, requires bureaus to make good management decisions on their IT investments. The investment review boards, at the Treasury and bureau levels, select IT investment projects based on mission needs, organizational priorities, and availability of funding. The IT projects selected make up IT investment portfolio for Treasury and the bureaus. On a periodic basis, decisions are made on the IT investments' performance in meeting strategic goals and objectives within budget limits.

The CIO, in partnership with the component organizations, should ensure that the principles of business process reengineering have been applied, and that the business process has been streamlined as necessary, prior to the planning phase for IT investments. Included in this process is an analysis of whether an IT investment is needed to enhance the performance of the business process and how this investment will contribute to mission performance. This process has three

phases that occur in a continuous cycle. The selection, control and evaluation phases link IT investment decisions to strategic goals and objectives and business plans. The following figure illustrates the IT investment decision processes:



Select

The selection phase creates a portfolio of IT project investments designed to improve overall mission performance. This phase combines rigorous technical evaluations of project proposals with executive management business knowledge, direction, and priorities. Key to this phase is the use of uniform decision criteria and scoring methodology so that the investment review board can make comparisons of costs, benefits, risks and returns across project proposals. The four-step selection process is:

- Screen IT project proposals
- Analyze risks, benefits, and costs
- Prioritize projects based on risk and return
- Determine the right mix of projects and make the final cut

Control

The control phase is an ongoing activity to review new and ongoing projects, as well as operational systems. During the control phase, the board regularly monitors the progress of ongoing IT projects against projected cost, schedule, performance, and delivered benefits. The frequency of the reviews may vary, but should not wait until the annual budget preparation and deliberation process. The frequency and nature of review for individual projects should be established as the last step in the selection phase. Rather than avoiding problems and concerns emerging from unexpected risks, this phase accentuates the need for management accountability by creating prearranged checkpoints for projects and forcing corrective action when necessary. If a project is late, over cost, or not being developed according to expectations, then the board must decide whether to continue, modify, or cancel it. The steps in this phase are to:

- Monitor investments against projected costs, schedule, and performance
- Take action to correct any deficiencies

Evaluation

Evaluation is conducted after a system is implemented, and assesses the project's success or failure. Using post-implementation reviews, data is collected, recorded, and analyzed to compare expected results against benefits and return. In addition to evaluating a particular project, post-implementation review evaluates the capital planning and investment control process as a whole. The lessons learned can then be applied to improving the process. This phase is comprised of three steps:

- Conduct post-implementation reviews
- Decide on adjustments
- Apply lessons learned

Chapter 4. INFORMATION SYSTEMS LIFE CYCLE MANAGEMENT

Introduction

Information is a valuable asset. It requires the same managerial principles and approaches applied to other major resources: people, facilities, and funds. Effective use of information is greatly facilitated by the application of IT encompassing computers, computer software and communications.

The information system life cycle is a structured approach used by the Department to apply IT to solve an information management problem or identify an opportunity. It addresses a broad range of activities starting with the initial identification of a problem or opportunity, progressing through building or acquiring, implementing and maintaining a solution, and determining the end of the solution's useful life.

Proposed information system projects will be clearly supported by detailed analyses of: the project's expected costs and benefits, alternative solutions considered; potential programmatic and technical risks, and the information system's overall contribution to the business area's and bureau's mission, goals, and objectives.

4.1 Purpose

Information system life cycle (ISLC) management emphasizes decision processes be based on full consideration of business functional requirements and economic and technical feasibility in order to produce an effective system. The purposes of the life cycle management approach are to:

- Deliver quality systems which meet or exceed customer expectations
- Deliver systems that are effective and efficient within the current and planned IT infrastructure
- Deliver systems that are inexpensive to maintain and cost-effective to enhance
- Develop quality systems using an identifiable, measurable, and repeatable process
- Establish an organizational and project management structure with appropriate levels of authority to ensure that each information system project is effectively managed throughout its life cycle
- Identify and assign roles and responsibilities including functional and technical managers throughout the information system life cycle
- Ensure that information system requirements are well defined and subsequently satisfied
- Ensure that project documentation includes enterprise architecture related information
- Provide visibility to bureau functional and technical managers for all information system resource requirements and expenditures
- Establish appropriate levels of management authority to provide timely direction, coordination,

control, review, and approval of the information system project
- Ensure project management accountability
- Identify project risks early and manage them before they become problems

4.2 Types of Information Systems Projects

Information systems projects vary in scope and diversity from simple to complex. Examples of information systems project types include:

(1) **COTS Application Project**: Commercial-Off-The-Shelf (COTS) application projects involve the installation or upgrade of COTS software packages that support selected business functions such as word processing, electronic mail, presentation graphics, correspondence management, and network management. COTS applications are discussed in greater detail in TD P 84-01, Information System Life Cycle Manual.

(2) **Information Technology (IT) Infrastructure Project**: IT infrastructure projects involve the installation of new or replacement hardware or system software products such as the installation of high speed switches or the upgrade of the network operating system. IT infrastructure projects support the evolution and adaptation of the bureau and Treasury IT infrastructure to support new systems and the increasing demands placed on it.

(3) **Information System Modification Project**: Information system modification projects involve significant changes to the information system design specifications to ensure that new or changing business requirements are being met. A functional change may be needed to meet statutory requirements and the design change may involve a transition from a mainframe to a distributed client-server architecture.

(4) **New Information System Development Project**: New information system development projects involve the development and deployment of an information system to support a new or changed business function, to replace an existing information system which can no longer fulfill business needs, or to automate functions being done manually.

4.3 Life Cycle Management (LCM) Phases

The LCM approach typically should be broken down into manageable phases (or at major milestones). During this time information system work products are defined or modified. The phases may be tailored (see next section) to accommodate the unique aspects of an information system project as long as the resulting approach remains consistent with the primary information system objective to deliver a quality system. Phases may overlap, merge, or subdivide and information system projects can follow an evolutionary development strategy that provides for incremental delivery of products and/or subsystems. The tailored process is generally described in the project plan.

4.4 Tailoring the Life Cycle

The LCM can be tailored to the unique needs of an information system project. For example, the use of COTS products in an information system can result in the reduction or elimination of some phases or activities. The tailored process will be described in the project (management) plan. As an example, life cycle tasks and products can be reduced for an information system project to install a COTS software product on the existing bureau IT infrastructure. The project manager should consider the size, complexity, and scope of the information project when preparing the project plan. Some tasks and work products may be omitted as long as the resulting approach provides for delivery of a quality system. The following are a few essential tasks and work products that cannot be omitted even when a COTS software product will be used:

- Succinct functional requirements statement
- Bureau standard data definitions
- Adequate testing
- Configuration management
- User training
- User manuals
- Operations, maintenance, and help desk documentation

4.5 Procedures and Processes

Procedures and processes for information system life cycle can be found in TD P 84-01, the Information System Life Cycle Manual.

Chapter 5. STANDARDS PROGRAM

Introduction

The Federal Government has been challenged, like the private sector, to adapt and respond to a new business culture. The goal to improve the internal management of the Executive Branch is partnered in a standards program that would promote the following goals:

- Eliminate the cost for developing Government-unique standards, decrease the cost of goods procured, and the burden on agencies to comply with an over abundance of regulations
- Provide incentives and opportunities to establish standards that serve national needs
- Encourage long-term growth for U.S. enterprises and promote efficiency and economic competition through harmonization of standards
- Further the policy of reliance upon the private sector to supply Government needs for goods and services

5.1 Purpose

The purpose of this chapter is to adopt the Office of Management and Budget Circular A-119 entitled, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities," (http://www.whitehouse.gov/omb/circulars/index.html).

5.2 Policy

The policy described in this chapter applies to all Treasury bureaus and offices. Treasury bureaus and offices should use the information provided here to determine the importance and need for utilizing standards.

5.3 Requirements

OMB Circular A-119 establishes the policies for the Federal use and development of voluntary consensus standards and on conformity assessment activities. In addition, Section 12(d) of Public Law 104-113, the "National Technology Transfer and Advancement Act of 1995," codified existing policies in A-119 established reporting requirements, and authorized the National Institute of Standards and Technology (NIST) to coordinate conformity assessment activities of the

agencies.

The following are mandatory annual reporting requirements:

1. as required by P. L. 104-113, identification of all instances when the bureau or office used government-unique standards in lieu of voluntary consensus standards (for each instance, include the rationale for such use, as well as the specific government-unique standard used and the voluntary consensus standard that was not selected);
2. the number of voluntary consensus standards bodies in which the bureau or office participates;
3. the number of employees participating in voluntary consensus standards activities (note that one employee may participate in several activities so that the numbers given in item 2 are likely to be larger than in item 3);
4. the number of voluntary consensus standards that was used since the previous annual report, based upon procedures set forth in sections 11 and 12 of the Circular;
5. identification of voluntary consensus standards that have been substituted for government-unique standards as a result of an agency review under section 15b(7) of the Circular; and
6. an evaluation of the effectiveness of Circular A-119 policy and recommendations for any changes.

The following are voluntary reporting guidance:

7. the conformity assessment activities in which the bureau has been involved in the during the reporting period as described, Guidance on Federal Conformity Assessment Activities (Appendix D); and
8. examples or case studies of standards successes by bureaus and offices.

5.4 Procedures and Processes

Treasury bureaus and offices will use the requirements, principles, and guidelines identified in OMB Circular A-119 to identify standards for use in the development and acquisition of information technology systems and equipment.

For the purpose of this policy, voluntary consensus standards are standards developed or adopted by voluntary consensus bodies, both domestic and international. These standards include provisions requiring that owners of relevant intellectual property have agreed to make that intellectual property available on a non-discriminatory, royalty-free or reasonable royalty basis to

all interested parties.

A voluntary consensus standards body is defined by the following attributes:

- Openness
- Balance of interest
- Due process
- An appeals process
- Consensus is a general agreement, but not necessarily unanimity. It is a process to resolve objections by interested parties. Further, as long as all comments have been fairly considered, each objector is advised of the disposition of his or her objection(s) and the reasons why, and the consensus body members are given an opportunity to change their votes after reviewing the comments.

Treasury Order (TO) 102-10, "Delegation of Authority to the Deputy Assistant Secretary for Information Systems to Waive Federal Information Processing Standards," was signed by the Secretary of the Treasury on March 17, 1989. The Order delegated authority to the Deputy Assistant Secretary for Information Systems to grant waivers to mandatory Federal Information Processing Standards in accordance with procedures established by the Department of Commerce.

Chapter 6. RECORDS AND INFORMATION MANAGEMENT

The Deputy Assistant Secretary for Information Systems/CIO has responsibility for establishing and maintaining a Records and Information Management (RIM) program. The RIM program assigns responsibilities for managing Departmental records, forms, and interagency reports. Refer to Treasury Directive (TD) 80-05, "Records and Information Management," and TD P 80-05, "Records and Information Management Manual," for RIM policy, responsibilities, processes, and guidance. The directive and manual, as well as current information on the RIM program, can also be found on the RIM home page on the Treasury intranet at <http://intranet.treas.gov/sites/cio/rim/index.htm>.

Chapter 7. INFORMATION SYSTEMS SECURITY

For information systems security policy, standards, procedures, and guidelines, please refer to TD P 71-10, "The Department of the Treasury Security Manual," Chapter VI, "Systems Security," (http://Intranet.cio.treas.gov/sites/cio/mag3/securityfs.htm). This chapter establishes policy for securing and protecting United States classified national security information and sensitive but unclassified information when stored, processed, transferred or communicated by telecommunications and automated information systems. It also provides guidance to determine the appropriate levels of security to be employed against the identified threat to those systems.

Chapter 8. ELECTRONIC INFORMATION DISSEMINATION

8.1 Government Information Locator Service (GILS)

Introduction

In coordination with the Information Infrastructure Task Force (IITF), the Office of Management and Budget promoted the establishment of an agency-based GILS to help the public locate and access information throughout the Federal government. GILS provides the public with an easier and more comprehensive electronic access to government information. It is no longer necessary to know which agency has the information. GILS is an integral part of the Federal government's overall information management and dissemination infrastructure, and facilitates both identification and direct retrieval of government information.

As part of the Department's role in the National Information Infrastructure (NII), Treasury's GILS identifies and describe information resources throughout the Department and provides assistance in obtaining the information. The public's entry point to the Department's GILS is by using the Government Printing Office (GPO) Access System. The GPO Access System uses standard network technology and the American National Standards Institute standard A39.50 for information search and retrieval so that information can be retrieved in a variety of ways. GILS consist of automated information systems, Privacy Act systems of records, and locators that cover all information dissemination products and services. GILS also satisfies the Electronic Freedom of Information Act (EFOIA) requirement to maintain an inventory of agency major information systems and record locators.

8.1.1. Purpose

The purpose of GILS is to provide the public with a standardized means of searching for electronic information about public information created by government agencies. GILS is recognized internationally as a searchable electronic index of descriptive facts about information resources – much like an electronic card catalog of printed resources. Each record in the electronic index contains information on some or all of a basic set of descriptive facts about the information resource.

This section establishes policy, responsibilities, and guidance concerning the creation and maintenance of the Government Information Locator Service (GILS). GILS provides a mechanism to provide information to the public in a government-wide standardized format.

GILS is designed to assist in locating the government's information holdings and how to obtain information of interest. It describes information resources in a way that allows users to search for and retrieve pointers to desired information.

8.1.2 Policy

The Treasury GILS was implemented in accordance with the Paperwork Reduction Act of 1995, National Archives and Records Administration (NARA) and OMB guidance.

8.1.3 Requirements

Treasury Mandatory Elements for GILS: The Department's GILS Application Profile is composed of both mandatory and non-mandatory elements. The Treasury GILS compliant locator record is comprised of those mandatory and certain non-mandatory elements that are germane to the Department's business. Each Treasury GILS Core Element is identified in Attachment D as it appears in the GILS Application Profile (FIPS Publication 192-1). To obtain the detailed information suggesting how data for the field should be recorded, or at least the rationale for requesting the information, refer to guidelines published in the National Archives and Records Administration publication, "Guidelines for the Preparation of GILS Core Entries."

8.1.4 Responsibilities

a. The Deputy Assistant Secretary for Information Systems/Chief Information Officer (DASIS/CIO) shall be responsible for the management and oversight of the Treasury GILS.

b. The Heads of Bureaus, Chief, Management and Program Office, the Office of Inspector General and the Treasury Inspector General for Tax Administration shall:
   - Be responsible for creating the corresponding GILS-compliant locator record
   - Ensuring that the latest version of the information product is identified in the Treasury GILS-compliant locator record

8.1.5. Procedures and Process

The GILS locator records will be developed as described in Appendix E GILS record template. The template is based on the Federal Information Processing Standards Publication 192-1, Metadata Standards for GILS. Each bureau office that developed an information resource or information locator are required to submit the template information to the bureau GILS Point of Contact (POC).

GILS application is accessible through the Department's Intranet home page, however, the GILS data is physically located on the General Printing Office's (GPO) Access System. The GPO Access system hosts other agencies' GILS which simplifies the process of searching for documents without knowing which agency produced the information resources the user seeks.

8.2 World Wide Web (Internet, Intranet, and Extranet)

Introduction

The Internet is a worldwide alliance of public networks that uses a common set of protocols to communicate information. The Internet offers tremendous benefits to Treasury information systems users in terms of increased access to information sources relevant to their official duties. Additionally though, use of the Internet has some significant security problems and provides users access to a wide variety of information not relevant to official duties.

8.2.1 Purpose

Treasury Directive 87-04, "Personal Use of Government Office Equipment Including Information Technology," defines the responsibilities of Treasury employees for the appropriate use of Internet services.

8.2.2 Policy

TD 87-04 defines the Department's policy on the use of the Internet. All information generated by users as a result of Treasury-provided Internet access is the property of the Government. Users should also be aware that there can be no expectation of personal privacy or confidentiality in the use of the Internet. Treasury-provided Internet services are routinely monitored to ensure quality of service and may be monitored to detect possible misuse. Internet traffic statistics and information content may be examined by technical personnel, supervisors, and/or auditors in the legitimate performance of their official duties.

Any directly connected access to Internet services from Treasury-provided computers, networks and/or communications services must occur through accredited gateways/firewalls approved by the DASIS/CIO.

Remote dial-up access to Internet services from Treasury-provided computers and/or networks not connected to the TCS must employ appropriate security mechanisms consistent with the sensitivity of the systems and information at risk and the security policies of the office or bureau. These mechanisms typically employ user authentication and encryption.

8.2.3. Procedures and Processes

For more specific information refer to:

TD 87-04 Appendix A, Specific Guidance found at http://treas.gov/regs/td87.04.html

Chapter 9. ENTERPRISE PROGRAMS AND SERVICES

9.1 Introduction

Customer Service Infrastructure and Operations (CSIO) provides comprehensive service management, planning, budgeting, acquisition, customer support and program management essential for IT services supporting shared voice, data, video and information infrastructure and expanding integrated service offerings across the Treasury Communications Enterprise (TCE). This chapter describes the mission, roles, IT programs, services, policies and responsibilities of the major business lines of CSIO as they relate to the TCE. Appendix E identifies the approved process that each bureau must follow when acquiring telecommunications equipment or services, to ensure uniformity in standards, economy of scale, and consistency of service between all Treasury bureaus.

Customer Service Infrastructure and Operations (CSIO) business lines support bureau customers and business partners through an integrated suite of services which bridge traditional IT service domains:

- Network services: encompasses a suite of network-based services, including network connectivity, resource management, value added services
- End-user access services: spans a range of end-user support, installation, access, and network configuration services
- Wireless services: provides specialized capabilities for mobile users, temporary locations, emergency access, and disaster recovery
- Communications services: including voice, data and video
- Information services: offers a wide range of network-based information, information system support, and information processing services, including electronic messaging, directory/certificate authority
- Intranet and Internet services

9.2 Treasury Communications Enterprise (TCE)

CSIO supports a unified TCE that will consolidate services such as voice, video, and data, providing local connectivity and nationwide distribution. The Department's Chief Information Officer partners with bureau Chief Information Officer's and other agencies to provide cost-effective telecommunications and information services, which will enable business process

improvements and mission critical accomplishments. It is anticipated that this enterprise solution, TCE, will be achieved through the use of scaleable commercially provisioned services, the costs and benefits of which, are shared by all bureaus.

CSIO is responsible for the overall management, administration, and fiscal functions of the TCE to include:

- Tactical and strategic planning
- Business policies
- TCE architecture standards
- Business case development
- Service catalog development
- Provisioning
- Customer service

9.2.1 Benefits of a Treasury Communications Enterprise

Infrastructure standardization: Standardization reduces inefficiencies, customer costs, operational costs, and security infractions through standard services and user interfaces, standard architecture rules, and common security measures.

Simplicity: An enterprise solution increases customer access to services, customer ease of use and satisfaction, and ease of program execution by providing points of presence spanning the continental U.S. with uniform service, access to web-enabled applications, and access to help anywhere. Corporate and regional management is enhanced through common control, common security measures, common education and training, reusable processes, and outsourced operation & maintenance.

Value-based utility: An enterprise solution allows the instant sharing of local innovation on the enterprise level with minimal incremental cost.

Shared infrastructure: A shared enterprise infrastructure makes it possible to command volume discounts that accrue to all customers and the enterprise. It is also less labor intensive to control, enhance, and provision standard platforms and connections, mission responsive scaleable networks, and plug-in network extensions.

Business-driven architectures: An infrastructure built to solve business problems is more responsive to customer needs and allows infrastructure refreshment based on the greatest good for the greatest number. This business responsive infrastructure is capable of meeting the needs of changing business patterns and trends.

Performance-based services: Performance based service provides more value per dollar expenditure and can be conducted through leveraging commercial services rather than owning equipment.

9.3 Policy

The Information Technology Management Reform Act (ITMRA), also known as the Clinger-Cohen law, became effective in August of 1996 and repealed the 1965 Brooks Act. The Clinger-Cohen law removed General Services Administration's (GSA's) regulatory control over the acquisition of Federal information technology resources, both IRM and telecommunications resources, with the exception of the Federal Telecommunications Services (FTS) programs.

With the passing of the Clinger-Cohen law, Treasury bureaus are no longer required to prepare an agency procurement request. However, bureaus are still required to obtain authorization, request a waiver, or provide notification to CSIO for all IT acquisitions. Once a request or notification is received, CSIO will review the information and take one of three possible actions:

- Authorize implementation
- Request additional data for further review by the CIO organization
- Refer to the Capital Investment Review Board (CIRB)

In order to implement the new law, the Interagency Management Council established a Local Telecommunications Advisory Council (LTAC). The LTAC has developed "Local Telecommunications Service Policy" which requires federal agencies to acquire, operate, manage, and maintain telecommunications resources through collaborative efforts within and among agencies. This policy also requires agencies to conduct integrated planning, budgeting, and process evaluations regarding employment of telecommunications services to their locations.

9.4 Governance

In order to support the concept of a TCE, CSIO participates in the following boards and committees:

9.4.1 The TCE Board of Directors

The TCE Board establishes policies to guide the use and management of the TCE, reviews strategic plans, architecture documents, and commissions new services. These things are accomplished with programmatic approval of the TCE budget and funds for enhancement

initiatives. The Treasury CIO chairs the board. Bureau CIOs constitute the vesting membership.

9.4.2 TCE Executive Steering Committee

The TCE Executive Steering Committee is comprised of designated senior bureau IT managers, as well as the CSIO management staff. The committee receives direction from and advises the TCE Board of Directors regarding telecommunications and IT services issues. The purpose of this committee is to ensure Department-wide progress toward the TCE, as directed by the TCE Board of Directors and accomplished by CSIO.

9.5 CSIO Information Technologies Programs

9.5.1 Treasury Communication System (TCS)

TCS provides a nationwide telecommunications utility to over 50,000 Treasury users at over 3,700 national and international sites, making it the largest U.S. civilian government private network. TCS provides common digital communication links, security and interoperability among terminals and hosts both internal and external to Treasury, and meets the participating bureaus' requirements for response time, availability, ease of use and security. TCS continues to respond to the new and changing mission needs of the Treasury bureaus by adding to its X.25 packet switching capabilities with technologies such as bandwidth management, circuit switching, and frame relay.

CSIO has been designated by the DASIS/CIO to ensure that the acquisition of inter-city data communications facilities and services are consistent with the departmental architecture and integration of FTS2001 data communications services. Therefore, bureau requests for inter-city data communications services (such as dedicated transmission service, switched data service, packet switch service, etc. or other request) will be coordinated with CSIO. CSIO will determine whether the requirements documented can best be satisfied by TCS or an alternative data communications services.

9.5.2. Digital Telecommunications Systems (DTS)

DTS provides local telecommunications voice/data services and support within the Washington, DC metropolitan area for Treasury's bureaus. It provides the users with faster and easier access and the capability to connect to a variety of systems, applications and services, such as FTS2001 and TCS. Other services available from the DTS program includes universal wiring design and installation support as well as in-house consulting for local voice and data design. As of October 1997, over 3205 lines have been installed, of which 80 percent are ISDN-capable. Over 22,683 of the installed lines have data terminals connected, illustrating the growth of integrated voice and data services.

9.5.3 Department Of the Treasury Telecommunications System (DOTTS)
The DOTTS program provides integrated digital voice and data local telecommunications equipment and services for federal agencies nationwide (excluding areas covered by the DTS contract). DOTTS is a firm fixed price, indefinite delivery, indefinite quantity contract, which provides local telecommunications equipment, telecommunications technical services, system maintenance, and management services.

Equipment available on the DOTTS Contract includes:
- Telecommunications switching systems (TSS)
- Hybrid electronic key systems
- Electronic key systems (EKTS)
- Data switching systems (DSS)
- Automatic call distribution (ACD) functionality
- Station equipment
- Wire and cable
- Other peripheral equipment

Services include:
- System maintenance
- Remote alarm monitoring
- On-site technicians
- On-call technicians
- Site survey
- System design work
- System installation
- Site inventory
- Training
- Complete site documentation

The DOTTS Contractor will provide complete system engineering, design, installation, implementation, testing, and management, as well as a fully operational and tested system. The contractor is responsible for furnishing all tools, labor, incidental materials, and equipment required to achieve the levels of operational performance as specified in the DOTTS Contract. The contractor will also provide complete project management, maintenance services, operational support, training materials, training personnel, and complete system documentation.

The DOTTS Contract is divided into 9 distinct geographical regions. Lucent technologies covers the Northeast, Mid Atlantic, and Southeast regions; VISTA Technologies Services, Inc. covers the South West, Center, Northern and Pacific Regions; U S West covers the Mid West

region; and Pacific Bell covers the Western region (see the DOTTS web page for actual states).

9.5.3.1 CSIO Engineering and Implementation Support

CSIO will assist bureaus with system implementation for the total implementation procurement life cycle. During system implementation a CSIO staff member coordinates all efforts between the site and the DOTTS contractor. CSIO also assists in the initial site visit, system design, installation phase, review of documents, system cutover, system testing, and final invoice review. For more information on the DOTTS Program, go to the DOTTS web page at <www.treas.gov/contracts/dotts> or contact the DOTTS Operational Program Manager.

9.5.4 DTS/Voice Messaging System (VMS)

The VMS program provides Treasury bureaus with digital voice mailboxes and messaging services nationwide. The systems to be implemented support nodes ranging in size from 100 to over 30,000 subscribers, and allow interoperability of messaging across the Treasury bureaus. The system will feature local nodes at large Treasury locations networked via FTS2001 (including TCS) services.

9.5.5 Wireless

The Wireless Radio Support Services (WRSS) program is responsible for the overall planning, coordination and implementation of a Treasury-wide shift of all land mobile radio systems to narrow band. The National Telecommunications and Information Administration (NTIA) mandated this shift across the entire government. The WRSS program is the focus for:

- Radio communications security
- Radio interoperability within Treasury and with other international, Federal, state, and local agencies
- Future integration of wireless technologies
- Including cellular radio
- Wireless facsimile
- Wireless digital data communications

The WRSS program has been the catalyst for information and cooperation among bureaus and other Federal, state, and local government agencies facing similar issues. The program redistributed older, still useful, tactical radio equipment within bureaus to meet specific needs, thereby providing cost savings to Treasury. The WRSS program also supported the U.S. Customs Service Over the Air Rekeying (OTAR) program to allow bureaus to share facilities for cryptographic rekeying, and worked with the Associated Public-Safety Communications Officers (APCO) to place Treasury requirements into the Technical Standards generated by this organization.

9.5.6 Radio Frequency Management

CSIO provides radio frequency management services for all Treasury bureaus and for non-Treasury agencies including the Federal Reserve System, the Small Business Administration and Department of Education. CSIO staff also serves as advisor to NTIA in overall government radio frequency management policy.

Each year CSIO performs a review of approximately 20 percent of Treasury's 10,000 or more frequency authorizations. As part of NTIA's Inter-department Radio Advisory Committee (IRAC), Radio Frequency Management staff reviews approximately 5,000 government-wide frequency assignment proposals and modifications monthly. CSIO assures that Treasury's long-term wireless needs are considered through its active participation in IRAC's Spectrum Planning Committee. CSIO staff, in conjunction with the Department of State and the Federal Communications Commission (FCC), works with Canada and Mexico to resolve or minimize international radio interference problems. For more information regarding Radio Frequency Management, refer to TD 86-02.

9.5.6.1 National Communications System

The Director of CSIO serves as the Treasury member of the National Communications System (NCS) Committee of Principals (COP). CSIO staff participates at the planning and operational levels of the NCS. CSIO participation ensures that Treasury's views on national security and emergency preparedness communications issues are articulated and implemented in the government's disaster recovery plans.

In matters involving National Security and Emergency Preparedness (NSEP), the Director of CSIO has the authority to invoke NSEP treatment for telecommunications services provisioning (Treasury Order 102-15). This enables the provisioning of services on a priority basis to meet Treasury essential functions during periods of national and regional emergencies.

9.5.6.2 Commercial Services

The Procurement Services Division (PSD) has awarded one Treasury-wide contract for paging services to Metrocall. All bureaus and offices may order numeric, alpha-numeric or two-way paging on either a local or nationwide basis at extremely favorable prices. Optional services include encryption.

PSD has also awarded two Treasury-wide cellular contracts: AT&T Wireless and Verizon Wireless will provide cell-phone services on a variety of programs using a variety of Government-purchased cell phones. Although these contracts were awarded under GSA contract rates, Treasury as a whole will benefit from volume discounts.

9.5.7 Federal Telecommunications Services (FTS) 2001

The FTS2001 program is non-mandatory, however CSIO supports and strongly encourages the use of ordering all inter-state long distance and international voice services through the FTS2001 program, when such services cannot be delivered under the TCE utility.

GSA awarded FTS2001 to MCI and Sprint in January 1999 for a contract term of 10 years. Detailed information on the contract and the services available can be found at web site <www.fts.gsa.gov>.

Treasury has chosen Sprint as its service provider under FTS2001. All services that cannot be provided for under TCE will be ordered with Sprint FTS2001. The department has also selected GSA consolidated billing in lieu of direct billing offered under FTS2001.

As a user of both AT&T and Sprint FTS Services, CSIO is strongly committed to the success of the program. Treasury uses FTS2001 for all non-local voice services and for those data services not satisfied by TCS/TCE. FTS provides a large part of the infrastructure for the TCS/TCE and for the IRS's Tax Modernization effort.

CSIO is an active participant in the Inter-Agency Management Council (IMC) which advises General Services Administrative (GSA) on the management and operation of FTS Programs. CSIO participated in the initial development and revisions of the GSA charter for the IMC.

When bureau procurement requirements include any inter-city telecommunications needs, which are within the scope of FTS2001 network services, bureaus must require offers in the new awards, subject to 40 U.S.C. 759, to satisfy those requirements by using Government Furnished Services (GFS) of the FTS2001 network as those services become available.

Responsibilities of the CSIO staff include:

- Hold quarterly meetings with the FTS Contractor on quality, performance, and other operational issues
- Perform liaison duties between GSA and the FTS Contractor for all bureau official correspondence
- Participate in all meetings related to Sprint FTS2001
- Work with bureaus to transition current services to FTS2001

Prior to ordering FTS2001 services, bureaus are required to review plans for service with TCS/TCE to determine if requirements can be met within the offerings of the TCS/TCE contract.

A Designated Agency Representative (DAR) is the official agency/bureau service ordering authority FTS2001. Information on the assignment of DARs is available to the bureau through employees' Sprint account team representative. It is the bureau's responsibility to assign and track DARs. All forms appointing DARs must be conveyed to the vendor under the signature of the DARs supervisor with an information copy to CSIO. DARs who are not contracting officers may be permitted to order services under a delivery order, but only as authorized by bureau contracting officers.

9.5.8 TCS Trade Center Web Design & Development

The TCS Trade Center offers on-line web enabled form templates specific to procurement and financial transactions. These are available to the Bureaus on the TCS Intranet and their trading partners on a secure Internet site. Data captured via these web forms can be translated into an EDI format and/or a bureau's database format. The Trade Center also provides customized web form development.

9.5.9 Web Services

Customer Solution Infrastructure and Operations (CSIO) is responsible for managing the Department of Treasury's Intranet (TreasNet) <http://intranet.treas.gov/> and the Treasury Internet page <http://www.treas.gov/>. CSIO's Service Development office assists Treasury bureaus and offices in publishing pages on the Internet and Intranet.

9.6 Acquisition of IT Equipment or Services

When preparing to acquire IT and telecom equipment or services, each Treasury bureau must obtain approval from CSIO to procure or provide notification to CSIO in accordance to the thresholds identified in Appendix E. If the bureau determines that CSIO programs identified in this chapter and Appendix E do not meet their technical or cost requirement, other contract vehicles can be considered after a waiver request has been approved from CSIO. The bureau submitting the waiver request is responsible for ensuring all federal acquisition requirements are met.

Chapter 10. ELECTRONIC BUSINESS

10.1 Electronic Messaging Systems

Introduction
Electronic mail (e-mail) is an integral component in conducting business within the Treasury Department and between the Department and other Federal agencies and private entities. Across government, users have experienced frustration in transmitting e-mails and attachments. The Executives and users have higher expectations, volumes are increasing, some attachments are very large, and queue times are a concern. The Federal Chief Information Officer (CIO) Council, through the Interoperability Committee, is seeking pragmatic solutions to these and other common problems. To assist in defining the technical barriers and opportunities, the Federal E-mail Postmasters Group was established to develop realistic guidelines and message delivery status expectations. As consensus is approached, Treasury will continue to update e-mail policies and guidelines to reflect government-wide decisions and solutions.

10.1.1 Purpose

The purpose of this section is to establish policy and assign responsibilities for the acquisition, maintenance, and use of electronic messaging systems and services within the Department. This will ensure interoperability and vendor independence among all electronic messaging systems within the Department. It does not apply to electronic messaging with private sector business entities or the general public. This section applies to all Treasury bureaus and offices.

10.1.2 Policy

It is the policy of the Department that e-mail:

- Shall be used for the conduct of official business or limited personal use as outlined in Treasury Directive (TD) 87-04, Personal Use of Government Office Equipment Including Information Technology, found on the Treasury Internet at http://treas.gov/regs/td87.04.htm.

- Official business conducted over e-mail systems should comply with record-keeping requirements of the Federal Records Act (FRA). Refer to TD 80-05, "Records and Information Management," and TD P 80-05, "Records and Information Management Manual," for Records and Information Management (RIM) policy, responsibilities, processes and guidance. The directive and manual, as well as current information on the RIM program, can be found on the RIM homepage on the Treasury Intranet at http://intranet.treas.gov/sites/cio/rim/index.htm.>.

- Messages that meet the definition of a record as stated in the FRA shall be preserved, for the appropriate period of time. For example, e-mail messages that document agency policies, programs, decisions, operations, and functions are considered Federal records and shall be archived.
- All employees shall properly manage the creation, retention, and disposition of records that are created or transmitted an on e-mail system.
- E-mail messages are subject to the Freedom of Information Act (FOIA).
- Shall be used as an enabling technology to improve Treasury business processes. E-mail messages are departmental property and not personal property. The expectation of privacy or confidentiality does not apply to e-mail messages stored, retrieved or exchanged. Accordingly, e-mail messages shall only be authorized for examination during the course of audits, investigations, and system administration functions.

10.1.3. Definitions

Business quality messaging: The full featured, reliable messaging system that supports the exchange of a wide range of sensitive but unclassified information between agencies. Business quality e-mail includes connectivity/interoperability, guaranteed delivery/accountability, timely delivery, confidentiality/security, sender authentication, integrity, survivability, availability/reliability, ease of use, and identification of recipients.

Directory schema: The framework consisting of a set of rules and definitions, which define the format for the structure and the contents of the electronic messaging directory as well as the rules for its use.

Directory synchronization: The bi-directional electronic exchange and update of information between proprietary electronic mail directories.

E-mail message: A document created, transmitted, or received on an e-mail system, including message text, and any attachments such as word processing documents, spreadsheets and graphics. E-mail documents are records when they are created or received in the transaction of agency business, appropriate for preservation as evidence of Treasury functions, or valuable because of the information they contain.

E-mail message system: A computer application used to create, receive, and transmit messages and other documents that can be accessed by multiple users. E-mail systems do not include file transfer utilities, data systems used to collect and process data that have been organized into data files or databases, or word processing documents not transmitted on an e-mail system.

Message transfer agent (MTA): A component of the X.400 message transfer system that receives, stores, and forwards X.400 formatted message to either a UA or another MTA based

on the routing information in the X.400 originator/recipient (O/R) name.
Simple mail transfer protocol (SMTP): The standard Internet protocol for transferring e-mail messages with ASCII contents from the originator to the recipient. The SMTP standard specifies the interaction and format of messages between mail systems.

X.400: The set of ITU/TSS recommendations, approved in 1984 and revised in 1988, which describe the system model and service elements of a message handling system.

X.500: The set of ITU/TSS recommendations, defined in 1988 and revised in 1993, which described directory services for X.400 and other networks.

10.1.4. Responsibilities

a. The Deputy Assistant Secretary for Information Systems (DASIS)/CIO shall:
   (1) Establish and maintain electronic messaging policy, programs, and guidance
   (2) Provide and manage the Treasury Electronic Messaging Backbone service to ensure:
      (a) All Treasury e-mail systems are configured for efficient and cost-effective operations
      (b) All Treasury e-mail systems conform to a minimum of 1993 X.400 Profile for Open Systems Internetworking Technologies (POSIT) standards
      (c) Interoperability exists between Treasury e-mail systems
   (3) Perform oversight management functions required of the FTS2001 system and serve as liaison with the General Services Administration, other Federal agencies, and the FTS2001 or other service providers on all e-mail messaging issues
   (4) Maintain and disseminate current information on e-mail standards, records, and interoperability to bureaus
   (5) Administer domain name or X.400 originator/recipient (O/R) naming conventions and POSIT address assignments in conjunction with bureau name and address administration offices

b. The Heads of Bureaus and Offices, as it relates to their respective bureaus and offices, shall:
   (1) Establish a bureau domain name and POSIT name and address administration official. The official shall ensure that all electronic messaging systems are assigned domain and POSIT names and addresses in accordance with Departmental procedures
   (2) Utilize Treasury Electronic Messaging Backbone service to exchange electronic messaging among disparate e-mail systems and support business quality messaging to the maximum extent possible

(3) Ensure name and address coordination between bureau FTS2001 designated agency representatives (DAR) and the bureau name and address administration contact

(4) Establish bureau electronic messaging system procedures to ensure that:

(a) Local systems are configured for efficient and cost effective operations. X.400 systems may communicate in Administrative Management Domain (ADMD) to Private Management Domain (PRMD) and/or PRMD-PRMD modes

(b) Systems conform to the Treasury X.500 directory schema to ensure integration of all Treasury directory information

(c) The assignment of O/R names and POSIT addresses are coordinated with their designated name and address administration office

(d) Guidelines are established to ensure that reliability and quality service is maintained in electronic messaging systems

(5) Identify and preserve those e-mail messages that constitute a record as defined in the FRA

(6) Inform the appropriate bureau Privacy Act Officer when a new messaging system is being planned or when significant changes are being made to an existing system

10.1.5. Message System Procedures and Requirements

a. Acquisitions of electronic messaging systems not configurable for connectivity to the Treasury Electronic Messaging Backbone must be evaluated and approved by the Director, Customer Service Infrastructure and Operations (CSIO). In addition, all acquisitions:
   - Must comply with either the Internet SMTP protocol standard or the 1993 X.400 and 1993 X.500 standards
   - Shall indicate a requirement for connectivity to the Treasury Electronic Messaging Backbone
   - Capable of configuration for interoperation with the FTS2001 X.400 system, in addition to the requirement for POSIT-compliant operation

b. Electronic messaging systems must be connected to the most cost-effective Treasury authorized sub-network (Bureau-level network or TCS) which satisfies functional requirements. The TCS, Customer Service Infrastructure and Operations, must provide prior written approval of any configuration which enables internetworking between TCS and any other network (e.g., FTS2001, the Internet, etc.).

c. The X.500 directory services shall be implemented with Treasury to provide enterprise-wide translation of user or network resource names to electronic mail addresses and directory synchronization services

d. All acquisitions for electronic messaging systems shall indicate a requirement for connectivity to the Treasury Electronic Messaging Backbone.X.400 is the Treasury standard protocol for interconnecting disparate e-mail systems, providing e-mail interoperability and all X.400 MTAs will utilize the Treasury Electronic Messaging Backbone

e. Both X.400 and Internet mail are evolving to include EDI (electronic data interchange) and electronic commerce, digitized voice, and other value-added services. The Department encourages the use of these related X.400 and Internet services upon their addition to FIPS, ITU or IETF standards

f. Electronic messaging system information may be subject to the Privacy Act of 1974 (5 U.S.C. 552a), as amended. Responsible authorities shall review Departmental Privacy Act policy contained in TD 25-04 and consult, as required, with their bureau Disclosure Office for further guidance

10.1.6. Security

Information security is the protection of Treasury's information technology resources from unauthorized accidental or deliberate modification, destruction, denial, delay, transmission or exposure.

a. Electronic messages are routinely recorded by originating, intervening, and terminating X.400 and Internet messaging systems which may subject message information (message content, addressing, and message frequency) to unauthorized access and disclosure

b. Information technology and telecommunications security policies and procedures apply to the planning, acquisition, and use of Treasury owned electronic messaging systems as well as electronic messaging services provided by other Government agencies or commercial sources to include FTS2001

c. National security information and sensitive unclassified information require protection and may not be exchanged via electronic messaging systems or services implemented under the provisions of this Directive without the application of appropriate security controls as approved by the Director, Office of Security, DO.

10.2 Electronic Data Interchange

Introduction

The Department of the Treasury has created an infrastructure for providing Electronic Commerce (EC) services to the Treasury bureaus and its trading partners. Implemented as a Value-Added Service of the Treasury Communications System (TCS), the Treasury Electronic Commerce Clearinghouse (ECCH) provides EC and communication services to accommodate the requirements of the Treasury bureaus and their trading communities.

10.2.1. Purpose

The purpose of the Department of the Treasury's EC program is to:

- Optimize Treasury resources and infrastructure
- Eliminate unnecessary hardware and software duplication
- Achieve an open systems environment
- Centralize EC services Treasury-wide
- Streamline Treasury interfaces to its trading community
- Eliminate paper
- Increase productivity

10.2.2. Policy

The Treasury Electronic Data Interchange (EDI) policy developed by the Treasury EDI Customer Action Team states that:

- Treasury supports and endorses FIP 161-2 (Federal Information Processing Standards Publication)
- Treasury supports the development and implementation of Federal electronic data interchange (EDI) implementation conventions. Treasury has implemented the approved government implementation conventions for procurement and finance
- Treasury encourages the use of the Treasury EDI procurement gateway unless a bureau can demonstrate financial hardship
- Treasury supports the DOD NEP architecture and the Treasury electronic commerce clearinghouse (ECCH)
- Treasury's EDI policy needs to be flexible to accommodate bureau requirements

10.2.3. ECCH Services/Requirements

The Treasury ECCH provides the following services:

- EC Messaging
- EDI Translation
- Creation of Implementation Conventions
- EDI Message Development
- Creation of Web Based Forms
- Message Encryption
- Value-added Network Gateways

ECCH Communication Services
- Internet Messaging
- X.400 Messaging
- X.435 Messaging (EDI over X.400)
- Dial-Up
- Dedicated Lines
- Gateway to Commercial VANs

ECCH EDI Services
- Develop and Maintain EDI Transactions Sets and Messages
- Draft Implementation Conventions for EDI Transactions
- Map EDI Transactions to Bureau Flat File
- Test Connectivity with Bureau Trading Community
- Test EDI Syntax with Bureau Trading Community
- Translate EDI Transmissions
- Create Trading Partner Profiles

Communication Testing

The ECCH will perform communication testing. Communication sessions will be established with the Treasury Bureau and its Trading Partners to ensure that transmissions can be successfully received and transmitted.

ECCH EDI Services

The development and maintenance of EDI transaction sets and messages.

If a Treasury Bureau determines that a new EDI transaction set or message (EDI transaction) is needed to support an application; the ECCH will develop the EDI transaction based on the Bureau's data requirements. The EDI transaction will be submitted by the ECCH to the appropriate EDI standards body for approval. The ECCH will support the maintenance of these EDI transactions. This will also include development and submission of Data Maintenance Requests (DMRs) required to modify EDI transactions.

Draft Implementation Convention for EDI Transactions

As part of its services, the ECCH will draft the Implementation Conventions (IC) required to implement an EDI transaction. The IC defines the detailed user specifications required to implement an EDI transaction. The ECCH will submit these ICs to the Federal EDI Standards Management Coordinating Committee (FESMCC) for Government-wide coordination and approval. The ECCH will publish these ICs in the Library on its Web site.

Map EDI Transaction to Bureau Flat File

The ECCH staff will work with each Bureaus on mapping the EDI transaction set/message to its application database.

EDI Translation Services

The ECCH supports the translation of the U.S. domestic standard X12 and the international EDI standard UN/EDIFACT.

The ECCH will work with the Bureau to determine which versions of a particular EDI transaction supports the current and preceding version of each standard. Bureau input will be sought prior to migrating to a new version.

Trading Partner Profiles

In support of the EDI messaging and translation functions, Trading Partner Profiles will be created and maintained by the ECCH. These profiles define the Bureau and Trading Partner:

- Messaging Protocols
- EDI Transaction(s)
- ID Number
- Network Address
- Network Connection
- Dial-Up Access Number
- Point of Contact (email and phone number)

Other Services

The ECCH will provide the following other services:

- X.400 address selection for EDI mailbox of registered users
- Interchange submission to clearing system, delivery to recipient's EDI mail box, and

successful retrieval by recipient. REAL TIME MESSAGE TRACKING
- Password aging
- Message authentication
- Message audit trail
- Customized trade-logs per EDI mailbox
- Message retention based on bureau requirements or, for at least 7 calendar days

10.2.4 Procedures and Processes

Procedures are in Appendix G.

Chapter 11. PUBLIC REPORTS MANAGEMENT PROGRAM

11.1 Introduction

This chapter describes what steps and procedures are required in order for the Department of the Treasury's bureaus and Departmental Offices (DO) must follow in order to collect information from the public. Approval of collections of information (questionnaire, reporting, recordkeeping requirement, labeling, third-party disclosure, or any other form of collection) from the public (directed to ten or more persons/respondents) must be obtained from the Office of Management and Budget (OMB). This chapter provides basic guidance to bureaus and Departmental Offices seeking such approvals.

On May 22, 1995, Congress enacted the Paperwork Reduction Act of 1995 (PRA) in an attempt to minimize the paperwork burden the Federal government places on the public, and to improve the quality and use of Federal information. The PRA took effect on October 1, 1995.

11.1.1 Background

Since 1942, the PRA and its predecessors have established policy and procedural requirements instructing agencies how to collect information. OMB reviews, approves, or disapproves proposed agency information collections in light of the policy criteria and internal agency planning procedures established by the PRA.

Although the scope of the PRA and its provisions has changed over the years, the underlying policy standards of the PRA remain the same. An agency's collection of information is to:

- minimize the burden on respondents and the cost of the collection to the agency,
- serve an agency purpose,
- meet a specific agency need,
- maximize practical utility, and
- not unnecessarily duplicate available information.

11.2 Purpose

Under the Paperwork Reduction Act of 1995 (PRA), the Office of Management and Budget's (OMB) Office of Information and Regulatory Affairs (OIRA) is responsible for oversight of Federal agencies' use of information resources to improve the efficiency and effectiveness of governmental operations to serve agency missions, including burden reduction and service delivery to the public. As part of this oversight, and as required by statute, OIRA publishes an annual report describing the information collection burden imposed by the Federal government on the public, the progress of the agencies towards the burden reduction goals set forth in the statute, and the agency activities to improve the public's access to Federal information resources.

The Information Collection Budget (ICB) is the vehicle through which OMB, in consultation with each agency, sets annual agency goals to reduce the information collection burdens imposed on the public. Each agency is required to develop an ICB that summarizes agency accomplishments in the prior fiscal year and describes agency goals for the following year.

11.3 Policy

It is the policy of the Department that the public shall be required to respond to information collections required by Treasury bureaus and offices only when it is absolutely necessary and in such a manner as to impose the least burden. The amount of information necessary to complete such information collections shall be kept at a minimum, considering the purpose, which necessitates the report, and the required information shall be gathered in the most practical and cost-effective manner.

The ICB serves as a management oversight tool and as an adjunct to the transactional case-by-case review of agency requests for approval required by the PRA. OMB uses the ICB in conjunction with management reviews of other agency activities to assess information collection priorities and as a tool to help maintain the lowest necessary level of paperwork burden on the public, consistent with the Federal Government's need for information. Therefore, based on instructions provided by OMB, it is the policy of Treasury to request bureaus and offices information for preparation of an annual ICB relating to information collections.

11.4 Requirements

Bureaus and DO within Treasury cannot engage in a collection of information without obtaining OMB approval of the collection of information and displaying a currently valid OMB control number and, unless OMB determines it to be inappropriate, an expiration date. Each bureau and DO organization within Treasury has the primary responsibility for its own information collection process. This includes the preparation of, and the completeness and correctness of, requests to OMB for approval of information collections. However, such PRA submissions must be signed by the Treasury Chief Information Officer (CIO) or designee before they may be sent to OMB.

The ICB consists of an estimate of the total bureau and Departmental Offices (DO) information collection requirements to be collected from ten or more respondents. Pursuant to Public Law 104-13, OMB has determined that agencies shall prepare an annual ICB, which is an estimate of the total number of hours required of the public to comply with Federal government requests for information (reporting, record-keeping, labeling, disclosure, etc.). The ICB refers to the planning document required by OMB for information collection activities, which is compiled every year based on instructions provided by OMB. The instructions for developing and submitting an ICB are issued annually through an OMB Bulletin. The Bulletin is provided to the bureaus and DO organizations that collect or intend to collect information from the public or impose a record-keeping requirement on the public during the current or upcoming fiscal year.

11.5 Responsibilities

a. The Deputy Assistant Secretary (Information Systems) and Chief Information Officer shall:

   (1) Manage the Department's program for controlling the paperwork burden on the public; and

   (2) Approve the ICB and any requests for amendments of a burden allowance.

b. The Heads of Bureaus,the Chief Management and Administrative Programs Officer, the Inspector General, and the Treasury Inspector General for Tax Administration, as it applies to their respective bureaus and offices, shall:

(1) Designate an individual as the official contact point between the Office of Information Technology Policy and Strategy (OITPS) and the bureaus and DO organizations for all public reporting matters (information collection submissions, ICB);

(2) Provide 60-day pre-clearance notice in the *Federal Register* (forms or other collections of information not contained in a proposed or current rule) to solicit comment on the need for the information, its practical utility, the accuracy of the agency's burden estimate, and on ways to minimize burden, including through the use of automated collection techniques or other forms of information technology prior to submission to OITPS; and

(3) Submit all clearance requests to OITPS for review and forwarding to OMB for final approval at least 90 days prior to either the proposed operating date of the new plan or public report form, or the expiration date of an existing plan or public report form.

c. The Director, Office of Information Technology Policy and Stragegy (OITPS) shall:

(1) Serve as the Departmental Clearance Officer;

(2) Review, grant Departmental approval, and forward all requests for clearance of plans and public report forms to OMB for final review and approval; and

(3) Coordinate the submission of clearance requests for information collections in regulations with the Associate General Counsel (Legislation, Litigation and Regulation).

11.6 Procedures/Processes

Clearance procedures can be found in Appendix H, Public Reports Management Program (Information Collection Budget).

Chapter 12. ACCESSIBLE TECHNOLOGY

Introduction

On August 7, 1998, the Workforce Investment Act of 1998, P.L. No 105-220, 112 Stat.936 (1998) was signed into law. Section 408(b) of that law included a revised version of Section 508 of the Rehabilitation Act of 1973, Sec 408(b), Sec. 508, 112 Stat. AT 1203-06. Section 508 imposes strict requirements for any information technology developed, maintained, procured or used by Federal agencies. Electronic Information Technology (EIT) is expansively defined. It includes computers (hardware, software and accessible data such as web pages, facsimile machines, copiers, telephones and other equipment used for transmitting, receiving, using or storing information. Section 508 also requires all Federal Agencies to conduct a self-evaluation of their current EIT and to report the results of these self-evaluations to the Department of Justice.

12.1 Purpose

This chapter provides Treasury-wide guidance on issues relating to access to information/data and EIT resources for persons with disabilities.

12.2 Policy

The Department of the Treasury will ensure that all persons with disabilities have equivalent assess to information technology resources, information, and data as all others. The Department will provide the necessary training to ensure that employees with disabilities have the opportunity to acquire the skills to use EIT resources effectively.

The Rehabilitation Acts (as amended) and implementing regulations and guidelines from General Services Administration and the Department of Education provide guidance for developing specifications to ensure access to information technology and information/data to persons with disabilities.

12.3 Responsibilities

a. Deputy Assistant Secretary for Information Systems (DASIS/CIO) will:
   (1) Collaborate with the Department's Human Resources and Procurement offices to develop internal policies and procedures for providing accessible information and

information technology resources in accordance with standards developed and maintained by the ACCESS Board (The Architectural and Transportation Barriers Compliance Board)
(2) Assist managers in acquiring guidance on appropriate EIT resource accommodations and training
(3) Represent Treasury on various councils and at conferences or meetings concerning EIT accessibility issues
(4) Facilitate a Treasury working group to ensure careful coordination of 508 knowledge sharing
(5) Coordinate bureau compliance with requirements of Section 508 to conduct self-evaluation of their current EIT and to report the results of these self-evaluations to the Department of Justice as required
(6) Coordinate and assure education and awareness of all employees.

b. The Deputy Assistant Secretary for Human Resources will:
(1) Ensure that all Treasury Managers are aware of the requirements and available resources for compliance by preparing a yearly follow-up reminder to managers.
(2) Process any complaints filed in accordance with complaint procedures established to implement section 504 for resolving allegations of discrimination in a federally conducted program or activity.

c. The Director Office of Procurement will:
(1) Ensure enforcement of Section 508 through the procurements process
(2) Educate Procurement Officials of the provisions of the law in conducting business
(3) Coordinate education and awareness of applicable Federal Acquisition Regulation Rule published April 25, 2001
(4) Inform and support program offices as they pursue procurements that must address Section 508 Standards
(5) Provide policy and guidance to bureaus and departmental offices on enforcement of Section 508.

d. Bureau Chief Information Officers, the Inspector General, and Treasury Inspector General for Tax Administration will:
(1) Collaborate within their bureau's Human Resources and Procurement offices to ensure awareness of and compliance with policies and procedures for accommodating persons with disabilities.
(2) Complete self-evaluation reports on compliance according to Section 508 to ensure the submission of an accurate and timely report in accordance with the requirements of the Department of Justice.

Chapter 13. INFORMATION TECHNOLOGY (IT) WORKFORCE IMPROVEMENT PROGRAM

Introduction

The Treasury Information Technology Workforce Improvement Program was developed to:

A. Achieve Treasury-wide compliance with the Clinger-Cohen (Information Technology Management Reform Act (ITMRA)) Act of 1996 by:

- Determining the IRM knowledge and skill requirements for Treasury executives and managers
- Assessing Treasury executives and managers against these requirements
- Creating strategies and specific plans for hiring, training and professional development to build competencies and report on progress to the Secretary of the Treasury

B. Provide interagency leadership by:

- Leading efforts to formulate Government-wide strategies for Federal IRM IT skills development at all levels by active involvement in the Federal CIO Council (Committee on Education and Training)
- Coordinating with (Government-wide Information Technology Services Board (GITSB) and other Reinvention efforts to identify and recognize key IT skills enhancement initiatives
- Developing increased public-private partnership efforts aimed at filling IT workforce gaps (IT Forum, IT Fellows, and other efforts fall under this category.)

C. Coordinate Department Initiatives on:

- Recruitment/Retention
- Information Technology Professional Program - Develop plans for a Treasury IT Professional Program to infuse our organization with bright, capable future leaders and provide them with a breadth of experience on which to build
- Recruitment Strategies - Develop strategies to recruit information technology workers to the Treasury Department
- Retention Strategies - Develop strategies for retaining key IT employees
- Career Development
- Technical/General Competency Training - Build a Treasury School of Information Technology which draws the best training approaches and strategies from throughout the Department to meet the training needs of Treasury bureaus and the Department

- Managerial Training for the IT Professional- Establish a training program to focus on the unique challenges that IT managers face in managing an IT organization. Potential programs may include Project Manager training and training programs for the new technical manager
- Professional Development - Issue guidelines on suggested approaches to professional development of executives and senior managers. See Chapter 14.1
- Succession Planning/Executive Development Programs
- Executive Core Competency Assessment - In compliance with the Clinger-Cohen Act, Treasury will conduct an annual assessment of its bureau CIOs and direct reports
- Treasury Executive Institute Programs - An Information Technology track has been established with courses designed to provide training in key competency areas for IT and non-IT executives. An SES Development Work Project of 3-4 months in length is planned to allow designees to participate in a hands-on environment to solve real problems
- Information Technology Fellows Program - The Treasury Department is piloting a career development program to provide promising IT managers with a yearlong assignment in private industry

The IT Workforce Improvement Program will provide guidance to the bureaus and facilitate resource sharing between the Departmental Offices and the Bureaus in the areas described above.

13.1 Purpose

The Clinger-Cohen Act of 1996 suggests professional development to enhance the knowledge and skills of executives and senior managers in information resources management (IRM). Such development activities facilitate the achievement of the performance goals established for IRM for the Treasury Department. Accordingly, one way to keep Treasury executives and managers up-to-date in IRM, to help ensure that they invest in IT wisely, and to ensure that they know how to measure IT's performance in meeting expected outcomes, is to encourage and offer professional development opportunities that provide the knowledge, skills and abilities necessary to meet these challenges. The professional development opportunities should expose the IT executive and senior manager to the issues and topics that are emerging in IT and IRM. Professional development opportunities discussed here are influenced by a Human Resource Development (HRD) Council handbook, and fall into the three categories: mobility assignments, networking/conference opportunities, and special training programs.

The Human Resource Development Council, a group of officials from the 22 major departments and agencies nominated by the President's Management Council , sponsored a special task force which authored a June 1997 handbook entitled *Getting Results Through Learning.* The handbook identifies some strategies for formal and informal individual learning that can have big payoffs. In addition to formal learning (traditional training in structured courses, classrooms, and formal development programs), three informal learning strategies are recognized:

- **Job rotations**: permanent or temporary appointments to new positions that stretch and challenge employees and broaden their understanding across different business processes of the organization

- **Special assignments**: tasks or projects that offer opportunities to explore new areas and to learn new skills
- **Self-development**: involvement in professional organizations, networks, attending demonstrations in other organizations, and participating on interagency committees

13.2 Policy

There are broad principles to consider in creating professional development strategies: A) Continuing education is necessary to stay current in the technical field. B) General professional and managerial competencies should be addressed as well as technical competencies when formulating development plans. C) Cross bureau training and exposure to outside organizations are important elements in providing breadth of experience for managers and executives. D) When planning training and development activities, distance learning approaches that provide lower per capita costs and wider geographic, diverse coverage are encouraged.

13.3 Requirements

Each of the Treasury Bureaus and the Department should describe and evaluate their current processes for professional development. They should propose changes as needed to adjust for changes in technology and workforce conditions.

13.4 Responsibilities

The Bureaus and Departmental Offices should incorporate training and development initiatives into the Annual Information Technology Planning Call.

13.5 Professional Development Opportunities

This guideline identifies categories of professional development opportunities offered by several federal agencies, academia, professional organizations, and Treasury itself, that can be used to formulate professional development strategies for executives and senior managers. Items listed below are the IT Skills Enhancement Subcommittee's recommendations for developing professional development action plans.

Bureaus and other Departmental Offices

a. Each bureau and office should identify current and future leaders in the organization to participate in programs such as the IRM College and GSA's CIO University. These individuals should be encouraged to seek the 1000x2000 certificate and/or the CIO certificate while enrolled in the IRM College's Advanced Management Programs. The individuals selected for participation in these programs should have to pass a rigorous screening process

b. Each bureau or office should consider identifying individuals for a detail or an Intergovernmental Personnel Act (IPA) assignment for each fiscal or calendar year. The details should focus on broadening perspectives, sharpening management and leadership skills, building current talents and filling a need in the receiving organization

c. The Bureau Head and Chief Information Officer should pursue subscription opportunities with institutions such as MIT, Harvard, Gartner Group, or the Information Management Forum, to facilitate senior level exposure to the best practices of leading technology companies

d. Bureau and Office executives and senior managers should be encouraged to take part in seminars and workshops offered by the Treasury Executive Institute, and attend the annual Treasury IT Conference and other professional development conferences sponsored by IT customers

e. Bureaus and Offices should endorse and encourage senior level participation in working groups, councils, committees, associations and boards

Categories of Opportunities

1. Mobility Assignments

Mobility assignments provide an opportunity for executives and senior managers to broaden their perspectives, sharpen their management and leadership skills, and build on current talents. Mobility assignments are also good for the Federal Government. These assignments help to ensure that

executive skills are provided in the areas of greatest need and contribute to a more effective, efficient government. Mobility assignments may be temporary or permanent job changes.

Details: Details move an employee from one position to another for approximately 4-12 months. The individual continues to hold the position held prior to the detail and is expected to return to that position at the end of the detail. Details may be within a bureau, between bureaus, between a bureau and the Department, or between agencies.

Intergovernmental Personnel Act (IPA) Assignments: IPA assignments enable federal employees to work in state, local and Indian tribal governments, domestic colleges or universities, or certain non-profit organizations. An assignment may be made for up to two years and if all parties agree extended for up to an additional two years. Individuals continue to hold the positions held prior to the IPA assignments and eventually return to those positions or similar positions. Cost-sharing arrangements are worked out between the participating organizations.

SES Sabbaticals: Sabbaticals are 3-11 month assignments. Typically, SES members initiate these sabbaticals. Sabbaticals broaden professional skills, provide opportunities for personal growth and enhance SES recruitment and retention efforts. Activities may include: teaching, study, or research at a university or think tank, work with the private sector, non-profit organization, or state, local or foreign governments. They could also pursue other activities such as bench research, invention, design development of a project, trouble-shooting/problem-solving, or writing. SES members continue to hold their positions of record and receive pay and benefits while on sabbatical.

2. Networking and Conference Opportunities

Participation in or on working groups, councils, committees, associations, boards, and conferences allows for the continual collaboration with other IT professionals. These communications must occur for Treasury to remain abreast of technology. The list below is a guide to the kinds of activities that should be taken advantage of:

Government-wide Chief Information Officer (CIO) Council
Executive Order 13011 "Federal Information Technology," established the CIO Council as the principal interagency forum to improve agency practices on such matters as the design, modernization, use, sharing, and performance of agency information resources. The Council members are agency CIO's and Deputy CIO's. The council is co-chaired by the Deputy Director for Management, OMB and a CIO Council member. The CIO Council has many subcommittees that offer the members the opportunity to participate in Government-wide activities.

Government-wide CIO Council Committee on Education and TrainingThe Education and Training Committee is a forum for facilitating Government-wide compliance with the information technology human resources aspects of the Clinger-Cohen Act. The activities being addressed include identifying needed competencies, assessing of current competencies, and rectifying any gaps between current and needed competencies through training, professional development, recruitment, and retention. Committee members include CIO's or their designees.

Government-wide CIO Council Committee on Interoperability
The Interoperability Committee is a forum for facilitating Government-wide interoperability standards and addressing related information management issues, concerns, and requirements of the federal government. These requirements deal not only with the federal government but consider requirements of external customers and partners, such as state and local government organizations.

Government Information Technology Executive Council (GITEC)
GITEC supports Government Information Technology Executives in delivering high quality, and cost-effective services to their customers. The Council is a non-profit, educational organization operated under the Federation of Government Information Processing Councils.

More specifically the Council:

- Provides educational material and experiences for government information technology executives
- Provides a forum for sharing experiences and information of current interest to government information technology executives
- Develops and maintains communications between government information technology executives and federal oversight agencies
- Influences information resource management policy by developing and expressing consensus opinions on matters affecting the government information technology environment
- Influences the private sector by demonstrating common needs of government information technology executives and encouraging industry involvement in meeting those needs

Armed Forces Communications and Electronics Association (AFCEA)
AFCEA fosters the ethical exchange of information between government and industry. Individuals gain insight in the furtherance of national security through the application of communications, electronics information and intelligence technologies and processes. AFCEA allows networking with C4I peers and Information Technology leaders.

Center for Information Systems Research, MIT, Sloan School of Management
The Center for Information Systems Research (CISR) at the MIT Sloan School of Management, established in 1974, investigates critical issues concerning the management and use of information technology in complex organizations. Sponsoring organizations, representing a broad range of industries assist in defining and investigating this research. CISR faculty have conducted pioneering research in such areas as: decision support systems, critical success factors, database systems, strategic IS planning, end user computing, executive support systems, and coordination technology.

Strategic Computing and Telecommunications in the Public Sector, Harvard University, John F. Kennedy School of Government
The John F. Kennedy School of Government, in cooperation with leading corporations and public agencies, launched a multi-year program of applied research to address problems of strategic computing and telecommunications in the public sector. The School held an exploratory workshop in April 1987, attended by federal, state, local, and international officials, along with computer industry professionals and researchers. Guided by this initial workshop, the Strategic Computing and Telecommunications Program was designed to:

- Survey current practice on the nature and extent of strategic computing activities

- Develop case studies to explore the problems opportunities and lessons of "cutting edge" organizations
- Analyze the managerial and policy issues of strategic computing, especially those involved in selecting strategic targets
- Develop organizational policies and procedures, and adopting new technologies
- Disseminate the findings of its research through publications and workshops.

Since its inception, the program has conducted twenty-seven workshops and nine national conferences, hosting nearly 3,000 managers and executives from over 200 public and private institutions. The program relies on Kennedy School faculty and researchers, cooperating with outside authorities as appropriate. The School has a tradition of research on innovation, excellence, and capacity-building in government.

The Information Management Forum (IMF), An International Association of Information and Business ExecutivesFor over twenty years, IMF has provided a platform for sharing the best in past experiences, current practices, and future innovative directions. The executives and senior managers participating in IMF represent Fortune 1000 companies, government agencies, and not-for-profit organizations in the US, Canada and Europe. IMF is a personal and closely connected organization of peers and practitioners where candid information sharing takes place, and the practical issues and experiences of managing information systems organizations are openly discussed.
IMF programs assist members to identify, understand, and resolve issues, and to implement solutions in areas such as: Information Systems Organization and Infrastructure, Application Development, Operations and Telecommunications, Electronic Commerce, Human Resources as it relates to information systems, Measuring and Communicating the Value of information systems, Distributed Processing and Client/Server.

Gartner Group
The Gartner Group is the world's leading independent advisor of research and analysis to business professionals making IT decisions, including users, purchasers and vendors of IT products and services. Its primary business consists of research and analysis of significant IT industry developments and trends, the packaging of such analysis into subscription-based products called personal advisory services, and the distribution of such products through various print and electronic media. Gartner Group offers more than 80 personal advisory services, each concentrating on specific issues and how they affect individual clients. It matches its services to client's personal IT needs. In addition, Gartner Group provides technology-based training products, worldwide conferences and events, research reports and newsletters.

Interagency Resources Management Conference (IRMCO)
According to GSA, the annual IRMCO is the premier conference for government senior executives and employees on information technology. Conferences address such topics as: telecommunications, acquisition and contracting, capital planning, electronic commerce, architectures, education and training, and IT best practices. *Attendee:* Treasury or bureau senior executive or senior manager.

Information Processing Interagency Conference (IPIC)
IPIC is an annual conference that brings together government and industry Executives (typically, CIO's and CEO's) in a forum for sharing experiences and information of current interest. In addition to speakers and panel sessions, the conference allows for the sharing of the application of technology in showcases sponsored by both industry and the government. A recent conference addressed such topics

as: acquisition/procurement, telecommunications, JAVA Enterprise Solutions, architecture, next generation technology, security, and CIO issues.

Industry Advisory Council (IAC) Executive Leadership Conference
This annual program brings together executives from government and industry to address the major issues in information technology systems acquisition. The IAC Executive Leadership Conference seeks to foster a meaningful partnership between the public and private sectors. At the conference, participants hear about the most recent developments in government policy and actively participate in dialogue on major issues.

Association of Government Accountants (AGA)
Since 1950, the Association of Government Accountants is the educational organization dedicated to the enhancement of public financial management. AGA membership is open to everyone whose career, studies, or interests involve government financial management. AGA members form a diverse group of individuals, from students to entry-level employees to senior managers, who work for: local and state governments, school districts and retirement systems, colleges and universities, federal agencies, and public accounting firms.

AGA Professional Development Conference

AGA, while not an IT organization, offers workshops and seminars on topics of interest to IT professionals. The following seminars are typical offerings:

- Making Smart Technology Decisions
- Building an Executive Information System
- Human Resources Development for the Next Millennium
- Two Heads Better than One: The CFO/CIO vs. CF and CI Debate
- Computer Audit Technology
- How Business Process Reengineering can Improve Performance in an Organization

Treasury Information Technology Conference
The Department of the Treasury sponsors an Information Technology Conference which focuses on the latest topics affecting IT and IRM. The following topics are typical offerings:

- The Clinger-Cohen Act of 1996
- Treasury, Industry, and Government-wide IT Issues
- OMB/GSA Activities
- Strategic Planning
- Capital Planning and Investments
- Information Systems Architecture
- IT Skills Enhancement
- IRM Intellectual Capital
- Corporate IT Services
- CFO Council’s Financial Systems Committee Concerns and Efforts
- Treasury Intranet and Internet/Intranet Security Issue

The conference also showcases both industry products and services and the bureaus' application of technology.

Annual Government Financial Management Conference
Treasury's Financial Management Service's Center for Applied Financial Management conducts an annual professional development conference for financial managers and other professionals in related fields. The following topics are typical IT offerings:

- Chief Information Officer's Act
- Acquiring Core Financial Systems
- EFT: Progress Update
- EBT: Where are we Today?
- Rapidly Changing World of Electronic Procurement and Payment
- GSA Card Technology
- ASAP: Replacing a Legacy System
- Finance Office of the Future
- Redesign of the World's Largest Collection System (CA$HLINK)
- GOALS-Migration and EDIPAC
- CAIVRS Delinquent Debt Database

3. Special Training Programs

Treasury Executive Institute (TEI)
TEI was established in 1983, by the Secretary, to enable senior executives in all bureaus, the opportunity to share ideas, experiences, and developmental opportunities in order to continually improve their leadership skills. Oversight of TEI is administered by the Treasury Career Advisory Panel, consisting of the highest ranking career official in each of the bureaus and the Departmental Offices. Among other responsibilities, TEI regularly presents seminars and workshops on leadership and topics pertinent to the missions of the bureaus. Seminar leaders are frequently authors, academics, business leaders, or key administration policy officials. The following are examples of two seminars: "Creating Learning Organizations for a Sustainable Future" by Dr. Peter Senge (the world's leading authority on building learning organizations); "Why Change Doesn't Work by Dr. Harvey Robbins.

In 1998, the Information Technology Workforce Improvement Program collaborated with TEI to begin a series of IT seminars for IT and non-IT executives. These programs were designed in a similar format to discuss significant IT issues such as capital planning, CyberTerrorism, and enterprise architecture. Speakers from industry and government highlighted best practices and then Treasury Department officials gave case examples. These programs were extremely well received and will continue to be presented in the future.

GSA Third Millennium Program
GSA, in cooperation with leading universities, has established graduate-level certificate programs for federal IRM professionals. The objective of the Certificate Program is to help federal IRM practitioners keep up-to-date on changes in technology and IRM policy, and prepare them for future leadership positions. Universities participating in the program award a graduate-level IRM Certificate after the successful completion of six courses. Credits earned for the IRM Certificate can be used to meet masters degree requirements in accordance with the rules of each university.

Eligibility: The program is government wide, including both civilian and defense agencies, open to federal employees, currently working in IRM, and enrolled in an IRM Certificate Program offered by one of the participating universities.

Participating Universities: Classes have been selected to cover the major areas of IRM to include computing, telecommunications, and information management.

CIO University

GSA is launching a new program entitled CIO University that is a collaborative effort between the Federal government and educational institutions to develop executives for the top information technology jobs in government. The University will deliver a comprehensive program, tailored for today's government leader, which encompasses the depth and breadth of today's IT and business disciplines - as outlined by the CIO Council-adopted Clinger-Cohen competencies. Students will select Core Competency modules according to their development needs. GSA expects balanced participation between the private and the public sector.

IRM College - CIO Certificate Program

The CIO Certificate Program, sponsored by the Defense Department's CIO, offers graduate education for CIOs to use in developing agency personnel. It addresses requirements in the Clinger-Cohen Act of 1996 and provides a certificate to show that an individual has received education in Federal CIO competencies. Additionally, students completing the program earn 15 graduate level credit hours that may be applied towards Masters degrees from Syracuse University or the University of Maryland University College. The program focuses on ten subject areas directly related to CIO competencies identified by the Federal CIO Council: Policy, Information Resources, Strategic Planning, Leadership/Management, Process Improvement, Capital Planning and Investment, Performance and Results-Based Management, Technology Assessment, Architecture, Security, and Acquisition.

IRM College - Advanced Management Program (AMP)

The fourteen week graduate-level AMP provides functional and technical information resources managers and executives with an integrated understanding of new policies and imperatives such as the Clinger-Cohen Act of 1996, the Federal Acquisition Streamlining Act (FASA) and the Federal Acquisition Reform Act (FARA). Graduates will be able to form managerial partnerships to justify, allocate, and apply information resources to mission requirements in compliance with regulatory, policy, and ethical standards.

The AMP core covers the key competency areas required of the Chief Information Officer and other senior IRM officials. These competency area elements include: IRM policies and reporting requirements; information resources strategic planning; information planning strategies using BPR and modeling; capital planning, selection, and evaluation of investments using established criteria; bench marking and process analysis to ensure performance and results based management; assessing technology trends and identifying organizational technology needs; applying standards and guidelines for designing architectures to align technology with organizational structure and human resources; acquiring technologies using acquisition reform to support efficient and effective government operations and leading the organization through changes necessitated by this new way of doing business.

Specialty Tracks provide two weeks of in-depth education related to the CIO competencies covered in the core to meet the specific student needs. Students may select one of the following Tracks: Public

Policy in the Information Age, Emerging Information Technologies, Best Practices in Process Improvement, and Information Systems Acquisition. The Domestic Field Studies provide students the opportunity to observe corporate and government information resources practices and discuss strategic and technological considerations with organizational leaders. The Electives Program also allows each student to do additional study in areas of particular professional interest. Students may select courses related to information strategies, information technologies, or acquisition management.

AMP students have the opportunity to qualify for the CIO Certificate and GSA's Third Millennium certificate. Fifteen (15) graduate hours can be applied towards Masters degrees from Syracuse University or the University of Maryland University College and for completion of the training requirement for Level III certification for acquisition workforce members in the Communications/Computer career field.

Financial Management Service (FMS) Center for Applied Financial Management
The Center for Applied Financial Management offers various financial management courses which may be appropriate for senior level IT managers and executives.

Appendices

Appendix A - Investment Review Board (IRB)

Guidelines for Bureau Investment Review Boards (Bureau IRB)

This document updates the initial guidance memorandum, dated December 16, 1996, from the Treasury Chief Information Officer entitled "Treasury Guidance on the Implementation of the Information Technology Management Reform Act of 1996 (ITMRA)." In that document, bureaus were informed of the mandate in ITMRA to establish and maintain an IT Investment Portfolio and the requirement to establish internal control mechanisms and procedures for review and approval of IT investments. At that time the Department did not prescribe how each bureau must implement the Investment Control process, only that they must include a member of the Treasury CIO staff in the process.

Bureaus are required to:

1. Create a Bureau IRB that conforms to the general guidelines set forth by OMB and GAO in the "Evaluating Information Technology Investment" document, dated November 1995. This document provides basic guidance on the development and operation of a review process that selects, controls and evaluates IT investments in a repeatable process which is well suited to the Department's needs.

2. Include a representative of the Treasury CIO organization in the Bureau IRB proceedings.

3. Submit a copy of the current Bureau IRB charter to the CIO for review and resubmit it whenever major changes are made.

4. Ensure that all IT systems in the Bureau's IT Investment Portfolio (including planned, under development, and existing systems) have been reviewed and approved by the Bureau IRB.

5. Use I-TIPS to document and update IT Investment Portfolio data for use in the bureau's capital planning process, and ultimately transmission to the Department of the Treasury as part of the Departmental budget process.

6. Have a repeatable, documented process in place for selecting, controlling, and evaluating the IT systems in the Investment Portfolios. All investments included in the final portfolio must have documentation available to Treasury that ensures adherence to the guiding principles set forth by OMB and Congress. This process will, at a minimum, adhere to the principles of the Clinger-Cohen Act (and the "Raines Rules") to ensure that:

- IT investments support core/priority missions and functions of the Bureau
- IT investments support the bureau's strategic plans
- There is involvement of key bureau executives (business sponsors) and the Treasury CIO and/or his designee
- Proposed IT investments are consistent with the Bureau's IT architecture
- Requirements analysis, analysis of alternatives, and cost/benefit analysis are performed prior to proposing any new IT investments
- IT investments are undertaken because no alternate private sector or governmental source can more

efficiently meet the requirement
- New systems support work processes that have first been “re-engineered”
- New development efforts project a positive return on investment
- IT investments reduce or minimize risks to the Bureau
- Whenever possible, new systems are implemented in a phased or modular fashion
- Acquisition strategies appropriately minimize risk to the government
- Performance measurements are in place to assess the effectiveness of the investment, and the results are reviewed
- Financial systems comply with OMB A-127 requirements

Appendix B - Requirements and Cost-Benefit Analysis

Introduction

The first step in the requirements analysis is determining the requirements the investment must meet. The requirements are described in terms of mission, goals and objectives, business outcome, purpose, performance criteria, constraints, schedule, and other functional areas. The next step is to identify all feasible alternatives to meet the investment objective. A comprehensive discussion and operational characteristic should be presented. The requirements analysis and analysis of alternatives should also address the required information relating to the "Raines Rules."

The Office of Management and Budget (OMB) Circular A-130 requires agencies to prepare, and update as necessary, cost-benefit analyses for all investments at a level of detail to the size of the investment. The purpose of such analysis is to ensure that the most cost effective alternative which satisfies requirements is chosen.

Requirements Analysis

Requirements analyses which are documented in support of IT investments will use the following format:

a. **Title and purpose**: Provide the full name of the information system initiative, including the system acronym if one is proposed. Indicate the name of the originating office, including geographical location/mailing address, parent organization(s), and the date of approval of the requirements analysis by the bureau official with functional responsibility. If this initiative has been approved in an IT Operational Plan, reference the initiative name and/or number. If the system is not included in an approved Plan, state the reason and explain when it will be incorporated into the Plan.

   State the purpose and provide a brief overview of the requirement in clear, technology-independent terms including any reason for the requirement (e.g., new legislation, changes to regulation, or the growth of a program beyond the support capability of existing systems).

b. **Describe the business need or objective:** Explain the business need or objective of the initiative or project in terms of opportunities for increased economy and efficiency, new or changed program requirements, or deficiencies in existing capabilities.

c. **Specify assumptions and constraints**: Specify and evaluate any other constraints and assumptions that are relevant to meeting the business need.

d. **Determine information requirements**: Define the overall information needs of the

initiative to establish a business profile or baseline. The needs discussed here can be based on the bureau's strategic information plans as well as current bureau databases and information architectures. Determine the bureau's information requirements by considering the following factors if applicable:

- Information that needs to be provided to or obtained from the public and other agencies
- Information currently being received in the organization
- Information needed but is not currently being received and how the missing information would be used to support current and future requirements related to this initiative
- Sources available to obtain the information
- Information outputs and information relationships
- The need to validate, maintain, or improve the integrity, accuracy, completeness, and Reliability of the information to be processed or stored
- Information format, media, quantity, location, and timeliness requirements
- Security and privacy of information
- Information accessibility - need to access and who may access

e. **Describe impact on other systems and initiatives:** Describe the impact and/or interrelationship of this project on currently operational systems, systems currently under development, or other proposed initiatives.

f. **Evaluate the current system/process**: Identify and briefly document the current system(s), automated and manual, which are related to supporting this requirement.

(1) **Describe the current system:** Briefly describe the current system(s) to form the baseline for supporting this requirement.

(2) **Evaluate the current system**: Evaluate the existing automated and/or manual system or processes in terms of the information needs, users, function(s), workload, IT resources, etc., as they relate to the business objective. Describe how the current system/process does and does not meet the business objective including deficiencies that the proposed project will correct.

g. **Describe the functional requirements:** Define requirements functionally wherever possible, describing what the new system or resource must do (its capabilities or features) and the information management opportunity or problem that will be addressed. Identifying technical requirements in addition to the functional ones may be appropriate in some cases. Document any

quantitative or qualitative requirements that must be met and why those requirements are necessary to meet the mission need. Describe requirements based on the following:

(1) **Workload and related requirements**: Document the current and projected workload requirements and capabilities by addressing the following factors if they are applicable:

- Growth and expandability requirements over the system life
- Processing, storage, data entry, communications, and support services workload requirements over the system life and how best to address uncertainties
- Data bases and data base management
- Data handling or transaction processing by type, volume, and location;
- Input and output needs and associated telecommunications support including peak traffic loads by location
- Any other workload-related requirements

(2) **Records management requirements:** document the following records management factors when determining requirements:

- Records retention and disposition requirements including a records disposition schedule for the records being created
- Integration of electronic records with other bureau or departmental records;
- Safeguards against unauthorized use or destruction of records
- Requirement for forms and their production in accordance with the bureau forms management program
- Production of reports subject to the agency reports control program; and
- Privacy Act requirements

(3) **Security requirements**

(a) General

Specify whether the data or information to be processed, stored, manipulated, or communicated on the proposed equipment or system is: (1) Classified data and the highest level of classification, (2) Limited Official Use (LOU) or other officially limited data, (3) Unclassified-sensitive data, or (4) Non-sensitive data. If the system will handle Privacy Act data, that fact should be highlighted. Systems processing or communicating Privacy Act data must, at a minimum, be designated as

unclassified-sensitive.

Consider contingency requirements for IT resources whose loss or failure would: (1) prevent the bureau from performing its mission, or (2) have an adverse effect on the nation. In addition, requirements for National Security and Emergency Preparedness will follow the applicable guidance documents in consultation with the Office of Information Systems Security.

(b) IT Resources Security Requirements

Describe IT resources security and privacy requirements and control objectives in functional terms. List potential threats and hazards and describe measures needed to provide protection. Indicate the date on which a risk analysis was completed and the date a Treasury System Security Plan for unclassified-sensitive systems was completed.

The Treasury Security Manual, TD P 71-10, provides minimum baseline security requirements and control objectives for unclassified-sensitive data. Chapter IV, Section 4.A of the Security Manual provides requirements for classified data and data which must be handled as if it were classified, such as LOU. Guidance on the completion of the Treasury System Security Plan is provided in NIST Special Publication 800-18, Guide for Developing Security Plans for Information Technology Systems. There are TDs and policy guidance that may apply to the protection of certain classified/sensitive data. The Department's Office of Information Systems Security should be consulted for further guidance.

NOTE: If encryption or encryption support requirements are described, the bureau must develop an encryption plan and obtain approval of the plan from the Office of Information Systems Security, CIO, Departmental Offices.

(c) Physical, Administrative, Environmental, Personnel, and Information Security Requirements

Describe any physical, administrative, environmental, personnel, or information security considerations that may apply to the equipment and/or system as well as the personnel who will access the data, and/or the environment in which the equipment or system will operate. Treasury guidance documents such as the Security Manual and the Risk Assessment

Guidelines should be reviewed for guidance and for additional security categories. The Office of Information Systems Security should be consulted for further information on these requirements.

(4) **Accessibility requirements for individuals with disabilities**: Describe the extent to which individuals with disabilities will access or use the information, system, and/or equipment to be acquired or developed. Additionally, describe, in functional terms, the way in which the bureau will meet these accessibility needs. Federal law requires that the needs of Federal employees with disabilities for access to computer and communications systems and equipment must be accommodated on an equivalent level with the needs of employees without disabilities.

GSA has issued requirements related to accessibility by handicapped employees on the following web site <http://www.itpolicy.gsa.gov>. GSA has also published a handbook entitled "Managing End User Computing for Users with Disabilities." These sources provide comprehensive guidance and assistance on defining and meeting accommodation requirements.

Analysis of Alternatives

All feasible functional alternatives for meeting the requirement(s) identified in the requirements analysis section should be identified and analyzed. The analysis should include all known relevant factors. For example, when analyzing the baseline alternative, highlight the current methods, procedures, and systems. Use a set of evaluation criteria to assist in the analysis if it is deemed appropriate. Often, it is useful to establish a set of selection criteria to assist in evaluating the advantages and disadvantages of each feasible alternative.

Each alternative to achieve the functional requirements must be identified, described, and analyzed both in general terms and in terms of the assumptions, requirements, and risks associated with the alternative. Provide a description of the technical, organizational, and operational characteristics of each alternative. Express in some detail how, and to what extent, each alternative meets the requirements identified in the requirements analysis.

a. **Identify and describe functional alternative:** In most situations, there are a variety of approaches to satisfying the business requirements identified in the requirements analysis. Do not automatically eliminate alternatives simply because they may bring about undesirable changes.

The description of each alternative must be commensurate with the size and complexity of the solution and the requirement(s). It is important to ensure that each alternative is functionally and programmatically feasible.

Examples of alternatives may include:

- Continuing the current system of operation or baseline approach
- Upgrading a selected component of the system or program such as the storage or processing capacity
- Undertaking business process reengineering to radically change the business process which involves rethinking the process, technology, and organization/culture
- Redesigning and/or simplifying the business processes to make incremental improvements or revising production schedule to improve productivity
- Assessing the continuing need for the function
- Reorganizing the organizational structure to institutionalize quality improvement and performance measures programs to improve performance and provide better services
- Using non-IT resources to satisfy the requirement such as additional staff, use of shift work, or job sharing to increase workload capacity
- Expanding installed IT resources by adding additional components to improve throughput, such as providing telecommunications services in a field office
- Sharing resources with another Federal agency, consolidating data centers, or using existing facility by another agency such as the information processing servicing organizations (IPSOs)
- Developing/installing a new system to fulfill the business requirement

For those alternatives that involve the acquisition of IT resources, the acquisition alternatives should be addressed as a characteristic of the alternative.

b. **Analyze each alternative:** While the requirements analysis is generally written in functional terms, analyzing the alternatives may require discussion of technical and acquisition aspects of each alternative. Discuss the advantages and disadvantages of each alternative and explain why the proposed alternative was selected. To ensure that each alternative identified is feasible, it is important to include the following information in the analysis:

- Any assumptions or constraints which would have an impact on the implementation of the alternative. This may include factors such as:
  - Compatibility-limited requirements implicit in the alternative (e.g., if applicable, specify that existing resources will require little or no modification when used with the proposed resources)
  - Requirements for specific make and model
  - Security requirements
- Expected accomplishments in measurable quantitative terms

- Performance measures (outcome-oriented) for the initiative or information systems project which relate to bureau mission, goals, objectives
- All characteristics or requirements which characterize the alternative, including:
  - Training needs to implement this alternative
  - Site preparation and/or facility needs
  - In-house staffing needs for implementing the alternative
  - An overview of the technical architecture
  - Hardware resources needed for implementation
  - Software resources needed for implementation
  - Telecommunications needs
  - Support services (including maintenance) needed for implementation
  - A proposed implementation schedule
  - Acquisition strategies associated with the alternatives
  - Security requirements
- Time to implement, including any factors which may delay implementation
- Estimated external impacts on other divisions, bureaus, Departments, or other agencies
- Operational impacts on the current system and organization
- Factors which are not quantifiable but which may impact the system if this alternative is chosen
- Risks and uncertainties associated with the implementation of this alternative and potential means to manage the risks
- Estimated system life of the alternative including a projection of time that begins with the installation of the resource and ends when the need for the resource has terminated

Cost-Benefit Analysis

A major goal of the cost-benefit analysis is to identify the most favorable business investment from among the various feasible alternatives. When feasible alternatives provide equal benefits, the least-cost alternative should, as a general rule, be the preferred feasible alternative. When the least-cost feasible alternative is not selected, it is imperative that the supporting discussion clearly and specifically identify the criteria or basis used for selection.

- Cost Analysis: For each alternative, calculate the total estimated cost. This should include both in-house costs (for staffing or use of existing equipment) as well as the cost of products and/or services to be acquired. Use the assumptions and characteristics identified for each alternative as a reference point. The total estimated cost for each alternative should include all costs for that alternative expressed in both discounted and non-discounted dollars.
- Benefit Analysis: Benefits are the positive effects of an alternative, or values of outcomes, expressed in both discounted and non-discounted dollars, in units, or in narrative form. Benefits are usually expressed in terms of the bureau's mission, goals,

or objectives.

It is important that all benefits be expressed in dollars whenever possible. When benefits are not quantified in dollars, they should be placed in unit form as shown below, or described thoroughly in the written narrative.

Two major categories of benefits (**tangibles, i.e., quantifiables** and **intangibles, i.e., non-quantifiables**) are listed below, along with some subcategories and examples.

- Tangibles are benefits that are quantified in dollars or units (such as hours). Tangibles generally include savings in time or cost to the government or public, as well as increases in revenue. These savings or revenue increases may result from increased capacities, decreased maintenance costs, decreased staffing needs, increased processing speed, etc.
- Intangibles are benefits that are not quantified or measurable in dollars or units. Intangibles can have a major impact on the cost-benefit analysis and the decisions it supports. Intangibles also require a narrative explanation and are often associated with information resources. To analyze intangibles, use techniques such as enumerating, ranking, assigning values, or using weights. However, reasonable attempts to quantify these benefits should be made

  Some examples of intangibles include:
  - Better decision-making by management using the system
  - Better information management
  - Requirements established by a Public Law
  - Better compliance with the law
  - Improved report generation

The benefit analysis will provide the basis for the development of performance and resulting measures for the chosen alternative. These are used in measuring the impact of the project in meeting the stated program mission and objectives established in the cost-benefit analysis required by Treasury guidance document TD P 84-01. These benefit measures are used in management's reviews of prototypes and pilots as well as in reviews of full system roll-out.

When analyzing alternatives, consider the investment in existing IT resources that may have to be converted, replaced, or disposed of, as a result of the alternative selected. Consider the **conversion costs**, risk, and magnitude of conversion from installed IT resources to augmentation or replacement resources. If appropriate, perform a conversion study commensurate with the size and complexity of the requirement. Procedures for a conversion study can be found in TD P 84-01, Information System Life Cycle Manual.

Determine any costs and describe appropriate strategies for maintaining up-to-date IT resources and avoiding outdated resources over the system life. IT hardware or software reaches obsolescence when it is either in an outmoded or degenerative condition, which if not corrected will render the resource useless.

a. **Determine costs of each alternative:** Determine the total costs for the alternative for the period the alternatives will be in effect (e.g., the system life costs). Each feasible alternative should be fully costed - this includes accounting for the spending for all resources (whether appropriated or non-appropriated) including items such as the cost of in-house staff hours, contractor costs, equipment costs (whether for purchase or lease), materials, GSA rent (standard rental charges for office space, utilities, protection, warehouse, etc.), logistical support, maintenance, compensating balances left in commercial banks in exchange for services, etc.

The development of the cost analysis must include a separate identification of *Developmental* (non-recurring) and *Operational* (recurring) costs.

A representative listing of costs typically associated with IT projects is provided below. **It is important to note that line items included in a cost analysis should not necessarily be limited to those presented below; nor should every cost analysis include all line items.**

(1) **DEVELOPMENTAL COSTS (non-recurring costs):** Costs incurred only once. Acquisition and transition costs fall into this category.

System Design
- Requirements Analysis Package Development
- RFP Development

Current System Measurement (Quality Measures)
Hardware Development/Acquisition
Software Development/Acquisition
Facilities/Non-Labor Costs
- Space and Materials
- Repair and Alterations to Space
- Furniture/Fixtures
- Office Supplies

Telecommunications (Data & Voice) Services
System Security
- Data Encryption

Labor and Support Costs
- Data Processing Services
- Procurement Services
- Systems Integrator
- Computer Engineer

Conversion Costs
Residual Value
Other Non-Budget Items

(2) **OPERATIONS AND MAINTENANCE COSTS (recurring costs)**: costs incurred throughout system life.

Hardware Maintenance
Software Maintenance
Facilities/Non Labor Costs
- Space and Materials
- Office Supplies

Telecommunications (Data & Voice) Services
- Data Transmission

System Security
- Operation and Maintenance of encryption equipment

Labor and Support Costs
- Direct Labor
- Logistic Support
- Management Supervision
- Benefits
- Overhead

Compensatory Balances Left on Deposit

(3) **SUNK COSTS**: Sunk costs are not relevant to the cost-benefit analysis. Sunk costs are costs that have already been incurred and are therefore irrevocable. Sunk costs may also be irrelevant to the cost-benefit analysis because they were incurred at the same level regardless of the alternative chosen. The cost-benefit analysis includes only those cash flows that a decision can affect.

For example, inclusion of costs for hardware is not allowed when a new application will run on existing hardware. This cost must be disregarded when estimating the cost of the alternative, as it is a sunk cost, and cannot be affected in any way by the choice among alternatives.

(4) **OTHER CONSIDERATIONS**: Relevant non-information systems costs must be included in the analysis. For example, if workload increases would require future increase to non-information systems staff the additional costs must be shown as increased costs for the alternative.

Cost estimates must be supported by a reasonably accurate projection of workload and capacity requirements. Specific workload data and associated capacity requirements for each year in the system life must be provided. TD P 84-01 requires bureaus to have an information systems capacity management and performance measurement program.

Forecasted changes in the general price level during the planning period (i.e., *inflation*) should not be used. All estimated costs and benefits for each year of the planning period should use the general purchasing power of the dollar at the time of the decision. This is because inflation is automatically included in the discounting calculations later.

However, a known or expected price increase or decrease in a specific cost item should be included when the magnitude of the price change may affect the decision (for example: an increase in personnel costs projected due to a planned general Federal pay raise, a raise, or decrease in the cost of computers).

In general, future inflation is highly uncertain. Analysts should avoid assumptions about the general rate of inflation whenever possible. The treatment of inflation is actually incorporated into the discount rate established by OMB.

b. **Determine benefits of each alternative**: The first step in the analysis of benefits (intangible and tangible) is to list the benefits for each alternative. Describe all expected benefits as they relate to organizational goals, objectives, missions, functions, and operating environment. Evaluate and quantify (where possible) the list of benefits.

The benefit analysis process for each feasible alternative will involve several steps to measure and quantify benefits, each of which is described in this section:

- Calculate present value life-cycle costs
- Calculate present value life-cycle benefits
- Determine net present value
- Determine benefit/cost ratio
- Weigh the qualitative and intangible factors

Rank each feasible alternative by its relative value to the bureau and the Department. The purpose is to consider quantitative and qualitative factors to determine the best alternative.

The frequently used technique to summarize the analysis is a matrix. The rows of the matrix can include, for instance, functional, technical or acquisition details. The columns represent each alternative. Explain why particular alternatives were selected.

When quantified benefits are limited when compared to costs, or it is known that each feasible alternative will provide equal benefits, net present value and benefit/cost ratio calculations will not be utilized. While present value analysis is still required, the use of net present value and benefit/cost ratio can still be used to show the relative worth among alternatives.

(1) **PRESENT VALUE ANALYSIS**: Every cost-benefit analysis must include a *present value analysis*. This means that cost and benefit totals must be discounted so dollars are expressed in terms of their value at the time the cost-benefit analysis is prepared.

Cash flows that happen at very different times have different units of value even though they area all nominally expressed in terms of dollars. The purchasing value of money varies with time as a result of factors such as inflation, interest, and opportunity costs. Adding together cash flows separated by time requires that they be changed into a common unit of measure. This is an extremely important technique to evaluate the relative worth of projects.
The simplest way to make the change is by *discounting* all cash flows into today's value or "present value." Businesses commonly use this conversion to get the best representation of what their financial costs or benefits really are. Discounted cash flows properly focus on cash, not budget or accounting measures. **Interest, inflation, and opportunity costs are all automatically included.**

Discounting says the cash you get out should be more than you put in, plus the interest the Government could earn by investing elsewhere. The technique discounts future cash flows to current dollars, and recognizes the alternative return the Government could get if it had the cash now rather than in the future.

(2) **NET PRESENT VALUE:** The net present value is used to determine whether or not a feasible alternative will show a return on investment. The net present value is the difference between the total present value benefits and the total present value costs.

(3) **BENEFIT/COST RATIO:** The benefit/cost ratio involves determining life cycle costs and benefits for each alternative and comparing the benefit/cost ratios as a determinant of efficiency of resource allocation.

(4) **OTHER TECHNIQUES**: Other optimization techniques may be used when deemed appropriate by local management. Consult local reference materials on cost-benefit analysis for a full explanation of these and other techniques.

(5) **DISCOUNT RATE**: The discount rates are updated annually. The Office of Economic Policy at OMB updates Appendix C of Circular A-94 to reflect the updated discount rates.

(6) **SENSITIVITY ANALYSIS**: After costs and benefits are determined for each feasible alternative and then ranked to see which appears best, the results need to be tested to verify whether they are reliable.

Knowledge about the future is uncertain. Consequently, analyses depend on estimates and assumptions that are seldom correct. It is common to find out that changing estimates or assumptions reorder the ranking, putting a different feasible alternative first.
If the change is reasonable or likely to happen, switching to a different recommendation or outcome can avoid serious projection problems.

A sensitivity analysis determines how sensitive the conclusion is to changes in the system parameters or basic assumptions.

The benefit analyses **require** sensitivity analyses to help deal with uncertainty by determining how easily the ranking of feasible alternatives is changed if estimates and assumptions vary. Sensitivity analysis is used to determine maximum allowable increases and decreases before the ranking of alternative change. The values may change one at a time or in combination. Each variation represents a reasonably possible set of circumstances that could occur. Spreadsheets are extremely useful for testing different scenarios.

As better information becomes available, adjustments in the analysis may provide management with clearer choices. Provide a narrative explanation of the variables tested for management review.

Listed below are some examples of what could impact a sensitivity analysis:

- Cost estimates (effects of significant increases or decreases in major cost estimates for hardware, software, telecommunications, or maintenance)
- Requirements (legislative mandate, changes in functional or organizational structure)
- Implementation schedule; or systems life (shorter or longer)
- Discount rate
- Assumptions (effects of alternative assumptions concerning requirements, operations, facilities, software, or configuration of equipment or software)
- Workload (effects of variation in the estimated volume, mix or pattern of workload)
- Inflation (only if specifically used)

c. **Summarize comparison and selected alternative:** Provide a summary of the final comparison of all alternatives, including costs, and reasons for the selected alternative. Describe how the proposed alternative will meet the requirements. State the objectives of the proposed program in measurable, quantitative terms. State the expected accomplishments if the objectives are achieved. Include impact or performance measures that will indicate whether the proposed program is having the desired effect. Provide all the known benefits of the proposed program and identify all improvements or savings in measurable terms.

Appendix B.2 – Customer Solutions and Infrastructure Procedures

This appendix identifies thresholds for obtaining acquisition authorization from the Office of Customer Solutions and Infrastructure to simply provide notification to OCSI for the procurement of IT equipment and services. This appendix also identifies CIO contracts that are available to support acquisition needs. OCSI does not require notification for the following actions, however, approval is required if the amount of acquisition matches the approval level identified in this appendix.

- System upgrades (software or equipment)
- System moves, adds, or changes (excluding physical moves to other locations)
- Acquisition of station or other peripheral equipment under $100,000.00
- Station/user feature moves, adds, or changes

Approval or notification for the following type of support is not required, however, OCSI highly recommends using the same contract and contractor that was used to procure the equipment in order to ensure warranty, maintenance support and other follow-on support.

- Technical support
- Yearly maintenance

CSIO Notification/Approval Requirement

Acquisition	Level of CSIO Approval / Notification	Acquisition Vehicles
Long Distance Telecommunications		
1. Inter-city digital transmission and equipment Services (including related security features) a. Data Networks – Frame Relay, ATM, etc. b. Internet Connections c. Managed Firewall Service d. Remote Firewall Service e. Web Server Housing f. Virtual Private Networks (VPN) g. Public Key Infrastructure (PKI)	Approval	Treasury Communications System (TCS)
2. Toll Free Voice Service	No approval or notification Required	FTS 2001
3. Voice Services (excluding Toll Free)		
4. Data Services		
5. Imaging and Videoconferencing		
6. International Telecommunications Services		
7. Communications Security / Encryption that connects to TCS network	Approval	NSA approved sources
8. Communications Security / Encryption	Notification	
Acquisition	**Level of Approval / Notification**	**Treasury / CSIO Acquisition Vehicles**

Local Telecommunications		
9. Local Telephone Service (Dial Tone) *Washington D.C. Metro Area* [1]	No approval or notification Required	DTS2
10. Local Telephone Service (dial Tone) *Outside Washington D.C. Metro Area* [1]	No approval or notification Required	No CSIO Contracts Available
11. Public Branch Exchange (PBX) or Central Office Business Lines (i.e. Centrex, Plexar, etc.)	Approval	TTS BPA's, DTS2 (Washington D.C. Metro Area)
12. Location move of a PBX	Notification	
13. Electronic Key Systems (EKTS)	Notification	
14. Location move of EKTS	Notification	
15. Voice Messaging Systems and Service	Notification	VMS, TTS BPA
16. Cellular Service	No approval or notification Required	No CSIO Contracts Available
17. Cellular Equipment	No approval or notification Required	No CSIO Contracts Available
18. Wireless Service	No approval or notification Required	No CSIO Contracts Available
19. Communications Wire and Cable *Inside Washington D.C. Metro Area* [1]	Approval - $50,000.00 & over	DTS2, TTS BPA's
20. Communications Wire and Cable *Outside Washington D.C. Metro Area* [1]	Approval - $50,000.00 & over	TTS BPA's

Notes:

1. The Washington D.C. Metro area is defined in the DTS 2 contract. For information regarding the definition, contact your Customer Account Executive.

Appendix C – Feasibility Study

Introduction

The purpose of a feasibility study is to describe the information management or business requirement or opportunity in clear, technology-independent terms that all affected organizations can agree on. An information management requirement or opportunity can be prompted by factors such as new legislation, changes to regulations, or the growth of a program beyond the support capability of existing systems.

The study provides an overview of a complex business requirement or opportunity and determines whether solutions exist before full life cycle resources are committed. The requirement or opportunity is assessed in terms of technical, economic, and operational feasibility. The study contains decision criteria, comparisons of general solution possibilities and a proposed program (solution). The following key decisions should be addressed before conducting the study.

1. **What is the specific requirement or opportunity, and for what organization(s)?** Provide an initial recognition of the requirement or opportunity and establish the broad objectives of the remainder of the life cycle. This section addresses characteristics of the requirement or opportunity such as programmatic, symptoms of the requirement or opportunity, affected organizations, types of information needed, high level information processing capabilities, initial perception of the ability of current systems, procedures to address the requirement or opportunity, and the timeframe(s) within which the requirement or opportunity must be resolved.

2. **What new information needs are associated with the problem?** Provide a context for future life cycle decisions by determining whether a new need exists for information to support a solution. Describe the scope of the need in terms of missions and organizations affected.

3. **How broad a scope should the solution cover?** Provide an overall context within which potential solutions to the requirement or opportunity are defined, and help ensure that solutions focus on the major priority areas. The scope is determined in terms of the organization(s) (e.g., agency offices, congressional organizations, executive branch agencies), pertinent portions of the missions or programmatic functions of each organization, potential relationship of the current requirement, efforts to formulate its solution to other previously identified

requirements, and ongoing efforts related to them.

A cost-benefit analysis is prepared along with the feasibility study. The cost-benefit analysis is the document that provides managers with adequate costs and benefit information to analyze and evaluate alternative approaches. The document provides information for management to make decisions to initiate a proposed program or continue (or discontinue) the development, acquisition, or modification to information systems or resources.

A sample outline of a feasibility study is provided and the description follows:

1. **Introduction**

   a. **Origin of Request:** Identify who and what precipitated this project request. Provide the objectives of the feasibility study in clear measurable terms.

   b. **Explanation of Requirement:** Describe the information management requirement in programmatic, technology-independent terms. State the specific deviations from the desired situation, the cause, and the cause of the new requirement or opportunity. Describe any new information need(s) associated with the requirement or opportunity. Identify the cause(s) and effect(s) of the requirement or opportunity. Validate the description of the requirement or opportunity with all affected organizations.

   c. **Organization Information:** Identify the organization(s) mentioned in the Origin of Request section. Identify pertinent current procedures, information, and systems of those organizations. Provide descriptions of the appropriate procedures and systems.

      Identify all organizational units involved. List the organizational unit(s) at all levels of the bureau, and external organizations, which relate to the requirement or opportunity, and describe the pertinent mission area(s) and programmatic functions of each.

   d. **Glossary:** Provide a glossary of all terms and abbreviations used in the feasibility study. If the glossary is several pages in length, place it as an appendix to the study.

2. **Evaluation Criteria**

Give criteria by which the alternatives will be evaluated. Identify between characteristics that must be present in the system for it to be acceptable.

3. **Alternative Descriptions**

Provide a description for each alternative proposed. Describe the resources required, associated risk, system architecture, technology utilized, and the manual process flow for each alternative. State at least two alternatives for each feasibility study, one being the alternative of doing nothing if appropriate. Predict the anticipated benefits of each alternative and the likely effects of not taking action on the alternative. State benefits in terms of in technical, operational, and economic feasibility.

a. **Alternative Model:** Present high-level data flow diagram and logical data model, if possible, from current physical processes and data for the proposed system alternative.

b. **Description:** Give a statement of required and desirable features and a concise narrative of the effects of implementing this alternative.

4. **Alternative Evaluation**

Provide a systematic comparison of the alternatives and document potential problems resulting from the implementation of each.

5. **Recommendation**

Provide a narrative that supports the recommended alternative program. Select the most advantageous program to implement the required functional capabilities based on the functional and technical concepts that satisfy the need. The information system should not be obtained at the price of inappropriate development risk or the loss of efficiency, capability, or capacity in the supported function.

Appendix D – Standards Program – Conformity Assessment Activities

Information on Voluntary Reporting on Federal Conformity Assessment Activities for the Department's Annual Report:

1) What is included in Conformity Assessment?

Conformity assessment means any activity concerned with determining directly or indirectly that requirements are fulfilled. Requirements for products, services, systems, and organizations are those defined by law or regulation or by an agency in a procurement action. Conformity assessment includes: **sampling and testing; inspection; supplier's declaration of conformity; certification; and quality and environmental management system assessment and registration**. It also includes **accreditation and recognition**. Conformity assessment does not include mandatory administrative procedures (such as registration notification) for granting permission for a good or service to be produced, marketed, or used for a stated purpose or under stated conditions. Conformity assessment activities may be conducted by the supplier (first party) or by the buyer (second party) either directly or by another party on the supplier's or buyer's behalf, or by a body not under the control or influence of either the buyer or the seller (third party).

2) What types of activities can be reported?

Any activities that are designed to eliminate unnecessary duplication and complexity in federal conformity assessment activities can be reported. These can include, but are not limited to:

- Participating in interagency efforts to share information or to harmonize conformity assessment requirements among federal agencies. Examples: NASA and DOD engage in a number of joint committee efforts to exchange information on joint suppliers and/or to harmonize inspection requirements for such suppliers. FDA may work with EPA or USDA to share information and reduce inspections of firms producing food products that contain water or raw agricultural products.

- Participating in intra-departmental efforts to harmonize conformity assessment requirements among agencies/services. Examples: Giving training to field personnel to help harmonize inspection interpretations of requirements, where a problem has been noted. Holding a DOD working group of some type to ensure that auditors from all services are applying standards or other requirements consistently during inspections or to exchange information on suppliers

that might help reduce the number or extent of audits. DOD or FTC could put out an easy-to-read guidance document on how to comply with various procurement or regulatory requirements making it simpler for firms to comply.

- Participating in national and international efforts of NACLA, NELAC, ISO/CASCO, ICAO, ITU, GHTF, FAO, etc., which (if adopted and implemented) are likely to result in harmonized requirements and reduced or simplified conformity assessment burden for U.S. industry. Many regulatory agencies are involved in this type of activity.

- Using the results of government or private sector organization conformity assessment activities to enhance the safety and efficacy of proposed new conformity assessment requirements and measures. Example: An agency could collect and review information on similar activities conducted by other Federal, state and international organizations and agencies and private sector organizations to determine if the results of these activities can be used to improve the effectiveness of a proposed Federal agency conformity assessment activity.

- Using relevant guides or standards for conformity assessment practices published by domestic and international standardizing bodies as appropriate in meeting regulatory and procurement objectives. Guides and standards for sampling, testing, inspection, certification, quality and environmental management systems, management system registration and accreditation are issued by organizations which include, but are not limited to, the American National Standards Institute, the International Organization for Standardization (ISO), the International Electrotechnical Commission (IEC), the International Telecommunications Union (ITU) and the Organization for Economic Cooperation and Development (OECD), the World Health Organization (WHO), and the Codex Alimentarius Commission. Examples: NIST's NVLAP program is updating its Handbook to make it consistent with the new ISO 17025, training assessors on the standard's requirements, and using that standard in its accreditation program. A number of agencies use the ISO 9000 standards in various programs and will be investing resources in updating their requirements/publications/ guidance as the year 2000 edition of the standards are published.

- Identifying appropriate private sector conformity assessment practices and programs and consider the results of such practices and/or programs as appropriate in existing regulatory and procurement actions. Examples: an agency could use the results of private sector or other governmental conformity assessment activities to schedule procurement type audits more effectively. This could allow agencies to reduce the number and extent of audits conducted at companies which are performing in accordance with contract specifications and which are under review by a third party or another agency and to concentrate agency audit efforts on

companies that have shown problems in conforming to contract specifications. The Federal Communications Commission's (FCC) Telecommunication Certification Body (TCB) program, which allows designated private entities to issue telecommunications equipment approvals for specified regulatory requirements. In addition, under Part 15, FCC premarketing approval requirements for certain types of equipment have been replaced with suppliers declaration of conformity to the regulations, provided test results supporting the declaration are obtained from an accredited testing lab.

- Using the results of other agencies' conformity assessment procedures. Example: DOD could use the results of NASA's inspection/audit of a joint supplier to eliminate or reduce the scope of its own inspection/audit of that supplier.

- Work with other agencies to avoid unnecessary duplication and complexity in Federal conformity assessment activities. Examples: An agency can participate in another agency's conformity assessment activities by conducting joint procurement audits/inspections of suppliers that sell to both agencies. An agency can share conformity assessment information with other agencies. An agency can use conformity assessment information provided by other agencies to the extent appropriate to improve the effectiveness and efficiency in its own conformity assessment activities. Conformity assessment information may include: Conformity assessment procedures and results, technical data on the operation of conformity assessment programs, processing methods and requirements for applications, fees, facility site data, complaint review procedures, and confidentiality procedures.

- Encouraging domestic and international recognition of U.S. conformity assessment results by supporting the work of the U.S. Government in international trade and related negotiations with foreign countries and U.S. industry in pursuing agreements with foreign national and international private sector organizations and any resulting activities/requirements resulting from those negotiations/agreements. Examples: Most regulatory agencies participate in interagency committees and supply information to the USTR for trade negotiation. A number of agencies participate in delegations to various trade related meetings/negotiations. A number of agencies also give presentations at NIST workshops to educate foreign government and industry officials in developing countries on the U.S. standards and certification system to gain its recognition/acceptance.

- Participating in the development of private sector conformity assessment standards to ensure that Federal viewpoints are represented. Example: EPA devotes considerable time and effort in its work on and with the U.S. Technical Advisory Group (TAG) to ISO TC 207 regarding the ISO 14000 standards.

- Working with other agencies to harmonize Federal requirements for quality and environmental management systems for use in procurement and regulation, including provisions which will allow the use of one quality or environmental management system per supplier facility in the Federal procurement process and the sharing and usage of audit results and related information as appropriate. Example: DOD and NASA may be working together on the issue of how to update their quality system requirements in light of changes in ISO 9001 so that such requirements are consistent between the two agencies.

- Working with other ICSP members, NIST, and the private sector to develop national infrastructures for coordinating and harmonizing U.S. conformity assessment needs, practices and requirements in support of the efforts of the U.S. Government and U.S. industry to increase international market access for U.S. products. Examples: DOE, FDA and NIST among other participate on ANSI's committee to accredit certifiers. EPA participates on the ANSI-RAB EMS Council.

- Work with other ICSP members, NIST, and the private sector as necessary and appropriate to establish criteria for the development and implementation of governmental recognition systems to meet government recognition requirements imposed by other nations and regional groups to support the efforts of the U.S. Government to facilitate international market access for U.S. products. Example: FCC, the U.S. Coast Guard, and other agencies are working with NIST, the USTR, etc., to implement the U.S.-EU Mutual Recognition Agreement.

3) When should activities be reported – before, during, or after completion?

You can report them at all these times if your bureau or office is investing resources in their planning, operation or implementation. You can report work-in-progress, even if the benefits have not yet been realized.

4) How much information should be included?

A short paragraph should be adequate for most activities. Try to emphasis the goals and accomplishments of the effort and how the effort with simplify the process and/or reduce the conformity assessment burden on industry. Also try to avoid acronyms, which are undefined. Explain the activity in simple, non-technical terms to the extent possible. Bureaus do not have to identify the paragraph(s) in the guidance under which the activity appears to fall.

5) Is it possible that our bureau or office is doing NOTHING in this area?

It is unlikely that your bureau or office is doing NOTHING in this area.

Appendix E - Government Information Locator Service (GILS) Core Elements

The National Archives and Records Administration (NARA) published Guidelines for the Preparation of GILS Core Entries that contains detailed information on the mandatory and optional elements for GILS. The NARA homepage has an electronic version of the publication. Each GILS core element is also defined in the GILS Application Profile (FIPS PUB 192).

The following GILS Core Elements, both mandatory and non-mandatory, are those that will comprise a Treasury GILS record:

Title: The name of the information resource. This *mandatory* element occurs once per locator record.

Originator: The name of the agency, bureau, and office. This *mandatory* element occurs once per locator record.

Local Subject Index: The bureau specific terms listed to search for the information resource. This *optional* element occurs no more than once per locator record.

Controlled Vocabulary: The terms identified by the Department that are used to search for the information resource. This *optional* element may occur multiple times per locator record.

> Index Terms - Controlled: The descriptive terms from the controlled vocabulary to assist users in locating entries of potential interest. This sub-element occurs once per Controlled Vocabulary element.
>
> Thesaurus: The reference to a formally registered thesaurus or similar authoritative source. This sub-element occurs once per Controlled Vocabulary record.

Control Identifier: This number is generated by the system to track the volume of GILS records. This *mandatory* element occurs once per locator record.

Abstract: This is a narrative description of the information resource. This *mandatory* element occurs once per locator record.

Purpose: This element describes why the information resource is offered, that is, agency program and/or specific statute. This *mandatory* element occurs once per locator record.

Access Constraints: This element describes any constraints or legal prerequisites to access the information resource. This *mandatory* element occurs once per locator record, although in some cases this element may contain the value "None."

Use Constraints: This element describes any constraints or legal prerequisites for using the information resource. This *mandatory* element occurs once per locator record, although in some cases this element may contain the value "None."

Availability: This element describes how the information resource is made available. This *mandatory* element occurs one or more times per record.

Distributor: This sub-element provides information about the distributor. This *mandatory* sub-element occurs once per Availability element.

Resource Description: This sub-element identifies the resource as it is known to the distributor. This *optional* sub-element occurs not more than once per Availability element.

Order Process: This sub-element provides information on how to obtain the information resource from the distributor, including any fees associated with acquisition of the product or use of the service. This *mandatory* sub-element occurs once per Availability element.

Technical Prerequisites: This sub-element describes any technical prerequisites for use of the information resource made available by the distributor. This *optional* sub-element may occur multiple times per Availability element.

Available Time Period: This sub-element provides the time period for the information resource as made available by the distributor. This *optional* sub-element may occur multiple times per Availability element.

Available Linkage: This sub-element provides information needed to contact an automated information system made by the distributor. This *optional* sub-element occurs not more than once per Availability element.

Available Linkage Type: This sub-element provides the data content type if there is an available linkage described. This *optional* sub-element occurs if there is an Available Linkage described.

Point of Contact for Further Information: This element identifies the organization serving as the point of contact. This *mandatory* element occurs once per locator record.

Record Source: This element identifies the organization that created or last modified this locator record. This *mandatory* element occurs once per locator record.

Date Last Modified: This element identifies the latest date on which this record was created or modified. This *mandatory* element occurs once per locator record.

Agency Program: This element identifies the major bureau program or mission supported by the system and should include a citation for any specific legislative authorities associated with this information resource. This *mandatory* element occurs once per locator record.

Source of Data: This element identifies primary sources or providers of data to the system, whether within or outside the bureau. This *mandatory* element occurs once per locator record.

Methodology: This element identifies any specialized tools, techniques, or methodology used to produce this information resource. This *optional* element occurs no more than once per locator record.

Original Control Identifier: This element is used by the record source to refer to another GILS record from which this record was derived. This *optional* element occurs no more than once per locator record.

Supplemental Information: This element is used when bureaus wish to convey to the public, or use for internal purposes, information that is not part of the GILS core. This *optional element occurs no more than once per locator record.*

Appendix G - Electronic Data Interchange (EDI) Procedures

Overview

The following outlines the ECCH testing procedures for the Treasury bureau and its trading partners. It should be noted that these procedures only apply to the functionality of the ECCH. Prior to ECCH testing, the Treasury bureau and trading partners must have successfully completed application system testing.

The testing procedures for the Treasury bureau and its trading partner are separately addressed due to subtle differences.

Treasury Bureau Testing Treasury Communications System (TCS) Network Connectivity

The bureau must have connectivity to TCS to access the ECCH which resides on the TCS network. There are various protocols and networking options available. These range from dial-up to the Internet.

ECCH User Accounts/ Mailboxes

Each Treasury bureau will be assigned one or more user accounts. Each user account will be assigned an EDI mailbox (EDI box). Each EDI box will have two directories one for outbound traffic and one for inbound traffic. For example, a bureau may have a user account for each type of application (e.g., procurement, finance, etc.).

Test 1. EDI Box Connectivity

A test EDI box will be set up for each bureau.

Steps Performed

1. Bureau assigned a login and password
2. Bureau connects to EDI box using specified protocol
3. Login and password are correct
4. Bureau can successfully send or receive from its EDI box.
5. If communication fails, login and password verified
6. Network protocol verified
7. Communication test repeated

Test 2. EDI Translation Test (EDI Syntax and Bureau Application Mapping)

EDI message translation is tested to ensure compliance with the bureau's application mapping and EDI syntax rules. This will be the basis for testing with the bureau's TPs.

Steps Performed

1. ECCH will forward EDI translated test message to bureau EDI box
2. Bureau downloads translated message to application system
3. Translation successful if the ECCH does not generate any error messages

Translation is not successful if error message(s) generated. The ECCH will generate the following types of error notifications if the translation fails. The location of the error in the message will be identified (e.g., line 1, 2, etc.). Error message generated to ECCH administrator and bureau.

Error Message Examples

1. Invalid code value (incorrect code used, syntax error)
2. Mandatory data element not provided (syntax/ error)
3. End of segment mark not found (syntax error)

Steps Performed

1. EDI syntax errors corrected - ECCH
2. Application mapping errors corrected – ECCH and bureau
3. EDI translation test repeated

Test 3. Failed Translation Notification Receipt

Test that the appropriate translation error message is generated and forwarded to ECCH administrator and bureau. This test will be separately performed if translation errors are not generated in Test 2.

Steps Performed

1. Submit invalid EDI interchange to EDI translation software
2. If bureau and ECCH administrator do not receive Failed Translation Notification, system and routing checked
3. Test repeated

Test 4. Failed Transmission Notification

Test that the ECCH can generate the Failed Transmission Notification and forwarded it to the ECCH administrator and bureau.

Steps Performed

1. ECCH forwards interchange to VAN or Bureau Trading Partner. Incorrect addressing or unacceptable format used for testing
2. If Failed Transmission Notification not received by Bureau and ECCH administrator, system and routing checked
3. Test repeated

Test 5. Delivery and Receipt Of Tradelog Report

The Tradelog Report details all events performed by the ECCH for a particular EDI box.. The ECCH automatically generates a Tradelog Report to a bureau's EDI box after the end of a communication system. Tradelog reports can also be e-mailed.

Steps Performed

1. Tradelog Report generated by ECCH and routed to EDI box at the end of a communication session
2. Bureau downloads Tradelog Report and verifies events
3. If not received, bureau configuration routing checked
4. Process repeated until successful

Test 6. Tradelog Audit Trail Process Records

Demonstrate and test the Tradelog Audit Trail Process (ATP) capability and accuracy.

Steps Performed

1. After completion of Tests 1 through 5, ensure that all processes are checked, recorded, and forwarded
2. Audit Trail generated and forwarded to EDI box and stored

Trading Partner/Van Testing

Test 1. Trading Partner/Van Connectivity Test

Test ECCH connectivity to Bureau Trading Partner (TP) or VAN.

Steps Performed
1. ECCH transmits interchange via specified TP/VAN communications protocol
2. If connection busy, redials specified number of times
3. Unable to make connection. Failed Transmission Notification received by ECCH
4. Test repeated until successful

Test 2. EDI Translation Test (EDI Syntax And Application Testing)

Test TP/VAN ability to send and receive EDI messages and mapping to specified Bureau Implementation Conventions.

Steps Performed
1. TP/VAN transmits test EDI message to ECCH.
2. ECCH translates EDI message to bureau flat file and forwards to EDI box
3. Translation test successful if the ECCH and bureau's system do not generate any error messages
4. ECCH transmits test EDI message to TP/VAN
5. Translation test successful if TP/VAN able to translate and accept message

Translation not successful if error message(s) generated. The ECCH will generate the following types of error notifications if the translation fails.

Error Message Examples
1. Invalid code value (incorrect code used, syntax error)
2. Mandatory data element not provided (syntax error)
3. End of segment mark not found (syntax error)

Steps Performed
1. EDI syntax errors corrected – TP/VAN
2. Application mapping errors corrected – TP/VAN
3. EDI translation test repeated

Steps Performed
1. ECCH submits invalid EDI interchange (incorrect addressing) to TP/VAN

2. If Failed Transmission Notification not received by TP/VAN and ECCH administrator, system and routing checked
3. Test repeated

Test Entire Process

Test the ability to forward, translate and send transaction from TP/VAN to ECCH to bureau and vice versa (bureau to ECCH to TP/VAN).

Steps Performed

1. Inbound to bureau - TP/VAN transmits EDI message to ECCH mailbox. ECCH translates EDI message and forwards to bureau EDI box. Tradelog and Audit Trail Reports are generated and automatically forwarded to bureau by preferred delivery method
2. Outbound to TP/VAN - Bureau transmits flat file to EDI box. ECCH translates flat file to specified EDI message and forwards to TP/VAN. Tradelog and Audit Trail Reports generated and automatically forwarded to TP/VAN

Test is successful if the EDI message transmitted via preferred communication method, translated according to specified Implementation Conventions and appropriate Tradelog and Audit Trail Reports are generated and received.

ECCH Pilot

The entire process will be piloted for at least 30 days. The pilot is monitored daily and reconciled with the Tradelog and Audit Trail Reports. A pilot is continued until successfully completed.

Test Results Checklist

The checklist below must be completed and signed by the Treasury bureau and EC/EDI program manager. A report will be generated assessing test results and recommendations provided.

DESCRIPTION OF TESTING EVENT	STATUS (Acceptable/Pending Action/Unacceptable)	REMARKS
Test 1. EDIBOX Connectivity		
Test 2. EDI Translation Test		
Test 3. Failed Translation Notification Receipt		
Test 4. Failed Transmission Notification		
Test 5. Delivery & Receipt of Tradelog Report		
Test 6. Tradelog Audit Trail Process Records		

ECCH Web Site

The ECCH web site can be found on the Treasury Intranet at:
http://tcsnet.treas.gov/edi/index/html

Appendix H - Public Reports Management Program (Public Reporting and Recordkeeping Requirements) (Information Collection Budget (ICB))

Procedures and Guidance

Introduction

Before a Department of the Treasury (Treasury) bureau or Departmental Office (DO) collects information from the public, it must obtain approval from the Office of Management and Budget (OMB). This appendix provides guidance to bureaus and DO organizations to obtain approvals from OMB.

Background

On May 22, 1995, Congress enacted the Paperwork Reduction Act of 1995 (PRA) to minimize the paperwork burden the Federal government places on the public, and to improve the quality and use of Federal information. The PRA took effect on October 1, 1995.

Among the key provisions of the PRA:

- Congress expanded the previous PRA's definition of what is considered a Federal information collection.

- Congress established more rigorous procedures for Federal agencies to obtain approval from OMB of proposed information collections.

- Congress added the requirement that each agency must now provide the public a 60-day comment period on a proposed information collection before the agency can submit to OMB a request to conduct that information collection; however, Congress exempted information collections associated with new rulemakings from this requirement.

- Congress set a limit of 3 years on OMB approvals of information collections. If an agency wishes to continue an information collection beyond 3 years, it must, in the final year, request public comments on this continuation and then submit to OMB a request for OMB to re-approve or extend the collection.

Paperwork Reduction Act

A. What is Considered an Information Collection

According to OMB regulations at 5 CFR 1320.3, a 'collection of information' means "the obtaining, causing to be obtained, soliciting, or requiring the disclosure to an agency, third parties, or the public of information by or for an agency by means of identical questions posed to, or identical reporting, recordkeeping, or disclosure requirements imposed on, ten or more persons, whether such collection of information is mandatory, voluntary, or required to obtain or retain a benefit." A 'collection of information' "includes any requirement or request for persons to obtain, maintain, retain, report, or publicly disclose information."

"Persons" does not include Federal employees acting within the scope of their employment.

Such collections of information require OMB approval regardless of "…whether such collection of information is mandatory, voluntary, or required to obtain or retain a benefit."

B. Items Generally Considered not to be Information

OMB's regulations (5 CFR 1320.3(h)), defines ten categories of inquiry which generally are not deemed to constitute "information." However, OMB may determine that any specific item constitutes "information." The ten categories are:

1. Affidavits, oaths, affirmations, certifications, receipts, changes of address, consents, or acknowledgments; provided that they entail no burden other than that necessary to identify the respondent, the date, the respondent's address, and the nature of the instrument (by contrast, a certification would likely involve the collection of "information)."

2. Samples of products or of any other physical objects. This category includes requests for information that is already available in a form suitable for distribution and is provided in that form to all requesters. (The request **is** a collection of information if the information has to be compiled, or if it is not provided to any person who requests it.)

3. Facts or opinions obtained through direct observation by an employee or agent of the sponsoring agency or through nonstandardized oral communication in connection with such direct observation.

4. Facts or opinions submitted in response to general solicitations of comments from the general public, published in the **Federal Register** or other publications, regardless of the form or format provided that no person is required to supply specific information pertaining to the commenter, other than that necessary for self-identification, as a condition of the agency's full consideration of the comment. This category does **not** include requests addressed to specific persons.

5. Facts or opinions obtained initially or in follow-on requests, from individuals (including individuals in control groups) under treatment or clinical examination in connection with research on or prophylaxis to prevent a clinical disorder, direct treatment of that disorder, or the interpretation of biological analyses of body fluids, tissues, or other specimens, or the identification or classification of such specimens. This category is limited to the collection of information with respect to medical research and treatment, and is limited to collections of information by or on behalf of bona fide medical scientific personnel. This category does **not** include more general monitoring of health conditions through reports and electronic or other technical methods. This category also does **not** include
disclosures that medical personnel make to patients or other third-parties or members of the public outside of a clinical examination or treatment setting.

6. Facts or opinions requested from a single person.

7. Examinations designed to test the aptitude, abilities, or knowledge of the persons tested and the collection of information for identification or classification in connection with such examinations. This category includes examinations and other tests given to one or more persons provided that the tests are designed to measure the knowledge, aptitude, skills, or abilities of the individual. This exclusion exists even though the tests may be standardized and given to ten or more persons during any 12 month period. On the other hand, OMB approval is required for questions asked to obtain information about respondents' knowledge of the practices of another person or entity. Approval is also required for any survey instruments or other information collections associated with an examination such as a survey of socioeconomic status that accompanies a reading test.

8. Facts or opinions obtained or solicited at or in connection with public hearings or meetings.

9. Facts or opinions obtained or solicited through nonstandardized follow-up questions designed to clarify responses to approved collections of information. This category includes questions asking respondents to verify or clarify their responses to a collection

of information previously approved by OMB. These questions of verification or clarification need to be specific to the person's prior response and may not relate to new areas of inquiry nor pertain to matters not covered in the initial inquiry.

10. Like items designated by OMB. OMB excepts references to other forms. Specifically, certain regulations do not designate the information to be collected, but request the completion of agency forms, specified by number and/or title. Such references in regulations to specific forms, even if the referenced forms are necessary to implement the regulation, do not require OMB review and approval. The forms themselves are reviewed and approved separately. However, a regulation that refers to specific forms often contains provisions calling for a collection of information; often more general statements of the provisions included in the specific forms. In such a case, the agency needs to submit both the regulation and the specific forms for OMB review and approval under the PRA.

C. Collections of Information that are Exempt

The PRA (44 U.S.C. 3518(c); OMB regulations 5 CFR 1320.4) defines certain purposes for which collections of information are exempt from all requirements of the PRA. However, if there is any uncertainty as to whether a particular collection of information is exempt, OMB should be consulted. The exempt collections are those conducted:

- during the conduct of a Federal criminal investigation or prosecution, or during the disposition of a particular criminal matter;
- during the conduct of a civil action to which the United States or any official or agency thereof is a party, or during the conduct of an administrative action, investigation, or audit involving an agency against specific individuals or entities;

- by compulsory process pursuant to the Antitrust Civil Process Act and section 13 of the Federal Trade Commission Improvements Act of 1980; or

- during the conduct of intelligence activities as defined in section 3.4(e) of Executive Order No. 12333, issued December 4, 1981, or successor orders, or during the conduct of cryptologic activities that are communications security activities.

The exemption for collections of information conducted during these Federal criminal, civil, or administrative actions is a limited one. It applies only after a case file or its equivalent is opened with respect to a particular party.

General investigations or audits that are not focused on a particular party; e.g., those undertaken with reference to a category of individuals or entities such as a class of licensees or an entire industry, are not exempt.

D. Design Requirements for Information Collections

OMB regulations at 5 CFR 1320.9 require that each agency certify that each information collection submitted to OMB for approval meets the following design requirements:

- it is necessary for the proper performance of agency functions;
- it avoids unnecessary duplication;
- it reduces burden on small entities;
- it uses plain, coherent, and unambiguous terminology;
- its implementation will be consistent and compatible with current reporting and recordkeeping practices;
- it indicates the retention period for recordkeeping requirements;
- it informs respondents of the information called for under OMB regulations at 5 CFR 1320.8(b)(3);
  - why the information is being collected;
  - use of information;
  - burden estimate;
  - nature of response (voluntary, required for a benefit, or mandatory);
  - nature and extent of confidentiality; and
  - need to display a valid OMB control number;
- it was developed by an office that has planned and allocated resources for the efficient and effective management of the information to be collected;

- it uses effective and efficient statistical survey methodology; and
- it makes appropriate use of information technology.

OMB Guidance

A. Final Rules

OMB promulgated final rules (5 CFR 1320, "Controlling Paperwork Burdens on the Public; Regulatory Changes Reflecting Recodification of the Paperwork Reduction Act," as revised) for Federal agencies to follow in implementing the information collection aspects of the PRA, effective October 1, 1995. These rules were published on August 29, 1995, in the Federal Register (60 FR, pages 44977-44996). A link to this document can be found on the CIO Homepage's Paperwork Management Program (PMP) web site (http://intranet-apps2.cio.treas.gov/PMP/rules.html).

B. OMB PRA Handbook

The most current OMB Handbook is entitled "The Paperwork Reduction Act of 1995: Implementing Guidance," preliminary draft (February 3, 1997). This Handbook provides guidance to agencies on when and how they need to obtain approval from OMB for an information collection.

C. PRA Clearance Request Documents

OMB provided the following documents (dated October 1995) for use in preparing PRA submissions:

- An updated standard OMB Form 83-I, entitled "Paperwork Reduction Act Submission"
- A one-page document entitled "Certification Requirement for Paperwork Reduction Act Submissions" (back page of standard OMB Form 83-I)
- A two-page set of instructions entitled "Instructions For Completing OMB Form 83-I"
- A two-page set of instructions entitled "Supporting Statement for Paperwork Reduction Act Submissions"

D. OMB Inventory of Approved Information Collections

OMB maintains a computerized database of approved information collections. Each month, via e-mail, OMB provides each agency with:

- A list of the agency's active, OMB-approved information collections;
- a list of the agency's information collections that are going to expire within the next 150 days; and
- a list of the agency's information collections that have expired that month.

E. OMB Homepage

OMB maintains a homepage on the World Wide Web. Via a Web browser, you can access from the OMB homepage a web page that lists the status of all PRA submissions currently under review by OMB. The web page is updated daily:

- The OMB home page's location is: http://www.whitehouse.gov/omb/text/index.html
- The page location is: http://www.whitehouse.gov/library/omb/OMBPPRWK.html
- You can view the status of your PRA submissions by going directly to the following locations, which is the Department of the Treasury's starting point on the web page:

  http://www.whitehouse.gov/library/omb/OMBPPRWK.html#TREAS

F. OMB Notices of Action

After OMB completes its review of a PRA submission, it notes on its web page whether that information collection request was approved or not. OMB also sends to the agency via e-mail an "OMB Notice of Action" (NOA) for that PRA submission that explains in detail any terms of clearance on the OMB approval of the information collection, or why the information collection was disapproved.

Treasury Implementation

A. Responsibilities

1. Bureau/DO Responsibilities

Each bureau and DO organization within the Department of the Treasury has the primary responsibility for its own information collection process. This includes the preparation of, and the completeness and correctness of, requests to OMB for approval of information collections. However, the Treasury CIO or designee must sign each PRA submission before it can be sent to OMB. That CIO or designee will also make the official submission to OMB for approval of such PRA submissions.

2. Treasury Responsibilities

a. Chief Information Officer

The PRA requires that each agency appoint a Chief Information Officer (CIO) which reports directly to the agency head to carry out the PRA responsibilities of the agency, and to establish a process for reviewing collections of information. The review must occur within an office independent of program responsibility to permit objective evaluation of the need for and respondent burdens imposed by each proposed collection of information.

The Office of IT Policy & Strategy (ITPS), within the Office of the Deputy Assistant Secretary (Information Systems) and Chief Information Officer (CIO), has been delegated all information collection responsibilities of the CIO and is the office of program responsibility for reviewing PRA submissions. ITPS:

- serves as the Treasury Clearance Office;
- reviews, grants Departmental approval, and forwards all requests for clearance of plans and public information collection requests to OMB for final review and approval;
- coordinates the submission of clearance requests for information collections in regulations with the Associate General Counsel (Legislation, Litigation and Regulation); and
- prepares and submits Federal Register notices to advise the public that a PRA submission has been sent to OMB.

b. Treasury PRA Contacts

Treasury's program for controlling the paperwork burden on the public is called the Paperwork Management Program (PMP). The PMP is located within the Office of ITPS. You may contact a PMP analysts if you have any questions on the PRA clearance process or to obtain copies of the PRA or the OMB information collection regulations, forms, or guidance documents.

c. Notices of OMB Action (NOA's) and OMB Inventory of Active Information Collections

OMB sends to ITPS its monthly inventory of all Treasury's active/approved information collections including all collections due to expire within 150 days via email. OMB also sends to ITPS the NOA's upon completion of its review of Treasury's PRA submissions. Via e-mail, ITPS forwards these OMB documents to the appropriate bureaus and DO highlighting terms of clearance.

d. Paperwork Management Program (PMP) Web Page

The PMP web page can be found on the CIO Homepage (http://intranet-apps2.cio.treas.gov/PMP). The PMP web page contains links to PRA points of contact, PRA clearance forms, guidance, laws, regulations, the Information Collection Budget (ICB), and includes PRA related issues such as the Government Paperwork Elimination Act (GPEA).

Information Collection Clearance Procedures

A. Required items in an Information Collection Clearance Package

As required by OMB regulations at 5 CFR 1320.5(a)(iii), a complete PRA clearance request (except a "discontinuance" discussed in section IV.G.) consists of the following requirements:

1. the proposed collection of information in the appropriate form or format, including documents to be used in the collection of information, or the document(s) describing the collection of information (i.e., forms, schedules, questionnaires, handbook, manual, interview plan or guide, rule, regulation, electronic media, or other document) – three copies;

2. OMB Control Number and Expiration Date. An information collection document, such as a questionnaire or form, must display the OMB control number that indicates OMB's approval of the information collection according to 5 CFR 1320.3(f), plus the expiration date of that

approval, unless OMB has specifically granted approval to omit printing the expiration date, (5 CFR 1320.5(b)(1));

3. the information collection document or instructions must contain a "Paperwork Reduction Act Statement," (sample PRA Statement can be found in IV. G.) according to OMB regulations at 5 CFR 1320.8(b)(3), that informs the public of the following:

    a. the reasons the information is to be collected;

    b. the way such information is to be used to further the proper performance of the bureau or DO;

    c. an estimate of the average burden of the collection in hours, together with a request that the public direct to the bureau or DO (and to OMB) any comments concerning the accuracy of the burden estimate and any suggestions for reducing the burden;

    d. whether responses to the collection of information are voluntary, required to obtain or retain a benefit (citing authority), or mandatory (citing authority);

    e. the nature and extent of confidentiality to be provided, if any (citing authority); and

    f. the fact that a Federal agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number;

4. a completed OMB 83-I, entitled, "Paperwork Reduction Act Submission," - one original and two copies;

5. a certification (this is the back page of the OMB 83-I);

6. a "Supporting Statement" (which includes the record supporting the certification), and other supporting documentation - one original and two copies;

7. the text of the 60-day Pre-clearance Federal Register notice (sample of notice is contained at IV.H.) and the actual date of publication – three copies;

8. a summary of the public comments received in response to the Federal Register notice providing the public 60 days to comment to the bureau or DO on the proposed information collection, including actions taken by the bureau or DO in response to the comments at #8 of the Supporting Statement or on a separate sheet behind the Supporting Statement;

   Note: A Federal Register notice is not required for information collections contained in new regulations. However, for required preamble statements, refer to TD 28-01.

9. a copy of the relevant statute and regulation, or Executive Order, etc., mandating or authorizing the collection of information - three copies;

10. other related documents, e.g., transmittal letter, interviewer guides and instructions, follow-up letters, and instructions – three copies; and letters and other materials to be given or sent to members of the public who do not respond – three copies.

B. When an Information Collection Clearance Document Should Be Submitted

All bureau and DO PRA clearance requests must be submitted to ITPS for review and forwarding to OMB for final approval. This process takes a minimum of 4 to 5 months to complete and an average of 5 to 6 months, assuming there are no complications.

C. Where an Information Collection Clearance Document Should be Submitted

All bureau and DO PRA clearance requests must be submitted to ITPS at the following address:

Office of IT Policy & Strategy
Department of the Treasury
1425 New York Avenue, NW
Room 2110
Washington, DC 20220
Attention: Paperwork Management Officer

D. Steps for Clearing all Information Collections Other Than Those Associated with New Rulemakings

Step 1. Develop or revise the information collection to conform to the design requirements for information collections. Ensure that its Paperwork Reduction Act and Privacy Act Statement is complete and accurate (at least 150 days prior to either the proposed operating date of the new plan or public report form, or the expiration date of an existing plan or public report form).

Step 2. Publish in the **Federal Register** a pre-clearance notice providing the public 60 days to comment to the bureau/DO on the proposed information collection (at least 120 days prior to either the proposed operating date of the new plan or public report form, or the expiration date of an existing plan or public report form).

- This **Federal Register** Notice must include the actual proposed information collection document(s), such as questionnaires or forms, or must inform the public how they can obtain the proposed information document(s) without charge from the bureau/DO.

- Sample **Federal Register** Notice is found in Section IV.H.

- Public comments should be directed to the bureau/DO.

- A bureau/DO does not need clearance from ITPS prior to submitting this notice to the **Federa**l **Register**.

Step 3. *Prepare a PRA Request for Clearance submission and submit it to ITPS for review and sign-off by the Designee of the CIO* (at least 90 days prior to either the proposed operating date of the new plan or public report form, or the expiration date of an existing plan or public report form). A complete PRA submission consists of:

- a completed OMB 83-I;

- a Supporting Statement;

- a Summary of the public comments received, including actions taken by the bureau/DO in response to the comments, and a copy of the 60-day **Federal Register** Notice from Step 2;

- copies of pertinent legal or regulatory authority, and

- retain one complete copy of the PRA submission for your files.

Step 4. *ITPS will submit the PRA submission to OMB*

Step 5. *ITPS will prepare and submit a 30-day notice to the **Federal Register** to include in and coincide with the submission to OMB.*

Step 6. *OMB will review the PRA Request for Clearance submission and respond after 30 days, but no more than 60 days with an OMB Notice of Action that either approves or disapproves the information collection.*

E. Steps for Clearing Information Collections Associated with New Rulemakings

If the information collection associated with the new rulemaking is covered by an existing OMB approval and is unchanged by the rulemaking, then it is not necessary to undertake this process. "Unchanged" means that there is no change in the respondent pool, the information that the respondents will give, the method by which the information is collected, or the burden. You need only note this fact in the preamble of the rulemaking.

If the information collection is unchanged but relocated within the regulations, the bureau and DO organization should also submit an OMB 83-C (Paperwork Reduction Act Change Worksheet) to inform OMB of this fact when the final rule is implemented.

If the rulemaking changes a currently approved information collection or adds a new information collection, then you must complete the following steps:

Step 1. In drafting the new rulemaking, develop the information collection to conform to the design requirements for information collections and to ensure that its Paperwork Reduction Act and Privacy Act Statement is complete and accurate.

Step 2. Prepare a PRA Request for Clearance submission and submit it to ITPS for review and sign-off by the Designee of the CIO. A complete PRA submission consists of:

- a completed OMB 83-I;
- a Supporting Statement;
- a Summary of the public comments received, (if any at this stage), including actions taken by the bureau/DO in response to the comments;
- copies of pertinent legal or regulatory authority. The draft Notice of Proposed Rulemaking (NPRM) should be attached; and
- retain one complete copy of the PRA submission for your files.

Step 3. *ITPS will coordinate with the Associate General Counsel (Legislation, Litigation and Regulation)*

Step 4. *ITPS will submit the PRA submission to OMB*

Step 5. *OMB will review the PRA Request for Clearance submission and respond after 30 days, but no more than 60 days with an OMB Notice of Action that either approves or disapproves the information collection*.

F. Steps for Clearing Emergency Information Collections

Step 1. *In situations where a bureau/DO needs to undertake an information collection before it can complete the information collection approval process, first contact ITPS on how to proceed*.

Step 2. *Prepare a PRA Request for Emergency (OMB 83-I) Clearance submission and submit it to ITPS for review and sign-off by the Designee of the CIO.*

- Check box 4.c. "Emergency" on OMB 83-I (specify date when bureau or DO organization wants approval).

Step 3. *As required by OMB regulations at 5 CFR 1320.13*:

- The request must be accompanied by a written determination that:

- The collection of information is needed prior to the expiration of the time periods designated, and is essential to the mission of the bureau and DO organization; and

- The bureau and DO organizations cannot reasonably comply with the normal clearance procedures because public harm is reasonably likely to result if normal clearance procedures are followed, an unanticipated event has occurred; or the use of normal clearance procedures is reasonably likely to cause a statutory or court ordered deadline to be missed;

- The bureau and DO organization must state the time period within which OMB should approve or disapprove the collection of information;

- The bureau and DO organization must submit information indicating that it has taken all practicable steps to consult with interested agencies and members of the public in

order to minimize the burden of the collection of information; and

- The bureau and DO organization must set forth in the **Federal Register** notice, unless waived or modified by OMB, a statement that it is requesting emergency processing, and the time period requested.

Step 4. If OMB approves the collection of information, it will assign an OMB control number valid for a maximum of 6 months after receipt of the submission at which time the bureau and DO organization must immediately begin the PRA clearance process for extension.

G. Steps for Discontinuing an Information Collection

Whenever an approved plan or public report form becomes obsolete before the OMB assigned expiration date, notification should be provided to ITPS by submitting an OMB Form 83-C (Paperwork Reduction Act Change Worksheet) – two signed copies.

H. Steps for Requesting Emergency Extension of a PRA Clearance Submission

Step 1. In situations where a bureau/DO needs to extend an information collection before it can complete the information collection approval process, or needs additional time to go through the pre-clearance **Federal Register** notice process, first contact ITPS on how to proceed.

Step 2. Prepare a PRA Request for Emergency Extension (OMB 83-E) Clearance submission and submit it to ITPS for review and sign-off by the Designee of the CIO.

I. Steps for Requesting PRA Clearance of Standard and Optional Forms

Standard and Optional forms that collect information from the public must be submitted to the ITPS for the PRA review and clearance process with the required copies of both OMB 83-I, "Paperwork Reduction Act Submission," and SF 152, "Request for Clearance or Cancellation of Standard and Optional Forms." The requests will be sent to the General Services Administration (GSA) for review and forwarding to OMB for final approval. (See your bureau or DO Forms Manager for instructions for filling out the SF 152.)

J. Steps for Requesting PRA Clearance of Interagency Reports

Interagency reporting requirements which collect information from the public or from state or local governments must be submitted to the ITPS for the PRA review and clearance process along with the required copies of both OMB 83-I, "Paperwork Reduction Act Submission," and

SF 360, "Request for Clearance of an Interagency Reporting Requirement." (For additional guidance on the procedures for approving interagency reports, see Records and Information Management Manual TD P 80-05, Part V.)

K. Supply of Forms

a. Copies of OMB 83-I, OMB 83-C, and OMB 83-E can be downloaded from the PMP Web Site, or obtained by contacting ITPS Paperwork Management Staff.

b. Copies of SF 152 can be downloaded from the following Web Site:

http://hydra.gsa.gov/forms/zero.htm

c. Copies of SF 360 can be obtained by calling ITPS at 202-622-1601.

L. Paperwork Reduction Act and Privacy Act Notice

[Sample]

Paperwork Reduction Act and Privacy Act Notice

This information is being collected to [**insert reason information is being collected**]. The information will be used to [**insert how the information is to be used by your bureau**]. While you are not required to complete this form, failure to do so may [state the reasons your form is mandatory/voluntary/or required to obtain a benefit]. You are not required to provide the information requested on a form that is subject to the Paperwork Reduction Act unless the form displays a valid OMB control number. The estimated average burden associated with this collection of information is **[insert X hours/minutes]** per respondent or recordkeeper, depending on individual circumstances. Comments concerning the accuracy of this burden estimate and suggestions for reducing this burden should be directed to [**insert name and address of bureau/office reports management official**].

M. Pre-Clearance Federal Register Notice

[SAMPLE]
Pre-Clearance Federal Register Notice

U.S. DEPARTMENT OF THE TREASURY

[Insert Bureau Name]

PROPOSED COLLECTION; COMMENT REQUEST

ACTION: Notice and request for comments.

SUMMARY: The Department of the Treasury, as part of its continuing effort to reduce paperwork and respondent burden, invites the general public and other Federal agencies to take this opportunity to comment on proposed and/or continuing information collections, as required by the Paperwork Reduction Act of 1995, Public Law 104-13 (44 U.S.C. 3506(c)(2)(A)). Currently, the **[insert name of bureau]** within the Department of the Treasury is soliciting comments concerning the **[insert title of collection].**

DATES: Written comments should be received on or before **[insert date 60 days after estimated date of publication in Federal Register]*** to be assured of consideration.

ADDRESS: Direct all written comments to **[insert agency and bureau name, agency contact name, complete mailing address, telephone number; include Internet address if available]**.

FOR FURTHER INFORMATION CONTACT: Requests for additional information or copies of the form(s) and instructions should be directed **[insert agency and bureau name, agency**

contact name, complete mailing address, telephone number; include Internet address if available].

SUPPLEMENTARY INFORMATION:

Title: [Insert title of information collection request]

OMB Number: [Example: 1512-0001; if new, omit this line entirely]

*** This date is entered by the Office of the Federal Register's Scheduling Office.**

Form Number: [If applicable, example: ATF Form 6, Part 1; otherwise omit this line entirely]

Recordkeeping Requirement ID Number: [If applicable, example: ATF REC 5520/1; otherwise omit this line entirely]

Regulation Project Number: [If applicable, example: INTL-61-86 Final; otherwise omit this line entirely]

Abstract: [Insert a brief description of the need for the information and uses to which it will be put]

Current Actions: [Insert one or more paragraphs describing either the proposed revision to an existing collection of information or a general description of a newly proposed collection of information]

Type of Review: [Insert one: New/Revision/Extension/Reinstatement (without change)/ Reinstatement (with change)/Existing collection in use without an OMB control number]

Affected Public: [Insert those that apply; if more than one, type primary first: Individuals or households/Business or other for-profit/Not-for-profit institutions/Farms/Federal Government/State, Local or Tribal Government]

Estimated Number of Respondents: [Hours, Minutes, if applicable, otherwise omit this line]

Estimated Total Annual Burden Hours: [Hours]

REQUEST FOR COMMENTS: Comments submitted in response to this notice will be summarized and/or included in the request for OMB approval. All comments will become a matter of public record. Comments are invited on: (a) Whether the collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden of the collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology; and (e) estimates of capital or start-up costs and costs of operation, maintenance, and purchase of services to provide information.

BILLING CODE: [Insert your bureau billing code]

DATE: [Insert the date signed]

[SIGNATURE BLOCK]

[Type your name and title]

Information Collection Budget (ICB)

The ICB consists of an estimate of the total bureau and DO information collection requirements to be collected from ten or more respondents. Pursuant to Public Law (PL) 104-13, the "Paperwork Reduction Act of 1995 (PRA)," OMB has determined that agencies shall prepare an annual ICB; i.e., an estimate of the total number of hours required of the public to comply with Federal Government requests for information (reporting, recordkeeping, labeling, disclosure, etc.). The ICB refers to the planning document required by OMB for information collection activities, which is compiled every year based on instructions provided by OMB. The ICB serves as a management oversight tool and as an adjunct to the transactional case-by-case review of agency requests for approval required by the PRA. The instructions for developing and submitting an ICB are issued annually through an OMB Bulletin. The Bulletin is provided to the bureaus and DO organizations that collect or intend to collect information from the public or impose a recordkeeping requirement on the public during the current or upcoming fiscal year.

Appendix I - Acronyms and Abbreviations

ACD	Automatic Call Distributor
ADMD	Administrative Management Domain
AFCEA	Armed Forces Communications and Electronics Association
AGA	Association of Government Accountants
AMP	Advanced Management Program
ANSI	American National Standards Institute
APCO	Associated Public Safety Communications Officers
ASCII	American Standard Code for Information Interchange
ATP	Audit Trail Process
ATPA	American Technology Preeminence Act
CAP	Telecommunications Accessibility Program
CCITT	International Telephone and Telegraph Consultative Committee
CFR	Code of Federal Regulations
CFO	Chief Financial Officer
CISR	Center for Information Systems Research
CIO	Chief Information Officer (Office)
COAT	Council on Accessible Technology
COCA	Clearinghouse on Computer Accommodations
COP	Committee of Principals
COTS	Commercial-off-the-Shelf
CSA	Computer Security Act
CSI	Customer Solutions and Infrastructure
DASIS	Deputy Assistant Secretary for Information Systems
DMR	Data Management Request
DAR	Designated Agency Representative
DO	Departmental Office
DOTTS	Department of Treasury Telecommunications System
DoD	Department of Defense
DSS	Data Switching Systems
DTS	Digital Telecommunications System
EA	Enterprise Architecture
EC	Electronic Commerce
ECCH	Electronic Commerce Clearinghouse
ED	Department of Education
EDI	Electronic Data Interchange
EFOIA	Electronic Freedom of Information Act
EISA	Enterprise Information Systems Architecture

EIT	Electronic Information Technology
EKTS	Electronic Key Systems
EO	Executive Order
FAR	Federal Acquisition Regulations
FARA	Federal Acquisition Reform Act
FASA	Federal Acquisition Streamlining Act
FCC	Federal Communications Commission
FED-STDs	Federal Telecommunications Standards
FESMCC	Federal EDI Standards Management Coordinating Committee
FIPS	Federal Information Processing Standards
FIPS-PUB	Federal Information Processing Standards Publications
FMS	Financial Management Service
FOIA	Freedom of Information Act
FRA	Federal Records Act
FTS	Federal Telecommunications Services
GAO	General Accounting Service
GFS	Government Furnished Services
GILS	Government Information Locator Service
GITEC	Government Information Technology Executive Council
GPEA	Government Paperwork Elimination Act
GPO	Government Printing Office
GPRA	Government Performance and Results Act
GSA	General Services Administration
HRD	Human Resource Department
IAC	Industry Advisory Council
IC	Implementation Conventions
ICB	Information Collection Budget
IEEE	Institute of Electrical and Electronics Engineers
IMC	Interagency Management Council
IMF	Information Management Forum
IPA	Intergovernmental Personnel Act
IPIC	Information Processing Interagency Conference
IRAC	Inter-department Radio Advisory Committee
IRB	Investment Review Board
IRM	Information Resources Management
IRMC	Information Resources Management College
IRMCO	Interagency Resources Management Conference
IRS	Internal Revenue Service
ISLC	Information System Life Cycle

ISO	International Organization of Standards
ISP	Information System Planning
IT	Information Technology
ITA	Information Technology Architecture or Information Technology Accommodation
ITIPS	Information Technology Investment Portfolio System
ITMRA	Information Technology Management Reform Act
ITU/TSS	International Telecommunications Union/Telecommunications Standardization Section
LCM	Life Cycle Management
MHS	Message Handling System
MTA	Messaging Transfer Agent
NARA	National Archives and Records Administration
NCS	National Communications Systems
NII	National Information Infrastructure
NIST	National Institute of Standards and Technology
NSEP	National Security and Emergency Preparedness
NTIA	National Telecommunications and Information Administration
NTIS	National Technical Information Service
OATR	Over the Air Rekeying
OIG	Office of Inspector General
OMB	Office of Management and Budget
OITPS	Office of Information Technology Policy and Strategy
PL	Public Law
POC	Point of Contact
POSIT	Profile for Open Systems Interconnectivity Technologies
PRA	Paperwork Reduction Act
PRMD	Private Management Domain
RIM	Records and Information Management
SES	Senior Executive Service
SMTP	Simple Mail Transfer Protocol
STEI	Scientific, Technical and Engineering Information
TADG	Treasury Architecture Development Guidance
TADP	Treasury Architecture Development Process
TEI	Treasury Executive Institute
TEL	Treasury Electronic Library
TEAF	Treasury Enterprise Architecture Framework
TCE	Treasury Communications Enterprise
TCS	Treasury Communications System

TD	Treasury Department or Treasury Directive
TD P	Treasury Directive Publication
CIRB	Capital Investment Review Board
TP	Trading Partner
UA	User Agent
USC	United States Code
VAN	Value-added Network
VMS	Voice Message System
WRSS	Wireless Radio Support Services

Appendix J - Definitions

Burden is defined as:

- The total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency, including: (1) reviewing instructions; (2) developing, acquiring, installing, and utilizing technology and systems for the purpose of collecting, validating, and verifying information; (3) developing, acquiring, installing, and utilizing technology and systems for the purpose of processing and maintaining information; (4) developing, acquiring, installing, and utilizing technology and systems for the purpose of disclosing and providing information; (5) adjusting the existing ways to comply with any previously applicable instructions and requirements; (6) training personnel to be able to respond to a collection of information; (7) searching data sources; (8) completing and reviewing the collection of information; and (9) transmitting, or otherwise disclosing the information.
- The time, effort, and financial resources necessary to comply with a collection of information that would be incurred by persons in the normal course of their activities (e.g., in compiling and maintaining business records) will be excluded from the "burden" if the agency demonstrates that the reporting, record keeping, or disclosure activities needed to comply are usual and customary
- A collection of information conducted or sponsored by a Federal agency that is also conducted or sponsored by a unit of State, local, or tribal government is presumed to impose a Federal burden except to the extent that the agency shows that such State, local, or tribal requirement would be imposed even in the absence of a Federal requirement

Cognitive or mental impairments cover a wide range of impairments including thinking, memory, language, learning and perception.

Collection of information is defined as the obtaining, causing to be obtained, soliciting, or requiring the disclosure to an agency, third parties or the public of information by or for an agency by means of identical questions posed to, or identical reporting, recordkeeping, or disclosure requirements imposed on, ten or more persons, whether such collection of information is mandatory, voluntary, or required to obtain or retain a benefit.

Computer accommodation is the acquisition or modification of end user computer equipment and software to surmount the functional limitations of employees with disabilities to provide equivalent access to agency information resources.

Conformity assessment is any activity concerned with determining directly or indirectly that requirements are fulfilled. Requirements for products, services, systems, and organizations are those defined by law or regulation or by an agency in a procurement action.

Core business process systems are those which support operations in one of the core business processes such as Trade Compliance or Submission Processing, or a cross-functional business area such as investigations.

Electronic equipment accessibility is the application or configuration of electronic equipment in a manner that accommodates the functional limitations of individuals with disabilities to promote productivity and provide access to work related and/or public information resources.

Employee with disability is a person who has a physical or mental impairment that substantially limits one or more major life activities; has a record of such impairments; or is regarded as having such an impairment. In general, this includes individuals with a significant vision, hearing, cognitive, or mobility impairment.

End user is anyone who has a need to access information electronically anywhere in Treasury.

Enterprise architecture (EA) is an on-going planning process driven by business objectives. EA represents an information system architecture for an enterprise or organization. The Treasury Enterprise Architecture Framework to develop an EA identifies four components, each representing a different perspective or view of the bureau:

> ***Functional***: A representation of what the bureau does (i.e., its mission and business processes) and how the organization can use the information systems to support its business operations.
>
> ***Work*****:** A description of where and by whom information systems are to be used throughout the bureau.
>
> ***Information***: A description of what information is needed to support business operations.
>
> ***Infrastructure***: A description of hardware and services (e.g., software, networks, servers, etc.) needed to implement information systems across the bureau.

Federally funded refers to research and development activities funded in whole or in part with federal funds.

Federal records are all books, papers, maps, photographs, machine- readable materials, or other documentary materials, regardless of physical form or characteristics, made or received by an agency of the United States Government under Federal law or in connection with the transaction of public business and preserved or appropriate for preservation by that agency or its legitimate successor as evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the Government or because of the informational value of data in them.

Form is any document printed or reproduced with space for filling in information. Certain printed items without fill-in space, such as contract provisions, instruction sheets, notices, tags, labels, and posters, may be considered a form when it is advantageous to identify and control them as forms for purposes of reference, printing, stocking and distribution and use with other forms.

General support system is an interconnected set of information resources under the same direct management control that shares common functionality. A system normally includes hardware, software, information, data, applications, communications, and people. A system can be, for example, a local area network (LAN) including smart terminals that supports a branch office, an agency-wide backbone, a communications network, a departmental data processing center including its operating system and utilities, a tactical radio network, or a shared information processing service organization (IPSO).

GILS core is a subset of all GILS locator records which describe information resources maintained by Federal agencies, comply with the GILS core elements defined in FIPS 192, and are mutually accessible through interconnected electronic network facilities.

Hearing impairments are classified into degrees based on the average hearing level for various frequencies (pitches) by decibels (volume) required to hear, and also by the ability to understand speech. Loudness of normal conversation is usually 40-60 decibels. A person is considered deaf when sound must reach at least 90 decibels (5-10 times louder than normal speech) to be heard. Even amplified speech cannot be understood with a hearing aid.

Information is any statement or estimate of fact or opinion, regardless of form or format, whether in numerical, graphic, or narrative form, and whether oral or maintained on paper, electronic or other media.

Information dissemination product is any book, map, paper, machine-readable material, audiovisual production, or other documentary material regardless of physical form or characteristic disseminated by an agency to the public.

Information products are technical reports, articles, papers, books, regulations, standards, specifications, charts, maps, graphs, software, data collections, data files, data compilation software, audio/video products, technology application assessments, training packages, and other Federally owned and/or originated technologies.

Information system (44 U.S.C. 3502(8)) is any combination of IT and related resources that function together to produce the capabilities required to fulfill a mission need, including hardware, ancillary equipment, software, but excluding construction or other improvements to real property.

Information system architecture is a conceptual and coherent blueprint that describes the structure of information system components, their relationships, and the architectural principles and guidance governing their design and evolution over time in an organization.

Information technology is any equipment or interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the Executive Agency. For purposes of the preceding sentence, equipment is used by an Executive Agency if the equipment is used by the Executive Agency directly or is used by a contractor under a contract with the Executive Agency which (1) requires the use of such equipment, or (2) requires the use, to a significant extent, of such equipment in the performance of a service or the furnishing of a product. **Information technology** includes computers, ancillary equipment, software, and similar procedures, services (including support services), and related resources.

Information technology (IT) acquisition means acquiring IT by any method including by contract, grant, cooperative agreement, international agreement, interagency orders or any "other transactions."

Information technology architecture, with respect to an executive agency, is an integrated framework for evolving or maintaining existing information technology and acquiring new information technology to achieve the agency's strategic goals and information resources management goals."

Information technology (IT) cost is the total estimated information technology costs or ceilings for the acquisition base period and all option periods. The estimate shall be in then-year dollars to include the projected inflation from the base year. Use the Maximum Order Limitation (MOL) for total contract order value (not the limitation for individual orders) as the estimated IT cost for Indefinite Delivery contracts that specify a MOL. This definition includes amendments and modifications to existing acquisition instruments when the amendment or modification includes

IT.

Information technology facility is an organized grouping of personnel, hardware, software, and physical facilities, a primary function of which is the operation of information technology.

Information technology installation is one or more computer or office automation systems including related telecommunications, peripheral or storage units, central processing units, and operating and support system software. Information technology installations may range from information technology facilities, such as large centralized computer centers, to individual stand-alone microcomputers such as personal computers, or workstations.

Infrastructure includes investments that will provide hardware, software, databases, networking, storage, and/or communications capabilities. While some bureaus centrally manage infrastructure, some bureaus manage infrastructure systems as *major* categories of equipment or systems (e.g., different mainframe systems or telecommunications network). Primarily, it depends upon how the bureau manages and controls infrastructure systems. This category should reflect the bureau's approach, but the ultimate goal is to better understand and plan for the major infrastructure *components*.

An ***interagency report*** is a report required by one agency of one or more other agencies. Operating documents are excluded.

Locator is an information resource which identifies other information resources, describes the information available in those resources, and provides assistance in how to obtain the information.

Low Vision is vision that is between 20/40 and 20/200 after correction. (20/200 means that something at 20 feet would be just as visible as something at 200 feet would be to someone with normal 20/20 vision.) A person is termed legally blind when their visual acuity (sharpness of vision) is 20/200 or worse after correction or when their field of vision is less than 20 degrees.

Major system is any information system in operation, under development, or planned new initiative that requires special and continuing management attention because of its importance to a bureau's mission; its high development, operating, or maintenance costs; or its significant role in the administration of bureau programs, finances, property, or other resources. Large infrastructure investments (e.g., major purchases of personal computers or local area network improvements) are considered major systems. All major systems must be included in one of the categories below, either as a stand-alone system, or as part of a larger "umbrella" system. Major systems are categorized as *core business process systems*, *mission support systems*, *infrastructure*, and *other*.

Mission support systems are systems used by human resource management, payroll, finance, accounting, facilities management, or document management.

> ***Other*** includes IT investments that may not easily fit into any of the other categories. Normally, this may include major IT systems that may be managed as a separate program, such as a centrally managed component (e.g., telecommunications).
>
> Systems ***in operation*** include those systems currently running in a production mode in all appropriate offices throughout the bureau (e.g., District Offices, Service Centers, etc.).
>
> Systems ***under development*** include those new systems (or major enhancements to existing systems) where development is already under way (including systems in the prototype or pilot phase).
>
> A ***new initiative*** is a proposal for the development/acquisition of a new information system or for a proposed enhancement to an existing system that will result in a major system as defined above, or for the acquisition of new information technology for which the Department should be informed. Typical activities for these systems include planning, requirements definition, and design.

Outcome measure, according to the Capital Programming Guide, is an assessment of the results of a program activity compared to its intended purpose.

Output measure, according to the Capital Programming Guide, is a tabulation, calculation, or recording of activity or effort that can be expressed as a quantitative or qualitative manner. They shall have two characteristics: 1) they shall be periodically or systematically captured through an accounting or management information system, and 2) there shall be a logical connection between the reported measures and the program's mission, goals, and objectives.

Performance measurement, according to the Capital Programming Guide , is a means to evaluate efficiency, effectiveness and results. Performance measurement should include program accomplishments in terms of outputs (quantity of products or services provided) and outcomes (results of providing outputs in terms of effectively meeting intended mission and objectives).

Person is defined as an individual, partnership, association, corporation (including operations of government-owned contractor-operated facilities), business trust, or legal representative, an organized group of individuals, a State, territorial, tribal, or local government or branch thereof, or a political subdivision of a State, territory, tribal, or local government or a branch of a political subdivision.

Physical impairment varies greatly. Included is paralysis (complete or partial), severe weakness, interference with control, missing limbs and speech impairment.

Practical utility is defined as the actual, not merely the theoretical or potential, usefulness of information to or for an agency, taking into account its accuracy, validity, adequacy, and reliability, and the agency's ability to process the information it collects (or a person's ability to receive and process that which is disclosed, in the case of a third-party or public disclosure) in a useful and timely fashion.

Recordkeeping requirement is a requirement imposed by or for an agency on persons to maintain specified records, including a requirement to: (1) retain such records; (2) notify third parties, the Federal government, or the public of the existence of such records; (3) disclose such records to third parties; the Federal government, or the public; or (4) report to the public regarding such records.

Risk assessment is an evaluation of IT assets and vulnerabilities to establish an expected loss from certain events based on estimated probabilities of the occurrence of those events. A risk assessment identifies potential threats and their probability of occurrence and proposes safeguards to combat these threats and provides management with information on which to base decisions, e.g., whether it is best to prevent the occurrence of a situation, to contain the effect it may have, or simply to recognize that a potential for loss exists.

Risk management is a formal risk assessment is not required, however, a risk-based approach should be used to define adequate security. This risk-based approach should include a consideration of the major factors in risk management: the value of the system or application, threats, vulnerabilities, and the effectiveness of current proposed safeguards. Bureaus may still choose to perform a traditional risk assessment which remains a valuable tool. Risk assessments are most effective in areas where risk and safeguards can be quantified or otherwise discretely measured of described.

Sensitive system is a system containing information that requires protection due to the risk and magnitude of loss or harm that could result from inadvertent or deliberate disclosure, alteration, or destruction of the information. The term includes information whose improper use or disclosure could adversely affect the ability of the Department to accomplish its mission, e.g., proprietary information, information about individuals requiring protection under the Privacy Act, and information not releasable under the Freedom of Information Act.

Special peripheral is a "special needs aid that provides access to electronic equipment that is inaccessible to an employee with a disability."

STEI activities is information resulting from a federally funded research and development activity, such as a Federally Funded Research and Development Center (FFRDC), a federally funded laboratory, or any other formal research and development program that is federally funded. It includes, but is not limited to, any report, manual, standard, specification, book, paper, chart, map, graph, data collection, data file, data compilation, software and audio/video production.

Telecommunications Device for the Deaf (TDD) is a device for transmitting and receiving messages by telephone networks. The TDD may have a visual display, keyboard, and printer to enable an individual with a hearing impairment to send and receive messages without the need to hear the spoken word.

Timely transfer is within 15 days of the date the STEI is first made available for public dissemination through any distribution channel.

Users of IT resources are responsible for complying with all security requirements pertaining to the IT resources they utilize and are accountable for all activity performed under their User ID's/passwords.

Visual impairment represents a continuum from people with very poor vision through individuals who can see light but no shapes, and to people who have no perception of light at all. However, this population represent two broad groups: (1) those with low vision and (2) those who are legally blind.

Appendix K - Laws, Regulations, and References

Public Law 105-220, "Workforce Rehabilitation Investment Act of 1998," and Section 508 of the Rehabilitation Act of 1973.

Public Law 105-277, "Government Paperwork Elimination Act of 1998."

Public Law 104-231, “Electronic Freedom of Information of 1996,” as amended.

Public Law 104-106, “Information Technology Management Reform Act (ITMRA) of 1996", also known as the Clinger-Cohen Act.

Public Law 104-13, “Paperwork Reduction Act of 1995.”

Public Law 103-62, “Government Performance and Results Act of 1990.”

Public Law 102-245, "American Technology Preeminence Act of 1991.”

Public Law 100-235, “Computer Security Act of 1987.”

Public Law 102-569, “The Rehabilitation Act Amendments of 1992.”

Public Law 100-542, “Telecommunications Accessibility Enhancement Act of 1988.”

5 CFR Part 1320, “Controlling Paperwork Burdens on the Public,” as revised August 29, 1995.

36 CFR Part 1222, “Creation and Maintenance of Records: Adequate and Proper Documentation.”

CFR §2635.704(b)(1), Government Property Use.

CFR § 2635.1 01 (a), Public Service is a Public Trust.

44 U.S.C. 3101, “Federal Records Act of 1950.”

Executive Order l3011, “Federal Information Technology,” July l6, 1996.

OMB Circular A-119, “Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities.”

OMB Circular A-130, "Management of Federal Information Resources."

Memorandum from Franklin D. Raines, OMB, titled, “Funding Information Systems Investments,” October 25, 1996.

Memorandum from Franklin D. Raines, OMB, titled, “Information Technology Architectures,” June 18, 1997, (M-97-16).

Memorandum from the Deputy Assistant Secretary for Information Systems, dated April 28, 1995, Subject: “Managing Internet Access.”

TD 28-01, “Preparation and Review of Regulations.”

TD P 71-10**,** “Department of the Treasury Security Manual.”

TD 80-05, “Records and Information Management Program.”

TD P 80-05, “Records and Information Management Manual.”

TD 84-01, “ Information System Life Cycle.”

TD P 84-01, “Information System Life Cycle Manual.”

TD 86-02, "Radio Frequency Management."

TD 87-04, “Personal Use of Government Office Equipment Including Information Technology.”

Treasury Enterprise Architecture Framework (TEAF).

Appendix L – Related Web Sites

Treasury web site:	http://www.treas.gov
Treasury Intranet:	http://intranet.treas.gov
Federal CIO Council	http://cio.gov
Federal Computer Acquisition Center http://www.gsa.gov/fedcac/fedcac.htm	
Office of Information Technology Integration	http://iti.gsa.gov/
Office of Management and Budget	http://www.whitehouse.gov/omb
Government Information Locator Service (GILS)	http://www.gsa.gov/gils/
GSA IT Policy on-ramp	http://www.itpolicy.gsa.gov/

MANUAL TRANSMITTAL

2.16.1

Department of the Treasury
Internal Revenue Service

JULY 10, 2017

EFFECTIVE DATE

(07-10-2017)

PURPOSE

(1) This transmits revised IRM 2.16.1, Enterprise Life Cycle (ELC), Enterprise Life Cycle Guidance.

MATERIAL CHANGES

(1) The information in this manual was revised to reflect changes since its last publication. Changes most notable are the inclusion of Interim Guidance IT-02-0416-0009 and the addition of the Agile Path, the Common Services Path, the Tool Path, and information about the program associated with this IRM.

EFFECT ON OTHER DOCUMENTS

IRM 2.16.1 dated December 22, 2015, is superseded.

AUDIENCE

This IRM applies to IRS managers, personnel, and executives who manage, directly support, or provide oversight to projects that effect business change. This IRM also applies to contractors who conduct projects on behalf of the IRS that effect business change.

S Gina Garza
Chief Information Officer

2.16.1
ELC Guidance

Table of Contents

2.16.1.1
(07-10-2017)
Program Scope and Objectives

(1) The Architecture, Integration, and Management Program provides engineering management capabilities; its scope includes systems strategy, architecture and engineering capabilities across information technology infrastructure, business applications, data management, and information technology security. Its objectives include providing portfolio control and management processes and tools, including **governance, enterprise lifecycle support**, tiered program management, business rules and requirements, transition management, cost estimation, configuration/change management and risk management.

(2) The purpose of this program is to provide engineering management capabilities.

(3) The audience for this program information is those involved with oversight, budget, or financial management.

(4) The IRS Information Technology Organization is the program owner.

(5) The goal of this program is to improve engineering management capabilities.

2.16.1.1.1
(07-10-2017)
Background

(1) For financial management purposes, this program is identified as ″Functional Area 67″. This program constitutes the budget activity, ″Business Systems Modernization″ and is identified as budget activity code 86. This budget activity is funded by appropriation fund 0921. The name of this appropriation fund is Business Systems Modernization.

(2) The program operates pursuant to law enacted by Congress. Appropriations are the most common type of budget authority provided by Congress.

2.16.1.1.2
(07-10-2017)
Authority

(1) This program is funded via the appropriation, “Business Systems Modernization (0921)”, which is for necessary expenses of the Internal Revenue Service for the capital asset acquisition of information technology systems including management and related contractual costs of such acquisition and including contractual costs associated with operations as authorized by 5 U.S.C. 3109.

2.16.1.1.3
(07-10-2017)
Responsibilities

(1) The Chief Information Officer ultimately is responsible for this program.

2.16.1.1.4
(07-10-2017)
Program Management and Review

(1) Performance appraisals and operational reports are used to provide information regarding the reporting of this program’s objectives.

(2) Performance plans are use to determine how the program goals are measured.

2.16.1.1.5
(07-10-2017)
Program Controls

(1) This program uses the *IRS Internal Management Documents System* to establish controls. This IRM section constitutes one of the controls.

2.16.1.1.6
(07-10-2017)
Terms, Definitions, and Acronyms

(1) This program has specific terms and acronyms associated with it. Definitions for these terms and acronyms follow.

Terms

Word	Definition
Appropriation	A law enacted by Congress that authorizes Government agencies to incur obligations, and the Treasury to make payments for designated purposes.
Budget Activity	A subdivision of an appropriation identified in the formal request to Congress.
Budget Activity Code	A code that identifies a budget activity.
Functional Area	1. A detailed program, which constitutes a specific phase or segment of IRS operations. 2. A grouping of related work operations that constitutes a specific phase or portion of an overall work program.
Operation	Continual work managed to serve a function or mission. Example of usage: The work associated with an organizational unit generally is managed as an operation as oppose to a program or project.
Program	1. An operation that constitutes a functional area. 2. An operation that is managed via an designated organizational unit and may manage related projects, in a way as, to obtain benefits unavailable from individually managing the projects. 3. An operation managed according to a published plan, approach, method, standard, or discipline for program management.

Acronyms

Acronym	Definition
BAC	Budget Activity Code

2.16.1.1.7
(07-10-2017)
Related Resources

(1) *IRS Document 12353, Financial Management (Revision 4-2016) (Catalog Number 48241J)* is a resource for information about this program.

2.16.1.2
(07-10-2017)
Overview

(1) The Architecture, Integration, and Management Program is the source of funding for information technology (IT) governance and enterprise lifecycle support operations; these operations are the focus of this IRM. IT governance is a function for internal control. This IRM establishes controls that support IT governance through enterprise lifecycle support. The Enterprise Life Cycle Office established, maintains, and supports this IRM. This subsection provides an overview of:

- Information Technology Governance;
- the Enterprise Life Cycle Office; and
- Enterprise Life Cycle Guidance i.e. this manual.

2.16.1.2.1
(07-10-2017)
Information Technology Governance

(1) Information technology governance is a function of internal control within the IRS. The primary objective of governance is to ensure assigned investment, program and project objectives are met, risks are managed appropriately, and enterprise expenditures are fiscally sound. This includes review and concurrence of Office of Management and Budget (OMB) and Treasury related submissions, business cases and baseline change requests. In conjunction with the reporting and funding process defined by the OMB, projects are categorized as major or non-major based on the category of the investment they support. The classification of major and non-major Investments is defined in *OMB Circular A-11*. This circular and OMB's Capital Programming Guide, each of which are updated annually, provide controls for all investments, programs and projects within its assigned portfolio.

(2) Governance is a process of putting structure around how IRS aligns IT strategy with business strategy, ensuring that it stays on track to achieve their strategies and goals, and implementing good ways to measure IT's performance. It makes sure that all stakeholders' interests are taken into account and that processes provide measurable results.

(3) The specific duties of governance process are documented in the IT Enterprise Governance Authority and Operations Directive. The directive can be located at *http://it.web.irs.gov/SP/IPMO/*. Contact the Investment and Portfolio Governance Office for more details and assistance.

(4) Governance is a critical reason for ELC reviews and occurs at specific points in the life cycle for an ELC path. The Milestone Exit Review (MER) is one of these reviews and is performed at specific points in the life cycle for an ELC path.

2.16.1.2.2
(07-10-2017)
Enterprise Life Cycle Office

(1) The *Enterprise Life Cycle (ELC) Office* maintains and supports this IRM. The e-mail address for this office is **IT ELC Office@irs.gov*.

(2) The mission of this office is to:

- define, develop, and institutionalize a proven set of best practices for managing change in the IRS business processes and systems;
- integrate and standardize process management activities to improve consistency; and
- provide leadership, consultation, and assistance to ensure understanding and effective use of best practices by all affected stakeholders.

(3) The purpose of this office is to provide direction, processes, tools, and assets based on best practices to accomplish change in a consistent and repeatable manner. The objectives of this office are to:

- standardize the approach for managing, governing, and supporting projects following the enterprise life cycle throughout the IRS;
- improve the probability of successfully achieving desired change within budget, schedule, and scope ; and
- help ensure project success by reducing risk and ensuring compliance with applicable internal and external standards and mandates such as Federal Information Security Management Act (FISMA).

In support of the purpose and objectives, the office offers a variety of products and services.

2.16.1.2.2.1
(07-10-2017)
Products

(1) In addition to this IRM, the ELC Office offers products primarily to include the:

- ELC Website
- ELC Artifacts by Phase Chart
- ELC Process Assets

2.16.1.2.2.1.1
(07-10-2017)
ELC Website

(1) The ELC website provides information and other resources for using the ELC approach and framework. Customers can access ELC process assets, Delivery Partners artifacts, register for ELC training classes, and obtain information related to their specific project needs.

(2) The ELC website can be found at: *http://elc.nc.no.irs.gov/elcpmoweb/index.asp*.

2.16.1.2.2.1.2
(07-10-2017)
ELC Artifacts by Phase Chart

(1) The *ELC Artifacts by Phase chart* provides a consolidated view of the phases, milestones, and artifacts that constitute the ELC framework.

2.16.1.2.2.1.3
(07-10-2017)
ELC Process Assets

(1) ELC process assets comprise the following products:

- ELC Project Management Plan (PMP) - Data Item Description (DID)
- ELC Project Review Process Description
- ELC Customer Technical Review (CTR) Procedure
- ELC End of Sprint Checkpoint Review (EoSCR) Procedure
- ELC Life Cycle Status Review (LCSR) Procedure

(2) These products may be acquired from the *Information Technology (IT) Process Asset Library*.

2.16.1.2.2.2
(07-10-2017)
Services

(1) The ELC Office offers services primarily to include:

- Coaching
- Training
- Compliance

2.16.1.2.2.2.1
(07-10-2017)
Coaching

(1) The ELC Office provides guidance to projects throughout the IRS on the implementation of ELC requirements and assistance with ELC work products. ELC coaching does not include creating or updating work products for projects, with the exception of ELC owned artifacts. The ELC Office offers the following support:

- Provide guidance in development of the Project Tailoring Plan (PTP) and Project Management Plan (PMP)
- Conduct Milestone Readiness Reviews (MRRs) and prepare associated MRR memorandums
- Provide consulting services as needed
- Provide web access to assets, tools, standards, guidelines, templates, and training
- Answer questions related to the ELC
- Provide ELC guidance and tools for project planning & tailoring (i.e., project path selection and tailoring plan generator)

(2) To request an ELC Coach, visit the ELC Front Door.

2.16.1.2.2.2.2
(07-10-2017)
Training

(1) The ELC Office currently offers the following training classes:

- Introduction to the ELC
- ELC Fundamentals for projects engaged in New Development
- ELC Fundamentals for projects engaged in Planned Maintenance
- ELC Fundamentals for projects following the new Iterative Path
- Introduction to the ELC for Iterative Path Business
- ELC Agile Overview
- ELC Agile Fundamentals
- Agile for Business Partners

(2) For more information regarding ELC training and how to register, visit the ELC Training page at *http://elc.nc.no.irs.gov/elcpmoweb/Training.asp*

2.16.1.2.2.2.3
(07-10-2017)
Compliance

(1) ELC Coaches conduct milestone readiness reviews (MRRs) during which they review a project's compliance with ELC guidance, as defined in this IRM. Based on the results of the MRR, the ELC Office recommends the projects for either a conditional or Unconditional Milestone Exit Review (MER).

2.16.1.2.3
(07-10-2017)
Enterprise Life Cycle Guidance

(1) This subsection is an overview of Enterprise Life Cycle Guidance i.e. this manual.

2.16.1.2.3.1
(07-10-2017)
Authority associated with this Manual

(1) This IRM establishes controls pursuant to:

- Public Law 104-106, Clinger-Cohen Act of 1996 (formerly Information Technology Reform Act of 1996)
- Government Performance and Results Act (GPRA)
- Federal Information and Security Management Act (FISMA)
- Office of Management and Budget (OMB) Circular A-123, Management's Responsibility for Internal Controls

2.16.1.2.3.2
(07-10-2017)
Purpose of this Manual

(1) The purpose of this IRM is to establish controls for implementing and complying with ELC requirements.

2.16.1.2.3.3
(07-10-2017)
Audience for this Manual

(1) The audience intended for this manual is IRS managers, personnel, and executives who manage, directly support, or provide oversight to projects that effect business change. This manual applies to that audience and also to contractors who conduct projects on behalf of the IRS.

2.16.1.2.3.4
(07-10-2017)
Owner of this Manual

(1) The owner of this manual is the ELC Office. This office usually revises this IRM on an annual basis and, does so, via the *Internal Management Document (IMD) clearance process*. Because the IRM is updated yearly and is not always current, there may be changes to the process that need to be implemented prior to IRM updates. Change Requests (CRs) and PowerPoint presentations are the first official steps in formalization of the change to the IRM. During clearance socialization, employees may provide feedback regarding this IRM. Employees interested in providing feedback during clearance may contact the originator of this IRM and request to be added to the list for those who receive the document clearance package. When the revised IRM is cleared for publishing, the originator will send employee feedback to the IRS Historical Research Library. Employees may also, at any time, provide feedback by contacting the *ELC Office*.

2.16.1.2.3.5
(07-10-2017)
Primary Stakeholders of this Manual

(1) The primary stakeholders of this manual are governance broads and process owners within the IRS's Information Technology Organization.

2.16.1.2.3.6
(07-10-2017)
Terms, Acronyms, and Definitions associated with this Manual

(1) Exhibit 2.16.1-1 lists and defines the acronyms associated with this manual.

(2) Exhibit 2.16.1-2 lists and defines the terms associated with this manual.

2.16.1.2.3.7
(07-10-2017)
Resources related to this Manual

(1) Resources related to this manual include the:

- *ELC Artifacts by Phase chart*
- *ELC Website*

2.16.1.2.3.8
(07-10-2017)
Organization of this Manual

(1) This section of the IRM is organized with the following subsections:

1. Program Scope and Objectives
2. Overview
3. ELC Framework
4. ELC Artifacts
5. ELC Paths
6. ELC Reviews
7. ELC Tailoring

(2) The first subsection introduces the program that this IRM supports. The second subsection provides an overview of information technology governance, the ELC Office, and this IRM. The third subsection explains the ELC Framework, explains associated concepts, and establishes controls related to

some concepts. The fourth subsection addresses artifacts associated with ELC guidance. The fifth section explains the paths associated with the framework and addresses guidelines and considerations related to the paths. The sixth subsection explains the reviews involved with IT governance and otherwise used for internal control. The seventh and last subsection explains tailoring and factors associated with tailoring ELC paths.

2.16.1.3
(07-10-2017)
ELC Framework

(1) The ELC Framework is a structure that provides guidance and requirements for IRS projects as they move from Vision and Strategy through System Deployment. The framework is used by IRS projects to ensure consistency and compliance with government and industry best practices. The framework is the workflow that projects follow to move an IT solution from concept to production while ensuring the movement complies with IRS guidelines and overall goals of the agency. The framework comprises:

- Phases
- Milestones
- Delivery Partners
- Process Assets
- Process Owners/Delivery Partners (Agile Path)
- Programs
- Projects

2.16.1.3.1
(07-10-2017)
Phases

(1) Phases constitute broad segments of work that encompass activities of similar scope, nature, and detail, and provides natural breakpoints in the life cycle. Projects are managed within the bounds of phases. Each phase begins with a kickoff meeting and concludes with a milestone exit. This means that as the project is developing the solution, it should be stated that the project **is in a phase, not in a milestone**. For example, the project is ″in the Domain Architecture Phase″ not ″in Milestone 2″.

(2) The following table identifies the phases of the enterprise life cycle. This table itemizes the phases addressed via the ELC framework and, for each phase, provides the phase name, describes the phase, identifies the milestone that occurs at the end of the phase, and states the major result of the phase. These phases apply to all paths, except Agile.

Phase Name	Phase Description	Milestone	Major Result of Phase
Vision & Strategy/ Enterprise Architecture	High level direction setting for the enterprise.	MS 0	Recommended enterprise strategies and/or proposed projects scope to address organizational goals.

Phase Name	Phase Description	Milestone	Major Result of Phase
Project Initiation	Defining project scope, forming the project teams, and beginning many of the ELC artifacts.	MS 1	Approval of project scope and team structure
Domain Architecture	Gathering, development and approval of solution concept, requirements, and architecture of the solution.	MS 2	Approval of the business requirements and architecture
Preliminary Design	Development of the Logical Design	MS 3	Approval of the Logical Design
Detail Design	Development of the Physical Design	MS 4a	Approval of the Physical Design
System Development	Coding, integration, testing, and certification of solution/ system	MS 4b	Authorization to put solution into production
System Deployment	Expanding availability of the solution to all target environments and users.	MS 5	Authorization to transfer support to another organization other than the developers and signifies the end of the use of project funding
Operations & Maintenance (O&M)	Ongoing management of operational solution/system.	N/A	Operational solution

(3) The following table addresses the phases for Agile.

2.16.1.3.2
(07-10-2017)
Milestones

(1) A milestone is a management decision point placed at a natural breakpoint in the life cycle where management determines whether a project can proceed to the next phase. Milestones are points at which management requires updated cost, progress, and risk information to make project funding and decisions for project continuation.

(2) Every project must conduct a Milestone 4B (IRR in Agile Paths) exit before putting their solution into production.

(3) Phases may be modified and combined through tailoring depending on the nature of the life cycle path used. In these cases, there is a single milestone at the end of the combined phase (for example, a single Milestone 3/4A is held instead of Milestone 3 and Milestone 4A exits).

(4) The MS 5 exit is the trigger point between DME and O&M funding and MS5 occurs when:

- The new system capabilities that are documented in the scope document (Project Charter/VSA) have been placed into production; and
- The system is operating in a steady state; meaning the number of defects has leveled off.

If the project has multiple, documented releases/phases, the MS5 Exit occurs only after the MS 4b, IRR for the final release.

2.16.1.3.3
(07-10-2017)
Process Assets

(1) The ELC Office develops and maintains certain process assets related to internal activities such as the Customer Technical Review (CTR) and the Milestone Readiness Review (MRR). Other process assets are developed and managed by other process owners. A listing of ELC delivery partners and their corresponding website link can be found at: *http://elc.nc.no.irs.gov/elcpmoweb/ProcessOwners.asp*.

(2) Process Assets include:

- **Directive** - provides the guiding principles that are used to set direction within an organization. Specifically, the Directive is the formal and mandatory order or official pronouncement on a policy, process, or procedure that establishes the organizational expectations. Directives address what the policy is, who is responsible for the execution and enforcement of the policy, and why the policy is required.
- **Process Description (PD)** - defines the set of activities performed to achieve a given purpose and provides an operational definition of the major components of a process. PDs address who is responsible for performing the process, what major functions are performed, and when the function is triggered.
- **Procedure (PR)** - explains how the tasks are to be done. Procedures detail who performs the Procedure, what steps are performed, when the steps are performed, and how the Procedure is performed.
- **Procedure Assets** - implementation asset for facilitating or automating procedure activities. Examples of Procedure Assets include artifacts, templates, forms, and checklists.
- **Process Aides** - supplementary resources that help in understanding an overall process. Examples of Process Aides include guides, manuals, and training materials.

(3) Process Assets are available on the Information Technology (IT) Process Asset Library (PAL) at *http://itpal.ds.irsnet.gov/*. The IT PAL provides a centralized repository for the IT organizations set of standard processes to improve bi-directional understanding and alignment between IT and Business customer on services, standards, and expectations. Projects should also contact Process Owners for the latest Process Assets. A listing of ELC Process Owners and their corresponding website link can be found at: *http://elc.nc.no.irs.gov/elcpmoweb/ProcessOwners.asp*

2.16.1.3.4
(07-10-2017)
Process Owners/Delivery Partners (Agile Path)

(1) Process Owners/Delivery Partners (Agile Path) are organizations or individuals assigned responsibility and accountability for management of an enterprise process. Process Owners are responsible for sponsorship, design, change management, and continual improvement of the process and its metrics. This might include:

- Defining the process strategy
- Defining the process policies and standards
- Ensuring process is formally documented in an directive, IRM, or PD
- Defining the implementation strategy (including tailoring/waiver)
- Provide coaching, training, and guidance on the process and/or procedure
- Training impacted stakeholders and project members on the process
- Provide review of the projects' compliance with the process and written approval of the document post project submission

2.16.1.3.5
(12-22-2015)
Program Management

(1) Programs are a means of executing corporate strategies and achieving business or organizational goals and objectives. The Project Management Institute (PMI) defines a program as "A group of related projects, subprograms, and program activities that are managed in a coordinated way to obtain benefits not available from managing them individually". Programs are comprised of various components—the majority of these being the individual projects within the program. Programs may also include other work related to the component projects such as training and operations and maintenance activities. Other work, however, make up the non-project components or activities of the program and may be recognized as the management effort and infrastructure needed to manage the program (e.g., Program Governance, Transition activities, or Program Stakeholder Engagement activities). Thus, programs may include elements of other work (e.g., managing the program itself) outside the scope of the discrete projects in a program.

(2) Program Management is the application of knowledge, skills, tools, and techniques to a program to meet the program requirements and to obtain benefits and control not available by managing projects individually. Program management provides a framework for managing related efforts considering key factors such as strategic benefits, coordinated planning, complex interdependencies, deliverable integration, and optimized pacing.

(3) The program manager integrates and controls the interdependencies among the components by working in five interrelated and interdependent Program Management Performance Domains: Program Strategy Alignment, Program Benefits Management, Program Stakeholder Engagement, Program Governance, and Program Life Cycle Management. Through these Program Management Performance Domains, the program manager oversees and analyzes component interdependencies to assist in the determination of the optimal approach for managing the components as a program.

(4) The Program Management Process Owner has identified the Integrated Project Management (IPrM) Process as the defined framework for program integration management and control activities for all Information Technology Programs and program releases. The purpose of the IPrM process is to establish and manage the project(s) and the involvement of the relevant stakeholders according to an integrated and defined process that is tailored from the organization's set of standard processes. The Program Management Process Owner will steward the process across all IT organizations by developing a vision, communicating across the IT enterprise, and maintaining standards. The ELC currently provides directives, guidelines, or procedures for managing projects as oppose to programs.

2.16.1.3.6
(05-21-2014)
Project Management

(1) A project, according to the PMBOK, is defined as a temporary endeavor undertaken to create a unique product, service, or result. This endeavor may include a series of activities to achieve a specific objective and has a definite beginning and a definite end. A project is planned, monitored, and measured, follows a specific life cycle process, and consumes resources which are also planned, monitored, and measured. The final result includes deliverables and/or end products.

(2) Project management involves orderly and controlled initiation, planning, execution, monitoring and controlling, and deployment of a project to Operations and Maintenance (O&M).

(3) Project management functions are described in the Project Management Plan (PMP). The PMP is a formal, approved document that defines how the project is executed, monitored, and controlled. The PMP may be composed of one or more subsidiary management plans and other planning documents that facilitate communication among stakeholders, and document the approved scope, cost, and schedule to ensure project success.

2.16.1.3.6.1
(05-21-2014)
Types of ELC Projects

(1) The ELC supports the management of the following types of IRS projects:

a. New Development Projects - New development projects may involve the acquisition, design, development, and deployment of solutions that support the enterprise vision and architecture. An ELC project is usually initiated in the Project Initiation Phase and concludes in the System Deployment Phase. A project with multiple releases may have one or more releases that are operational while development of the current release is in progress.
b. Maintenance Projects - Maintenance projects maintain the Current Production Environment (CPE) and may include the enhancement, and/or change of an operational solution or a solution component. For example, Planned Maintenance is a type of maintenance effort that is formally planned in advance as a project and executed with an appropriate degree of management and governance controls. A maintenance project may address multiple maintenance actions at the same time, will often originate from the Operations & Maintenance (O&M) Phase, and may not need to execute all ELC phases.

(2) Note, in some cases, projects that are part of the Current Production Environment (CPE) may undergo a combination of maintenance and new development. The classification of these projects (New Development, Maintenance) depends on the extent of the changes to the solution.

(3) Note, there is a new approach for initiatives that are primarily infrastructure in nature. The Infrastructure approach is used for projects that are basically hardware (infrastructure) in nature:

- that have no new software development, no new coding; and
- that have no new significant functionality changes.

Once a project is identified as an Infrastructure approach control is turned over to a special organization within UNS that will make sure that the project follows the reduced ELC requirements.
Characteristics - The following are characteristics of the Infrastructure development approach:

- Well Defined Requirements – Hardware projects that are identified as Sustaining Infrastructure (Tier I,II,& III), Sustaining Architecture, or Sustaining Other, which includes: Break/Fixes; Real Estate – moves, adds and changes; and AdHoc/get-it activities. No new software development is allowed on these projects, No new coding. No new significant functionality changes or baseline changes are allow on these projects. If new software development or significant functionality changes occur these projects use one of the other ELC Paths.
- Technical Approach - the infrastructure approach is characterized by the development of a new solution.

Contact User & Network Services, Service Planning & Improvement, Portfolio Mgmt, Project Portfolio Management for further information.

2.16.1.3.6.2
(07-10-2017)
Infrastructure Approach

(1) General Description - The Infrastructure approach is used for projects that are basically hardware (infrastructure) in nature:

- that have no new software development, no new coding
- that have no new significant functionality changes.

Once a project is identified as an Infrastructure approach control is turned over to a special organization within UNS that will make sure that the project follows the reduced ELC requirements.

(2) Characteristics - The following are characteristics of the Infrastructure development approach:

- Well Defined Requirements – Hardware projects that are identified as Sustaining Infrastructure (Tier I,II,& III), Sustaining Architecture, or Sustaining Other, which includes: Break/Fixes; Real Estate – moves, adds and changes; and AdHoc/get-it activities. NO NEW software development is allowed on these projects, NO new coding. NO NEW significant functionality changes or baseline changes are allow on these projects. If new software development or significant functionality changes occur these projects use one of the other ELC Paths.
- Technical Approach - the infrastructure approach is characterized by the development of a new solution

(3) Contact User & Network Services, Service Planning & Improvement, Portfolio Mgmt, Project Portfolio Management for further information.

2.16.1.3.6.3
(07-10-2017)
Investigative Components

(1) An investigative component is an experimental product used to analyze the feasibility, functionality, or performance of a target product. There are four types of investigative components:

- Technical Demonstrations
- Prototypes
- Proof-of-Concepts
- Pilots

(2) The duration during which each component may be used varies with the milestones associated with a path. The rules of use follow. A technical demonstration may be used prior to milestone 1, 2, 3, 4A, or 4B. A prototype may be used prior to milestone 1 or 2. A proof-of-concept may be used after milestone 2 and prior to milestone 3, 4A, or 4B. A pilot may be used after milestone 4B and prior to milestone 5. The following figure graphically depicts the use.

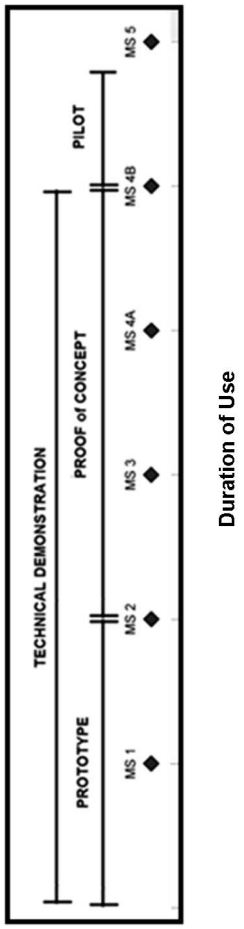


Figure 2.16.1-1 Duration of Use for Investigative Components

2.16.1.3.6.3.1
(05-21-2014)
Technical Demonstrations

(1) Technical Demonstrations are used in support of the Domain Architecture Phase for the purpose of evaluating technology or producing data in support of analyses of alternatives. In the Managed Services Path, technical demonstrations can also be performed in the Service Selection phase. Technical Demonstrations are generally conducted by vendors in simulated or controlled operationally relevant environments for a short period on time. The technical demonstration must be within the program/project's scope. A definitive period of the test dates must be determined before the Technical Demonstration is started. The period of the Technical Demonstration should not be longer than 7 days.

(2) Technical Demonstrations are not allowed to run in the production environment nor are they allowed to use production data. Technical demonstrations must have definitive start and end dates and are intended to be relatively short in duration, i.e. a number of hours and certainly not longer than a week or two.

(3) Rules of Engagement: If a Technical Demonstration is approved by management to be incorporated into the project then all standard reviews and approvals are required by the process owners to exit all milestones. If the Technical Demonstration is not selected, then no review or approval from Process Owners is required.

2.16.1.3.6.3.2
(05-21-2014)
Prototypes

(1) A prototype is a rudimentary working model that is used for business and/or architecture functionality discovery to mitigate potential risks. Prototypes mimic the functioning of a system, but do not use real data nor perform real work. Prototypes are built for demonstration purposes or to simulate the production environment to elicit detailed requirements and achieve buy-in between developers and business customers. Prototypes allow users to see the solution early and determine if it meets their needs. In prototyping, a simulated version of the system is built, tested, and then reworked as necessary until an acceptable solution is achieved. These simulations are built quickly and are never intended to be used in production.

(2) A form of prototyping called "visualization" is currently employed by Requirements Engineering Program Office. With these prototypes, a visualization tool is used to quickly assemble working previews of business software that mimic the exact look, feel and behavior of the final product. The prototypes empower stakeholders to test drive and fully interact with proposed business software before any extensive coding is done. Other forms of prototyping can also be used.

(3) Prototypes are typically used in new development paths in the Domain Architecture Phase (Phase 2). A prototype cannot be put into production without going through all the appropriate phases of ELC.

(4) Rules of Engagement: If the prototype is not used any further than MS Phase 2 no documentation is required by the ELC. If the prototype is refined and deemed usable and has not started Phase 1 nor Phase 2, it should then start as a project; and needs to work with an ELC Coach to determine the ELC Path and Process Owners. If the prototype is refined and deemed usable and has started Phase 1 or Phase 2, the prototype outputs should be used in the development of the Domain Architecture Phase artifacts.

2.16.1.3.6.3.3
(07-10-2017)
Proof-of-Concepts

(1) A proof-of-concept is used to demonstrate the feasibility of an idea or to prove a theory to mitigate integration, interoperability, and/or system-level risks. Proof-of-Concepts normally occur during Logical Design (MS 3), Physical Design (MS 4a) and System Development (MS 4b) phases when the participants want to prove that an idea or collection of ideas suggested will work. If a project wants to implement a certain concept for a design, and would like to first test it to see if the concept is feasible, the project can use the proof-of-concept approach. A proof-of-concept is usually a component of the solution built to test out an idea.

(2) A proof-of-concept is usually considered for new development projects and rarely considered for planned maintenance projects. In rare instances, when planned maintenance projects consider using the proof-of-concept, the projects need to work with the ELC coach and process owners. A proof-of-concept cannot be put into production without going through all the phases of ELC. If the proof-of-concept is deemed useable, the project then to needs to work with the ELC Coach and Process Owners. A proof-of-concept cannot be put into production without going through all the phases of ELC.

(3) A proof-of-concept report documents the findings from the proof-of-concept. EA has produced many proof-of-concept reports for various projects and EA expertise can be leveraged to develop a proof-of-concept report. If the project chooses the solution, then the solution statement with pros/cons should be incorporated into the proof-of-concept report and the project should update all the necessary artifacts to reflect the chosen solution.

(4) Sprints are a specialized version of proof-of-concepts that are used for Iterative and Agile projects. These development sprints are held in the new Design and Development phase, between MS 2 and MS 4B. The development Sprints can run sequentially or in parallel. At the end of each sprint, there will be an End of Sprint Checkpoint Review (for Iterative Projects and End of Sprint Reviews for Agile projects) that includes a functionality demonstration and feedback from stakeholders.

(5) Rules of Engagement: If the proof-of-concept does not exit Milestones 3, 4a or 4b, (PPR or IRR in the Agile Path) no review or approval from process owners is required. If a proof-of-concept is deemed useful and the project wants to incorporate the proof-of-concept into the final solution, all standard reviews and approvals are required to exit Milestones 3, 4a or 4b (PPR or IRR in the Agile Path).

2.16.1.3.6.3.4
(07-10-2017)
Pilots

(1) A pilot is a limited version (limited functionality or limited number of users, etc.) of a system being deployed to discover and/or solve problems before full implementation. If a project has completed all prior phases and is currently in System Development Phase of the ELC and would like to initially rollout a completed product into production to a limited scope of end users or with a limited set of functions, then the project must first complete all the requirements of ELC in the System Development Phase including reviews (MRR and MER) and artifacts. If there are any issues with development of the product based on the limited scope of deployment, then the project must go back to the System Development Phase and correct the issues and repeat the requirements of the phase. The above process can be repeated as many times as the project wishes. Once the issues have been corrected, artifacts are updated and the project then conducts required (MRR and MER) reviews.

(2) A pilot is usually considered for new development projects and rarely considered for planned maintenance projects. In rare instances when planned maintenance projects consider using the pilot, the projects need to work with the ELC coach and Process owners. A pilot cannot be put into production without going through all ELC phases.

(3) Rules of Engagement: All pilots must have exited the System Development Phase (MS 4b) and all required, standard reviews and approvals.

2.16.1.3.6.4
(07-10-2017)
Project Development Outputs

(1) The following are common development outputs of a project as it progresses through its life cycle:

a. Builds - A build is a component of a solution that is implemented in the development and testing environments, but is not deployed into a production environment. Builds do not require governance board approval. A build becomes a drop or release when it is approved by a governance board to be put into production.
b. Releases - A release is any solution from a project that is approved to be put into production. A release requires governance board approval prior. Each release must have its own Tailoring Plan.
c. Drops - A drop is a release that has been previously approved by a governance board to be put into production, usually within 3 months of a release, and deploys into a production environment without another formal governance board review.

Note, these definitions are specific to the IRS.

2.16.1.3.6.5
(07-10-2017)
Project Team

(1) The Project team is made up of the Project Manager and the project team. Large projects sometimes have a person dedicated to coordinating the development of the ELC artifacts. The project team is formed in the first phase they start in. For traditional new development projects, that is normally the Project Initialization Phase (MS 1). For Agile new development projects, that is normally the Product Planning Phase (MS 1). For Planned Maintenance projects the first phase is normally the System Development Phase (MS 4b).

2.16.1.4
(07-10-2017)
ELC Paths

(1) The ELC Framework consists of multiple paths for new development and maintenance. Paths are an approach to accomplishing the life cycle work. A path specifies how the work will be partitioned into phases, and supports a unique technical or system engineering approach in order to develop a solution.

(2) A path is selected based on the technical approach that the project takes to develop the solution. Each path has its own unique characteristics and sets forth its own requirements of how a project is to progress through the life cycle. Projects work with their ELC Coach to select an appropriate path that provides the best fit for developing the desired solution.

(3) For New Development projects, the ELC supports the following paths:

- Waterfall Path
- Commercial-Off-the-Shelf (COTS) Solution Path
- Managed Services Path
- Iterative Path
- Agile Path
- Common Services Path
- Tool Path
- Mobile Apps Path

(4) For Maintenance projects, the following may be followed:

- Planned Maintenance Path
- Emergency Maintenance

(5) For the most part, the first two phases (the Project Initiation and Domain Architecture phases) are the same for all new development project paths (Waterfall, COTS, Managed Services, and Iterative). These new development projects complete the Project Initiation artifacts establishing the scope of the project and the technical approach they will use. During the Domain Architecture Phase, development projects define the architectural requirements to meet the scope approved in the project charter. One exception to this, is the Agile Path which begins with the Product Planning Phase.

(6) New development projects using the iterative path that discover requirements outside of the scope in their approved charter need to update the charter and get it re-approved. New development projects that follow the Agile Path, use User Stories, Epics, etc. instead of requirements. Agile projects also may use process models, business rules. User Stories are based lined when they are put into production and therefore as long as the User Stories are:

a. not outside the scope
b. increase the cost of the product
c. extend the when the product is put into production nor
d. affect another project they do not need the approval of a Change Control Board (CCB) or some other management authority outside of the Agile project.

(7) For projects where the majority or all of the solution is already in production and maintenance needs to be performed, the "maintenance needs" are the requirements and are clearly defined by a Change Control Board (CCB) or some other management authority.

(8) Once the requirements for the new development projects are defined in the Domain Architecture Phase, the project team needs to determine what is the "best" way to obtain a solution that fulfills the most requirements defined.

2.16.1.4.1
(12-22-2015)
Path Characteristics Summary

(1) The following table summarizes the characteristics of each path. For each path, the table identifies the path, identifies the typical requirements appropriate for the path, specifies the progression of the path, specifies the team structure used with the path, identifies the technical approach used with the path, and identifies the typal project associated with the path.

Path Name	Requirements	Progression	Team Structure	Technical Approach	Project Type
Waterfall	Defined	Sequential	Evolving	Developmental	New
COTS	Defined	Sequential	Evolving	Vendor solution	New
Managed Services	Defined	Sequential	Evolving	Vendor supplied service	New
Iterative	Defined	Repetitive	Fixed	Developmental	New

Path Name	Requirements	Progression	Team Structure	Technical Approach	Project Type
Mobile Apps	Defined	Sequential	Fixed	Developmental (only for mobile apps)	New
Agile	Evolving	Repetitive	Fixed	Developmental	New
Common Services*	Defined	Sequential	Evolving	Developmental	New
SharePoint **	Defined	Sequential	Evolving	Developmental	New
Infrastructure **	Defined	Sequential	Evolving	Developmental	New
Planned Maintenance	Defined	Sequential	Fixed	Developmental	Maintenance

* Limited to functions to be used by other projects
** Waterfall requirements scaled down to reflect reduced risk

2.16.1.4.2
(07-10-2017)
Path Selection

(1) ELC path selection typically occurs during the Project Initiation Phase and should be made based on the technical approach the project decides to use to develop the solution. Depending on which approach the project selects (build, buy or rent) determines which new development path the project will follow for that release. If it is determined that the "best" approach is to develop a new solution, then the project will follow either the Waterfall Path, Iterative, or Agile. If the "best" approach is to buy a solution and have the IRS maintain it, then the project will follow the COTS Path. If the "best" approach is to buy a service (rent a solution) and have the vendor maintain it, then the project will follow the Managed Service Path. Projects should follow one of the new development project paths (Waterfall, COTS, Managed Services, Iterative, and Agile) if the solution is new (not already in production). If most of the solution is already in production, then the Planned Maintenance path should be used.

(2) Project Managers should consult with an ELC Coach and make use of specific guidance provided on the ELC website during the path selection process. Ultimately, as the process owner, the ELC Office will make the final decision on the appropriate path for each project.

2.16.1.4.2.1
(07-10-2017)
Path Selection Considerations

(1) There are several factors that influence selection of an ELC path. These include:

- Whether system is in production or requires new development
- Technical approach the project is going to use (build it, buy it, rent it)
- Whether project is in "Discovery mode"
- Availability of users and Process Owners to participate on the project
- Whether the end solution is a mobile app
- Whether the solution is being developed using SharePoint

(2) If the solution consists of more than one release, a separate ELC path may be selected for each release to ensure each piece of the solution is developed using the most appropriate approach. Each release must have its own Tailoring Plan.

(3) The following subsections provide descriptions and explanations of the most used ELC Paths. Additional information (including graphical representations of these paths) is available on the *ELC website*.

2.16.1.4.2.2 (07-10-2017)
Path Selection Guidelines

(1) The ELC Office has developed a Path Selection Tool that helps projects in determining their ELC path and also provides a link to generate a Tailoring Plan pre-tailored for the path. The ELC Path Selection Tool consists of various questions which require projects to answer truthfully and to the best of their knowledge. Incorrect answers may select the wrong path and/or generate an inappropriate Tailoring Plan, which will cause problems and delays for the project later in the process. The ELC path selection tool can be found on the ELC website at *http://elc.nc.no.irs.gov/*.

(2) Alternatively, selection of a path for consideration may be accomplished by reviewing some of the common scenarios for which the paths are useful, as outlined in the following table. This table itemizes the paths and associated scenarios used as the basis for selecting the path; for each path, the table identifies the path and states the associated scenarios.

Path	Usage Scenarios
Waterfall	• Develop custom-built solution based on well-defined requirements • Utilize internal development resources to work on unique or proprietary systems
COTS	• Capitalize on availability of a commercially provided product that satisfies needed functionality • Conserve internal development resources to work on unique or proprietary systems
Managed Services	• Capitalize on the benefits of services provided by an outside vendor (third party) • Conserve internal development resources to work on unique or proprietary services
Iterative	• Develop a system with volatile requirements and a high-level of user interaction • Utilize the “trial and error” method to identify customer’s needs in a solution

Path	Usage Scenarios
Mobile Apps	• Develop a solution that will run on either iOS or Android operating system • Utilize pixel perfect image of the mobile apps screens to speed up development
Agile	Develop a system using user stiires, epics, etc. instead of requirements and a high-level of user interaction • Project is in the discovery mode • Utilize the a repetitive "trial and error" method to identify the solution
Common Services	• Used for software functions that can be reused in multiple IRS applications. • Administrative access cannot be available outside IRS protected environment • Only allowed for services that will be added to the EA Service Registry
Planned Maintenance	• Implement changes to a solution that is in production and can be planned in advance • Releases are planned at an optimal time based on minimal disruption to the operations of the system
Share Point	• Used for projects that meet the criteria defined in the SharePoint Tool Guide.

(3) Project Managers should consult with an ELC Coach and make use of specific guidance provided on the ELC website during the path selection process. Ultimately, as the process owner, the ELC Office will make the final decision on the appropriate path for each project.

2.16.1.4.3
(12-22-2015)
New Development Paths

(1) The paths described below are appropriate for projects which are developing new solutions.

(2) Document Considerations: At each phase of the solution, documentation is required by the process owners to describe the project's solution to the various life cycle processes. Formal approval from Process Owners is recorded in the documentation or an e-mail.

(3) Management & Governance Considerations: Formal management and governance considerations are taken into account in all phases of all paths. Appropriate level governance board approval must be obtained before a solution can be put into production regardless of the path.

2.16.1.4.3.1
(05-21-2014)
Waterfall Path

(1) General Description - The Waterfall path has defined requirements, sequential progression through the phases, evolving teams and uses a developmental technical approach for its solution. Waterfall is the only path that includes the full complement of phases, milestones and reviews. It provides the model from which all the other paths were developed.

(2) Characteristics - The following are characteristics of a Waterfall development approach:

- Defined Requirements - A comprehensive and detailed set of business system requirements is developed and approved in the Domain Architecture phase. These include functional, operational, programmatic, and other types of requirements. Although these requirements are not meant to be static and may be refined further in later phases, they should be relatively stable and form a solid foundation for designing/developing the solution.
- Sequential Progression - A Waterfall approach evolves through a series of sequential phases. Movement through the phases is authorized through an approved governance board.
- Evolving Teams - As the project life cycle progresses, the nature of the project team evolves to match the nature of activities performed. Early in the life cycle, architects have a prominent role. As the life cycle progresses into design, various types of analyst and designer roles are more involved. After physical design, programmers or developers take on the primary role and are followed by the testers.
- Technical Approach - the Waterfall path is characterized by the development of a new solution.

(3) Diagram - The following diagram exhibits six (6) columns representing ELC project phases: Project Initiation (MS 1), Domain Architecture (MS 2), Preliminary Design (MS 3), Detailed Design (MS 4a), System Development (MS 4b), and System Deployment (MS 5). Milestones terminate each phase. Within several phases, a Waterfall project must conduct ELC reviews, in the following order:

- Project Initiation Phase: Milestone Readiness Review (MRR) and Milestone Exit Review (MER)
- Domain Architecture Phase: Customer Technical Review (CTR), Life Cycle Status Review (LCSR), MRR, and MER
- Preliminary Design Phase: CTR, LCSR, MRR, and MER
- Detailed Design Phase: CTR, LCSR, MRR, and MER
- System Development Phase: CTR, LCSR, MRR, and MER
- System Deployment Phase: MRR and MER

The diagram depicts the following baselines: Functional Baseline (occurs within the Domain Architecture Phase), Allocated Baseline Logical Design (occurs within the Preliminary Design Phase), Allocated Baseline Physical Design (occurs within the Detailed Design Phase), and Product Baseline (occurs within the System Development Phase). The following figure depicts the diagram.

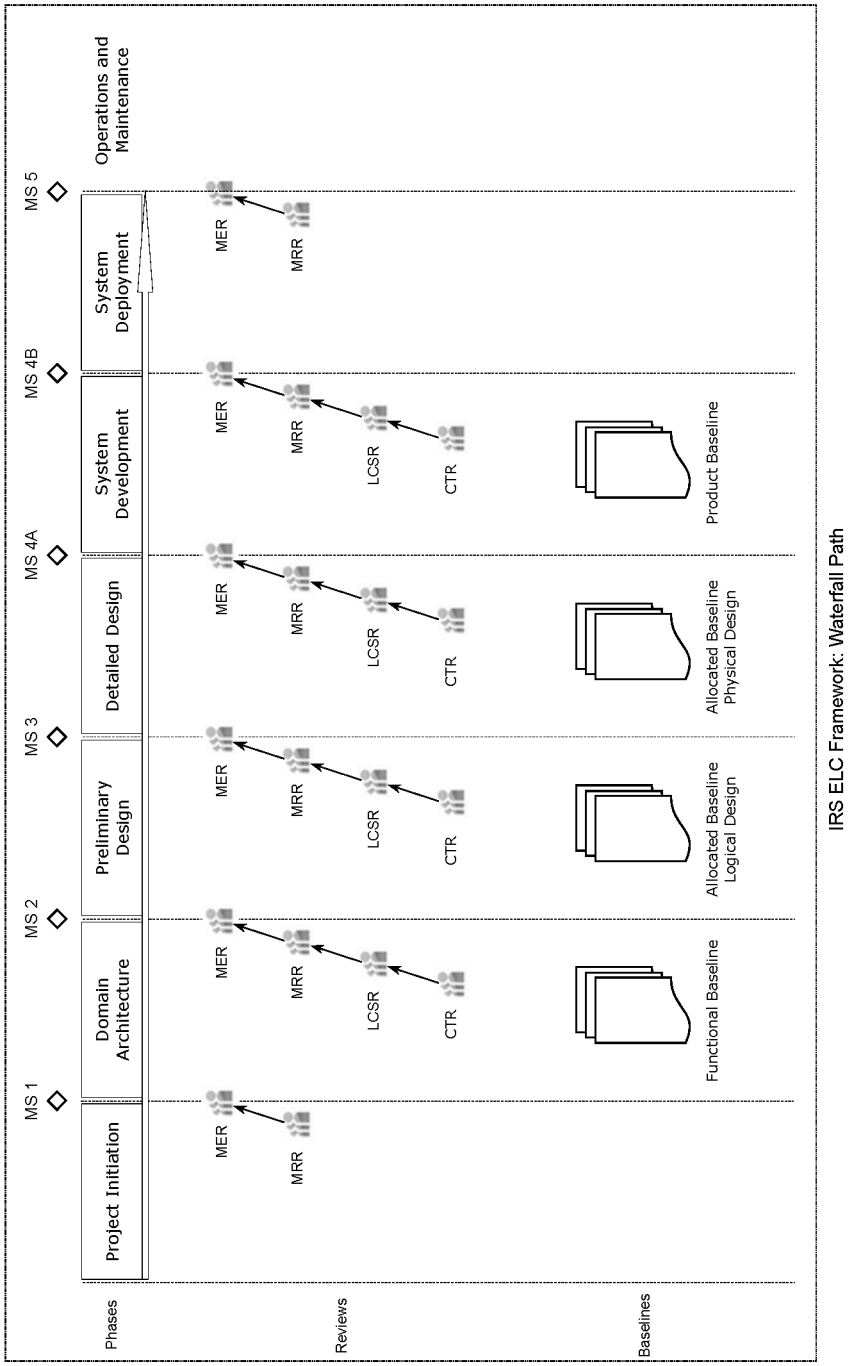


Figure 2.16.1-2 Waterfall Path

2.16.1.4.3.2
(07-10-2017)
Commercial-Off-the-Shelf (COTS) Path

(1) General Description - The COTS path has defined requirements, sequential progression through the phases, evolving teams and uses a vendor solution for its technical approach. The COTS path is used when pre-packaged, vendor-supplied software will be used with little or no modification to provide all or part of the solution. Pre-existing solutions produced by the government are termed Government-Off-the-Shelf (GOTS). The COTS solution path is used for both types of off-the-shelf solutions. The COTS path normally combines Preliminary Design Phase and the Detailed Design Phase into the Design Phase. However, it can be modified through tailoring.

(2) Characteristics - The following are characteristics of a COTS development approach:

- Defined Requirements – A comprehensive and detailed set of business system requirements is developed and approved in the Domain Architecture phase. These include functional, operational, programmatic, and other types of requirements. Although these requirements are not meant to be static and may be refined further in later phases, they should be relatively stable and form a solid foundation for designing/developing or procuring the solution.
- Sequential Progression – A COTS approach evolves through a series of sequential phases. Since it is a vendor built solution, there is no need for two different design phases. Therefore, the two design phases were combined.
- Evolving Teams – As the project life cycle progresses, the nature of the project team evolves to match the nature of activities performed. Early in the life cycle, architects have a prominent role. As the life cycle progresses into adaptation of the vendor's solution to the IRS environment, various types of analyst and designer roles are more involved. After physical design, programmers or developers take on the primary role and are followed by the testers.
- Technical Approach – the COTS path involves acquisition of a vendor solution. This includes activities to identify and pre-screen software packages or infrastructure components, conduct a formal Request for Proposal (RFP) or Request for Solution (RFS) process, and document the selection, which results in the completion of contracting and legal requirements for obtaining the selected solution.

(3) Diagram - The following diagram exhibits five (5) columns representing ELC project phases: Project Initiation (MS 1), Domain Architecture (MS 2), Preliminary and Detailed Design (MS 3/4a), System Development (MS 4b), and System Deployment (MS 5). Milestones terminate each phase. Within several phases, a COTS project must conduct ELC reviews, in the following order:

- Project Initiation Phase: MRR and MER
- Domain Architecture Phase: CTR, LCSR, MRR, MER
- Preliminary and Detailed Design Phase: CTR, LCSR, MRR, and MER
- System Development Phase: CTR, LCSR, MRR, and MER
- System Deployment Phase: MRR and MER

The diagram depicts the following baselines: Functional Baseline (occurs within the Domain Architecture Phase), Allocated Baseline Logical and Physical Design (occurs within the Preliminary and Detailed Design Phase), and Product Baseline (occurs within the System Development Phase). The following figure depicts the diagram.

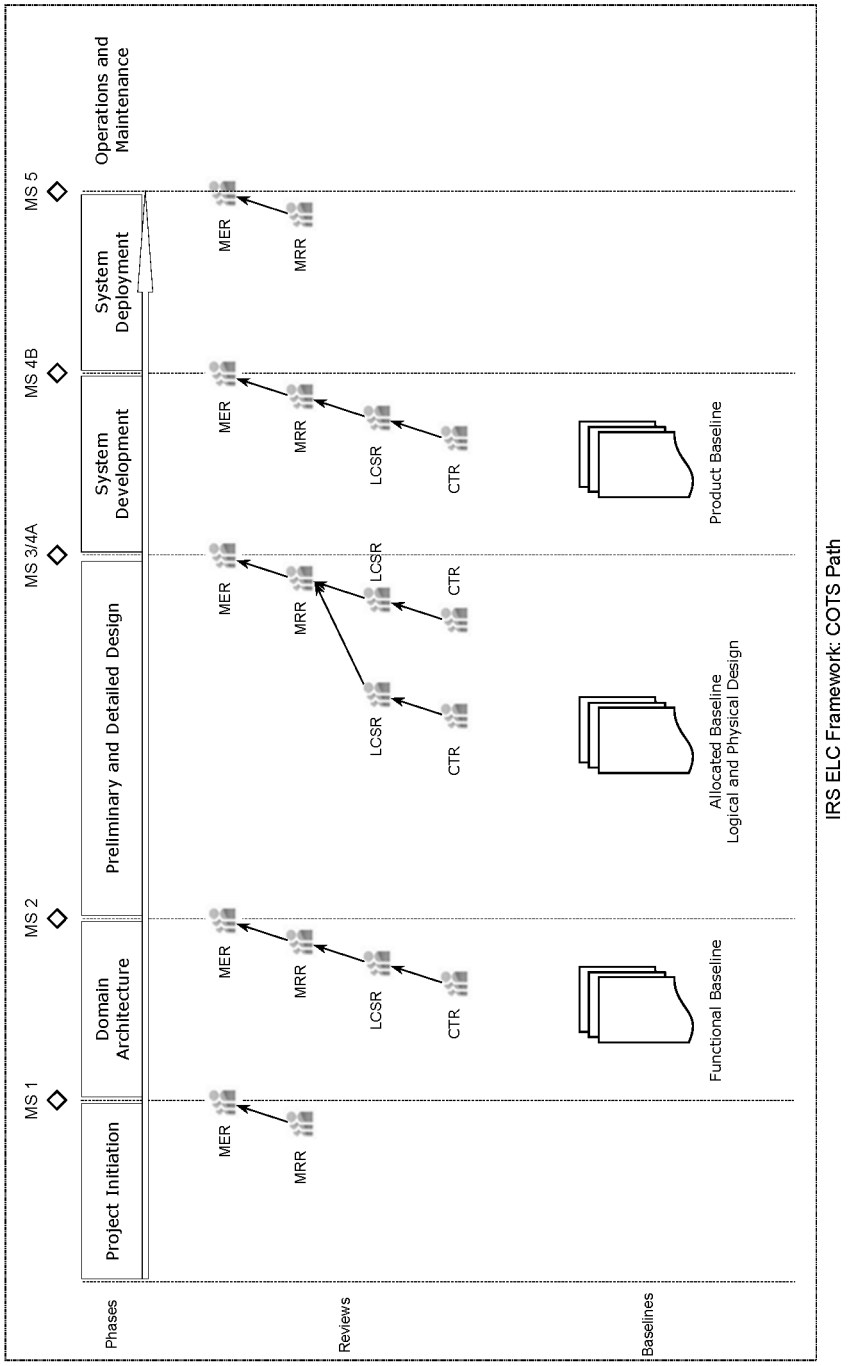


Figure 2.16.1-3 Commercial-Off-the-Shelf Path

2.16.1.4.3.3
(07-10-2017)
Managed Services Path

(1) General Description - The Managed Services path has defined requirements, sequential progression through the phases, evolving teams and uses a vendor service for its technical approach. The Managed Services Path is designed to capitalize on the benefits of services provided by an outside vendor (third party). This could include software package(s), integrated software packages, shared-services and/or infrastructure components (assets) e.g., servers, web hosting, network centric, workstations, support services and/or web hosting.

The first two phases of the Managed Services Path are identical to the phases of the Waterfall and COTS path. Subsequent to the Domain Architecture phase, activities in the Managed Services Path will differ from the other ELC paths (Waterfall and COTS). The differences occur because the managed service is: proprietary and/or not maintained by the IRS. The standard detailed reviews required in the development of new solutions or the purchase of a service is not required when the solution is being provided and maintained by a service provider.

(2) Characteristics - The following are characteristics of a Managed Services approach:

- Defined Requirements - The Domain Architecture phase identifies the requirements to provide the desired service functionality. These may include software package(s), integrated software packages, shared services and/or infrastructure (operational) components (assets) e.g., servers, web hosting, network centric, workstations, and/or web hosting.
- Sequential Progression - A Managed Service approach evolves through a series of sequential phases. The sequential phases are service selection and service deployment instead of design and system development. Service selection involves an acquisition process. This includes activities to identify and pre-screen services or infrastructure (operational) components, conduct a formal Request for Proposal (RFP) or Request for Service Solution (RFSS) process, document selection, and completion of contracting and legal requirements for obtaining the selected service solution. After acquisition, the service solution is installed and/or configured. Service provisioning involves choosing desired settings for each of the service options and possible installation of equipment required to access the service. Configurations may be needed for infrastructure (operational) components (assets). Acceptance of the service is achieved when the vendor's Service reaches the agreed upon levels for a period of time defined in the acquisition process.
- Evolving teams - As the project life cycle progresses, the nature of the project team evolves to match the nature of activities performed. Early in the life cycle, architects have a prominent role. As the life cycle progresses into adaptation of the vendor's service, various types of analyst and designer roles are more involved. After physical design, programmers or developers take on the primary role and are followed by the testers.
- Technical Approach - The Managed Services path involves an acquisition of services.

(3) Diagram - The following diagram exhibits four (4) columns representing ELC project phases: Project Initiation (MS 1), Domain Architecture (MS 2), Service Selection (MS 3/4a), and Service Deployment (MS 4b). Milestones terminate each phase. Within several phases, a Managed Services project must conduct ELC reviews, in the following order:

- Project Initiation Phase: MRR and MER
- Domain Architecture Phase: CTR, LCSR, MRR, MER
- Service Selection Phase: CTR, LCSR, MRR, and MER
- Service Deployment Phase: CTR, LCSR, MRR, and MER

The diagram depicts the following baselines: Functional Baseline (occurs within the Domain Architecture Phase) and Product Baseline (occurs within the Service Deployment Phase). The following figure depicts the diagram.

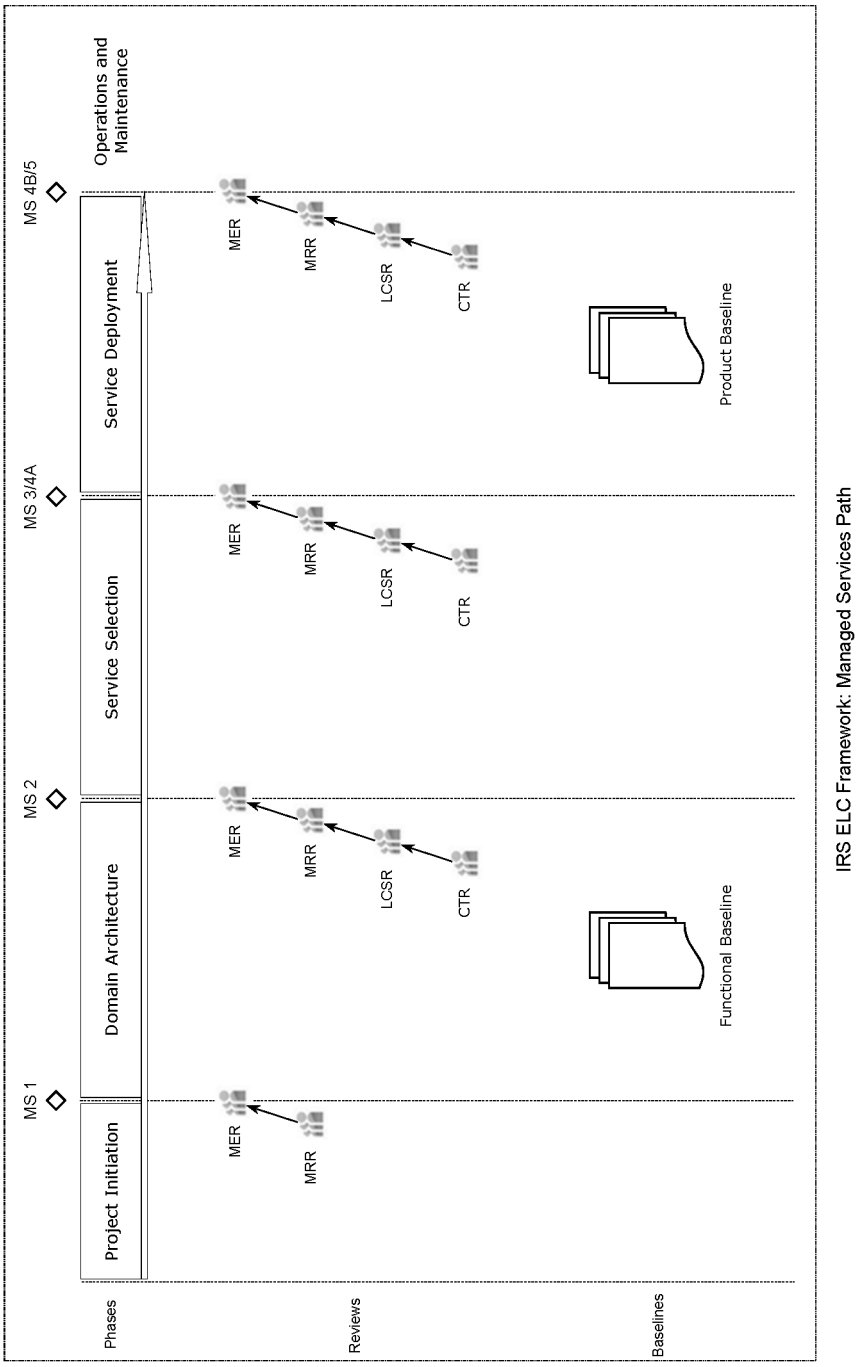


Figure 2.16.1-4 Managed Services Path

2.16.1.4.3.4
(07-10-2017)
Iterative Path

(1) General Description - The Iterative path has conceptual requirements and uses repetitive progression through the phases to evolve the requirements. Additionally, Iterative establishes fixed core teams and uses a developmental technical approach for its solution. The Iterative path streamlines a number of development phases. The Project Initiation and Domain Architecture phases are combined into one Project Planning and Initiation phase. The Preliminary Design, Detailed Design, and System Development phases are combined into one Design, Coding, Testing, and Integration phase. Corresponding to the changes in development phases, an Iterative project will only have Project Initiation, Design and System Development, and System Deployment phases.

(2) Characteristics - The following are characteristics of an Iterative development approach:

- Evolving Requirements -The Iterative Path is an adaptive development approach in which projects start with a conceptual vision of the solution and, through a series of repeated cycles (sprints) of requirements discovery, development and test, ends with deployment. The Iterative Path is well suited to projects and environments in the “Discovery Mode” which only have a visionary concept of requirements.
- Repetitive Progression - The Iterative Path enables development of a system through repeated cycles (sprints) and in small increments. This allows developers to take advantage of learning from the development and testing of earlier portions or versions of the system. The repeated cycles (sprints) build upon the evolving versions until a solution or a portion of the solution is ready for deployment. Rigorous tracking of performance metrics – Due to the flexible nature of the Iterative Path, it is important to have rigorous tracking of performance metrics, to ensure that the project is on track to be delivered on time and with good quality. Iterative metrics may include velocity (i.e., functionality backlog per iteration), defects per Iteration (i.e., defects found during testing done within the iteration), and burn down rate (i.e., functionality backlog completed vs. remaining in iteration). Traditional metrics such as person-days or recorded defects should also be tracked.
- Fixed Teams – Projects using the Iterative path will form integrated core teams, consisting of business analysts, solution engineers, developers, testers, a dedicated Process Owner representative and any other relevant functional or domain experts. Members of an integrated core team would join the team from the very start of the project and contribute throughout the entire project. Close involvement of business stakeholders – Iterative projects rely on the involvement of business stakeholders to continuously provide feedback, so that requirements can be clarified and the design can be improved continuously. Typically, business representatives and members of key process owner groups would be embedded (either full or part-time) in the team for the duration of the project.
- Technical Approach - the Iterative path involves development of a new solution. This includes high-level requirements definition and repetitive iterations of development, testing, and a solution or a portion of the solution is ready for deployment.

(3) Diagram - The following diagram exhibits three (3) columns representing ELC project phases: Project Initiation (MS 2), Design and System Development (MS 4b), and System Deployment (MS 5). Milestones terminate each phase. Additionally, the circle arrow depicted within the Design and System Development

Phase suggests the cyclical nature of work performed in that phase. Within several phases, an Iterative project must conduct ELC reviews, in the following order:

- Project Initiation Phase: MRR and MER
- Design and System Development Phase: End of Sprint Checkpoint Review (EoSCR), MRR, and MER
- System Deployment Phase: MRR and MER

The diagram depicts the following baselines: Functional Baseline, Allocated Baseline Logical Design, Allocated Baseline Physical Design, and Product Baseline; these baselines occur in the Design and System Development Phase. The following figure depicts the diagram.

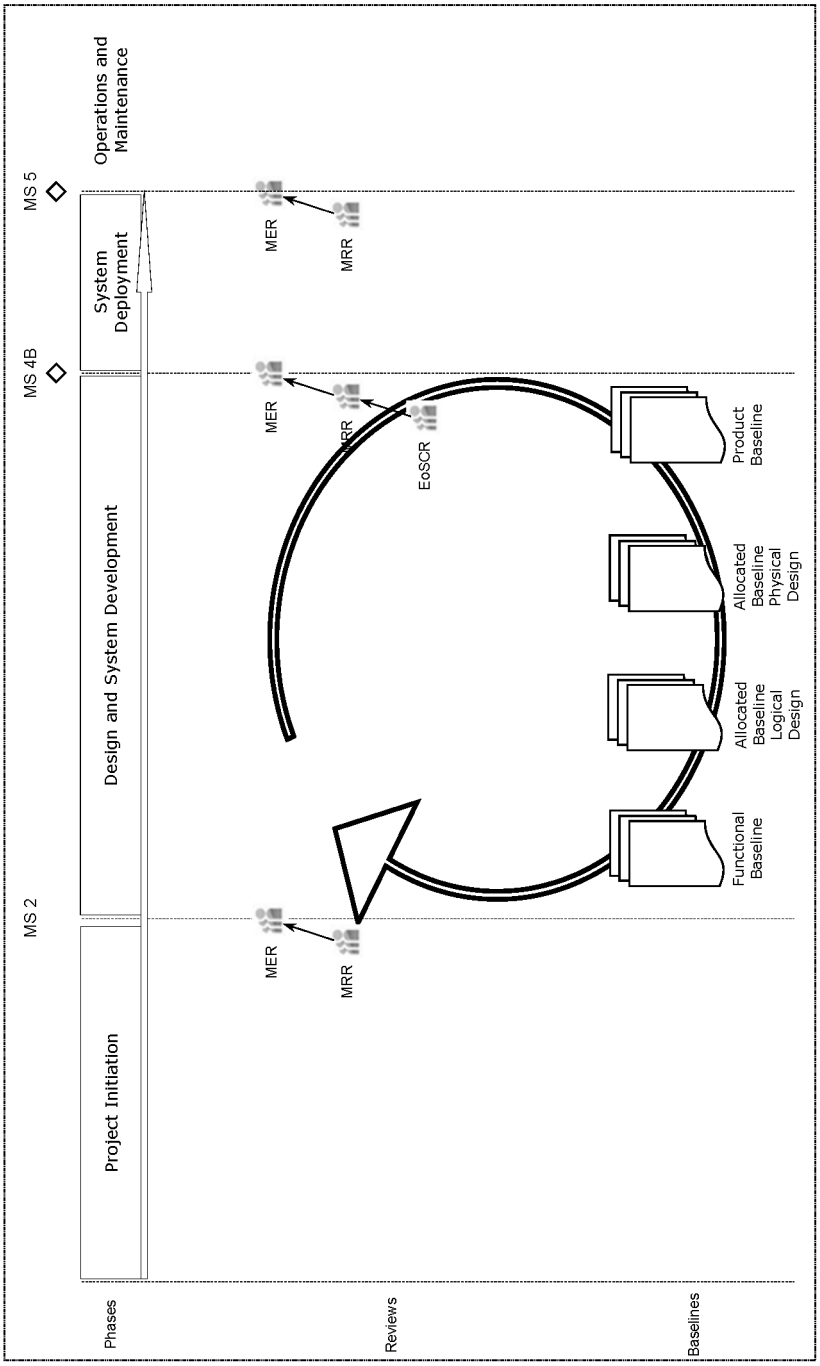


Figure 2.16.1-5 Iterative Path

2.16.1.4.3.5
(07-10-2017)
Mobile Apps Path

(1) General Description - The Mobile Apps path has a narrowly defined project scope, functional equivalence for requirements, sequential progression through the phases, evolving teams and uses a new developmental technical approach for its solution. The Mobile Apps path can only be used by projects initiated in the Online Services (OLS) Division, who is chartered to deliver software products (applications) that execute on an iPhone (iOS) or Android operating system and do “screen scraping” from systems that are already in production. OLS is responsible for developing a pixel perfect composite description which serves as a functional equivalence for both the requirements and the preliminary design artifacts. The Mobile Apps path uses a highly consolidated and streamlined approach that starts with combined Project Initiation and Domain Architectural phases and has no formal milestone exit for that phase. The path continues with repeated cycles of detail design, development, and testing culminating with a formal milestone exit at the end of the System Development Phase. The Mobile Apps path ends with a Deployment Phase.

(2) Characteristics - The following are characteristics of a Mobile Apps approach:

- Defined Requirements - Mobile Apps projects use a pixel perfect image of the mobile application screens to build the solution. The pixel perfect image serves as a functional equivalence for both the requirements and the preliminary design artifacts. This composite screen description is developed by OLS and approved before being turned over to the developers in the development phase. Mobile Apps is the only path that is allowed to use this approach.
- Sequential Progression - The Mobile Apps path consists of two phases. The first phase is a combination of the Project Initiation and Domain Architecture phases and is referred to as the Project Planning and Initiation phase. This is followed by a LCSR. The second phase is a combination of the Preliminary Design, Detailed Design, and System Development phases and is called the Design, Coding, Testing, and Integration phase. A Mobile Apps project only has a MS4b milestone exit.
- Evolving Teams - As the project life cycle progresses, the nature of the project team evolves to match the nature of activities performed. Early in the life cycle, OLS has the prominent role in designing the pixel perfect composite screen. As the life cycle progresses into development, programmers and/or developers take on the primary role and are followed by the testers.
- Technical Approach - The Mobile Apps path is characterized by the development of a new solution.

(3) Diagram - The following diagram exhibits two (2) columns representing ELC project phases: Initiation and Architecture Phase (ends with an LCSR) and Development Phase (MS 4b). Milestones terminate each phase. Additionally, the circle arrow depicted within the Development Phase suggests the cyclical nature of work performed in that phase. Within several phases, a Mobile Apps project must conduct ELC reviews, in the following order:

- Initiation and Architecture Phase: LCSR
- Development Phase: EoSCR, MRR, MER

The diagram depicts the following baselines: Functional Baseline, Allocated Baseline Logical Design, Allocated Baseline Physical Design, and Product Baseline; these baselines occur within the Development Phase. The following figure depicts the diagram.

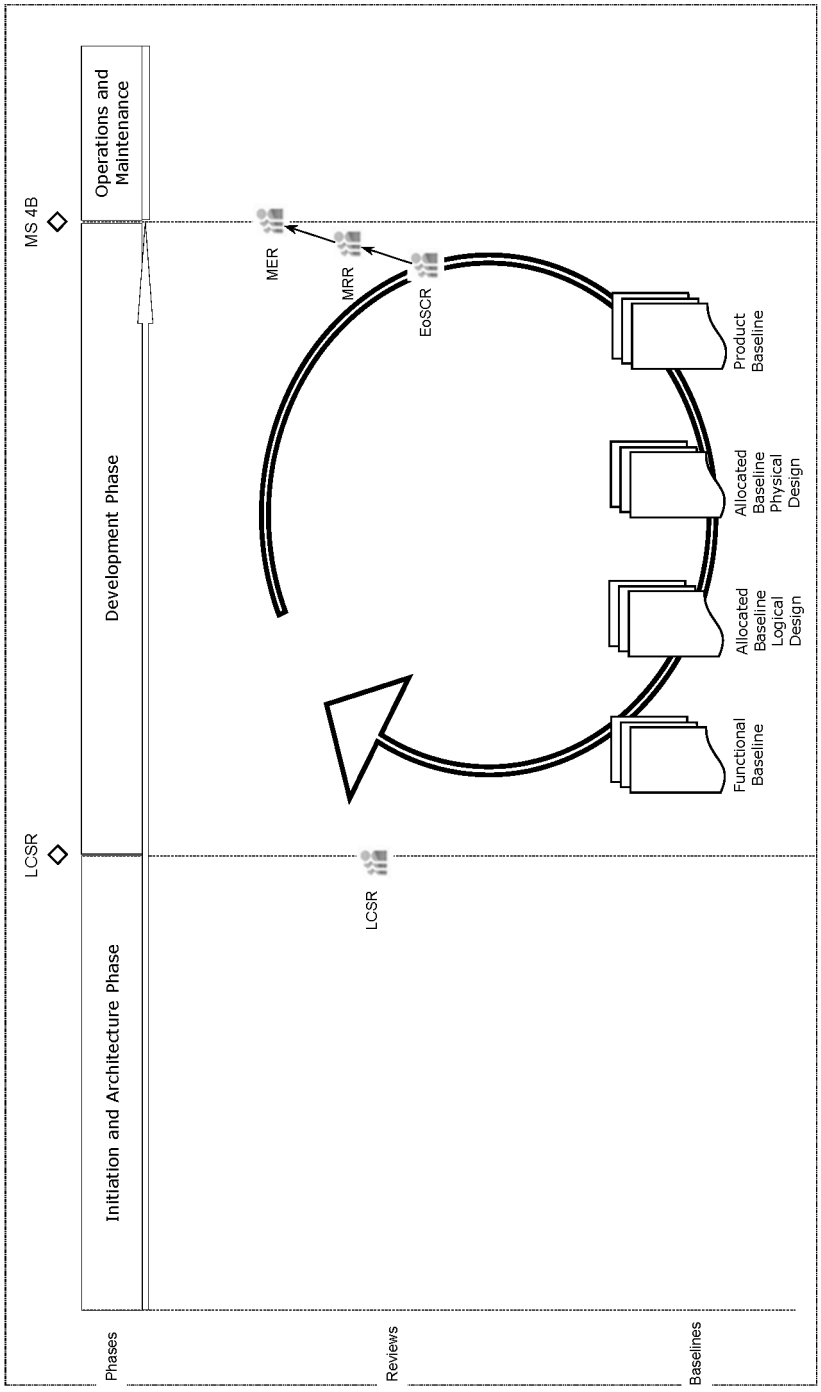


Figure 2.16.1-6 Mobile Apps Path

2.16.1.4.3.6
(07-10-2017)
Agile Path

(1) General Description - The Agile path has initially conceptual vision and uses an incremental developmental approach for its solution. Additionally, Agile establishes fixed core teams earlier than any other path and requires them to collaborate from the beginning to the end. The Agile path streamlines a number of the Waterfall phases and renames the milestones. The Project Initiation (MS1) and Domain Architecture (MS2) phases are combined into one Product Planning phase. The Preliminary Design, Detailed Design, and System Development phases are combined into a single, Design and System Development phase. Corresponding to the changes in development phases, an agile project will only have three phases: the Product Planning, the Design and System Development, and the System Deployment phase. The Milestone at the end of the Product Planning Phase is called the Product Planning Review (PPR). The Milestone at the end of the Design and System Development Phase is called the Integration Readiness Review (IRR).

(2) Characteristics - The following are characteristics of the agile development approach:

- Evolving Requirements -The Agile Path is an adaptive development approach in which projects start with a conceptual vision of the solution and, through a series of repeated cycles (sprints) of discovery, development and test, ends with deployment.
- Repetitive Progression - The Agile Path enables development of a system through repeated cycles (sprints) and in small increments. This allows developers to take advantage of learning from the development and testing of earlier portions or versions of the system. The repeated cycles (sprints) build upon the evolving versions until a solution or a portion of the solution is ready for deployment.
- Due to the flexible nature of the Agile Path, it is important to have rigorous tracking of performance metrics to ensure that the project is on track to be delivered on time and with good quality. Agile metrics may include velocity (i.e., functionality backlog per sprint), defects per Sprint (i.e., defects found during testing done within the iteration), and burn down rate (i.e., functionality backlog completed vs. remaining in sprint). Traditional metrics such as person-days or recorded defects can also be tracked.
- Fixed, Integrated, and Collaborative Teams – Projects using the agile path will form integrated core teams, consisting of business analysts, solution engineers, developers, testers, a dedicated and empowered client representative (Product Owner) and any other relevant functional or domain experts. Members of an integrated core
- Technical Approach - the Agile path involves development of a new solution. This includes high-level feature definitions and repetitive cycles of development, testing, and a solution or a portion of the solution is ready for deployment.

(3) Diagram - The following diagram exhibits three (3) columns representing ELC project phases: Product Planning (MS 2), Design and System Development (MS 4b), and System Deployment (MS 5). Milestones terminate each phase. Additionally, the circle arrow depicted within the Design and System Development Phase suggests the cyclical nature of work performed in that phase. Within several phases, an Agile project must conduct ELC reviews, in the following order:

- Product Planning Phase: MRR and MER
- Design and System Development Phase: End of Sprint Checkpoint Review (EoSCR), MRR, and MER
- System Deployment Phase: MRR and MER

The diagram depicts the following baselines: Functional Baseline, Allocated Baseline Logical Design, Allocated Baseline Physical Design, and Product Baseline; these baselines occur in the Design and System Development Phase. The following figure depicts the diagram.

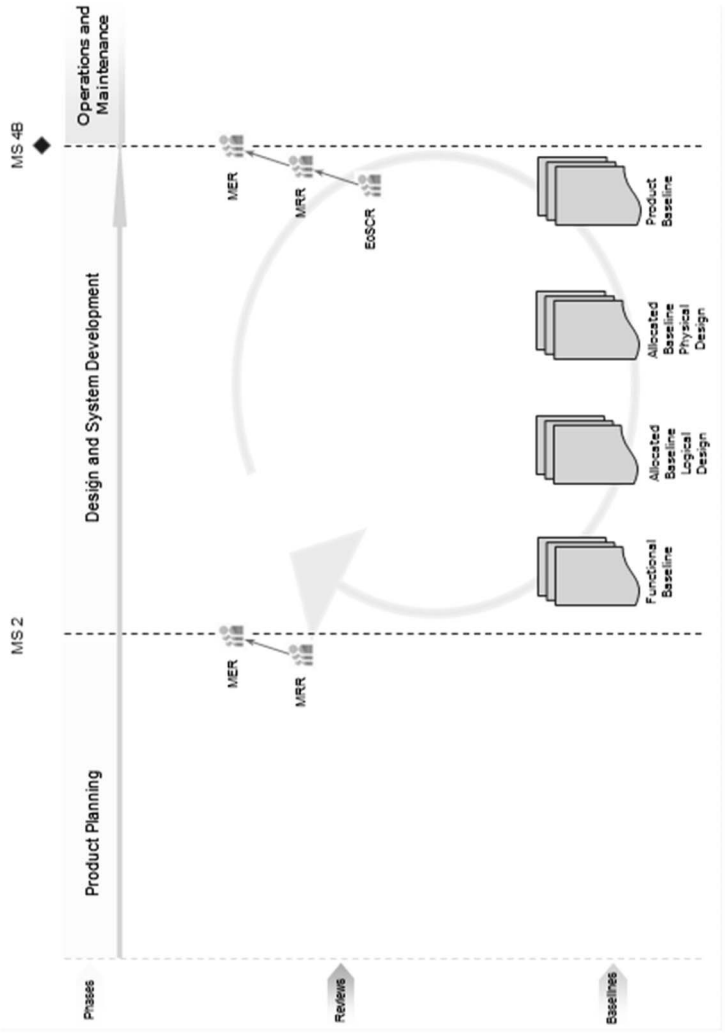


Figure 2.16.1-7 Agile Path

2.16.1.4.3.7
(07-10-2017)
Common Services Path

(1) General Description - The Common services path is used for software functions that can be reused in multiple IRS applications. The functions cannot have administrative access outside the IRS protected environment. Projects following the Common Services Path are limited to services that will be added to the EA Service Registry.

(2) Characteristics - The following are characteristics of the agile development approach:

- Well Defined Requirements - A comprehensive and detailed set of business system requirements is developed and approved in the Domain Architecture phase. These nclude functional, operational, programmatic, and other types of requirements. Although these requirements are not meant to be static and may be refined further in later phases, they should be relatively stable and form a solid foundation for designing/developing the solution.
- Sequential Progression - A Common Services approach evolves through a series of sequential phases. Movement through the phases is authorized through an approved governance board.
- Evolving Teams - As the project life cycle progresses, the nature of the project team evolves to match the nature of activities performed. Early in the life cycle, architects have a prominent role. As the life cycle progresses into design, various types of analyst and designer roles are more involved. After physical design, programmers or developers take on the primary role and are followed by the testers.
- The Common Services Path solution is never directly put into production. It is only put into production as part of another projects release.
- Technical Approach - the Common Services path is characterized by the development of a new solution

(3) Diagram - The following diagram exhibits six (6) columns representing ELC project phases: Project Initiation (MS 1), Domain Architecture (MS 2), Preliminary Design (MS 3), Detailed Design (MS 4a), System Development (MS 4b). Note: there is no System Deployment Phase in the Common Services Path Within several phases, a Common Services project must conduct ELC reviews, in the following order:

1. Initiation and Architecture Phase: : Customer Technical Review (CTR), Life Cycle Status Review (LCSR), Milestone Readiness Review (MRR) and Milestone Exit Review (MER)
2. Design Phase: CTR, LCSR, MRR, and MER

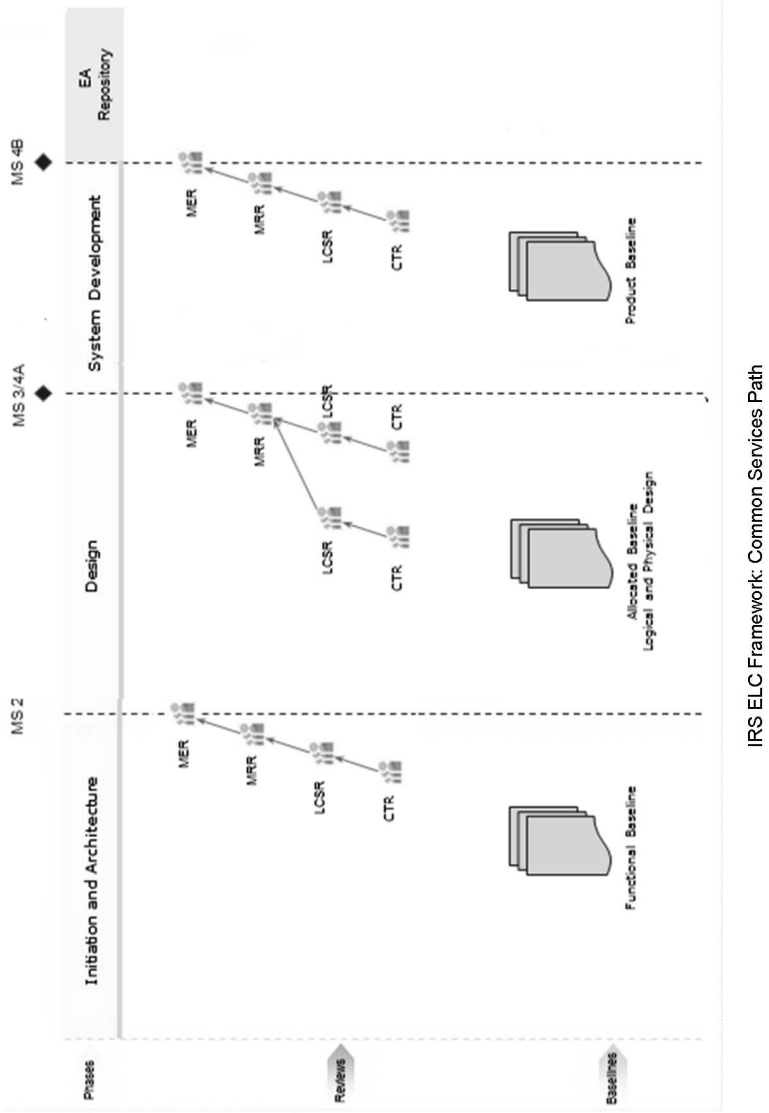


Figure 2.16.1-8 Common Services Path

2.16.1.4.3.8
(07-10-2017)
SharePoint Path

(1) General Description - The SharePoint path is used for projects that are developed using SharePoint and that meet the criteria defined in the SharePoint Tool Guide. The procedures of the Waterfall Path have been scaled down to match the reduced risk of projects that develop using SharePoint.

(2) Characteristics - The following are characteristics of the SharePoint development approach:

- Well Defined Requirements - A comprehensive and detailed set of business system requirements is developed and approved in the Domain Architecture phase. These include functional, operational, programmatic, and other types of requirements. Although these requirements are not meant to be static and may be refined further in

later phases, they should be relatively stable and form a solid foundation for designing/developing the solution.

- Sequential Progression – The SharePoint Path approach evolves through a series of sequential phases. Movement through the phases is authorized through an approved governance board.
- Evolving Teams - As the project life cycle progresses, the nature of the project team evolves to match the nature of activities performed. Early in the life cycle, architects have a prominent role. As the life cycle progresses into design, various types of analyst and designer roles are more involved. After physical design, programmers or developers take on the primary role and are followed by the testers.
- Technical Approach - the SharePoint path is characterized by the development of a new solution.

(3) Diagram - The following diagram exhibits two (2) columns representing ELC project phases: Initiation and Architecture (MS1/ 2), Design and Development (MS 3/4a/4b). Note: there is no System Deployment Phase(MS 5) in the SharePoint Path.
Within several phases, a SharePoint Tool project must conduct ELC reviews, in the following order:

- Initiation and Architecture Phase: modified Customer Technical Review (CTR), Milestone Readiness Review (MRR) and Milestone Exit Review (MER)
- Design and Development Phase: MRR, and MER

The diagram depicts the following baselines: Functional Baseline (occurs within the Initiation and Architecture Phase), Allocated Baseline Design (occurs within the Design and Development Phase), Allocated Baseline and Product Baseline (occurs within the Design and Development Phase). The following figure depicts the diagram.

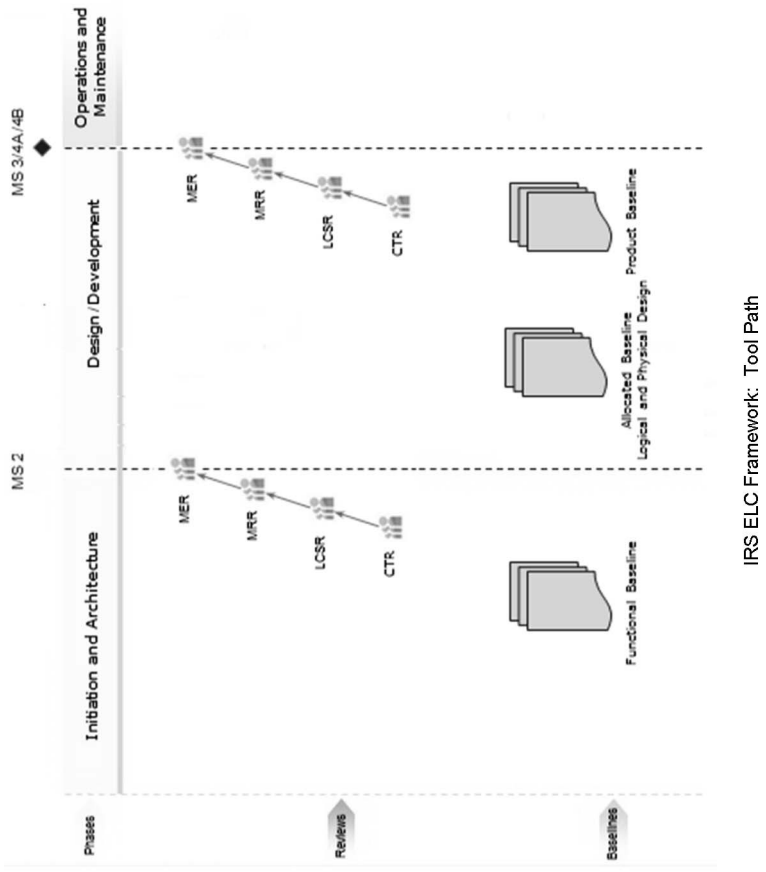


Figure 2.16.1-9 Tool Path

2.16.1.4.4
(12-22-2015)
Maintenance Paths

(1) The paths described below are used for Maintenance Projects, which involve making changes to an existing operational solution or release of a system. Planned Maintenance projects are projects that have already deployed or are in O&M. Planned Maintenance projects enter back into O&M after MS 4B. Emergency Maintenance is for a system maintenance of an emergency nature.

2.16.1.4.4.1
(07-10-2017)
Planned Maintenance Path

(1) General Description - The Planned Maintenance path has defined requirements, sequential progression through the phases, evolving teams and uses a developmental technical approach for correcting solutions that are already in production. The Planned Maintenance Path is a path for planned system maintenance of a non-emergency nature. This path manages change in an organized manner, minimizes the disruption caused by frequent system changes, and increases the efficiency and effectiveness of the system change process.

(2) Characteristics - The following are characteristics of the Planned Maintenance approach:

- Defined Requirements - When maintenance needs to be performed on a system already in production, the Change Control Board (CCB) defines the maintenance needs as requirements and are defined by a

CCB or some other management authority. These may include functional, operational, programmatic, and other types of requirements. Planned Maintenance typically addresses numerous system requirements and simultaneously implements all of the changes as a new version (or release) of the system. This approach has advantages including improved management of the maintenance function, reduced amount of retraining, and potential improvement of coding efficiency and effectiveness. Under Planned Maintenance, changes may include combinations of different types of maintenance, including: Corrective maintenance (e.g., fix errors, bugs, defects; replace equipment); Adaptive maintenance (e.g., conform to changed environment - for example, an operating system upgrade or change of database management system); Preventive maintenance (prevent a problem before it occurs); Perfective maintenance (e.g., upgrades or enhancements to system functionality and/or performance); and Changes under Planned Maintenance include permanent repairs to replace temporary patches implemented by Emergency Maintenance.

- Sequential Progression - A Planned Maintenance approach begins in either the Design or Development phases depending on the nature of the changes. During the planning process, the appropriate entry point is determined based upon the earliest baseline that will be affected by the maintenance. For example, if the logical design portion of the Allocated Baseline will be affected, the Planned Maintenance project should begin in the Preliminary Design Phase. If the physical design portion of the Allocated Baseline will be affected, the Planned Maintenance project should begin in the Detailed Design Phase. If the Product Baseline will be altered by making changes directly to code but neither the logical or physical design are affected, the Planned Maintenance project may begin in the System Development Phase. Once the starting phase is determined, Planned Maintenance projects evolve in a sequential manner. Movement through the phases is authorized through an approved governance board. The Planned Maintenance path does not have a System Deployment (MS 5) phase.
- Fixed Teams - Projects using the Planned Maintenance path will form integrated teams, consisting of solution engineers, developers, testers, and any other relevant functional or domain experts.

(3) Diagram - The following diagram exhibits six (6) columns representing ELC project phases: Project Initiation (MS 1), Domain Architecture (MS 2), Preliminary Design (MS 3), Detailed Design (MS 4a), System Development (MS 4b), and System Deployment (MS 5). Milestones terminate each phase. Within the System Development Phase, a Planned Maintenance project must conduct ELC reviews in the following order: MRR and MER. The diagram depicts the following baselines: Functional Baseline (occurs within the Domain Architecture Phase), Allocated Baseline Logical Design (occurs within the Preliminary Design Phase), Allocated Baseline Physical Design (occurs within the Detailed Design Phase), and Product Baseline (occurs within the System Development Phase). The following figure depicts the diagram.

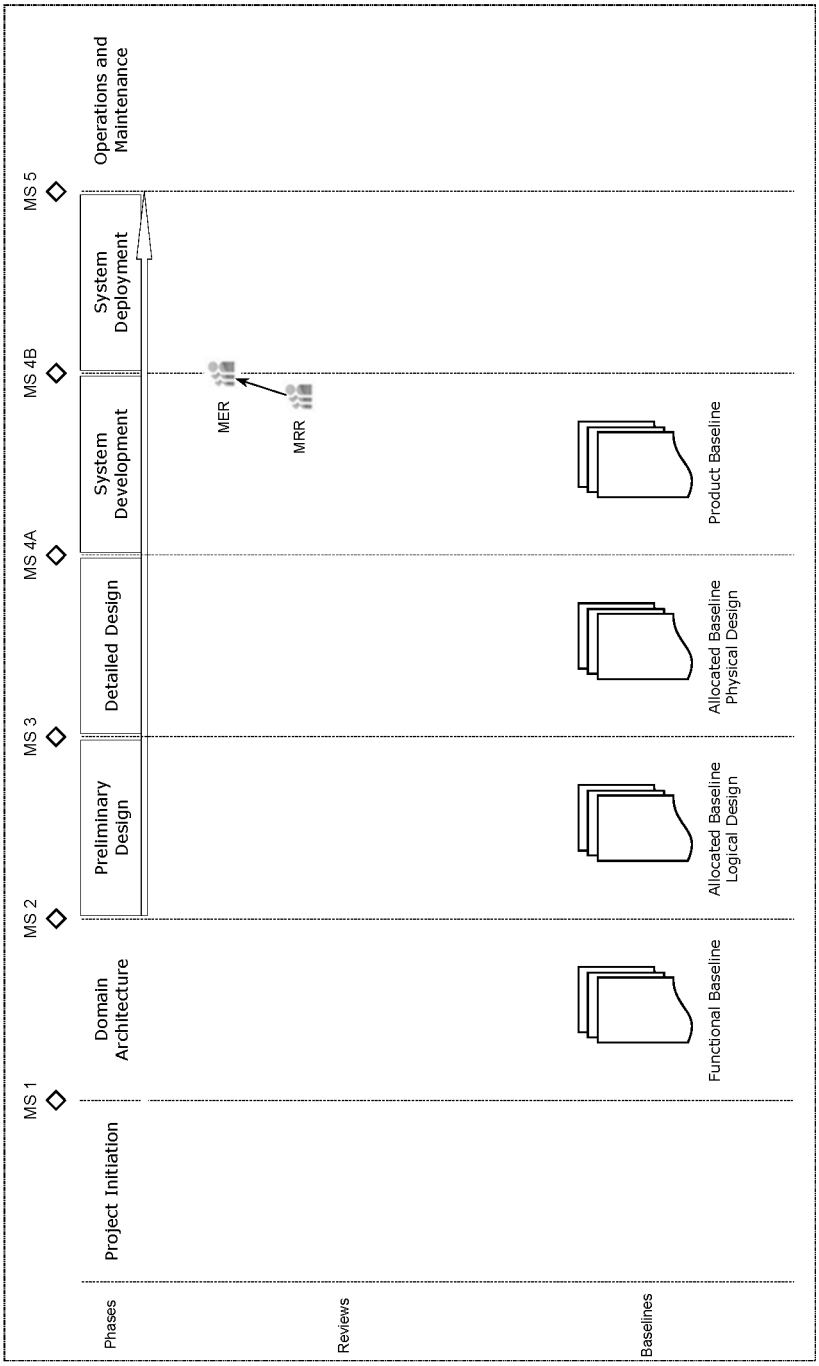


Figure 2.16.1-10 Planned Maintenance Path

2.16.1.4.4.2
(05-21-2014)
Emergency Maintenance Path

(1) General Description - Emergency Maintenance is for system maintenance of an emergency nature. This constitutes a sudden or unexpected impending situation that may cause injury, loss of life, damage to property, and/or interference with the normal activities of a system or application. This would therefore require immediate attention and remedial action (i.e. when a system or application is ″down″ and incapable of making/ doing what it is meant to do at an opportune time). As such, Emergency Maintenance changes occur in a manner befitting their urgency, and are thus not subject to the same documentation and management considerations as a path.

2.16.1.5
(12-22-2015)
ELC Artifacts

(1) An artifact is the output of an activity performed in a process/procedure. Artifacts are created throughout the lifecycle of a project and can support either project management or the IT technical solution such as the design.

(2) The ELC Artifacts by Phase Chart lists the required artifacts for New Development (Waterfall) projects and when they are created or updated in the life cycle. The artifacts listed in this chart are those required for milestone exit purposes. The latest ELC Artifacts by Phase chart can be found via the ELC website at *http://elc.nc.no.irs.gov/*.

(3) ELC artifact templates are created and maintained by Process Owner organizations. Process Owners approve the artifact completed by the project (if applicable). Artifact templates are subject to change as deemed necessary by the process owner. Projects should visit the IT PAL (*http://itpal.ds.irsnet.gov/index.asp*) for the latest artifact templates.

(4) The ELC Office provides an independent validation and verification that projects have had all artifacts listed in their approved tailoring plan approved by the appropriate process owners.

(5) A detailed list of assets and resources that support the ELC are located in the ELC Roadmap and can be found via the ELC website at *http://elc.nc.no.irs.gov/*.

2.16.1.5.1
(05-21-2014)
Data Item Descriptions (DID) and Templates

(1) A DID provides a description of the information that is required within an artifact. A template provides both the information that is required within an artifact as well as the format of the information. Most IRS DIDs include the artifact template.

(2) DIDs help to ensure consistency regardless of which organization produces an artifact or what methodology is used. All projects following the ELC are required to provide artifacts that conform to specified DIDs unless deviations are authorized and approved by their Process Owner and documented in the PTP. Artifacts produced using alternate formats must include a mapping of all sections in the alternate format back to the sections of the standard DID.

(3) DIDs and templates supporting ELC can be found on the IT PAL (*http://itpal.ds.irsnet.gov/*) and on the ELC website (*http://elc.nc.no.irs.gov/*). Projects should also contact Process Owners for the latest DIDs and templates.

2.16.1.5.2
(12-22-2015)
Minor Artifact Revisions (Errata Sheet)

(1) An errata sheet is an optional mechanism in the ELC process used to make minor revisions to a published artifact. These minor revisions include any changes which are non-technical and non-architectural (i.e. spelling corrections, typing mistakes, etc.).

(2) The errata sheet should be used to notify those who originally approved/concurred an ELC artifact by signing it, that minor changes have been made to the document/artifact. Unless those who originally signed the document felt like the changes were significant, the changes described in the errata sheet would be accepted and no new approval/concurrence signature would be required. If the signers believe the changes are significant and they notify the originator of such in writing, the whole ELC artifact must be re-published and re-approved/concurred by all individuals who originally approved/concurred on the artifact.

(3) The errata sheet should be listed in the Revision History of the final version of the document being updated. The following errata sheet will be distributed to those who originally approved/concurred to the ELC artifact. An Errata sheet must specify the:

a. name of the project;
b. date upon which the sheet was issued;
c. name of the artifact associated with the project;
d. original date of the artifact;
e. original version number of the artifact;
f. configuration identification item (CII) number of the artifact;
g. name of the person who prepared the sheet;
h. names and offices of those who originally signed the artifact;
i. reason the artifact was changed; and
j. sections that were changed and what was changed in the section.

(4) For detailed information on the errata sheet, refer to the Errata Sheet Guidance document (*http://elc.nc.no.irs.gov/Library/DIDs/Errata%20Sheet%20Guidance%20final.doc*).

2.16.1.5.3
(12-22-2015)
ELC Required Artifacts

(1) Projects following the ELC are required to complete and submit various artifacts for Process Owner approval (If applicable). The Process Owner may require other signatures such as the PM and reps of the organization when deemed necessary. Artifacts are listed in the project's approved Tailoring Plan and include ELC owned artifacts and other Process Owner owned artifacts. The ELC Office does not maintain or approve all ELC required artifacts.

(2) The list of ELC artifacts below is from the Artifacts by Phase Chart. Please visit the *IT PAL* and the ELC website *ELC website* for more information on ELC required artifacts. Additionally, projects should contact applicable Process Owners for the latest artifact(s).

2.16.1.5.3.1
(12-22-2015)
508 Accessibility and Compliance Mitigation Package

(1) The 508 Accessibility and Compliance Mitigation Package records how the project has met its Section 508 requirements. Updated throughout the lifecycle, it describes what the project will test and how the project will test it, including the 508 requirements that apply, the tests that are conducted, the results of that testing, and how the project addresses risks that are identified in testing. The purpose of the 508 Accessibility and Mitigation Package is to validate that the project's solution adheres to the requirements of Section 508 in order that the solution is accessible to users with disabilities.

(2) The 508 package consists of the following documents that must be updated and approved for each milestone:

- Accessibility Compliance Approach
- Applicable Provisions and Testing

- Accessibility Risk Information
- Signature Sheet

(3) The Information Resources Accessibility Program (IRAP) Office is the Process Owner for the 508 Accessibility Compliance and Mitigation Package. In order to advise the project, the IRAP office may require that a project complete informational forms, including one or all of the following:

- 508 Project Initiation Questionnaire
- 508 Project Profile Form
- 508 Maintenance Determination Questionnaire

For additional information related to the 508 Accessibility and Compliance Mitigation Package (including additional 508-related documents), visit the *IRAP Website* at http://irap.web.irs.gov or e-mail **508 (508@irs.gov)*.

2.16.1.5.3.2
(12-22-2015)
Business System Report (BSR)

(1) The Business System Report (BSR) is a report of the vision or concept, architecture and requirements analysis that forms the basis for subsequent business solution design, development, integration, and testing.

(2) This report is a project artifact for the Domain Architecture phase of the IRS ELC, and is also updated to incorporate business rules, and terms, as well as refinement of security control allocation in the Preliminary Design Phase.

(3) The BSR can be developed iteratively, with each iteration containing a further level of detail, as the solution evolves from the initial concept. The report provides a mechanism for communicating this evolution, helping ensure that team members and stakeholders have a commonly understood form of the overall concept, intended architecture, and the developing requirements through the product baseline.

(4) The Requirements Engineering Program Office is the process owner for the BSR. For additional information related to the BSR, contact the *Requirements Engineering Program Office*.

2.16.1.5.3.3
(12-22-2015)
Computer Operator Handbook (COH)

(1) The purpose of the COH is to provide all responsible personnel for the operation and support of a solution with operational instructions for supporting daily operations. The COH documents the tasks that must be performed to support the applications and servers deployed for the solution. The COH is prepared during the System Development Phase (MS 4B) and should be updated to reflect the completed product during the System Deployment Phase (MS 5).

(2) The Enterprise Computer Center (ECC) is the process owner for the COH. For additional information related to the COH, contact the ECC.

2.16.1.5.3.4
(12-22-2015)
Configuration Management Plan (CMP)

(1) (1)The configuration management plan (CMP) documents the CM activities that an organization uses to maintain the integrity of Configuration Items (CIs), CI associated artifacts, and other products throughout the life cycle. The CMP is developed during the Project Initiation Phase and is maintained throughout the life cycle. The CMP is configuration controlled and should be reviewed and updated annually. An organization's approved CMP will be distributed to the next higher-level organization and the approving organization may further distribute the CMP as appropriate.

(2) (2)The Information Technology Enterprise Service Management (ITESM) Office is the process owner for the CMP. For additional information related to the CMP, contact the ITESM Office (*http://it.web.irs.gov/ES/BRSD/ITESM/default.htm*).

2.16.1.5.3.5
(12-22-2015)
End of Test Completion Report (EoTCR)

(1) The End of Test Completion Report (EOTCR) can be used by systems classified as New Development or Planned Maintenance. The EOTCR is an Enterprise Life Cycle (ELC) requirement. The purpose of the EOTCR is to provide a standard artifact to summarize the complete test effort for the release. The EOTCR gives the project an opportunity to mitigate risks that may cause delays to project implementation.

(2) The EST Test Program Management & Center of Excellence Section 2 is the process owner of the EoTCR. For additional Information related to the EoTCR, contact the ESTTPMCOE2 office (*http://docit.web.irs.gov/docit/drl/bjectId/09007562804fed1e*).

2.16.1.5.3.6
(12-22-2015)
Government Equipment List (GEL)

(1) The GEL provides a complete listing of equipment to be installed for use in various system environments. The system environments needing a GEL are: Development, Unit Test, Integration, Production and Disaster Recovery. The purpose of the GEL is to identify and track the incremental hardware and software required by a project for the proposed system.

(2) The Solution Engineering (SE) Office is the process owner for the GEL. For additional information related to the GEL, contact the *SE Office*.

2.16.1.5.3.7
(12-22-2015)
Interface Control Document (ICD)

(1) The ICD defines the details for boundary conditions and data at the design solution interfaces. The purpose of the ICD is to establish an agreement of responsibilities among the organizations owning the interfacing entities. The ICD is first created in the Preliminary Design phase (MS 3) and is subsequently updated during the Detailed Design phase (MS 4A).

(2) The SE Office is the process owner for the ICD. For additional information related to the ICD, contact the SE Office (*http://mits.web.irs.gov/ES/SI/EDMO/default_new.htm*).

2.16.1.5.3.8
(12-22-2015)
Lessons Learned Report (LLR)

(1) The LLR provides a summary of a project's important points, including what went right, what went wrong, and what could have been done differently. This information is reviewed and approved by a project manager for use as a reference for subsequent project efforts. The LLR is subject to a sensitivity analysis and is posted to the Lessons Learned Library so other projects may enhance their likelihood of success.

(2) The Investment and Portfolio Evaluation Office (PEO) is the process owner for the LLR. For additional information related to the LLR, contact the *Investment & Portfolio Evaluation Office (I&PE)*.

2.16.1.5.3.9
(07-10-2017)
Privacy Package

(1) Privacy and Civil Liberties Impact Assessment (PCLIA) includes a process for examining the risks and ramifications of using information technology to collect, maintain and disseminate information in identifiable form about members of the public and agency employees. The Privacy Package also identifies and evaluates protections to mitigate the impact to privacy of collecting such information. The Privacy Package must be completed by the project and approved by the process owner prior to the system processing live data.

(2) The Office of Privacy Compliance is the process owner for the Privacy Package. For additional information related to the Privacy Package, contact the Office of Privacy Compliance via*email* or access their *website*.

2.16.1.5.3.10
(12-22-2015)
Project Charter

(1) The Project Charter is required for all new development IRS projects and is a statement of the scope, objectives and participants in a project. The purpose of the Project Charter is to provide authority for the future of the project. The Project Manager and normally the project Team are described in the Project Charter.

(2) The Project Charter lists the business processes, key stakeholders, locations, requirements, systems, interfaces, business and technical scope, tools, and target releases that the project must address, as derived from the IRS Enterprise Architecture (EA), which includes the information systems and business architectures.

(3) The Project Charter must be created using the latest approved template and must comply with existing IRS document standards. Additionally, the Project Charter should provide content that meets the purpose and intent of the document, and the content of the artifact at a minimum, shall include the following sections listed in the template.

(4) The EA Office is the process owner for the Project Charter. Please visit the *IT PAL*Enterprise Architecture and select Project Charter-DID for more information.

2.16.1.5.3.11
(12-22-2015)
Project Management Plan (PMP)

(1) The PMP defines the project's scope of work and its approach to managing all project activities. The purpose of the PMP is to provide a framework for managing project activities and for completing the project successfully. The PMP is a requirement for all IRS IT projects and is a key project planning artifact.

(2) The PMP comprises subsidiary plans. The following table itemizes these plans. For each plan, the table identifies the plan, identifies the organization that owns the plan, and describes the plan.

Name	Owned By	Description
Contingency Management Plan (COMP)	Risk Management	Describes the approach that will be employed in the event the project cannot make the "operational readiness" date

Name	Owned By	Description
Application Development Quality Management Plan (AD QMP)	Quality Assurance	Describes the quality activities that the project will perform to assure that quality processes and procedures are followed throughout the life cycle to Describes the quality activities that the AD project will perform to assure that quality processes and procedures are followed throughout the life cycle. NOTE: AD projects are required to produce an AD QMP. The AD QMP template can be found on the IT-PAL.
Risk Management Plan (RMP)	Risk Management	Describes the processes, techniques, and tools that will be used to track, manage, and control project risks
Requirements Plan (RP)	Requirements Engineering Program Office	Describes the processes, techniques, and tools that will be used to manage and control project requirements and the mechanisms that will be used to establish and maintain an agreement with the customer on the requirements for a project.

Name	Owned By	Description
Engineering Plan (EP)	Solution Engineering (SE)	Describes the activities that the project will perform to assure that the Enterprise Technical Solution, Enterprise Solution Integration, Decision Analysis and Resolution, and Government Equipment List engineering processes and procedures from the IRM are followed throughout the life cycle.

(3) Projects must adhere to the latest PMP and subsidiary plan templates located on the ELC website.

(4) The ELC Office is the process owner for the PMP. For additional information related to the PMP, visit the ELC website (*http://elc.nc.no.irs.gov/*).

2.16.1.5.3.12
(12-22-2015)
Project Tailoring Plan (PTP)

(1) The Project Tailoring Plan (PTP) artifact is a documented agreement between the project manager/organization and process owners regarding how the project will meet the established process requirements. The PTP identifies the process artifacts required to be completed by the project and any provisions or exceptions to the processes. Upon agreement by the Process Owners, this agreement establishes the process-related foundation to develop the project management plan for the specific project.

(2) Projects can generate their initial PTP by using the ELC Tailoring Plan Tool located on the ELC website (*http://elc.nc.no.irs.gov/*). The generated PTP is pre-tailored based on the information provided by the project and the selected path.

(3) Any deviations from the mandatory artifacts listed in the PTP require approval/concurrence from corresponding Process Owners. Additionally, projects must adhere to the latest PTP template located on the ELC website.

(4) The ELC Office is the process owner for the PTP. For additional information related to the PTP, visit the ELC website (*http://elc.nc.no.irs.gov/*).

2.16.1.5.3.13
(07-10-2017)
Security Package

(1) The Security Package includes a testing and evaluation process that results in authorization based on the NIST Special Publication 800-series. The purpose of the Security Package is to validate that a system has the Authorization to Operate (ATO). Systems must go through the reauthorization process every three years to evaluate the system and determine if the ATO will be continued. The Security Package must be completed and certified by the process owner prior to the system processing live data.

(2) The Cybersecurity Office is the process owner for the Security Package. For additional information related to the Security Package (including additional security-related documents), contact the *Cybersecurity Office* .

2.16.1.5.3.14
(07-10-2017)
Simplified Design Specification Report (SDSR)

(1) The SDSR documents the logical and physical design of a proposed solution from allapplicable perspectives. The SDSR is created in the Preliminary Design phase (MS 3)and is updated with physical design details during the Detailed Design phase (MS 4A).

(2) The SE Office is the process owner for the SDSR. For additional information related to the SDSR, contact the SE Office (*http://mits.web.irs.gov/ES/SI/EDMO/default_new.htm*).

2.16.1.5.3.15
(07-10-2017)
System Deployment Plan (SDP)

(1) The System Deployment Plan (SDP) can be used by systems classified as New Development or Planned Maintenance. The SDP is an Enterprise Life Cycle (ELC) requirement. The purpose of the SDP is to provide a standard artifact to summarize the planned deployment activities for the release. The SDP gives the project an opportunity to mitigate risks that may cause delays to project implementation.

(2) The EST Test Program Management & Center of Excellence Section 2 is the process owner of the SDP. For additional Information related to the SDP, contact the *Test Program Management and Center of Excellence Organization*

2.16.1.5.3.16
(07-10-2017)
System Test Plan (STP)

(1) The System Test Plan (STP) can be used by systems classified as New Development or Planned Maintenance. The STP is an Enterprise Life Cycle (ELC) requirement. The purpose of the STP is to provide a standard artifact to summarize the complete test effort for the release. The STP gives the project an opportunity to mitigate risks that may cause delays to project implementation.

(2) The EST Test Program Management & Center of Excellence Section 2 is the process owner of the STP. For additional Information related to the STP, contact the *Test Program Management and Center of Excellence Organization*.

2.16.1.5.3.17
(12-22-2015)
Transition Management (TM) Package

(1) The TM Package documents the transition strategy and readiness gaps for each receiving organization, described in terms of People, Processes, Assets and Financials. The purpose of the TM Package is to provide an overview of the project's release, current/future state, transition readiness gaps, and mitigation strategies.

(2) The Enterprise Transition Management Office (ETMO) is the process owner for the TM Package. For additional information related to the TM Package, contact the ETMO (*http://it.web.irs.gov/ES/BRSD/ETMO/default.htm*).

2.16.1.6
(07-10-2017)
ELC Reviews

(1) The ELC Framework includes various reviews to ensure that a project is progressing through its life cycle efficiently and within the directives of the IRS. These reviews include:

- Project/Phase Kick Off Meeting Review
- Customer Technical Review (CTR)

- Life Cycle Status Review (LCSR)
- End of Sprint Checkpoint Review (EoSCR)
- Milestone Readiness Review (MRR)
- Milestone Exit Review (MER)

(2) Decisions as to which reviews will be mandatory for a given project are made during the planning phase and documented in the Project Tailoring Plan (PTP).

2.16.1.6.1
(07-10-2017)
Project/Phase Kick Off Meeting Review

(1) The Project Kickoff Meeting is performed during the Project Initiation Phase and covers the scope, objective, business capabilities and end-to-end costing as projected at the time of kickoff for the entire project (to include the O&M phase). Kickoff meetings are held to ensure that IT leadership and stakeholders understand and are in agreement with the goals, objectives, scope, business capabilities and projected costs of the project, and are prepared to fully support the execution of the project.

(2) Subsequent Phase Kickoff Meetings are performed at the start of each subsequent lifecycle phase (i.e., Domain Architecture, Preliminary Design, Detailed Design, System Development and System Deployment) and will address detailed requirements, implementation approach (including tailoring plans), schedule, budget, risk/issues for that phase, and revisit the release strategy. For the iterative path, there may not be a Phase Kickoff Meeting at the start of each subsequent lifecycle phase since the lifecycle phases are collapsed.

(3) The Project/Phase Kickoff Meeting Minutes contain a list of the meeting attendees, key decisions, action items, and issues. The purpose of the Project/Phase Kickoff Meeting Minutes is to confirm that the kickoff meeting was held and document key items discussed.

(4) The ELC Office validates completion of the Project/Phase Kickoff Meeting Minutes during the project's MRR meeting. For additional information related to the Project/Phase Kickoff Meeting Minutes, please visit the *ELC website* and review the Project/Phase Kickoff Meeting Procedure.

2.16.1.6.2
(05-21-2014)
Customer Technical Review (CTR)

(1) A CTR is conducted by the project with stakeholders to review select artifacts produced by the project. CTRs facilitate Process Owner approval of artifacts by:

- Ensuring stakeholder feedback
- Identifying any weaknesses and resolving issues and actions required to gain approval
- Providing a forum to resolve conflicting comments, deliverables, and/or feedback

(2) Depending on the Path, a CTR may be held during the following phases:

- Domain Architecture Phase (At a minimum, the select artifact is the Requirements document)
- Preliminary Design Phase (At a minimum, the select artifact is the logical design document)
- Detailed Design Phase (At a minimum, the select artifact is the physical design document)
- System Development Phase (At a minimum, the select artifact is the user training/COH document)

(3) CTR activities include:

a. Planning and Scheduling the CTR - Includes distributing the artifact to be reviewed, instructions associated with the review, and confirming review participants.
b. Conducting the CTR - Includes evaluating the distributed material for compliance, recording reviewer comments, and disposing of comments.
c. Closing Out the CTR - Includes responding to reviewer questions, updating the artifact according to the comments, capturing outstanding issues/action items for the subsequent LCSR, and distributing the updated artifact.

(4) A CTR is complete when:

- The Project Manager and Reviewers have agreed to the disposition of comments
- All review documents have been discussed and issues have been resolved
- All applicable artifacts have been updated
- Final checklist of open items and meeting minutes have been created and archived

(5) For further detail, please refer to the CTR Procedure located at: *http://elc.nc.no.irs.gov/elcpmoweb/ELCAssets.asp*

2.16.1.6.3
(12-22-2015)
Life Cycle Status Review (LCSR)

(1) A LCSR is conducted by the project with stakeholders to verify that the process owner processes have been conducted appropriately at that point in its life cycle. Upon verification, the solution may be approved for a projects baseline. A LCSR occurs during a phase, prior to the MRR. Accordingly, a successful LCSR consists of:

- Specifying an applicable set of Process Owner criteria for review
- Verifying that the project followed the process owner processes completely, correctly and consistently
- Reviewing Process Owner artifacts (appropriate at that point in its life cycle) and discussing outstanding items from the previous CTRs

(2) Depending on the Path, a LCSR is required during the following phases:

- Domain Architecture Phase (Business System Requirements and Architecture LCSR)
- Preliminary Design Phase (Logical Design LCSR)
- Detailed Design Phase (Physical Design LCSR)
- System Development Phase (Development LCSR)

(3) LCSR activities include:

a. Planning and Scheduling the LCSR – Includes determining which artifacts will be reviewed, reviewing the LCSR Checklist for the appropriate phase, and completing the LCSR Presentation Deck.
b. Conducting the LCSR – Includes presenting the LCSR Presentation Deck, participating in and moderating the LCSR discussion to resolve any open items, and capturing any new risks, issues, and/or action items.
c. Closing Out the LCSR – Includes developing mitigation plans for any risks, issues, and/or action items.

(4) An LCSR is complete when:

- The Project Manager has reviewed and responded to Reviewer comments
- All issues have been resolved and the final checklist of items still open and meeting minutes have been created and archived
- The LCSR meeting minutes have been distributed.

(5) For further detail, please refer to the LCSR Procedure located at: http://elc.nc.no.irs.gov/elcpmoweb/ELCAssets.asp

2.16.1.6.4
(05-21-2014)
End of Sprint Checkpoint Review (EoSCR)

(1) For projects following the Iterative Path, EoSCRs replace the CTRs and LCSRs. A EoSCR is an opportunity for the project team to summarize the progress made, obtain feedback and approvals from stakeholders, and adjust planning for subsequent iterations. A successful EoSCR includes:

- Demonstrating the functionality developed for the stakeholders
- Sharing sprint documentation, including draft ELC artifacts, and project issues and changes with selected Process Owners
- Determining whether issues and risks meet escalation criteria
- Providing feedback on whether the functionality meets stakeholder requirements, and/or suggesting changes for subsequent iterations

(2) EoSCRs are held iteratively during the Design and System Development Phase.

(3) EoSCR activities include:

a. Planning and Scheduling the EoSCR – Includes completing the EoSCR Template, and scheduling the EoSCR meeting.
b. Conducting the EoSCR – Includes presenting the EoSCR Template, discussing key objectives, and validating that concurrence was provided.
c. Closing out the EoSCR – Includes distributing EoSCR meeting minutes, providing feedback, soliciting lessons learned, conducting Sprint Reflection and Sprint Planning meetings to prepare for the next sprint, and escalating any risks, issues, and/or action items, if applicable.

(4) A EoSCR is complete when:

- Product has been demonstrated and the functionality is documented and approved
- Business Owner and stakeholders have accepted and approved product functionality
- EoSCR presentation has been archived in the project repository
- Issues, next steps, and/or risks are documented

(5) For further detail, please refer to the EoSCR Procedure located at: *http://elc.nc.no.irs.gov/elcpmoweb/ELCAssets.asp*

2.16.1.6.5
(05-21-2014)
Milestone Readiness Review (MRR)

(1) A MRR is conducted by the ELC Office at least 5 business days prior to the MER to determine if the project is in compliance with ELC Process Owner processes and is ready to begin the milestone exit process and proceed to the next phase. The MRR is a detailed and extensive review of the project status for IRS executive review. The purpose of the MRR is to provide IRS executives with the status of the projects compliance with Process Owner processes and its readiness to exit the milestone so that the executives can make go/no-go

MER decisions. As such, an MRR results in a formal recommendation from the ELC Office to the project's governance board. A successful MRR involves:

- Verifying the approval of Process Owner artifacts identified for that phase in the Project Tailoring Plan
- Sharing information on existing project information, including project status, lessons learned, risk identification, and decision criteria from LCSRs and/or EoSCRs

(2) It is recommended that the project complete a pre-MRR at least 5 business days prior to the MRR which is a dress rehearsal for the MRR. The pre-MRR is an opportunity to identify issues and/or risks/action items that may impact the outcome of the MRR, as well as, resolve any process related issues and/or project risks/issues/action items of the previous phase or phase being exited.

(3) MRRs are required for all ELC phases and monitors readiness to exit each phase's respective milestone. Note, Planned Maintenance Path projects do not have a MS 5 exit. Therefore, there is no MS 5 MRR. (5)MRR activities include:

a. Planning and Scheduling the MRR – Includes confirming that all ELC required artifacts have been approved, developing and distributing project documentation to be reviewed during the MRR, and scheduling the MRR meeting.
b. Conducting the MRR – Includes creating an MRR attendance list, validating that the ELC required artifacts have been approved and that the required reviews (CTR, LCSR, EoSCR) have been conducted, and examining the status of risks, issues, action items, and/or prior or current project conditions.
c. Preparing the MRR package – Inputting the impact of all risks, issues, and action items on the MS Exit into the MRR recommendation, developing the MRR Memorandum including all attachments and inputs, routing the MRR package to the appropriate Executives for approval, obtaining executive approval, and routing the approved package to the applicable governance office.

(4) An MRR is complete when the MRR Package has been approved. Additionally:

- If there are no risks, issues, and action items, the ELC Office will make a formal recommendation to the appropriate level governance board that the project is ready for an unconditional exit.
- If there are risks, issues, and action items, the ELC Office will recommend a conditional exit and document the outstanding risks, issues, and action items in the formal memorandum.
- If there are a substantial number of risks, issues, and action items, the ELC Office may recommend that the project not proceed to an exit until all risks, issues, and action items are mitigated or have a mitigation plan.

(5) For further detail, please refer to the MRR Procedure located at: *http://elc.nc.no.irs.gov/elcpmoweb/ELCAssets.asp*

2.16.1.6.6
(05-21-2014)
Milestone Exit Review (MER)

(1) A MER is a mandatory project review performed by IRS executives when a project has reached a life cycle milestone. MERs are discussed further in the Governance section of this ELC IRM.

(2) A MER is a mandatory project review performed by IRS executives when a project has reached a life cycle milestone. The purpose of the MER is to assess the viability of continuing the project, identifying any risks and issues, verifying any changes to cost, scope, schedule, and business results.

(3) Generally, the MER does not begin until the project's governance organization receives a formal recommendation from the reviewing organization that the Milestone Readiness Review (MRR) was successfully completed. The governance board decision review is based primarily on previously conducted reviews and recommendations. Specifically, MER decisions are based on the following key decision criteria:

- Project Status (i.e., is the project on-time, is it within budget, are there major issues and risks, etc.?)
- Contract status (i.e., if there is a contract for the work, are the terms and conditions being satisfied?)
- Solution status (i.e., is the solution complete, consistent, and properly constituted, and does it reflect what is wanted?)
- Business case (i.e., is there a well-reasoned argument documented to convince the stakeholders of the benefits of an IT investment, while educating them about the changes, costs, and risks that will be part of the effort?)
- Funding (i.e., is there sufficient budget dollars available to fund the continuation of the project?)

(4) Irrespective of the ELC path a project is following, all projects must undergo MERs prior to exiting a single or combined phase and entering the next. Answers to these questions and considerations, along with recommendations from the appropriate authorities and subject matter experts, should be developed prior to the MER using the mechanism of other reviews (i.e., CTRs, LCSRs, EOSCRs, and MRRs). These answers and recommendations should be provided to the deciding governance board voting members for consideration. Note, the MER is not meant to be a detailed or extensive technical review. Rather, it is meant to be a venue for Governance Boards in making informed investment decisions.

(5) The outcome of a MER will be annotated in one of the following go/no go decisions: an unconditional approval, conditional approval, disapproval, or a recommendation to suspend or to terminate the project.

(6) For additional information related to the MER Procedure (including governance on the specific MER steps and activities), contact the I&PG Office *http://it.web.irs.gov/sp/RM/PGO/default.htm*.

2.16.1.7
(12-22-2015)
ELC Tailoring

(1) Tailoring is the process of adapting an approved set of processes, procedures and artifacts to the needs of a specific project or projects. Tailoring can be done at several levels, however, the most common are:

a. Tailoring for an organization, division or program - If specific tailoring is requested, it is the responsibility of the requestor, (i.e., organization) to convince the appropriate Process Owners the benefits of their proposed tailoring and to obtain the process owners formal approval. Once approved, the tailoring may be applied to all projects within that organization. These tailoring changes must be within the ELC framework.

b. Tailoring for individual projects - A project must convince the appropriate Process Owners of the benefits of their proposed tailoring and must obtain formal Process Owner approval. Once approved, the tailoring may be applied to the remaining phases of the project and all subsequent releases of that project.

(2) There are several factors that influence ELC path tailoring. These include:

- Project size
- Number of planned releases
- When the project transitions into ELC (i.e. how much work has been completed prior to following ELC)
- Flexibility in terms of what functionality is actually deployed

(3) Project tailoring must be formally documented in the project's Tailoring Plan and presented to affected Process Owners for approval. Initial project tailoring must be formally documented in the project's Tailoring Plan and presented to affected Process Owners for approval. The PTP must identify all initial tailoring decisions and list the approving authority (Process Owner) that approved the tailoring and the date the approval was granted.

(4) Process Owner(s) can make an assessment and determination on a case by case basis that their artifact or process is not required. Deletions, waivers or deferrals will be provided, as needed. All approved deletions, waivers and deferral documentation is annotated in the PTP and approved by the affected Process Owners. The PTP must be maintained in the project's repository in accordance with IRS guidelines.

(5) A project can also request that a Process Owner review an alternative document for an artifact. If the process owner decides that the alternative is functionally equivalent (FE) to the required artifact, the process owner would document their approval of the FE in either an email or in the document

(6) Any tailoring of the ELC must be made with the concurrence of the ELC Office and the process owner responsible for the processes (and related artifacts) being tailored in or out

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Exhibit 2.16.1-1 (07-10-2017)
Acronyms

(1) The following table lists the acronyms used in this IRM. For each acronym, the table identifies the acronym and provides its meaning.

Acronym	Meaning
ACIO	Associate Chief Information Officer
AD	Applications Development
ADPMO	Applications Development Project Management Office
BC	Business Case
BOD	Business Operating Division
BSP	Business System Planning
CCB	Configuration Control Board
CFR	Code of Federal Regulations
CI	Configuration Item
CII	Configuration Identification Index
CM	Configuration Management
CMMI	Capability Maturity Model Integration
CMP	Configuration Management Plan
COH	Computer Operator Handbook
COMP	Contingency Management Plan
COTS	Commercial-Off-the-Shelf
CPE	Current Production Environment
CPIC	Capital Planning and Investment Control
CS	Configuration System
CTR	Customer Technical Review
DAA	Designated Approving Authority
DBMS	Database Management System
DID	Data Item Description
DIO	Division Information Officer
DSRT	Deployment Site Readiness Test
E300	OMB Exhibit E-300
E53	OMB Exhibit E-53
EA	Enterprise Architecture

Exhibit 2.16.1-1 (Cont. 1) (07-10-2017)
Acronyms

Acronym	Meaning
ECDM	Enterprise Conceptual Data Model
EDM	Enterprise Data Management
EDMO	Enterprise Data Management Office
eGOV	Electronic Government
EITE	Enterprise Integration and Test Environment
ELC	Enterprise Life Cycle
ESC	Executive Steering Committee
EST	Enterprise Systems Testing
EoSCR	End of Sprint Checkpoint Review
EoTCR	End of Test Completion Report
FEA	Federal Enterprise Architecture
FIPS	Federal Information Processing Standards
FISMA	Federal Information Security Management Act
FIT	Final Integration Test
FOC	Full Operational Capability
FOD	Functional Operating Division
FRA	Federal Records Act
FRC	Federal Records Center
GAO	Government Accountability Office
GAT	Government Acceptance Test
GEL	Government Equipment List
GPRA	Government Performance and Results Act
GSS	General Support System
IA&E	Infrastructure Architecture & Engineering
IBM	International Business Machines
ICD	Interface Control Document
IDSS	Investment Decision Support Services
IOC	Initial Operational Capability
IPM	Integrated Process Management
IRAP	Information Resources Accessibility Program
IRM	Internal Revenue Manual

Exhibit 2.16.1-1 (Cont. 2) (07-10-2017)
Acronyms

Acronym	Meaning
IRS	Internal Revenue Service
ISA	Interconnection Security Agreement
ISAT	Independent Systems Acceptability Testing
ISCP	Information Systems Contingency Plan
IT	Information Technology
IT&E	Integration, Test and Evaluation
ITMRA	Information Technology Management Reform Act
ITRAC	Item Tracking System
ITSM	IT Service Management
ITS	Information Technology Services
KISAM	Knowledge Incident/Problem Service Assess Management
KPI	Key Performance Indicator
LAN	Local Area Network
LCSR	Life Cycle Status Review
LL	Lessons Learned
MER	Milestone Exit Review
MOA	Memorandum of Agreement
MITS	Modernization & Information Technology Services
MRR	Milestone Readiness Review
MS	Milestone
NIST	National Institute of Standards and Technology
O&M	Operations and Maintenance
OC	Organizational Change
OMB	Office of Management and Budget
PAL	Process Asset Library
PCLIA	Privacy and Civil Liberties Impact Assessment
PD	Process Description
PES	Product Evaluation and Selection
PGO	Program Governance Office
PL	Public Law
PM	Project Manager

Exhibit 2.16.1-1 (Cont. 3) (07-10-2017)
Acronyms

Acronym	Meaning
PMI	Project Management Institute
PMO	Program Management Office
PMP	Project Management Plan
POs	Process Owner(s)
PTP	Project Tailoring Plan
PPM	Program Performance Management
PR	Procedure
QA	Quality Assurance
QMP	Quality Management Plan
RCS	Records Control Schedule
REPO	Requirements Engineering Program Office
RFP	Request for Proposal
RFSS	Request for Service Solution
RIM	Records and Information Management
RM	Risk Management
RMA	Records Management Application
RMP	Risk Management Plan
RP	Requirements Plan
RUP	Rational Unified Process
SA&A	Security Assessment & Authorization
SAE	Security Architecture & Engineering
SAR	Security Assessment Report
SAT	Systems Acceptability Testing
SBU	Sensitive But Unclassified
SCA	Security Control Assessment
SCP	Strategy and Capital Planning
SDLC	Software Development Life Cycle
SDP	System Deployment Plan
SDSR	Simplified Design Specification Report
SIA	Security Impact Assessment
SIT	System Integration Test

Exhibit 2.16.1-1 (Cont. 4) (07-10-2017)
Acronyms

Acronym	Meaning
SME	Subject Matter Expert
SP	Security Package
SSP	System Security Plan
STP	System Test Plan
TD	Treasury Directive
TIGTA	Treasury Inspector General for Tax Administration
TM	Transition Management
TMP	Transition Management Plan
TMO	Transition Management Office
TSS	Test Support Section
USC	United States Code
USI	User System Interface
UWR	Unified Work Request
V&S	Vision and Strategy
WBS	Work Breakdown Structure
WR	Work Request
WRMS	Work Request Management System

Exhibit 2.16.1-2 (07-10-2017)
Definitions

(1) The following table lists and defines terms used in this manual.

Term	Definition
Acquisition	The process of obtaining products or services through contractual agreements with outside vendors or contractors.
Agile Development	Specific group of software development methodologies based on iterative and incremental development, where requirements and solutions evolve through collaboration between self-organizing, cross-functional teams. Agile promotes development, teamwork, collaboration, and process adaptability throughout the life-cycle of the project. Agile represents a type of development methodology that can be used when following the Iterative path.
Allocated Baseline	Contains requirements that have been refined and/or derived from system-level requirements, requirements allocated to specific software, hardware, or interfaces from a CS or higher-level CI, as well as additional design constraints.
Application	An IT component of a system that utilizes IT resources to store, process, retrieve or transmit data or information using IT hardware and software.
Application Software	Computer software that supports the conduct of business (as opposed to "system software," which supports operation of the computers and infrastructure).Also see **Application**.
Architecture	A unifying overall design or structure that divides a system into its component parts and relationships and provides the principles, constraints, and standards that help align development efforts in a common direction.
Artifact	The tangible result (output) of an activity or task performed by a project during the life cycle.
Beta Test	A limited test of software/system that does not send data downstream, that is given to a representative set of potential internal/external users before it is released to production deployment, and includes end user error reporting as part of the test process.
Build	A build is a component of a solution that moves through development and testing environments, but is not deployed into a production environment. Builds do not require governance board approval. A build becomes a drop or release when it is approved and deployed.

Exhibit 2.16.1-2 (Cont. 1) (07-10-2017)
Definitions

Term	Definition
Burn Down Chart	A graphical representation of the work left to do in a given project versus time. The outstanding work (or functionality backlog) is typically on the vertical axis, with time along the horizontal. Over time, the project team plots the number of features/requirements in the functionality backlog. Burn down charts are effective tools for communicating progress and predicting when work will be completed. The burn down chart is also an effective means for teams to make adjustments in order to meet product/project delivery expectations.
Business Analyst	Serves as a liaison among stakeholders in order to elicit, analyze, communicate and validate requirements for changes to business processes, policies and information systems.
Business Case	A formal justification for a project or program that outlines the associated benefits, costs, risks, and alignment with strategic objectives, and that is used to help determine whether or not the effort should be funded.
Business Change	A lasting revision to the nature or structure of an organization or the manner in which the organization conducts business. This may include change in the business processes, in the organization structure, in the locations for doing business, and/or in the technology, data, and computer applications used.
Business Change Initiative	An organized effort (e.g., programs or projects) to accomplish business change and/or implement information systems.
Business Owner	The individual from the business ultimately accountable for success of the system (e.g., defining and prioritizing product requirements, ensuring business process change if needed). The Business Owner sets the vision and direction of the product. Since the Iterative path involves frequent change, the Business Owner must be available to answer questions regarding the direction or vision of the Product. The Business Owner also: • Ensures the right features are included in the project • Obtains resources from and reports to the Executives • Removes obstacles impeding progress
Business Process	What the enterprise must do to conduct its business successfully. A business process comprises actions taken to respond to particular events and produce particular results, and may cross multiple business functions or organizations.
Business Risk	The risk that the business or organization may be harmed in some way.

Exhibit 2.16.1-2 (Cont. 2) (07-10-2017)
Definitions

Term	Definition
Business Rules	"A directive that is intended to influence or guide business behavior. Such directives exist in support of business policy, which is formalized in response to risks, threats, or opportunities". This definition is from the publication," Organizing Business Plans: The Standard Model for Business Rule Motivation, Revision 1, Nov. 2000" prepared by the Business Rules Group.
Business Sponsor	The highest business executive sponsoring the system, which may be the business PMO Director, Deputy Commissioner or the Executive Steering Committee.
Capability Maturity Model® Integration (CMMI)	Used to judge the maturity of an organization's processes and related procedures and process assets and can be used to plan further improvements. CMMI sets the standard for the essential elements of effective and mature processes, improved with quality and efficiency.
Capital Planning and Investment Control	CPIC outlines methods used by the IRS to propose, evaluate, compare, prioritize, select, and monitor capital investments, including programs and projects for business change and information systems.
Certification	A technical evaluation process resulting in a judgment stating whether a particular information system design or implementation (e.g., computer system, application or network design, and implementation) meets a pre-specified set of security requirements.
Clinger-Cohen Act	Legislation that requires government agencies to integrate their IT investment plans into the budget process. Clinger-Cohen specifies requirements to identify and adopt best practices for IT management (including commercial sector practices); to identify quantitative measurements for net benefits and risk; to manage projects according to defined milestones; and to baseline, benchmark, and revise business processes before making significant IT investments. Also known as the Information Technology Management Reform Act of 1996.
Commercial-Off-the-Shelf Solution	Pre-packaged computer software for a particular purpose or application developed by a vendor for same to numerous companies and organizations or a standard technical infrastructure component.
Completed Solution	A solution for which all releases are operational.
Conditional Exit	An MRR result provided to a project when there are critical action items, issues, risk, or impediments (e.g., pending test results or unapproved PO artifacts(s)) that are unresolved.
Configuration Item	An aggregation of hardware, software, and documentation that is treated as a single entity in the CM process, satisfies an end use function, and is specifically designated as a CI.

Exhibit 2.16.1-2 (Cont. 3) (07-10-2017)
Definitions

Term	Definition
Configuration Management	A discipline applying technical and administrative direction and surveillance to identify and document the functional and physical characteristics of a configuration item, control changes to those characteristics, record and report change processing and implementation status, and verify compliance with specified requirements.
Configuration Management Baseline	An agreed upon description of the attributes (i.e., functional and physical characteristics) of a product at a point in time that serves as a basis for defining change.
Contractor	An organization external to the IRS that supplies goods and services according to a formal contract or Task Order. A contractor is a type of provider.
Control	A provision established to a) determine or influence decisions or b) establish limits, alternatives, and guidelines for personnel who exercise discretion in applying their authority or fulfilling their duties and responsibilities. Examples of a control include a rule, mandate, standard, policy, directive, or procedure.
Controlled Launch	The transition activity for moving a software/system from a test state to a production state with the use of managed live data while controlling customer use of the system and may include data retained for downstream transaction processing. Mock is an example of a Controlled Launch that does not retain data for further use. The accepted term is controlled launch and replaces HUB.
COTS Path	One of the five paths of the ELC. The COTS Path specifies a development approach based on the purchase and use of pre- packaged software.
Customer Technical Review	Review performed by the project with IRS stakeholders on a work product or small group of closely related work products produced by a project. The purpose is to facilitate approval of the work product by ensuring early stakeholder feedback as well as early identification and resolution of issues and actions.
Daily Scrum	The Daily Scrum, also referred to as 'the daily stand-up' in Agile world is a brief, daily communication and planning forum, in which Agile/Scrum teams come together to evaluate the health and progress of the sprint. As a daily, team planning meeting, an effective daily scrum should be a tightly focused and time boxed meeting that occurs at the same time and place, on a daily basis. The intent of the daily scrum is to better understand the progress of the sprint, by all contributing team members honestly answering the following three questions: what have you done since the last Daily Scrum; what will you do between now and the next Daily Scrum; and what got in your way of doing your work?

Exhibit 2.16.1-2 (Cont. 4) (07-10-2017)
Definitions

Term	Definition
Data Item Description	A DID outlines standard content and presentation format for major artifacts (reports, plans, documentation, etc.) generated during the life cycle.
Defect Backlog	Typically specifies only the defects identified in sprints.
Degree of Difficulty	A subjective measure of how easy or hard it is likely to be to execute a project or portions of the life cycle.
Deliverable	An artifact produced by a project that is identified in the applicable contract or task order as an item that must be turned over to and formally accepted by the IRS.
Detailed Design Phase	The Detailed Design Phase includes the portion of the life cycle between Milestones 3 and 4A, and includes physical solution design.
Development Path	A distinct approach to tailoring and performing the Preliminary Design, Detailed Design, System Development, and System Deployment Phases of the life cycle for a project or solution component.
Development Project	A project initiated after Milestone 0 to design, develop, and implement solutions in support of the enterprise vision and architecture (if any).
Disposition	The shipping of records to an agency storage facility or to a Federal Records Center (FRC) for storage.
Domain Architecture Phase	The Domain Architecture Phase includes the portion of the life cycle between Milestones 1 and 2, and includes development of a business system concept, business system requirements, and business system architecture.
Directive	Centralizes and establishes the essential practices for effective project management. Directives contain guidance for planning, measuring, and performing project management to foster an environment where good practices are employed.
Drop	A drop is a release that has been previously approved by a governance board, usually within 3 months of a release, and deploys into a production environment. Note, for the Iterative Path, a drop can be developed in one or more sprints.
End of Iteration Checkpoint	This is done instead of a CTR or LCSR when using the Iterative Path.
End of Sprint Checkpoint Review	The sprint review is an important communication forum that occurs at the end of a sprint. During the sprint review an agile team will evaluate and agree on which stories have been completed and which stories need to be deferred or split. The sprint review is an event that generally ignites the closing of a sprint. Often times, teams will also use the sprint review as a forum to demonstrate the work that was completed within the sprint.

Exhibit 2.16.1-2 (Cont. 5) (07-10-2017)
Definitions

Term	Definition
End of Test Completion Report	The End of Test Completion Report can be used by systems classified as New Development or Planned Maintenance. The report is an Enterprise Life Cycle (ELC) requirement. The purpose of the report is to provide a standard artifact to summarize the complete test effort for the release. The report gives the project an opportunity to mitigate risks that may cause delays to project implementation.
Enterprise	A major organization with its own mission, goals, and performance objectives. An enterprise may be an independent company, a major division of a large company, a corporation, or a government agency. The typical enterprise includes a number of business areas.
Enterprise Architecture	A unifying overall design or structure for an enterprise that includes business and organizational aspects of the enterprise as well as technical aspects. Enterprise Architecture divides the enterprise into its component parts and relationships, and provides the principles, constraints, and standards to help align business area development efforts in a common direction. An enterprise architecture ensures that subordinate architectures and business system components developed within particular business areas and multiple projects fit together into a consistent, integrated whole.
Enterprise Data Management	Includes processes for defining and managing data throughout the life cycle.
Enterprise Integration, Test and Evaluation	Includes processes for integrating multiple components of a solution and conducting various types and levels of testing that are over and above standard unit testing of individual solution components.
Enterprise Life Cycle	The approach used by the IRS to manage and effect business change. The ELC provides the direction, processes, tools and assets for accomplishing business change in a repeatable and reliable manner.
Entry Criteria	The elements and conditions (state) necessary to trigger the beginning of a process step.
ELC Framework	A structure for organizing, understanding, and applying IRS process assets to manage and effect business change.
ELC Requirement	A control established through this IRM or related to the ELC framework.
Enterprise Planning Project	A project conducted during the Vision and Strategy phase that addresses enterprise level issues such as vision and strategy.
Exhibit 53	The proposed IRS IT Investment Portfolio that is submitted to request funds from OMB as part of the normal budgeting cycle. All projects requiring OMB funding are listed on the E53.
Exit Criteria	The elements or conditions (state) necessary to trigger the completion of a process step.

Exhibit 2.16.1-2 (Cont. 6) (07-10-2017)
Definitions

Term	Definition
Federal Enterprise Architecture	The FEA Program, which builds a comprehensive business-driven blueprint of the entire Federal government. The FEA consists of a collection of interrelated "reference models" designed to facilitate cross-agency analysis and the identification of duplicative investments, gaps, and opportunities for collaboration within and across Federal agencies.
Federal Records Act	All Federal employees (and Federal contractors) are required by law to preserve records containing adequate and proper documentation of the organization, functions, policies, decisions, procedures, and essential transactions of the agency. Records must be properly stored and preserved, available for retrieval, and subject to appropriate approved disposition schedules. The Federal Records Act applies to e-mail records just as it does to records that are created using other media.
Final Integration Test	A system test consisting of integrated end-to-end testing of mainline tax processing systems to verify that new releases of interrelated systems and hardware platforms can collectively support the IRS business functions allocated to them.
Framework	A structure that facilitates understanding of a complex topic by breaking the topic into multiple pieces or features, classifying the features, illustrating relationships between the features, and organizing them in a manner that facilitates visualization and practical usage.
Functional Baseline	Comprises the initial system-level requirements and system architecture describing a CS's or CI's functional, interoperability and interface characteristics.
Functional Equivalent	An artifact that, although it does not have the same form or format as a standard ELC artifact, has the same general content, adequately serves the same purpose, and with approval may be used in lieu of the standard artifact.
Functionality Backlog	The list of features and functionality people have requested for the system. The Business Owner and Project Manager are responsible for deciding which features are included or excluded from the system.
Go Live	The first time that hardware, software, documentation or a process can be used for processing transactions or data in production. (Example: Project level, when IMF is ready).
Governance	The decision making authority over a project or program derived by a formal charter in accordance with the IRS Governance directive.
Government Acceptance Test	A system test that allows the government to independently verify aspects of the functionality tested during system testing to determine the system's fitness for implementation.

Exhibit 2.16.1-2 (Cont. 7) (07-10-2017)
Definitions

Term	Definition
Government Performance and Results Act	Legislation that aims to improve performance of government programs by implementing results-oriented management. GPRA directs government agencies to prepare strategic plans, prepare annual performance plans, monitor performance, and report annually on results.
High Performance Team	A team of people using specialized methods, processes, procedures, tools and work environment to achieve extremely efficient system development or other endeavor.
Increment	A subset of the logical design that independently undergoes physical design and development but is not deployed.
Independent Systems Acceptability Testing	A test for software functionality and is done independent of the developer of the software. It is conducted to validate core and specific functions within a system satisfy requirements and confirm that changes work correctly when receiving data from and sending data to external systems.
Information System	An Information System is a discrete set of information resources organized for the collection, processing, maintenance, transmission, and dissemination of information, in accordance with defined procedures, whether automated or manual.
Information Technology Infrastructure Library (ITIL)	Contains a collection of best practices, enabling organizations to build an efficient framework for delivering IT Service Management (ITSM) and ensuring that they are meeting business goals and delivering benefits that facilitate business change, transformation, and growth.
Initiative	An initiative is: a. An effort managed to achieve a result; or b. An effort proposed to achieve a result.
Issue	A known event that may impact project goals.
Issue and Action Item Management	The process of identifying, tracking, reporting, and resolving project and/or program-related issues and actions to be completed.
IT Investment	An organizational investment employing or producing IT or IT-related assets. Each investment has or will incur costs for the investment, has expected or realized benefits arising from the investment, has a schedule of project activities and deadlines, and has or will incur risks associated with engaging in the investment.
IT Process Asset Library (IT-PAL)	The authoritative repository for IT Assets. The IT PAL stores process and procedure assets and Best Practice Examples that are potentially useful to those who are defining, implementing and managing processes.

Exhibit 2.16.1-2 (Cont. 8) (07-10-2017)
Definitions

Term	Definition
IT Service Management (ITSM)	An industry standard model for managing technology support services, based on the Information Technology Infrastructure Library (ITIL). The management of activities performed to plan, deliver, operate, and control information technology services offered to customers.
Item Tracking Reporting and Control (ITRAC)	System used to track and report on issues, risks, and action items.
Iteration	See IRS preferred term: Sprint.
Iterative Path	New ELC software development methodology at the IRS. The Iterative ELC path combines Milestones 1 and 2 into a single MS 2 exit; Milestones 3, 4A, and 4B into a single MS 4B exit; and retains the standard MS 5 exit. Specific details about Iterative path can be found in IRM 2.16.1 or on the ELC Office website.
Joint Application Design	An approach to rapidly producing solution requirements and/or high-level design using time-boxed work sessions involving all key stakeholders.
Life Cycle	A repeatable sequence that identifies all of the work required to accomplish an initiative, and partitions the work into a series of coherent segments that lead sequentially from inception to culmination. The life cycle provides a standard for what work needs to be done but does not prescribe how to do or manage the work.
Life Cycle Analysis	An analysis of which portions of a project's life cycle are likely to be high difficulty and which are likely to be low difficulty.
Life Cycle Status Review	Performed by the project with IRS stakeholders to verify the solution for its completeness, correctness, and consistency given its point in the life cycle. An LCSR deals with all artifacts that comprise the solution.
Maintenance	The process of making fixes, enhancements, and upgrades to operational systems, either on a planned or emergency Managed Services basis.

Exhibit 2.16.1-2 (Cont. 9) (07-10-2017)
Definitions

Term	Definition
Major IT Business Case	An agency's Major IT Business Cases describe the justification, planning, and implementation of individual capital assets included in the Agency IT Portfolio Summary and serve as key artifacts of the agency's EA and IT capital planning processes. The Major IT Business Case comprises two components: • The Major Business Case itself which provides key high-level investment information to inform budget decisions, including general information and planning for resources such as staffing and personnel; and • The regular information updates to the Major IT Business Case, which provides more temporal information, related to tracking management of an investment, such as projects and activities, risks, and operational performance of the investment. Complete details on specifications for completing Agency IT Portfolio Summary, Agency IT Provisioned Services Spending Summary, Agency IT Infrastructure Spending Summary, and Major IT Business Cases are provided in the FY 2017 IT Budget – Capital Planning Guidance.
Major Project	A project meeting the criteria established by OMB for major projects.
Managed Services Path	One of the six paths of the ELC. The Path is designed to capitalize on the benefits of Managed Services provided by either an outside services (3rd party); internal intra-business processes; and/or existing infrastructure (operational) service providers.
Methodology	A standard, repeatable set of practices, procedures, and templates for accomplishing a specific type of endeavor (e.g., business change).
Milestone	Milestones usually occur at the end of a life cycle phase, and provide natural breakpoints at which new information regarding costs, benefits, and risks may be evaluated. Milestones also serve as executive management decision points at which IRS executives make go/no-go decisions for continuation of a project. Project funding decisions are often associated with milestones. A milestone is an investment management decision point placed at a natural breakpoint in the life cycle which allows the project to proceed to the next phase.
Milestone Exit Review	Project review performed by IRS executives when a project has completed a life cycle phase to determine if the project will be allowed to continue on to the next phase and, if necessary, to approve the required funding.
Milestone Readiness Review	A review to determine whether or not a project has satisfied the exit conditions for the next Milestone Exit Review. An MRR results in a formal go/no go recommendation to the Governance Board, (i.e., Executive Steering Committee (ESC)).

Exhibit 2.16.1-2 (Cont. 10) (07-10-2017)
Definitions

Term	Definition
Mobile Path	A modified life cycle approach that is designed only for mobile applications and is comprised of substantially pre-approved technology components, data usage, and development tools. The criteria for use of the mobile path is that a project has a narrowly defined project scope with a short project delivery schedule with limited estimated risk and user impact.
Modernization	Modernization is the process of updating, improving, and bringing in line with modern standards. Modernization is an IRS program that includes Organization Modernization and Business System Modernization (processes and technology).
Mitigation Plan	Plan that documents how and when a condition, risk, issue, and/or action item will be resolved.
New Development Release	A project release that addresses development of new functionality assigned during the Domain Architecture Stage.
Non-Major Project	A project that meets OMB criteria for non-major projects.
OMB Compliance	Consists of OMB vehicles or other documentation required to comply with OMB reporting requirements.
Opening Day	Date advertised to the public when they can start filing certain types of returns, (i.e., electronic individual opening date, paper opening date and IMF electronic).
Operation	The ongoing operation of an information systems solution as part of ongoing business, including daily production, call center or help desk assistance, disaster recovery, and service-level agreements (SLAs).
Operations and Maintenance Phase	The Operations and Maintenance Phase includes the portion of the life cycle subsequent to Milestone 5 and concluding with retirement of the solution.
Organizational Change (OC)	A disciplined process for defining the future organizational characteristics required to enable the intended business results and for supporting stakeholders in their transition to and realization of that organizational future state.
Oversight	IRS management of project work conducted by outside contractors to assure that IRS needs and contractual terms are met. Also, monitoring or governance of IRS projects by organizations outside the IRS.
Practitioner	Person that has assigned roles and responsibilities in the process to perform. Trained by the Process Manager to perform the process.
Partial Solution	A solution for which all planned releases are not operational.
Path	Embodies a specific technical or system engineering approach for performing the work.

Exhibit 2.16.1-2 (Cont. 11) (07-10-2017)
Definitions

Term	Definition
Phase	Phases divide the life cycle into portions that represent work of varying nature (e.g., visioning vs. conceptual design vs. logical design vs. physical design vs. coding and testing vs. deployment vs. operations, etc.).
Planned Maintenance Path	One of the paths of the ELC. Maintenance may address numerous system changes concurrently under the auspices of a project that is planned in advance, and simultaneously implements all of the changes as a new version (or release) of the system.
Procedure	A written description of a course of action to be taken to perform a given task.
Process	A set of interrelated activities, which transform inputs into outputs, to achieve a given purpose.
Process Asset	An aid (e.g., directive, process, procedure, standard, template, example, methodology, etc.) that provides guidance, support, direction, or assistance in the execution of work to be performed.
Process Asset Library	An on-line repository containing IRS process assets.
Process Description	Describes "what" happens within a set of interrelated activities and provides an operational definition of the major components of the process.
Process Manager	The definition for Process Manager is a role responsible for operational management of a process. The Process Manager's responsibilities include planning and coordination of all activities required to carry out, monitor and report on the Process. There may be several Process Managers for one process. The Process Manager role is often assigned to the person who carries out the process owner role, but the two roles may be separate in larger organizations.
Process Owner	Process Owner is a role responsible for ensuring that a process is fit for purpose.
Product Backlog	The product backlog is a repository for high level requirements with high level estimates provided by the product stakeholders. It is typically owned and managed by the product owner who reviews it on a regular cadence to ensure that the development unit is focusing on the completion of those items that represent the highest impact on the overall product value.
Product Baseline	Contains design and descriptive information for the as-built CI, including what would be necessary should the system need to be rebuilt, as well as the actual products them- selves (i.e., software, hardware, listings, and schematics).

Exhibit 2.16.1-2 (Cont. 12) (07-10-2017)
Definitions

Term	Definition
Product Owner	A business representative who: • Leads the development effort by communicating product vision in Product Backlog • Ensures the right features are included in the product backlog • Prioritizes features in the Product Backlog based on business value • Assists Scrum teams with product, scope, and timing questions • Assists in removing obstacles that impede progress • Works with stakeholders and leaders to ensure all product interests are reflected in the product backlog • Is available to the development teams to answer questions and provide direction • Validates and provides feedback on product development during each iterative cycle
Production Deployment (Deployment to Production)	The activity responsible for movement of new or changed hardware, software, documentation, process, etc. to the Production Environment.
Program	1. An operation that manages a group of related projects in a coordinated way to obtain benefits and control not available from individually managing them. 2. An operation that is managed via an organizational unit and may manage related projects, in a way as, to obtain benefits unavailable from individually managing the projects. 3. An operation managed according to a published approach, discipline, or method for program management.
Program Management	Program Management involves planning, directing, con- trolling, and administering activities throughout the life cycle of the program. This does not include management of individual projects, but focuses on the coordination between individual projects as well as guidance and direction for aspects common to all projects.
Project	A group of tasks to accomplish a specific objective, with a beginning and ending date, that is planned, monitored, and measured, follows a life cycle process, and results in deliverables or end products.
Project Asset	An artifact that a project has produced.
Project Charter	It is a requirement for all new IRS projects. A Project Charter provides the formal objectives, mandates, and scope for a project and specifies (from the Enterprise Architecture) the business processes, key stakeholders, locations, requirements, systems, interfaces, tools, standards, and target releases to be dealt with by the project.
Project Kickoff Meeting Minutes	Conducted during the Project Initiation Phase, ensures that the leadership and stakeholders are in agreement with the scope, objectives and business capabilities of the project.

Exhibit 2.16.1-2 (Cont. 13) (07-10-2017)
Definitions

Term	Definition
Project Initiation Phase	The Project Initiation Phase includes the portion of the life cycle between Milestones 0 and 1.
Project Life Cycle	The sequence of work performed by a project from inception to completion. The project life cycle begins when the project is chartered and concludes when the portion of the system being addressed has been deployed.
Project Management	Project management involves planning, directing, con- trolling, and administering discrete projects throughout their life cycle.
Project Management Institute (PMI)	Organization that advances the project management profession through globally recognized standards and certifications.
Project Manager	Responsible for ensuring the project is progressing properly. The Project Manager also: • Ensures team members have the information and tools necessary to complete their work • Organizes meetings • Facilitates release planning • Monitors work being done
Project Risk	The risk that the project will not complete on schedule or within budget.
Project Tailoring Plan	Adapts the ELC Framework to the unique and specific needs of the individual project or release. This tailoring includes selection and modification of the following ELC components to be commensurate with the scope and risk of the project: project life cycle (including phases and milestones), life cycle path(s), major types of activities, work products/deliverables, data item descriptions, customer technical reviews, life cycle status reviews and scope of manage- ment.
Proof-of-Technical-Concept Prototype	A short and/or incomplete realization (or synopsis) of a certain method or idea(s) to demonstrate its feasibility, or a demonstration in principle.
Prototyping	Prototyping is the process of quickly putting together a working model (a prototype) in order to test various aspects of a design, il- lustrate ideas or features and gather early user feedback. Prototyping is often treated as an integral part of the system design process.
Provider	The organization responsible for development of a solution. May be an internal IRS organization or a contractor.
Quality Management	The process of monitoring and assessing project and program processes and artifacts to assure that they meet accepted standards for high quality.

Exhibit 2.16.1-2 (Cont. 14) (07-10-2017)
Definitions

Term	Definition
Raines Rules	OMB's implementation of the provisions of the Clinger-Cohen Act. Raines Rules establish decision criteria that should be used when evaluating investments in major information systems. Included are requirements to use commercial software wherever possible as opposed to custom developing solutions; to implement small projects that provide incremental benefit; to pilot, prototype and simulate solutions prior to full scale implementation; and to be consistent with Federal, agency, and bureau information architectures.
Rapid Application Development	A highly accelerated approach to system development characterized by small, joint teams of users and technical personnel who work together to discover solution requirements and design and to develop a workable solution via prototyping conducted in a strict timeframe.
Rational Unified Process	A proprietary system development methodology of IBM often used for object-oriented design.
Readiness Test	Readiness tests determine that the system is ready to be deployed to users for the conduct of live business.
Records and Information Management	A program office which fully support the IRS mission and programs by promoting current information, guidance, and awareness of the importance of managing records throughout the IRS.
Records Control Schedule	A document providing mandatory instructions for what to do with records (and nonrecord materials) no longer needed for current Government business, with provision of authority for the final disposition of recurring or nonrecurring records.
Records Management Application	The form used by Federal agencies (SF-115) to obtain disposition authority from NARA for records for which the General Records Schedules are inapplicable.
Re-engineering	Radical redesign of process from scratch to support aggressive performance objectives.
Release	A release is any solution that is deployed into a production environment. A release requires governance board approval prior to deployment.
Release Backlog	The Release Backlog is a subset of Product Backlog. Requirements are pulled from the product backlog and identified and prioritized for an upcoming release. The release backlog contains more details about the requirement and low level estimate which are usually estimated by the team performing the work.
Requirement	A verifiable statement of a capability or condition that a system must have or meet to satisfy a contract, standard, or other formally imposed specification.
Requirements Analyst	See IRS preferred term: Business Analyst.

Exhibit 2.16.1-2 (Cont. 15) (07-10-2017)
Definitions

Term	Definition
Requirements Engineering	Requirements Engineering provides guidance on how to capture, refine, verify, validate, and trace requirements throughout the life cycle. Also provides guidance on how to identify and capture business rules, how to associate rules with business requirements and how to manage rules throughout the life cycle.
Reuse	Taking advantage of existing assets instead of developing new ones from scratch.
Risk	An uncertain event or condition that, if it occurs, has a negative effect on the project.
Risk Management (RM)	The process of identifying, monitoring, and mitigating project and program risks.
Scrum	Scrum is a incremental and iterative software development framework, and is arguably one of the most commonly used agile methods. Scrum outlines a process framework in which Product Owners and Team Members, all work together collaboratively to define product and sprint backlogs that are executed in short, time-boxed iterations that are called sprints. At the end of each sprint, a working increment of the software is delivered/demonstrated to the product owner and the entire process repeats itself.
Scrum Master	Facilitates the Sprint Planning meeting, Daily Scrum meeting, End of Sprint Checkpoint Review meeting, and Sprint Reflection meeting. Responsible for removing obstacles brought up by the team during the Sprint. The Scrum Master's key role is to protect the team from distracting influences and keep them focused on the tasks. The Scrum Master should have in depth knowledge of the Iterative software development lifecycle utilized by the project and possess essential soft skills including moderation, facilitation, conflict resolution and communication. The Scrum Master reviews the lessons learned from each Sprint and continually takes steps to improve the Iterative process to fit the needs of the Sprint team and project. The PM will serve as the Scrum Master, as appropriate.
Security and Privacy	Security protects information and assets. Privacy protects rights of individuals to control collection, use, retention, and disclosure of their personal information. Security helps protect privacy. Privacy protection helps to select appropriate security.
Security Control Assessment	A readiness test consisting of activities designed to ensure that the system's security safeguards are in place and functioning as intended.
Security Package	Determines whether or not the system, as installed at the target site, meets a pre-specified set of security requirements and to obtain official management authorization for the system to process sensitive by unclassified data in an operational environment.

Exhibit 2.16.1-2 (Cont. 16) (07-10-2017)
Definitions

Term	Definition
Service Management	Service Management involves planning, directing, con- trolling, and administering the support of a solution from the time it is delivered until the time it is retired. This includes management of service operations (e.g., operating and maintaining the technical infrastructure and automated solutions), maintenance and enhancement of the solution, and providing related services to users of the solution (e.g., help desk).
Simulation Prototype	A temporary representation that mimics the functioning of a system but does not access real data or perform real work. May be constructed in software or on paper.
Solution	A solution is: a. A set of project assets which, when taken together, satisfy the goals of the initiative; b. A product or a sum of products that answers a question, satisfies a request, or otherwise solves a problem; or c. A result expected from an initiative.
Solution Component	A part of the overall solution that is developed separately and then integrated into the overall solution.
Solution Risk	The risk of producing an inappropriate, inadequate, or poorly functioning solution.
Solution State	The degree of development to which the solution has evolved.
Specialty Area	A subject area of importance that has its own subordinate life cycle and requires heightened emphasis in the manner it is addressed during the life cycle of a project.
Spiral Development	A method of system development characterized by a try and see approach that iteratively hones in on the final solution via successive rounds of requirements discovery, design and development.
Sprint	Between MS 2 and MS 4B, projects will run through a series of ″Sprints,″ either sequentially or even in parallel, within each release. The goal of each sprint is to get a subset of the project's functionality to a ″production-ready″ state. At the end of the sprint the functionality developed will be fully tested (although it will not be put into production until a MS 4B exit is achieved for the full release). Each project (or each release, for large projects) will include sprints of between 2 weeks and 4 months, typically 4-6 weeks.
Sprint Backlog	The Sprint Backlog contains requirements/sub-requirements that the team anticipates completing at the end of the sprint. These are the items that the team will ″Burn Down″ against throughout the duration of the sprint.
Sprint Planning	Task at the beginning of each Sprint to size and pick which Sprint Backlog items can make that Sprint.

Exhibit 2.16.1-2 (Cont. 17) (07-10-2017)
Definitions

Term	Definition
Sprint Retrospective	At the end of each Sprint the team gets together to reflect on the last Sprint. What went well, what can be improved, changes to next Sprint?
Stakeholders	A group of individuals that is affected by, or in some way is accountable for, the outcome and undertaking. Stakeholders may include project members, suppliers, customers, end users, and others.
Story points	A unit of functionality within a user story. Each use case would include multiple story points. These story points are typically used for time and cost estimating purposes by the development team. The size/scope of a typical story point is typically defined by the project team itself (which makes it a bad idea to compare story points across project teams).
Subject Matter Expert	A subject matter expert is a skilled authority that represents the various process areas (e.g., configuration management expert, IRAP expert, ELC expert) whom should be invited to the project kickoff meeting. For most projects, programs, and organizations at the IRS, a subject matter expert refers to an expert in its business domains.
Sub-release	A subset of the logical design that independently undergoes physical design and development and is then integrated and deployed.
System	A set of interdependent components that perform a specific function and are operational. IT systems may also include software, hardware, and processes.
Systems Acceptability Testing	Testing conducted to verify a system satisfies application requirements.
System Deployment Phase	The System Deployment Phase includes the portion of the life cycle between Milestones 4B and 5, and includes deployment of the solution to all users at all target sites. This is the last phase a project will usually perform.
System Deployment Plan	The System Deployment Plan can be used by systems classified as New Development or Planned Maintenance. The plan is an Enterprise Life Cycle (ELC) requirement. The purpose of the plan is to provide a standard artifact to summarize the planned deployment activities for the release. The plan gives the project an opportunity to mitigate risks that may cause delays to project implementation.
System Development Phase	The System Development Phase includes the portion of the life cycle between Milestones 4A and 4B, and includes programming, integration and testing the solution.
System Integration Test	A system test conducted to verify that the system is integrated properly and functions as required.

Exhibit 2.16.1-2 (Cont. 18) (07-10-2017)
Definitions

Term	Definition
System Life Cycle	The sequence of work spanning the lifetime of a system. The life cycle of a system begins when the problem or desired change is first conceptualized and ends when the system produced is retired from active use. Note that this includes not only development and implementation of the solution but also the entire period during which the solution is in operation.
System Test	A test that determines the complete integrated solution works as intended. Includes SIT, SAT, GAT, and FIT.
System Test Plan	The System Test Plan can be used by systems classified as New Development or Planned Maintenance. The plan is an Enterprise Life Cycle (ELC) requirement. The purpose of the plan is to provide a standard artifact to summarize the complete test effort for the release. The plan gives the project an opportunity to mitigate risks that may cause delays to project implementation.
Tailoring	Modification of a standard approach to customize it for a specific situation. For example, ELC tailoring is modification of the standard ELC for the unique needs of a specific project.
Technical Infrastructure	The hardware, system software, networks, and communication mechanisms that constitute the underlying technology for a system.
Termination/Retirement	Termination/Retirement represents the end of the project or system's life cycle. It provides for the systematic termination of a project or system to ensure that vital information is preserved for potential future access and/or reactivation. The project or system, when placed in the Termination/Retirement status, has been declared surplus and/or obsolete and has been scheduled for termination, and/or retired. The emphasis of this status is to ensure that the project or system (e.g., equipment, parts, software, data, procedures, and documentation) is packaged and disposed of in accordance with appropriate regulations and requirements.
Tool	Job aid for a specific purpose, e.g., Checklist, template, application.
Transition	Preparation of all resources, including personnel and facilities, needed to operate and use the solution, plus the actual transfer of responsibility and physical transfer of solution components to the organizations where they will reside.
Transition Management	Transition Management specifies how to plan and execute effective solution transition at each phase of the life cycle so that targeted personnel and organizations are prepared to receive, use, operate, and maintain the business processes and technology provided by a project.
Unconditional Exit	When all critical action items, issues, risks, or impediments have been resolved (e.g., all pending test results) and ELC required PO artifacts have been approved.

Exhibit 2.16.1-2 (Cont. 19) (07-10-2017)
Definitions

Term	Definition
Unified Work Request (UWR)	The UWR process initiative is to provide a single system to request products and services from the IRS MITS organization, except for those services that are requested through OS GetIT services.
Unit Test	Unit tests are tests of a program module, object class, or other unit of the solution performed by the developer prior to integration to verify that the unit works correctly and satisfies its requirements.
Use case	A use case is a document that attempts to describes system behavior from an end-user's perspective, by outlining the flow of data, system behavioral interchanges and corresponding end-user interactions in a sequential, step-by-step manner. In other words, a use case describes ""who"" can do ""what"" with the system in question and it should vary in detail based on the needs of the requirements. Uses cases often make use of the following artifacts to describe how a system should work: Goal - What is end goal and desired effect of the functionality that the use case is attempting to describe. Summary - A brief, high-level and easily understood description of the use case. Actors - The consumers of the system that will be interacting with the system within the scope of the use cases. Actors can be people or other systems or services. Preconditions - System conditions and assumptions that must be true for the use case to be valid. Triggers - The specific events required to initiate the use case. Body Text - The description of each of the steps involved/required to complete the use case. Generally, body text will focus only the main (happy) path. Alternative Path - Steps that deviate from the main path due to exceptions, alternative logic or other conditional events. Post Conditions - The changes in the system and data as a result of executing steps outlined in the use case.
User Story	User Stories are simple, brief and concise statements in a more conversational tone, used to describe "raw" user need. It's something that the user needs to do in his day-to-day job. If you never build any software for him, then that need will still exist! It's something that anyone can understand, in the language of the users. Recommended formats for users stories are as follows: Short format: As a (User Role), I would like (Statement of need). Long format: As a (User Role), I would like (Statement of need), so that I can (desired benefit) Example: As a Business User, I would like an Agile Lexicon, so that I can understand the meanings of words that I hear in daily meeting.
Verification and Validation	Verification and validation are separate controls together used to check that a product or service 1) meets requirements and specifications and 2) fulfills its intended purpose. Validation pertains to the assurance that a product or service meets the needs of the customer and other identified stakeholders. Verification pertains to the evaluation of whether a product or service complies with a regulation, requirement, specification, or imposed condition.

Exhibit 2.16.1-2 (Cont. 20) (07-10-2017)
Definitions

Term	Definition
Velocity	A measure of productivity calculated by counting the number of units of work completed in a certain interval. The number of units are defined at the outset of the project based on the project characteristics, but would typically be any of: features, requirements, story points, use cases, hours, or days. The length of an interval is also determined up front and can be weekly, bi-weekly, monthly, or the length of the sprint.
Vision and Strategy	The Vision and Strategy Phase includes the portion of the life cycle leading up to Milestone 1, and includes development of the enterprise vision and strategy and transformation strategy.
Waterfall Approach	A rigorous method for system development characterized by serial performance of work with frequent breakpoints at which the solution must be formally approved prior to any additional work being performed.
Waterfall Path	One of the six paths of the ELC. The Waterfall Path is based on the sequential development method typical of a waterfall approach.

U.S. Department of the Treasury

Information Technology Capital Planning And Investment Control Guide

SECTION 1. IT Capital Planning and Investment Control Overview

Capital Planning and Investment Control (CPIC) is a structured, integrated approach to managing information technology (IT) investments. It is the primary process for making investment decisions, assessing investment process effectiveness, and refining investment related policies and procedures. It ensures that all IT investments align with the agency's mission and support business needs while minimizing risks and maximizing returns throughout the investment's lifecycle. CPIC is not meant to be program or project management but is the governance activities and processes that support portfolio management.

The Clinger-Cohen Act of 1996 requires government agencies to use a disciplined CPIC process to acquire, use, maintain and dispose of IT. A robust CPIC process is a dynamic process in which well justified and properly planned IT investments are selected and funded, appropriately monitored during development and operations, and periodically re-evaluated to ensure each capital investment continues to be well managed, cost effective, and in alignment with the mission and strategic goals of the government organization.

The CPIC process is governed by an appropriate Investment Review Board (IRB), to ensure that the appropriate capital investments enter, or are maintained in an agency's portfolio. The CPIC process is closely aligned with portfolio management processes. Each agency is responsible for developing a comprehensive IT CPIC policy framework that implements the following 3-phased approach to selecting, managing and evaluating IT investments:

- **SELECT:** The annual planning process to identify the best mix of IT investments, screen against predetermined criteria, and recommend the initiatives for inclusion into the agency's IT investment portfolio. Select includes validation of the existing list of investments as well as selection of new investments.
- **CONTROL:** The regular reporting process that ensures timely oversight, quality control, and executive review of each approved IT project primarily in terms of cost, schedule, quality, and scope.
- **EVALUATE:** The ongoing determination of whether the performance goals forecasted in the select phase have been realized or continue to be realized in the actual output of implemented investments. Annual evaluation of the existing portfolio provides information back into the annual select process.

SECTION 2. Annual Planning Process -- SELECT PHASE

A. IT CAPITAL PLANNING ANNUAL PLANNING PROCESS – INTRODUCTION

The IT Capital Planning Annual Planning Process (CPAPP) is a group of activities that supports the development of the President's Budget proposal for the Department and is one part of the overall IT Annual Planning Process. The primary deliverables from this process are the IT Portfolio, a group of Business Cases, and their associated Business Case Details. These are shown in the figure below as the CPIC Documents. The **IT Portfolio** captures all IT spending across the Department, by investment and by funding source and should include DME and O&M spending for all major and non-major investments. Each major IT investment must also produce a **Business Case** which is a detailed budget justification document that supports the budget request to OMB. Both of these documents are part of the budget cycle and are focused on the Budget Year (BY) time period. The **Business Case Detail** lays out the high level project plans for every project within a major investment, and a set of operational metrics that provides some insight into the performance of investment elements that are already in operational production. The Business Case Detail is the baseline for the monthly reporting process for the upcoming Current Year (CY) and will be discussed in depth in Section 3. Initial submission of all these deliverables to OMB is required in early September with final submission of the IT Portfolio due to OMB in early January, and the final submissions of the Business Cases for major IT investments are required in February. Exact dates of these deliverables are established annually by OMB.

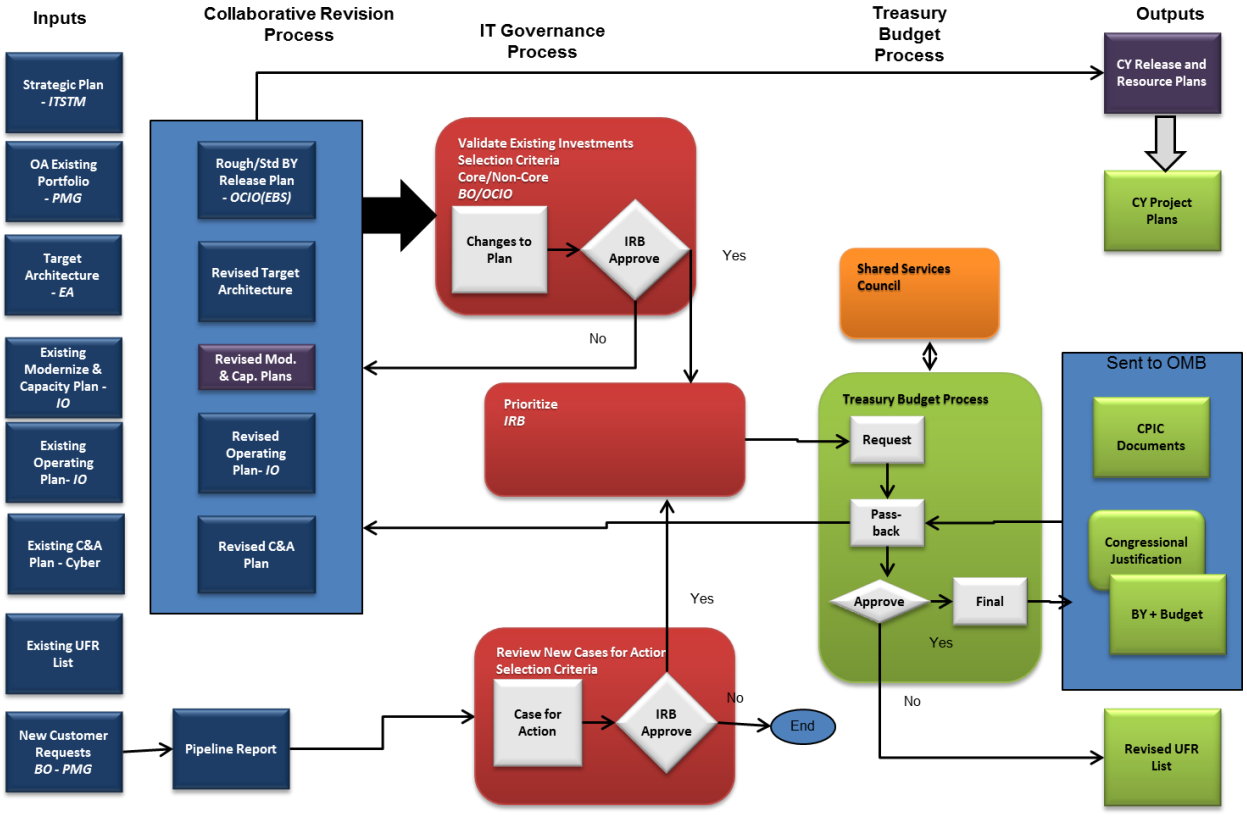


Figure 2.1 Annual IT Planning Process

OMB regularly updates their requirements so a detailed discussion of each deliverable must be addressed by this process without directly discussing those details in this guidance. Typically, OMB begins revisions for their guidance around March and publishes a nearly final version sometime in late May or early June.

IT Capital Planning has a number of processes that work in parallel that are all coordinated through the annual planning cycle. Completion annually of an Operational Analysis of existing production systems is mandatory and provides important input into the annual planning process (see Inputs in Figure 2.1 above and Section 6). Both the Monthly Reporting Process (Section 3) and the Baseline Change Control Process (Section 4) are leveraged during the annual process. While the CPAPP is a linear process that has a regular, annual cadence, these other processes happen throughout the year at intervals that are different and defined by their own requirements. So the points at which the CPAPP interacts with them are often snapshots at that time and not necessarily comprehensive of all the activities that are captured throughout those other processes.

Perhaps the most significant interaction with the CPAPP is the governance process. Governance is the process or group of processes by which decisions are made and priorities are established. It also encompasses the oversight of project and operational execution but this aspect is more closely aligned with the Monthly Reporting Process and the Baseline Change Request Process. Commonly referred to as the Select Phase of capital planning, the CPAPP and Governance processes identify work requests for the upcoming CY and the BY, determine if these requests meet the selection criteria, and then prioritize these requests to either fit within the existing budget constraints of the CY or propose new funding requests for BY. Treasury delegates all select phase governance decisions for mission specific items to the individual bureaus subject to review by the Treasury CIO with final review and approval by the Deputy Secretary through the annual budget review process. Enterprise-wide initiatives are identified through the Treasury CIO Council.

B. IT CAPITAL PLANNING ANNUAL PLANNING PROCESS – POLICY

This guidance describes the CPAPP at the Department level. Each individual bureau is responsible for developing, implementing and maintaining their own governance and planning processes in support of this guidance. The bureau CIOs will each provide a complete review to the Treasury CIO of the entire IT portfolio annually in advance of submitting their budget requests to Treasury. These reviews will highlight any significant increases to the budget request for existing investments (10% or more between the most recent budget as enacted and the upcoming CY and BY requests) and provide a detailed review of any newly proposed major IT investments. The bureaus will also provide all artifacts defined in this guide on time in support of OMB and Treasury requirements. The Office of the CIO within the Departmental Offices will coordinate with the Office of Performance Budgeting to establish timing and information sharing across their separate work streams on an annual basis. This will result in a single, common calendar for both budget and IT capital planning work in support of the submissions to OMB. A preliminary schedule will be provided at the beginning of the process but will be updated, as necessary, depending on OMB's published timing and requirements.

C. IT CAPITAL PLANNING ANNUAL PLANNING PROCESS – PROCESS

The CPAPP starts with pre-planning around February and ends with the final submission of the IT capital planning documents to OMB in February and March the following year. OMB typically begins their process in March reviewing and editing the A-11 and ends in early June by publishing their 99% Solution of this guidance. The process to perform an operational analysis of each system in production (see Section 6) occurs throughout the year with each system establishing their

individual timing and producing a recommendation to replace or reinvest in that system. These recommendations are a key input into the CPAPP. Separately, the IT organizations at the bureaus capture requests for new work from a variety of sources and local processes.
The following table provides the approximate schedule for the critical activities and due dates between the Department and the Bureaus, and between the Department and OMB. Since these dates depend on OMB's final schedule, they can only be used as a guide until OMB provides their final direction usually in early June. Each individual Bureau is responsible for establishing internal development and review processes to meet these deadlines including coordination between their CPIC staffs and their own budget offices. Treasury's DO OCIO is responsible for coordinating these activities within the Departmental Offices and the related DO orbit organizations. Figure 2.1 above reflects the detailed planning process for DO. There are essentially four types of activities:

1. Communication and Training
2. Reviews
3. Artifact Development
4. Artifact Submission

Communication and Training: The Department's Capital Planning organization within the Performance Measurement and Governance group has the lead responsibility for providing consistent direction across the Department through good communication and training. These activities include coordinating with the Department's Office of Performance Budgeting and OMB to identify any changes to the process each year, analyzing those revisions, and developing reasonable guidance that helps all Departmental entities report in an accurate and timely fashion. Communication of this guidance is conducted through training sessions that establish any new policy decisions in addition to providing guidance on annual submissions. This is important to note because the program goes through changes annually and the most effective approach to defining new policy is through these sessions. All training sessions are recorded with links maintained on the CPIC Team SharePoint site. A priority for the Department is to gain as much value from what is essentially a compliance requirement, however.

Reviews: The Federal IT Acquisition Reform Act (FITARA) requires that the Department CIO review and approve the entire IT budget annually and attest to that review in the submission to OMB (see Attachment A). In order to support the CIO in making this attestation, there are two separate reviews between the Department and the Bureau. The **first review**, conducted from March through May, is an individual, detailed review between the Department CIO and the Senior IT person at each Bureau. The Department will set minimum criteria for the review annually and provide templates, but the final format and content is the responsibility of each individual bureau. At a minimum the Bureau should discuss any significant (greater than 10%) changes to existing major IT investments, provide a detailed presentation on new major IT investments, and any other significant changes to the portfolio as a whole. The review should highlight key risks in the IT portfolio, major strategic changes to the direction of the Bureau that will affect IT spending, and any other relevant information necessary for the Department CIO to make an informed recommendation to the budget process. The **second review**, conducted during June and July and led by OPB, is a Quarterly Performance Review (QPR) with the Deputy Secretary and the individual Bureau Commissioners or Deputy Commissioners that covers the entire Bureau's budget request. The Department CIO is invited to participate in these discussions and may comment on relevant IT related requests. This is an important opportunity for the Department CIO to act as an advocate for Bureau IT related issues. This process is managed by OPB with the outcome being an approved total budget for each Bureau and approval of specific, high visibility programs. Because this outcome may be different from the original Bureau request, the Bureau must then revise their program allocations which might affect IT spending on specific line items. It is important that Bureau CPIC organizations work closely with their Bureau budget groups to ensure timely sharing of this information within the Bureau in order to meet Department submission deadlines.

Process Step	Approximate Schedule
Treasury CPIC coordinates with OPB to establish a preliminary planning calendar	February 15
Treasury provides bureaus with semi-annual training session to cover schedule and points of emphasis for the year's planning cycle	February-March
Establish work plan to update portfolio management tool (SPIKE) in time for annual submissions	March
Treasury CIO & Bureau CIO IT Budget Reviews	March - May
Bureau Budget Submissions to OPB	June 1
Bureau Budget QPR with the Dep Sec	June 1-July 20
SPIKE Deployment to Test	June 15
SPIKE User Acceptance Testing	June 15-June 30
SPIKE Deployment to Production	July 1
Semi-annual CPIC Training to finalize submission schedule, provide guidance on annual changes from OMB, and demonstrate new SPIKE updates	July 1-15
Deadline to submit CY BCRs	July 15
Bureaus Develop IT Portfolio Summaries & Major IT Investment Business Cases	July 15-August 15
Bureaus Submit IT Portfolio Summaries and Major IT Investment Business Cases to Treasury	August 15
Bureaus Develop Major IT Investment Business Case Detail Project Plans (use BCR functionality)	July 15-Sept 15
Department Budget Pass-back to Bureaus	July 25
Draft OMB Submission due to OPB	August 15
OPB Comments due to Bureaus	August 15
Final OMB Submission due to OPB	August 25
OPB submission to OMB	September 15
Treasury Submit IT Portfolios and Major It Investment Business Cases to Treasury	September 14
Bureaus Submit Major IT Investment Business Case Detail Project Plans to Treasury	September 15
Treasury Submits Major IT Investment Business Case Detail Project Plans to OMB	October 5
Treasury Submits Metrics only BCRs for Major IT Investments	November 5
Treasury receives Budget Passback from OMB	November 25
Bureaus update and submit Final IT Portfolio Summary to Treasury	December 29
Treasury submits final IT Portfolio to OMB	January 5
Bureaus update and submit Final Business Cases for major IT investments	January 25
Treasury submits final Business Cases to OMB	February 5
Bureaus submit new investment artifacts for major IT investments to OMB	March 15

Artifact Development: With the conclusion of the budget QPRs, the Bureaus must then develop the appropriate artifacts for submission to the Department. The basic artifacts are the **IT Portfolio Summaries** for every individual investment, and **Business Cases** and **Business Case Details** for all major IT investments. OMB may also require supplemental information such as a summary of cyber spending, a summary of infrastructure spending, or other similar artifact that supports OMB led IT initiatives. Each Bureau should develop their own policies and processes for developing and reviewing these artifacts. FITARA also requires that the Department CIO attest to the accuracy and validity of these submissions. As a result, the Treasury will require Bureau CIOs to make a similar attestation. This **Attestation** will be required by the Bureau CIOs for the final submissions in January and February.

The IT Portfolio Summary is a listing of all IT investments across a Bureau or Department by individual funding source and divided into Development, Modernization and Enhancements (DME or Capital Costs) and Operations and Maintenance (O&M or expenses). Each investment submits these individually to Treasury where it is compiled into a single document for submission to OMB. OMB uses a draft version of this form to identify any changes to the portfolio (addition, deletion or change in status of each investment). This summary is expected to capture 100% of IT spending across the Department. This format is also used by Treasury to capture all capital spending across the Department and serves as the basis for their 4.1 Table, Capital Investment Plan, in the congressional justifications that they submit to OMB and Congress.

The Business Case is a budget justification document and accompanies the submissions made by OPB to OMB. It is required for each investment that meets the definition of a major IT investment in either the upcoming CY or the submission BY. For example, the submission made in September, 2014 would support a CY of FY 2015 and a BY of FY 2016. This artifact provides the basic reason for including this major IT investment request in the annual budget. It often includes other pieces of information that are collected annually, but may change based on the direction from OMB. For example, this artifact often includes a summary of contracts that support the investment. Generally this data is relatively static and doesn't warrant more frequent updates.

The last major artifact, the Business Case Detail, is the foundation for regular oversight and program control. There are two distinct sections to this document: **project management** and **operational performance** reporting. The initial submission of this information establishes the project plans and performance targets at the beginning of the CY. Execution against these plans and targets is then tracked monthly and is covered in Section 3 of this guide. The initial submission captures the planned start and end dates, and the planned cost of each activity within a defined project. Treasury also provides the opportunity to define a critical path for each project at this time. It also captures the targets for operational performance metrics. In addition to these targets, Treasury requires that each investment set thresholds that define the range of values that would be considered Yellow or Red for each metric. This helps the Department monitor the performance of these systems in the production environment.

Artifact Submission: There are two levels of submissions required to complete a single cycle: **Bureau to Treasury**, and **Treasury to OMB**. There are two cycles in the annual process, the **initial submission** which usually occurs in early September and the **final submission** which usually occurs in January and February. These two submissions are separated by OMB's budget passback which normally occurs just after Thanksgiving. Generally OMB requires **initial submission** of all related artifacts at the same time during the first full week of September. This submission includes a single **IT Portfolio Summary** for the Department, individual **Business Cases** and individual **Business Case Details** for each major IT investment. Treasury understands that there is a lag in reporting actual performance results, however, and has adapted their schedule to allow final reporting against the prior year's project plans and operational targets during the October monthly submission. Since Treasury uses the baseline change control functionality in the portfolio management tool (SPIKE), the Department has the ability to stagger the initial submission

of the Business Case Details to beyond OMB's initial deadline and generally extends submission of the project plans until late September and submission of performance metric targets until early November. Because OMB often changes the fields required in the Business Case Details, Treasury must adapt their system to account for these changes. It is the Department CPIC Director's responsibility to ensure that the correct fields are reflected in all submissions to OMB.

The final submission in January and February only requires submission of revised IT Portfolio Summaries and Business Cases that change as the result of OMB's passback, and the CIO's signed attestation. There is no requirement to provide revised Business Case Details. After initial submission, any changes to the Business Case Details are handled through the BCR process. Any individual IT investment without changes only needs to create a new IT Portfolio Summary or Business Case in SPIKE and submit it to Treasury, as it is and without changes. Lastly, OMB often defines a set of additional artifacts for a March submission to their MAX Collect system. These artifacts are typically pre-existing artifacts that are required elsewhere in the CPIC process such as Investment Charters, Operational Analyses, and Analyses of Alternatives.

Section 3. Monthly Reporting – CONTROL PHASE

D. IT PORTFOLIO MONTHLY REPORTING – INTRODUCTION

For the BY2016/FY2015 submission, Exhibit 53A was changed to the IT Portfolio (ITP), the Exhibit 300A was changed to the Business Case (BC), and the Exhibit 300B was changed to the Business Case Details (BC Details). Minimal changes were made to the IT Portfolio, Business Case and BC Details for the BY2017/FY2016 submission. The Treasury Department utilizes the Baseline Change Request (BCR) form to submit annual project plans. A monthly form and workflow process is provided by the Treasury's IT Portfolio management tool, also known as SPIKE, to comply with monthly reporting requirements to the Federal IT Dashboard. For consistency throughout this CPIC Guide, the tool will be known interchangeably as the Treasury IT Portfolio Management Tool and SPIKE.

An overview of the Treasury's IT Portfolio Dashboard and investment rating and reporting is illustrated in Figure 3.A.

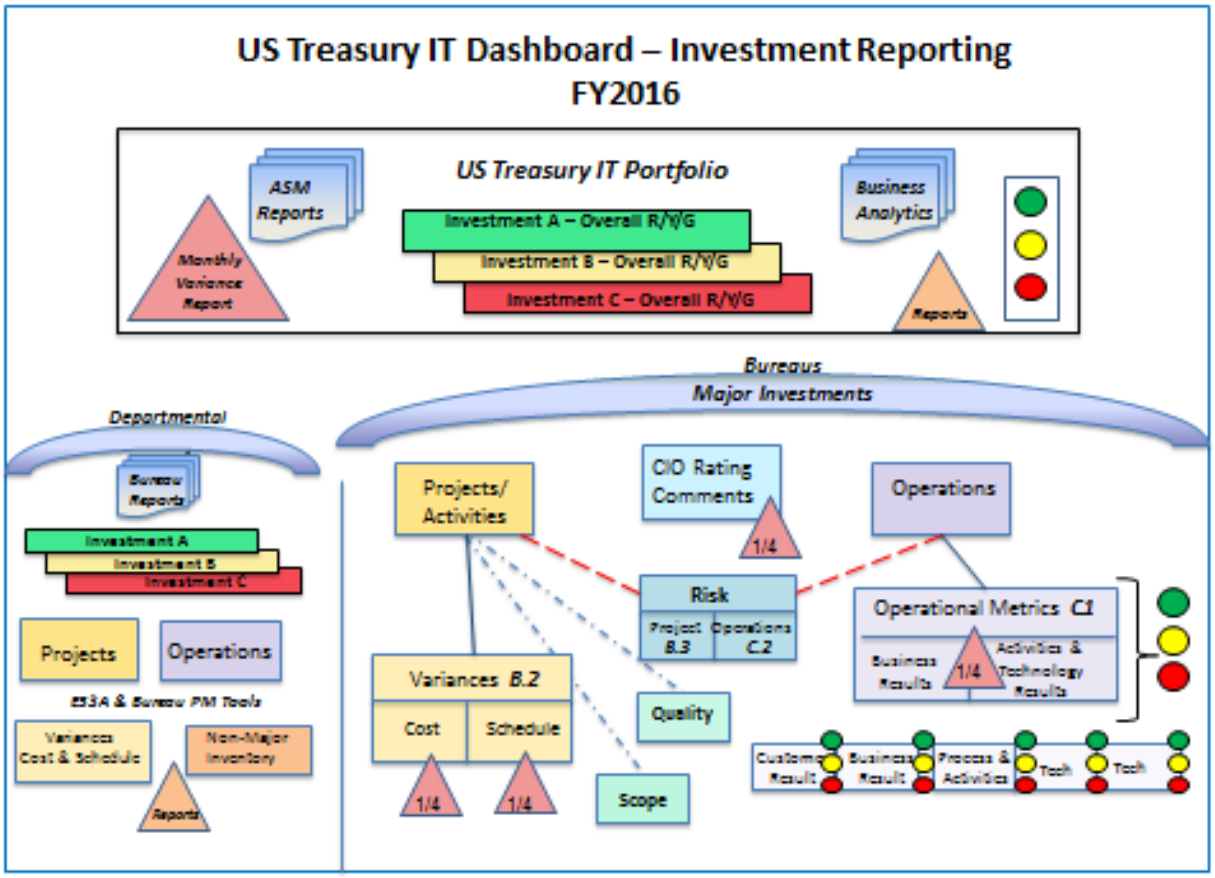


Figure 3.A: Treasury IT Dashboard - Monthly Investment Reporting Overview

E. IT PORTFOLIO MONTHLY REPORTING – POLICY

The Treasury's Capital Planning and Investment Control (CPIC) Director is responsible for preparing and publishing a monthly performance report of the Treasury's IT Portfolio status on the federal IT Dashboard, developed and hosted by the Office of Management and Budget (OMB). The Bureaus' Chief Information Officer and supporting CPIC staff are responsible for timely, accurate and complete updates to the monthly performance report for their investments. The same monthly data submission to OMB is hosted by Treasury, Information Technology Strategy and Technology Management (ITS&TM), Performance Measurement and Governance (PM&G). The Treasury monthly reporting cycle timeline is detailed in Figure 3.B.

Treasury IT Portfolio – Monthly Deliverables

REPORT PROCESS	*MONTHLY REPORTING*
Office of the Treasury CIO • Bureau CIOs (and/or designees) will receive invitations to the monthly review meetings	***As scheduled (at least a month in advance)***
IT Portfolio Management Tool - Monthly Form • Bureaus create new monthly form for each investment • Bureaus submit projected/actual data on cost, schedule and operational metrics • Update existing risks as needed and enter any new risk(s) for investment and projects	***15th of the month***
Bureaus - Monthly Variance Report • Bureaus run monthly variance report • Analyze variances calculated at the project and investment level • Prepare explanation for any cost, schedule or operational metrics variances • Write Bureau CIO Comments to address any variances, detail accomplishments and address risks as needed. May include positive/good news reports as requested. • 'Submit to Treasury' including Bureau CIO Comments – ***Official Submission***	***16th - 20th of the month*** ***20th of each month***
Treasury Desk Officer(s) – Monthly Variance Report • Treasury runs monthly variance report to identify investments for review • Analyze variances for cost, schedule and operational metrics • Analyze any deterioration since prior month • Analyze risks • Review Bureau CIO comments and draft <u>proposed</u> Treasury CIO Comments and Rating • Treasury CPIC prepares complete DRAFT Variance Report for monthly review meeting • Treasury CPIC publishes Agenda for review meeting; ensure Bureau CIOs (and/or designees) participation	***16th – 20th of the month*** ***20th of the month***

Treasury CIO CPIC Monthly Review Meeting • Review meeting held with Bureau participation as identified in the Agenda • Treasury CPIC updates CIO Comments and CIO Rating, as needed • Confirm final edits in preparation for submission	***As scheduled (near the 25th of the month)***
Treasury CPIC Director • Prepare executive summary for month's Variance Report • ***Publish*** Monthly Variance Report for ASM and Bureau Heads • ***Produce/Deliver*** Monthly Variance Report to ASM for Bureau Head Meeting	***Friday prior to 1st Monday of each month***
Treasury CPIC • Submit all Monthly forms to OMB	***Last day of the month***

Figure 3.B: Monthly Reporting Deliverable

Three primary dates drive the monthly reporting cycle. First, bureaus must update project execution data and operational performance for each major investment by the 15th of each month. Cost and schedule variances are analyzed, along with operational metrics and project risks, and a bureau-level view of the monthly variance report can be prepared at the bureau level. Second, the monthly updates are consolidated at the Departmental level and presented to the Treasury CIO near the 25th of each month. Finally, the Department's monthly submission is due to OMB by the last day of each month. Treasury's Monthly Variance Report, complete with portfolio variance analysis, investment summaries, and trend analysis is published for the Assistant Secretary for Management, bureau heads and posted on the CPIC website.

F. IT PORTFOLIO MONTHLY REPORTING – PROCESS

While the IT Portfolio primarily reports on the investment's capital planning process, the Business Case is intended for monthly reporting on project execution and operational performance. The Treasury-wide IT Portfolio management tool, SPIKE, provides a monthly investment version "view" to provide OMB and the Federal IT Dashboard with current fiscal year (FY) investment performance data for major investments. Treasury uses SPIKE's user interface and reports generator to prepare the monthly Business Case updates for detailed project performance, cost and schedule variance reporting, and a custom view of operational performance through an operational metric variance.

Figure 3.C depicts the monthly reporting process flow of actions required of Bureau and Treasury CPIC personnel throughout the Monthly Reporting Process.

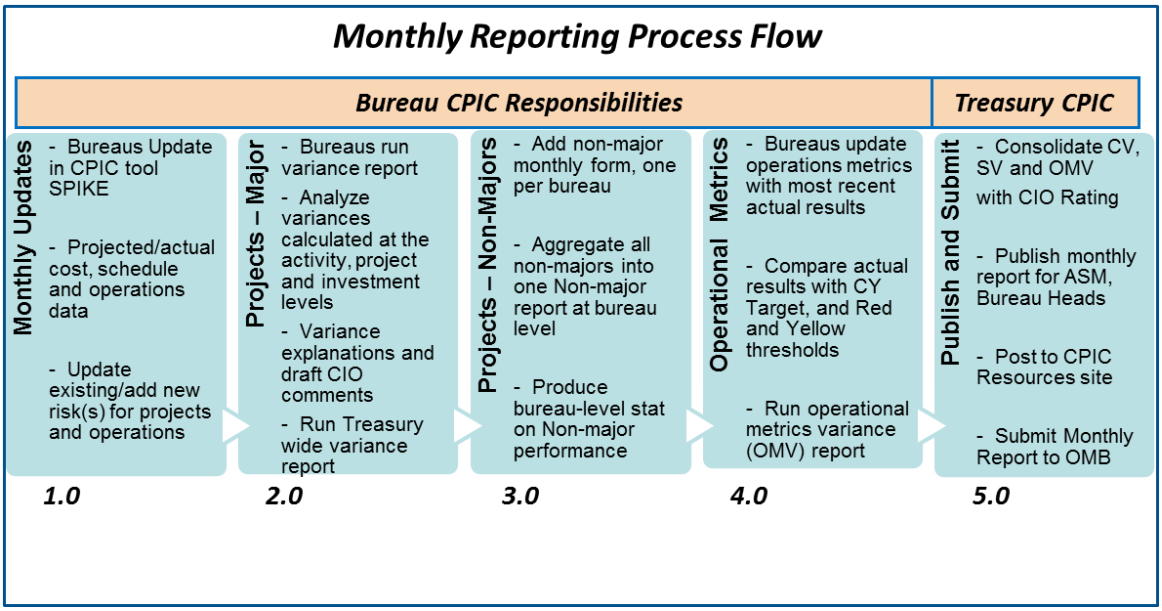


Figure 3.C: Monthly Reporting Process Overview

The purpose for this section is to describe the five sub-processes and the Treasury's Capital Planning and Investment Control (CPIC) policies that constitute the Treasury's Monthly Reporting Process.

1.0 Update Business Case + Details (Treasury BCR) Data

The first sub-process, 1.0 Update Business Case Data, is fully executed as part of each Budget Year (BY) submission, typically in early September. The entire BY submission of IT Portfolio, Business Case, and Details is completed as the BY Annual Planning Process comes to a close. (Please see **Section 2. Annual Planning – SELECT PHASE**.)

In accordance with OMB Circular A-11, CAPITAL PLANNING GUIDANCE (Revised 06/22/2015)an IT Portfolio and Business Case + Details must be submitted for each major IT investment. The Business Case requires cost and schedule plans for projects and associated activities, as well as operational performance data. Major investments are required to report on either project plans, or operational performance metrics, or both. The Business Case should include, at a minimum, all projects, activities, and operations scheduled to commence or continue in the current fiscal year, and shall establish cost, schedule and performance targets for current fiscal year and FY+1.

When creating project plans, OMB requires building project plans with project segments/activities of six month duration with the objective to deliver needed functionality quicker. Treasury project plans entered in the IT portfolio management tool (SPIKE) will need to implement this 6-month duration guideline where it is appropriate and where it makes good business sense to deliver improvements and needed functionality.

While OMB allows for regular updates to projects, activities and metrics to be submitted to the OMB IT Dashboard as soon as the data becomes available, Treasury requires a date-deliverable monthly update process (See Figure 3.B above). Treasury's data requirements from the bureaus fulfill the

OMB requirement to update operational performance for each investment at least once per each calendar month. All major investments in the Treasury portfolio are required to report monthly updates to their Business Case through a monthly form process in the Treasury-wide IT Portfolio Management Tool.

The following direction summarizes the Treasury policy for portfolio reporting through the monthly reporting process. Section B, project data, and/or Section C, operational data, is provided in the Business Case/BCR for an investment. Depending on the lifecycle phase, the investment can have either project data, or operational data, or both. An investment cannot leave both Section B and Section C blank. Monthly updates are required in the following Business Case sections:

B.1: ***Projects***. Update all of the investment's projects with activities occurring the current FY.

B.2: ***Activities*****.** Outline the activities **t**that are performed to achieve the outcome of each project.

In Tables B.1 and B.2, update the projects reported with any activities that started in a previous FY (PY and earlier) and that have not been completed by the beginning of the CY. Also update reported projects and activities that are scheduled to start in the CY and BY, including planning, development, modernization and enhancement (DME) and maintenance projects. As available, update projects and activities commencing beyond the BY.

All DME and project maintenance activities that have any period of performance in the current FY will need to be reported in Table B.1 (projects) and Table B.2 (project segments/activities). This would include:

- projects starting in the PY and completing in current FY
- projects starting in the PY and extending through the current FY
- projects starting and completing in the current FY, and
- projects starting in the current FY and extending into the next FY.

The Table B.1 and B.2 fields that are required to be updated include Projected/Actual Start Date, Projected/Actual Completion Date, and Projected/Actual Costs. Values entered into projected fields are assumed to be the program/project manager's best assessment at the time the data is provided. Values entered into actual fields are assumed to be authoritative and based on bureau's or program/project management office's system of record. Actual values should be entered within 60 days of the project/activity end date but may be revised later through a correction baseline change request if necessary.

In summary, if any of a parent activity's child activities occurs in the current year or budget year (CY or BY), then all child activities of the parent activity must be reported, regardless of their timing. This is to ensure that a complete view of the parent activity is available.

B.3: ***Project Risk*****.** Identify significant risks to each project's success.

In Table B.3, list all significant project-related risks submitted for the investment that are currently open and provide risk assessment information. It is not necessary to address all 19 OMB Risk Categories. Consider the combination of the risk probability and the risk impact when updating significant risks.

Risk assessments should include risk information from all stakeholders and should be performed at the initial concept stage and then monitored and controlled throughout the life cycle of the investment. A copy of the investment Risk Management Plan must be provided to OMB through the DataPoint document list service. All major investments are responsible to keep their investment artifacts current on the DataPoint site.

In Table B.3, list all project-related risks submitted for the investment that are currently open and provide risk assessment information. Risks must be identified for each active project. It is not necessary to address all 19 OMB Risk Categories.

C.1A and C.1B: *Operational Performance Information*. Identify performance targets and results for evaluating operations.

Investments with operational performance data must define a minimum of five metrics, across three areas:

Customer Satisfaction (Results): Provide a minimum of one metric that reflects results (i.e. service quality, end user satisfaction) with respect to the impact to major stakeholders (customers, affected citizens, inter and intra-agency end users).

2. ***Strategic and Business Results:*** Provide a minimum of three metrics that measure how this investment contributes to the Strategic Objectives / Agency Priority Goals or business need of the Agency. These could come in two different areas. At least one Strategic and Business Results metric must have a monthly reporting frequency.

a. Effectiveness –quantified desired effect the investment has on the Agency's mission or business needs (e.g. processing speed, processing quality, backlog reduction, mission outcomes, business outcomes, etc.)
b. Efficiency - quantified desired effect the investment has on the agency's operational/technical needs (e.g. reliability, availability, throughput, response time/latency, utilization, etc.)

3. ***Financial Performance:*** Provide a minimum of one metric that measures the reasonableness and cost efficiency of the investment.

4. ***Innovation:*** Investments are not required to report innovation metrics for every investment, however
Agency's may choose to report under Innovation metrics category if they so choose.

Use Table C1.A when adding a new metric, such as for a new investment, or to provide additional information about an existing investment. Table C.1B is used to report actual results of measures at the appropriate frequency. Since all data in Tables C.1A and C.1B will be displayed to the public on the IT Dashboard, ensure that all metrics provided are publicly releasable.

Treasury's experience with Business Case metrics has demonstrated that 'percentage' and 'average' are preferred Units of Measure, as opposed to absolute values such as 'number' or 'dollars.' When setting the CY target value for existing metrics, pay particular attention to the past performance against the PY metric target value, and set accordingly. Reporting Frequency can be monthly, quarterly, semi-annually or annually. However, annual reporting frequencies are reserved for annual operating cost measures, performance

measures associated with an annual performance plan, or other measures that can only be appropriated measured on an annual basis.

Agency Strategic Objective/Agency priority Goals were issued by OMB for the BY2017 submission. SPIKE provides a drop-down selection in Table C.1A.

Objective Or Goal ID	Objective Or Goal Code	Objective Or Goal Description
1	1109	Promote savings and increased access to credit and affordable housing options
2	930	Wind down emergency financial crisis response programs
3	929	Complete implementation of financial regulatory reform initiatives, continue monitoring capital markets, and address threats to stability
4	1110	Facilitate commerce by providing trusted and secure U.S. currency, products, and services for use by the public
5	1117	Promote free trade, open markets, and foreign investment opportunities
6	1114	Protect global economic and financial stability and press for market-determined exchange rates
7	1120	Advance U.S. economic, financial, and national security goals by leveraging multilateral mechanisms
8	1116	Provide technical assistance to developing countries working to improve public financial management and strengthen their financial systems
9	1131	Improve the efficiency and transparency of federal financial management and government-wide accounting
10	1126	Improve the disbursement and collection of federal funds and reduce improper payments made by the U.S. government
11	1130	Pursue tax reform, implement the Patient Protection and Affordable Care Act and Foreign Account Tax Compliance Act, and improve the execution of the tax code
12	1133	Identify priority threats to the financial system using intelligence analysis and outreach to the financial sector
13	1136	Develop, implement, and enforce sanctions and other targeted financial measures
14	1138	Improve the cybersecurity of our nation's financial sector infrastructure
15	1134	Protect the integrity of the financial system by implementing, promoting, and enforcing anti-money laundering and counterterrorism financing standards
16	1142	Increase workforce engagement, performance, and diversity by instilling excellence, innovation, and inclusion in Treasury's organizational culture and business practices
17	1143	Support effective, data-driven decision-making and encourage transparency through intelligent gathering, analysis, sharing, use, and dissemination of information
18	1144	Promote efficient use of resources through shared services, strategic sourcing, streamlined business processes, and accountability
19	1145	Create a culture of service through relentless pursuit of customer value
20	1176	Focus Enforcement on High-Priority Threats using Pro-active Analysis
21	290	Increasing Self-service Options for the Taxpayers

Figure 3.D: Performance Reference Model Codes

Treasury added three additional fields to Table C.1A that facilitate a custom view of operational performance through an operational metric variance (OMV) report. These three additional fields are considered local, or "Treasury-specific" and are not included in Treasury's monthly submission to OMB's IT Dashboard:

- Yellow Threshold for CY Target
- Red Threshold for CY Target
- Top-3 (Treasury Key) Metric Y/N Indicator Flag

See sub-process 4.0 Operational Data – Metrics paragraph for details on how the Treasury-specific fields formulate the Operational Metrics Variance (OMV) report. A summary of the Treasury-specific operational metrics requirement is presented in Figure 3.E.

Top-3 Metrics for Treasury IT Portfolio reporting:

• OMB's requirement for 5 metrics changed:
  • **1** required from *Customer Satisfaction (Results)*
  • **3** required from *Strategic and Business Results*
  • **1** required from *Financial*
  • *Innovation* category – not required

• Bureaus/investment managers will designate **at least three Key Metrics** for inclusion in the Operational Metrics Variance (OMV) calculation.
• Treasury OMV - **2** ***Strategic and Business Results*** – monthly or quarterly only
• Treasury OMV - **1 from EITHER *Customer Satisfaction* OR *Financia*l** category – monthly or quarterly only
• Remaining 2 required metrics – can be any Reporting Frequency

Figure 3.E: Treasury IT Portfolio Reporting - Operational Metrics

As actual results are measured at the appropriate frequency, they should be reported as new entries in Table C.1B:

- ***Metric ID***: Unique ID provided by Treasury for the metric, and used to reference the correct metric.
- ***Actual Result*** and ***Date of Actual Result***

- ***Comment:*** Requires a comment for any metric that is "Not Met" or not on track. Yellow and Red Metrics are considered to be "Not Met" and will require the user to enter a comment.

C.2: *Operational Risk*. Risk assessments should include risk information from all stakeholders and should be performed at the initial concept stage and then monitored and controlled throughout the life cycle of the investment. A copy of the investment Risk Management Plan must be provided to OMB through the DataPoint document list service. All major investments are responsible to keep their investment artifacts current on the DataPoint site.

In Table C.2, list all open operational-related risks for the investment and provide risk assessment information. Investments with current year O&M funding are required to report operational risks. It is not necessary to address all 19 OMB Risk Categories. Consider the combination of risk probability and the risk impact when identifying significant risks.

2.0 Project Execution - Major Investments

Updates to the Treasury-wide IT portfolio management tool monthly form, due by the 20th of each month, become the "trigger" for the creation of the monthly variance report. The Monthly Variance Report can be run at any time, but it is expected that once the monthly updates are complete, bureaus can run the report for their own analysis and preparation of the Bureau's CIO Comments.

2.1 Variance Calculations

2.1.A. OMB IT Dashboard

Utilizing the new Business Case project execution tables, OMB will calculate and post cost and schedule variances for each investment on the IT Dashboard. Given the reporting structure which tracks baselines at the lowest level of child activities reported, all variance calculations for activities are necessarily at the lowest level.

The OMB's approach to calculating variances is summarized here, and then contrasted below with the Treasury's CPIC approach to calculating variances. It is important for the Treasury CPIC community to understand the differences in the calculations, and recognize the variance when displayed on the IT Dashboard.

Cost Variance – The Dashboard will calculate cost variance for activities by comparing the planned total cost of an activity or sub-activity with the actual total cost or use the projected total cost if the activity is not yet complete. For example, if an activity is planned to have a cost of $1000, but the actual cost reported is $1200; the cost variance is -$200. If something is "Planned" at $100, and "Actual" is ZERO (Not Null), the IT Dashboard will consider this completed at NO cost.

IT Dashboard Cost Calculations:

- Always use the "Actual" value if both "Projected" and "Actual" are provided for the same activity.

- Roll-ups are obtained by summing the costs of all the included lowest level child activities.

- For Individual Future Activities or Roll-Ups that contain only future activities: *Cost Variance = 0%*

- For Completed or In-Progress Activities and Roll-Ups (which may include some future activities):
  - *Cost Variance = Planned Total Costs – Projected OR Actual Total Cost*
  - *% Cost Variance = Cost Variance / Planned Total Cost * 100*

Definitions:

- Future Activities: If *Planned Start Date* is > Today **AND** *Actual Start Date, Actual Completion Date* and *Actual Total Cost* are zero/blank

- In-Progress Activities: If *Actual Start Date* is provided **OR** *Planned Start Date is* ≤ Today

- Completed Activities: If *Actual Completion Date* is provided (not blank)

Schedule Variance – The Dashboard will calculate schedule variance for activities by comparing the planned completion date of an activity with the actual completion date. If the actual completion date is not available, the projected date is used. For example, if an activity or sub-activity is planned to be completed in 5 days, but the current projected completion date is 8 days away; the schedule variance is 3 days.

IT Dashboard Schedule Calculations:

- Always use the "Actual" value if both a "Projected" and "Actual" date are provided for the same activity.

- Schedule Variance in Days for an Activity:
  - *Planned Completion Date – Actual OR Projected**** Completion Date*
    ****** use today's date if the Projected Completion Date has passed without reporting an Actual completion date*

- Schedule Variance in Days for a Roll-Up:
  - *Latest Planned Completion Date of all activities – Latest Actual OR Projected**** Date of all activities*
    ****** use today's date if the Projected Completion Date has passed without reporting an Actual completion date*

- Schedule Duration in Days for an Activity: *Planned Completion Date – Planned Start Date*

- Schedule Duration in days for a Roll-Up: *Latest Planned Completion Date of all activities – Earliest Planned Start Date of all activities*

- Percentage Schedule Variation: Investment *% Schedule Variance* = $\frac{\text{variance in days}}{\text{duration}}$ ** 100*

Cost and Schedule Variances displayed on IT Dashboard		
% Cost Variance (use absolute value)	**% Schedule Variance**	**Color**
0% , < 10%	0% , < 10%	**Green**
≥ 10% , < 30%	≥ 10% , < 30%	**Yellow**
≥ 30%	≥ 30%	**Red**

Figure 3.F: OMB IT Dashboard – Variances

Treasury IT Portfolio Dashboard

Treasury uses the same Variance percentages, CV% and SV%, and R/Y/G color indicators as portrayed in Figure 3.F, but has has implemented more proactive variance calculations that will "flag" a variance earlier than would be expected under the OMB IT Dashboard variance calculations. Treasury's CPIC capitalizes on the detailed reporting of monthly cost and schedule updates in the Business Case project execution tables by developing Treasury-specific cost and schedule variance calculations that incorporate critical path methodology. Treasury's cost variance (CV) and schedule variance (SV) calculations were designed to facilitate value-added analysis with the intent to identify problems earlier than the IT Dashboard calculations permit. Hence, Treasury's CV and SV calculations are conservative and more rigorous to provide an earlier assessment of variances.

The Monthly Variance Report produces an overall rating for each investment based on one-fourth of the rating coming equally from the Cost Variance %, Schedule Variance %, CIO Rating % and the Operational Metric Variance %. The Operational Metric Variance % (OMV%) is described in described in Section **4.0 Operational Data – Metrics** of this Monthly Reporting – Control Phase Section.

The cost and schedule variance calculations measure only project segments/activities open during current fiscal year (FY) based on Table B.2 in the Business Case. Given the reporting structure which tracks baselines at the lowest level of child activities reported, variances are calculated at the lowest level activity in the parent/child/grandchild construct of Tables B.1 and B.2. The variances are summed and rolled up at the activity level, project level and finally at investment level.

Cost and Schedule Variances – US Treasury IT Portfolio Dashboard		
% Cost Variance	**% Schedule Variance**	**Color**
> -10%	> -10%	**Green**
≤ -10% and > -30%	≤ -10% and < -30%	**Yellow**
≤ -30%	≤ 30%	**Red**

Figure 3.G: Treasury IT Portfolio Dashboard – Variances

Treasury Cost Variance – CV will be measured only on project segments/activities open during the current FY, and will continue to be the sum of all activity variances.

- CV ($) = Total Planned Costs for CY – Total Projected OR Actual Costs for CY
- Cost Variance % = (Cost Variance $ / Total Planned Costs for CY) * 100

Treasury Schedule Variance – SV will be measured along the ***critical path***. A critical path is defined as a series of project segments/activities that define the minimum time needed to complete the project. This implies that a single day slip in an activity will cause an equivalent slip to all subsequent activities in the path.

- Total Planned Days = Planned Completion Date (of the last activity in the critical path) – Planned Start Date (of the first activity in the critical path)
- Total Projected OR Actual Days = Projected OR Actual Completion Date (of the last activity in the critical path) – Planned Start Date (of the first activity in the critical path)
- SV (Days) = Total Planned Days – Total Projected OR Actual Days
- Schedule Variance % = SV Days / Total Planned Days

NOTE: Care should be used to address issues resulting from $0.00 entered in the Actual Total Cost field. A blank (NULL) should be entered in this field up until the Actual Costs are known so that the report computes the CV by comparing Planned Total Costs and Projected Total Costs. Bureaus should ensure that the Actual Total Cost field remains blank (NULL) until the project segment/activity is complete and a date is entered into the Actual Completion Date field. Treasury's CV and SV calculations are summarized in Figure 3.H.

Variance Calculations	
Cost Variance ($)	Total Planned Cost for CY – Total Projected OR Actual Cost for CY
Cost Variance (%)	(Total Planned Cost for CY – Total Projected OR Actual Cost for CY) / Total Planned Cost for CY
Total Planned Days	Planned Completion Date – Planned Start Date
Total Projected OR Actual Days	Projected OR Actual Completion Date – Planned Start Date
Schedule Variance (Days)	Total Planned Days – Total Projected OR Actual Days
Schedule Variance %	(Total Planned Days –Total Projected OR Actual Days) / Total Planned Days
Overall Variance %	(CV% + SV% + OMV% + CIO Rating %) / 4

Figure 3.H: Treasury Cost and Schedule Calculations

Projected/Actual Start Date and Projected/Actual Completion Date are expected to be updated on a monthly basis.

- If there is no Actual Start Date and the Projected Start Date is 45 days before the 20th of the reporting month, then the difference between the Projected Start Date and last day of the month preceding the reporting month will be added to the Projected Completion Date to calculate the schedule variance.

- If the Projected Completion Date is 45 days older than the 20th of the reporting month, then the Projected Completion Date will be calculated to be the 20th of the reporting month minus 45 days. This means that every day the project is not updated, past the last reported Projected Completion Date, (after the 45 day grace period) will generate an equivalent schedule variance.

Two examples are provided:

1) If the Projected Start Date is 5/14/2015 for the 7/20/2015 report date, then 47 days (the difference between 5/14/2015 and 6/30/2015) will be added to the Projected Completion Date for calculating SV.

2) If the Projected Completion Date is 5/15/2015 for the 7/20/2015 report date, then the SV will be calculated as if the Projected Completion Date were 6/5/2015.

SV Calculations for Projects With and Without Critical Path

In general, the SV is calculated as the difference between the Planned Days and Projected Days. The difference in calculations for Non-critical path and Critical path projects/activities is reflected in how the Planned Days and Projected or Actual Days are calculated at the project level.

If there is a schedule variance at the activity level, then it is possible that there may not be a schedule variance at the project level, as long as the subsequent activity on the critical path has started, and the projected completion date for subsequent activity remains same as the planned completion date. The SV at the project/parent level is the greater of the SV of the open sub-activity

(an activity with an Actual Start Date) or SV of a subsequent sub-activity(s) (an activity that follows the current activity on the critical path, it has no Actual Start Date and it is in the current fiscal year).

Planned Days or Projected Days calculations for project segments/activities that employ the critical path methodology are summarized in Figure 3.I.

Variance Calculations – Critical Path Planned or Projected Days Calculations for projects with Critical Path(s)	
1. SV of Project with WITHOUT Critical Path	Planned Days = Sum of planned days of all sub-activities
	Projected Days = Sum of projected days of all sub-activities
2. SV of Project WITH Critical Path	Planned Days = Planned Completion Date of the sub activity that finishes last minus Planned Start Date of the sub activity that starts earliest.
	Projected Days = Projected Completion Date of the sub activity that finishes last minus Projected Start Date of the sub activity that starts earliest PLUS SV (Days) of the last open activity on CP
3. SV of Projects with both types of Activities WITH and WITHOUT CP	Activities WITHOUT CP are not considered in the SV calculation. SV will be calculated same as in #2 above.
4. SV of Investments WITH Mixed Projects	Planned Days are sum of Planned Days of ALL Projects.
	Projected Days are sum of Projected Days of ALL Projects

Figure 3.I: Treasury Schedule Variance Calculations with Critical Path

2.2 Critical Path

For purposes of the critical path methodology and calculation(s), the following definition is utilized:

> **Critical Path:** *A series of activities where the planned end date of the last activity is directly dependent on the timely completion of all the previous activities.*

The Department's portfolio management tool allows for critical path identification and placement relationship. Under the critical path method, the SV will be equal to the variance of the last activity on the critical path, with the last activity variance adjusted for changes in prior activities.

Critical Path Methodology

- If a critical path is defined for the particular investment, then enter a "Y" in the Table B.2 1-character field. If critical path methodology is not defined for the particular investment, then enter a "N" in the critical path designator field.
- Identify each project segment/activity that is on the critical path.
- For each project segment/activity that is on the critical path, enter the sequence number the activity is on the critical path. (See *Assignment of Critical Path numerical value* below.)

- Non-critical path activities (of the same investment) will not be included in overall variance calculations. (**NOTE:** Non-critical path activities may be included in project risk scores.)

When reporting against a critical path, adjust all uninitiated (Start Date Planned is still in the future) subsequent activities' "Completion Date Projected" fields to match the adjustment of the latest open activity in the critical path. By definition, subsequent activities in a critical path will have a day-for-day change to match changes in earlier activities. Once an activity is open, adjustments may be made within the activity to recover the planned schedule.

If no critical path is identified, then the Schedule Variance (SV) will be the sum of all activity variances.

Assignment of Critical Path numerical value

Two fields were added to the CPIC portfolio management tool to identify activities in a project's critical path, and to assign a numerical value to its position in the sequence. In order to streamline the critical path numerical assignment and create a standard across the Department, the following approach should be used when numbering steps in the critical path:

- For those activities which are part of the critical path of the project, select 'Yes' to the Critical Path question.

- Assign the sequence order of that activity within the critical path. Critical path activities should be numbered using the following nomenclature "*X.Y*" where *X* is the critical path identifier and *Y* is the sequence number.

Critical Path Example:

Project ABC has 6 activities: Initiation, Requirements, Design, Development, Testing and Documentation. The Project ABC has 1 critical path and 5 activities which are part of the critical path. The critical path order number for those activities should be entered as follows:

Initiation - 1.1
Requirements - 1.2
Design - 1.3
Development - 1.4
Testing - 1.5

The *X* in the example is '1' which tells the system that there is only 1 critical path when the variance calculation is being done. The *Y*'s in the above example are 1, 2, 3, 4, 5, which tells the system Initiation must be completed before Requirements, Requirements must be completed before Design, Design must be completed before Development, and so on.

- If a project has more than one critical path, the critical path *X* position should be incremented for each new critical path.

- The *Y* position will reset for each critical path as that is the sequence order which tells the system the order the activities within that critical path must be completed.

- While this may appear to be repetitious to the structure ID, its purpose is different. Activities are often added to a project in an order which may not necessarily align with the critical path order and the structure ID is assigned by the system as activities are added.

- We added the critical path order field to address instances when a project has multiple critical paths and when activities were added ad-hoc and not in any particular order therefore making the structure ID of no relevance when calculating variance for critical path activities.

NOTE: A validation process for the critical path nomenclature "*X.Y*" was added to the IT portfolio management tool and is run against existing critical path position sequence. Bureaus are to verify this validation and/or update the critical path numerical sequence for their projects. The CPIC IT portfolio management tool will do a validation when the user enters the critical path sequence order number and if it doesn't follow the prescribed format, the user will receive an error.

2.3 Draft CIO Comments

CIO Comments drafted by the bureaus are most useful when they are clear, concise and specific to the variances calculated for cost, schedule and operational metrics. Bureaus should address any red/yellow cost or schedule variance, at the investment level, by explaining why investments are over or under cost, and behind or ahead of schedule, as compared to the planned values. The following list is recommended as a checklist when preparing Draft CIO Comments once the bureau locally runs its variance report(s).

- Submissions complete and on time
- Data is accurate, including updates to:
  - Projected/Actual Costs
  - Projected/Actual Dates
  - Most Recent Actual Results for operational metrics
  - Actuals reported within 60 days of activity completion
  - Revised risks, as necessary
- CIO Comments should be focused and succinct, and need to capture the following:
  - The reason for all Cost, Schedule & Performance variances at the investment level
    - vs. plan
    - month-to-month
  - Information on accomplishments from the prior month including specific dates
  - Information on any planned accomplishments for the upcoming month
  - Narrative on any significant new Risks for the Investment or Projects

An example of a good CIO Comment:

*Overall, the investment is within tolerance on cost (-.04%) and schedule (-9.24%). The entire variance is driven by one activity, the Re-engineering MS/5 Activity, which has a cost variance of -16% and a schedule variance of -83%. The variances are being caused by a delay in the go live date with Transcript Delivery System Release 1(TDSR) delaying the scheduled start from **10/17/2015** to **01/08/2016.** This delay is to complete critical tests necessary to validate that the TDSR system remains secure and will perform under load without any synchronization issues or race/cross threading conditions that could lead to a disclosure.*

2.4 Project Risk

Within the Business Case, there is the requirement to enter data on two sets of risks – project risks and operational risks. Project risks are entered in Table B.3, and should include all significant project related risks for the investment that are currently open. Bureaus will ensure project risk assessment information is up to date, to include project ID, risk name and category, risk probability and impact, and a short description of the risk mitigation plan.

3.0 Project Execution – Non-Major Investments

NOTE*: The following **Non-Major Reporting Policy and Process** was implemented for the BY2014/FY2013 reporting cycles. This process was then disabled for the BY2015/FY2014 reporting cycles due to the roll-out of SPIKE. It is the intent of the Treasury CPIC Director to re-institute the Non-Major Reporting process to coincide with advances made with the Treasury's CPIC Dashboard. The Non-Major Monthly form discussed below is currently not available in SPIKE.*

*The **following 3.0 Project Execution - Non-Major Investments** text is left in this draft to ensure institutional knowledge of implemented policy/process is maintained.*

Upon completion of the monthly form and Business Case updates for each major investment, Bureaus are then required to complete the Non-Major Monthly form for that same month. One, and only one, Non-Major monthly reporting form should be completed by each Bureau and the Departmental Offices. The Non-Major Monthly form is available on a pick-list of the Treasury-wide portfolio management tool, is due to the Treasury by the 20th of each month, and will be included in the monthly variance report as a single aggregated investment.

The Non-Major form captures summary information for ***two specific*** purposes:

1) Populate fields for a Bureau view of the Non-Major Portfolio, and

2) Create one aggregate investment on the Monthly Variance Report that will summarize the results of the performance of all non-major investments of the bureau.

Non-Major Reporting – Policy

All non-major investments must be reported individually on the IT Portfolio and Table 4.1. Similar to major investments, non-major investments can be either in the DME, O&M or mixed lifecycle phases. The Non-Major Monthly reports will include calculations for cost and schedule variance on ***projects*** with respect to planned costs and completion dates. The cost and schedule variances will be calculated for each non-major investment that are in the DME phase. In the case of mixed life phase investments, only the portion of the investment that is in the DME stage will be considered for the cost and schedule variances.

The objective is to ensure governance of non-major investments by consolidating non-majors' project execution into a single major investment. This single aggregated "Non-Major Investment" will be consolidated into each Bureau's portfolio. The variance calculations for non-majors will be common across the Department, and are consistent with

cost and schedule variance calculations for major investments. Non-Major reporting is required monthly. The non-major investments, to include project execution, may be subject of a TechStat at both Bureau and Department Level. Finally, overall variance calculation for non-majors will not ***initially*** consider the CIO Rating. However, a CIO Rating may be added in the non-major portfolio rating in the future.

Non-Major Reporting Calculations

The cost and schedule variance calculations for the non-major investment are the same as the variance calculations for a complex single major investment, and summarized in Figures 3.I and 3.J. Cost and schedule variances will be calculated for each non-major investment that has a project(s), regardless of the lifecycle phase of the non-major investment.

Variance Calculations of Individual Non-Major Investment	
Cost Variance ($)	Total Planned Cost for CY – Total Projected OR Actual Cost for CY
Cost Variance (%)	(Total Planned Cost for CY – Total Projected OR Actual Cost for CY) / Total Planned Cost for CY
Total Planned Days	Planned Completion Date – Planned Start Date
Total Projected OR Actual Days	Projected OR Actual Completion Date – Planned Start Date
Schedule Variance (Days)	Total Planned Days – Total Projected OR Actual Days
Schedule Variance %	(Total Planned Days –Total Projected OR Actual Days) / Total Planned Days

Figure 3.J: Variance Calculations for Non-Major Investments

In the case of non-major investments, the variances will be totaled and reported on the Monthly Variance Report as one aggregate investment.

Summary Variance Calculations for Non-Major Investments	
Total Cost Variance ($)	Sum of Cost Variance ($) of all Non-Major investments
Total Cost Variance (%)	Total Cost Variance ($) / Sum of Planned Cost of all Non-Major investments
Total Schedule Variance (Days)	Sum of Schedule Variance (Days) of all Non-Major investments
Total Schedule Variance (%)	Total Schedule Variance (Days) / Sum of Planned Days of all Non-Major investments

Figure 3.K: Summary Variance Calculations for Non-Major Investments

Non-Major Reporting – Process

CPIC teams at the Bureaus are expected to identify all project segments planned and executing as part of the non-major investments within the Bureau's portfolio. Treasury's CPIC Director has provided an Excel template to the Bureaus to organize and calculate cost and schedule variances on each investment in their Non–Major portfolio. This template tool will be updated and verified in the beginning of each FY as a resource to organize and calculate required fields for the Non-Major portfolio summary. (See FORMS AND TEMPLATES, c. Non-Major Monthly Summary Template.) Bureaus can either use this Excel template, or any of their local project management tool(s), to calculate the non-major variances and capture the overall rating per non-major investment. The Excel template then summarizes and totals the project execution data so that it can be input into the Non-Major Monthly form.

NOTE: The Non-Major Monthly form is strictly an input form; no calculations are computed by the form.

The Non-Major Portfolio Monthly form is available from a pick-list of investment forms within the Treasury-wide IT portfolio management tool, and facilitates the monthly update of bureau summary information. Each bureau will enter their totals for all of their Non-Major investments (that have projects) into a single form each month. The functionality of adding and submitting the form works much like all the other forms.

Each bureau will ***only complete 1 form each month*** and the data that goes into the form is the total values for all of the bureau's Non-Majors.

To complete the Non-Major Monthly form in the Treasury-wide IT portfolio management tool:

1. Go to My Investments and select ' Non-Major Monthly'
2. Select from Bureau drop down list
3. Select the form Month and Year which you would like to add. The form Month and Year should be the same as your Major investments Monthly Form. For example, in the month of January 2015, add a Non-Major Monthly form for Month = January, and Year = 2015.
4. Click 'Add non-Major Monthly' button.
5. Click the 'Edit' link next to the non-Major Monthly form to enter your data.
6. Click 'Save' to save your updates.
7. Once you are ready to submit your non-Major investment portfolio summary, click the 'Submit to Treasury' button.

END - 3.0 Project Execution – Non-Major Investments

4.0 Operational Data – Metrics

Bureaus are required to define at least five operational metrics in Business Case, Table C.1. On the OMB Federal IT Dashboard, operational performance is updated monthly and displayed in table format by portraying each metric, its description, frequency, current FY target, most recent actual results and status on whether or not the investment has met, or not met (or not met yet), its performance target. No calculations are utilized, nor are any metric variances displayed.

Operational Metrics – Policy

Bureaus are to report actual results through the monthly update of the Business Case tables. Actual results are measured at the defined reporting frequency, whether it is monthly, quarterly, semi-annual, or annual. Given that ***at least*** one Technical metric must be reported monthly, there will always be the requirement to update the investment's metric(s). The Date of Actual Result field in Table C.1B should be the date the metric was measured, not the date it is reported.

Given the four reporting frequencies (monthly, quarterly, semi-annual and annual), a rating will stay Green (or 'unrated') until that reporting frequency period is reached. While the 'unrated' metric will stay Green externally (OMB, Treasury Dashboard) until '*Reporting Frequency*' is due, Bureaus are encouraged to continually rate metrics internally. This gives the investment owner/PM the opportunity to potentially correct the problem and improve the rating before having to report externally.

Treasury IT Dashboard Reporting

Bureaus will determine the Yellow Threshold and Red Threshold for each metric, and report these thresholds in the initial BY Business Case/Treasury BCR submission. In addition to the Yellow/Red Thresholds, investment managers must indicate their "Key" metrics (or sometimes referred to as "Top 3" metrics) to be included in the Treasury's custom Monthly Variance Report. A check-box is used to indicate Key Metrics. There is no need to prioritize as first, second, third, etc. In summary, the Yellow/Red thresholds and Key Metrics are local Treasury fields that are used internally for portfolio reporting and ***will not*** be included in monthly update submission to OMB.

Treasury IT 'Operational Performance' applies to major investments only, where one operational performance rating per investment will be calculated based on the variance to the current FY performance targets.

- When updating metrics in Tables C.1A and C.1B, only CY Targets are required. For an existing investment, metrics details are carried-over from the existing Business Case.
- In the Business Case Table C.1.B, the "Date of Actual Result" should be the date the metric was measured, not the date it is reported.
- If an investment will not be in operation until later in the current fiscal year, leave blanks in E300B operational metrics tables.
- After the initial BY submission, the Key Metrics field is not an editable field and any changes to it will require a BCR.
- The operational metric variance (OMV%) for an investment is based only on the designated Key Metrics.
- Treasury's OMV% report process will calculate an individual investment's variance regardless how many metrics are designated as key metrics.

Finally, since all data in Tables C.1A and C.1B will be displayed to the public on the IT Dashboard, ensure that all provided metrics information is publicly releasable.

Operational Metrics – Calculations

Figure 3:L below illustrates the Treasury's approach to developing a performance rating for a set of operational metrics, termed "penetration into the zone." An allowable numerical zone is operating as planned and therefore "Green." Distance from the green or CY Target zone is determined with a set of ratio calculations. Yellow and Red thresholds are used to draw boundaries marking the beginning of the yellow zone, then beginning of the red zone. (*See the full set of OMV% calculations and an example in the Appendix.*)

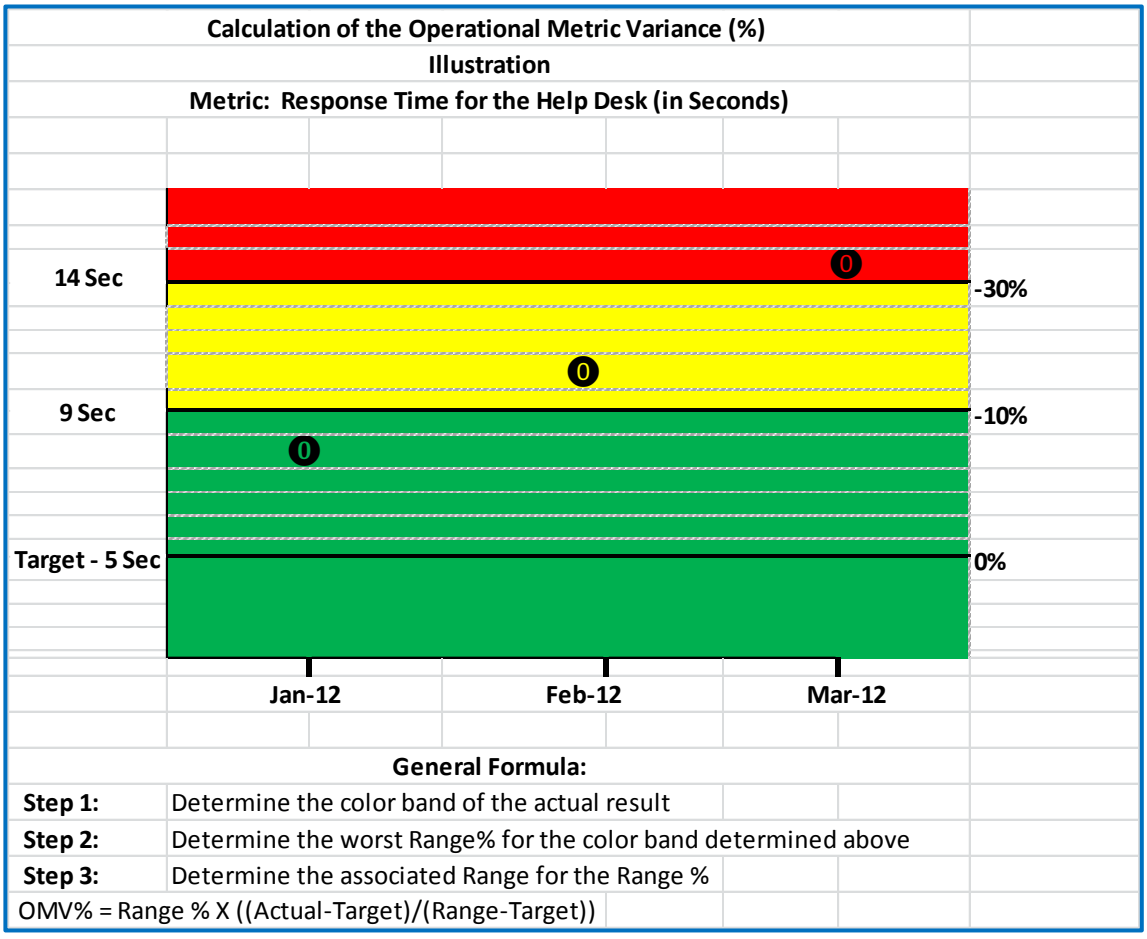


Figure 3.L: Operational Metrics Variance Calculations

Operational Metrics – Process

As part of the monthly form update, due by the 15th of each month, investment managers must report actual results for those metrics with appropriate reporting frequency.

The Treasury portfolio tool will pull all Key Metrics designated for inclusion in the OMV% calculations. Equal weight is given to each metric:

- Investment OMV% = OMV%1 + OMV%2 + OMV%*3* / *3*

OR

- Investment OMV% = OMV%1 + OMV%2 + …OMV%*n* / *n*

The OMV% is subsequently included in the Overall Rating:

- (CV% + SV% + CIO% + OMV%) / 4

The OMV% calculation and Overall investment rating is summarized in Figure 3.M.

NOTE: The cost, schedule and operational performance measurements as described above are the effective performance measurements for the first month of the fiscal year, October. November will be first monthly reporting under the new fiscal year targets (CY Target) and Yellow/Red Thresholds.

Treasury IP Portfolio Management **OMV% and Overall Investment Rating**		
Operational Metric Variance (OMV%)	**(OMV%1 + OMV%2 + OMV%3 + …OMV%*n*) / *n***	Each metric equally weighted
Overall Investment Rating	**(CV% + SV% + OMV% + CIO%) / 4**	Equally weighted ¼

Figure 3.M: OMV% and OVERALL Investment Rating Calculations

Periodic or "Seasonal" Metrics

Given the seasonal, cyclical, or periodic nature of some metrics, Treasury CPIC provides the capability to include periodic metrics for those investments with predictable seasonality, such as electronic tax filings. The process is to designate, initially when the metric is established and during the annual planning cycle, the changing targets for each month of the particular metric. Treasury CPIC developed a table in SPIKE, illustrated in Figure 3.N for operational metrics containing targets and thresholds that change throughout the year. Bureau investment managers must complete the table for each periodic metric that changes and populate all cells regardless of whether it is a monthly, quarterly or semi-annual metric. For example, a quarterly metric will have the same values for all three months of the quarter. After the metric has been established, a BCR is required to alter targets and thresholds.

Month	Target	Yellow Threshold	Red Threshold
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

Figure 3.N: Periodic/Seasonal Monthly Metric Target Worksheet

5.0 Publish and Submit

As described in Section B. IT PORTFOLIO MONTHLY REPORTING – POLICY, the Treasury's Capital Planning and Investment Control (CPIC) Director is responsible for preparing and publishing a monthly performance report of the Treasury's IT Portfolio status on the federal IT Dashboard, developed and hosted by the Office of Management and Budget (OMB).

The second date-driver of the monthly reporting cycle is near the 25th of each month. Monthly updates are consolidated at the Departmental level and presented to the Treasury CIO. Figure 3.O summarizes the criteria used to select those individual investments for the CIO's monthly review, where reasonableness is expected, and discretion may be used.

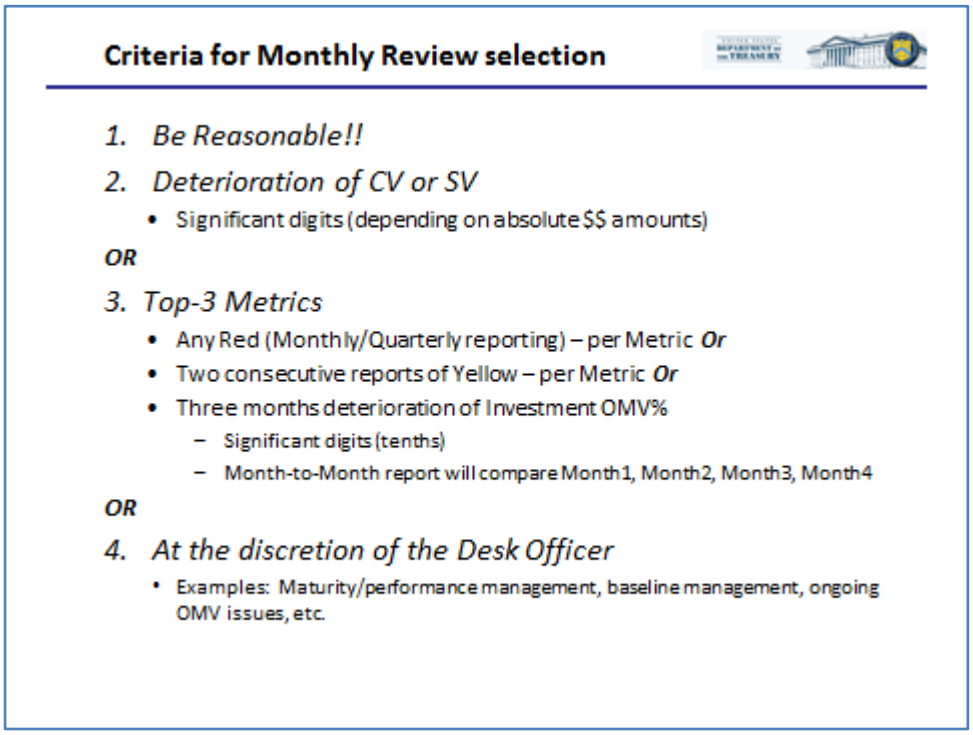


Figure 3.O: Criteria for Monthly Review Selection

After the CIO – CPIC Monthly Review is concluded, the CPIC team will consolidate the various reports produced by SPIKE into one monthly variance report with the following tabs:

- Cover Page – Executive summary with cost, schedule and operational performance trend analysis
- Tab 1 – ASM (CIO Comments for each major investment)
- Tab 1 – Summary Variance Report
- Tab 2 – Detail Variance Report
- Tab 5 – Month-to-month comparison by investment
- Tab 6 – Month-to-month comparison at project/activity level
- Tab 7 – Overall metric variance report by investment
- Tab 8 - Operational metric variance report at individual metric/investment level
- Tab 9 – Non-major monthly variance report (not currently used)

Finally, the Department's monthly submission is due to OMB by the last day of each month. The Director, CPIC is responsible for the electronic submission and authorized to make all technical and management adjustments as necessary to ensure the submission is timely, accurate and complete. The Director, CPIC ensures the submission was accepted and validated by the Office of Management and Budget.

Treasury's Monthly Variance Report, complete with portfolio variance analysis, investment summaries, and trend analysis is published for the Assistant Secretary for Management, bureau heads and several Investment Review Boards (IRB) and posted on the CPIC SharePoint site on theGreen.

SECTION 4. Baseline Change Request -- CONTROL PHASE

A. INTRODUCTION

Performance baselines and regular status reporting are created to monitor the execution of projects, and IT assets in operation. They are used to determine the investments health and the performance of the investment, program, and project teams. They support management decision making at all levels of the Department and may indicate issues with and across investments. In order to support these goals, performance baselines must be relatively stable and be revised with some measure of control. The IT Portfolio is focused on the annual budget process while the Business Case will be the focus of the control program. Since the Business Case requires the project implementation plan and operational metrics only for the Current Year (CY - the next 12 months), this policy assumes that detailed work plans and targets will be more accurate than longer term, multi-year plans. As a result, changes to those CY plans and targets will have a higher threshold of review than revisions to budgetary data in the summary of funding table of the IT Portfolio, or to the actual values for closed activities in the past.

B. BASELINE CHANGE REQUEST POLICY

A Baseline Change Request (BCR) is generated when certain events or circumstances require a change to an investment's current operating baseline, as described in the next section. BCRs may be generated at any time during the year of execution (CY) to revise the plan values in the Business Case or the actual values for activities in the past that have been closed. Changes to the IT Portfolio will be done as part of the annual submission process including initial submission in September, passback revisions, or other revisions as directed by OMB and will not be handled through the BCR process. The basic elements of this policy include:

- This policy applies to major Information Technology (IT) investments only.
- The Department's portfolio management tool shall retain all historical baseline information without change. This includes all initial planned completion dates and planned costs, as well as all current approved Projects and Activities that are closed or represent progress to date.
- All Projects and Activities must be self-explanatory and understandable to a lay person.

Acceptable Reasons for Baseline Changes

Effective program management control programs are built on four essential dimensions: Cost, Schedule, Scope and Quality. Coordinated targets are established in these areas to focus execution and ensure that IT provides good affordable services to their customers. By design, a significant change in any one of these dimensions would require adjustments to the targets in the other three. The baseline change policy is the control mechanism by which these targets are revised when necessary. In general, there are two categories of change drivers: external to the bureau and internal to the bureau. External causes are beyond the control of the bureau and could be events such as new Congressional mandates, changes to funding levels for various reasons including continuing resolutions and OMB direction, and responses to audit findings. Internal drivers involve changes within the control of the bureau such as revisions to bureau strategy or other mission related impacts. Both categories usually focus on either funding (cost) or scope causing revisions to the other dimensions as necessary. A third category, corrections, is simply to make the existing data more accurate and has the lowest level of review. The following are some examples:

- Investment-specific budget changes mandated by Congress or OMB (e.g., Congressional rescissions or OMB Passback - External)
- Treasury/Bureau-determined budget changes resulting from OMB, Congressional or legislative action (e.g., To fund the Hurricane Katrina recovery efforts, Congress issues legislation directing all Federal agencies to take an across-the-board reduction of 5%, leaving it to each agency's discretion how the cut is to be taken - External)
- Budget changes to existing investments imposed by the Department (e.g., via the Treasury Passback - External) that necessitates a change to the previously-submitted-to-OMB baseline
- Bureau Governance Board approved changes in requirements, performance measures or scope (including enhancements and changes to functionality - Internal)
- Major technology changes or process innovations that result in changes to an investment's cost, schedule or scope (Either)
- Bureau Governance Board approved business alignment change (e.g., project mergers or business realignments - Internal)
- To correct entry errors in Projects, Activities and/or Operational Metrics (Correction).
- Provide additional detail to existing investments/projects at any time during the FY without increasing funding or extending beyond the latest Planned End Date of the already existing projects (Correction).

C. BASELINE CHANGE REQUEST PROCESS

To make the change process efficient, different thresholds of review will be required depending on what drives the required updates; with externally driven changes having a lower review requirement than internally driven changes. External drivers across multiple investments will be handled as a group. For example a continuing resolution might require changes to multiple investments as internal prioritizations and tradeoffs at the bureau may move funding from one investment to another. Correction BCRs have the least level of review and are used to correct errors in a Projects, Activities and/or Operational Metrics.

Figure 4 illustrates the three types of Treasury BCRs – Correction, Rebaseline, and Replan - and explains the different levels of review and approval.

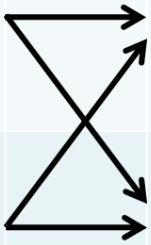
OMB BCR Type		Treasury BCR Type & Review Level	How BCR is Used
Correction BCR		Treasury **Correction** BCR. (bureau requested) Reviewed/Approved by Treasury CPIC Director.	Correct errors made in data submissions to include past, present and future data entered in error, or to provide further detail. Changes to Actuals that have been entered previously will require a Correction BCR.
Rebaseline BCR		Treasury **External** BCR (driven externally by Congress, OMB, CR, Passback). Reviewed/ Approved by Treasury ITS&TM ACIO.	Historic/Closed Project, Activities, or Metrics can not be changed. All ongoing and future Project, Activities and Metrics can be changed.
Replan BCR		Treasury **Internal** BCR. (bureau requested) Review/approved by Treasury CIO.	Historic/Closed Project, Activities, or Metrics can not be changed. All ongoing and future Project, Activities and Metrics can be changed. (The OMB Replan BCR is used for planned changes with minimal change in overall scope, cost or schedule objectives. Must have a cost variance of 10% or less between the Replan submission and current activities).

Figure 4: BCR Type Process

Externally Driven Revisions Process:

Externally Driven BCRs will be approved by the Treasury ACIO for IT Strategy and Technology Management.

1. The Project Manager (PM) shall complete the ***Baseline Change Request*** form for each affected investment using the Department's IT Portfolio Management Tool. The PM must update the following in the investments' BCR:

    a. The planned performance data in the Operational Metrics, table C1 to reflect any anticipated changes to the investment's performance.

    b. The new baselines approved by the Bureau Governance Board in the cost and schedule tables B1 and B2.

2. When dollars are added to or subtracted from contract(s) supporting the investment, or if the BCR changes the scope or schedule of any contract, the PM must revise the Investment level Acquisition Plans.

3. The PM (in tandem with the Bureau CPIC Coordinator) shall obtain Bureau Governance Board approval of the ***Baseline Change Request*** and record the approval date and title of the Governance Board.

4. The Bureau CPIC Coordinator shall then notify the Treasury CPIC Desk Officer that complete, fully vetted and approved BCRs are submitted and awaiting review.

    a. For related changes across multiple investments, the Bureau CPIC Coordinator shall also provide the Treasury Desk officer with a consolidated spreadsheet that shows the changes across the entire portfolio of investments that are being revised.

5. The Treasury CPIC Desk Officer shall:

    a. Review the requests to ensure that all required information has been provided and validate information against the external direction driving these changes (Passback, CR, etc.).

    b. Present an analysis of the BCRs to a Treasury CPIC Review Team along with a recommendation.

6. The Treasury Review Team shall provide a final determination within five business days of the submission of an accurate and complete BCR package to the Treasury ACIO for Planning and Management. BCRs found deficient will be returned to the Bureau with an explanation of the deficiencies found.

7. Once BCRs are approved by Treasury the Treasury CPIC Desk Officer will submit the BCR to the Treasury's Portfolio Management Tool HelpDesk for submission to OMB. When completed this will enable the proposed new baseline to become the new operating baseline. The Treasury CPIC Desk Officer will notify the Bureau CPIC Coordinator when this has been completed.

8. The investment PM shall begin reporting against the newly-revised baseline during the next monthly update to the IT Dashboard.

Internally Driven Revision Process:

Internally Driven BCRs will be approved by the Treasury CIO.

1. The Project Manager (PM) shall complete the ***Baseline Change Request*** form using the Department's IT Portfolio Management Tool. Additionally, the PM must:

    a. Update the investment's chosen alternative cost detail in the Investment level Alternative Analysis.

    b. Update the planned performance data into the Operational Metrics, Table C1 to reflect any anticipated changes to the investment's performance.

    c. Update the new baselines approved by the Bureau Governance Board into the cost and schedule Tables B1 and B2.

2. When dollars are added to or subtracted from contract(s) supporting the investment, or if the BCR changes the scope or schedule of any contract, the PM must revise the Investment level Acquisition Plan.

3. The PM (in tandem with the Bureau CPIC Coordinator) shall obtain Bureau Governance Board approval of the ***Baseline Change Request*** and record the approval date and title of the Governance Board.

4. The Bureau CPIC Coordinator shall then notify the Treasury CPIC Desk Officer that complete, fully vetted and approved BCRs are submitted and awaiting review

5. The Treasury CPIC Desk Officer shall:

   a. Review the request to ensure that all required information has been provided. Fully completed and Bureau-vetted BCRs submitted on or before the 20th of the month will be reviewed and be acted upon within 5 business days. (The Treasury Desk Officer may not revise or accept revisions to the BCR after a Bureau Governance Board approved BCR is submitted to Treasury for review.)

   b. Present an analysis of the BCR to a Treasury CPIC Review Team along with a recommendation.

6. The Treasury Review Team shall provide a final recommendation to the Treasury CIO. BCRs found deficient will be returned by the Treasury CIO to the Bureau CIO with an explanation of the deficiencies found.

7. Once BCRs are approved by Treasury the Treasury CPIC Desk Officer will submit the BCR to the Treasury's Portfolio Management Tool HelpDesk for submission to OMB. When completed this will enable the proposed new baseline to become the new operating baseline. The Treasury CPIC Desk Officer will notify the Bureau CPIC Coordinator when this has been completed.

8. The investment PM shall begin reporting against the newly-revised baseline during the next monthly update to the IT Dashboard.

Correction BCR

Correction BCRs will be approved by the Treasury CPIC Director.

1. The Project Manager (PM) shall complete the ***Baseline Change Request*** (BCR) form for the affected investment using the Department's IT Portfolio Management Tool. The PM must:

   a. Update the investments with the correct data for the effected projects, activities, and/or operational metrics.

   b. Notify the Bureau CPIC Coordinator the BCR has been completed.

2. The Bureau CPIC Coordinator shall submit and notify the Treasury CPIC Desk Officer that the completed BCR is awaiting review.

3. The Treasury CPIC Desk Officer shall:

   a. Review the requests to ensure that the designated data has been corrected in the Treasury's IT Investment Portfolio Management tool's BCR form.

   b. Present an analysis of the BCR to a Treasury CPIC Review Team along with a recommendation.

4. The Treasury Review Team shall provide a final determination. BCRs found deficient will be returned to the Bureau with an explanation of the deficiencies found.

5. Once BCRs are approved by Treasury the Treasury CPIC Desk Officer will submit the BCR to the Treasury's Portfolio Management Tool HelpDesk for submission to OMB. When completed this will enable the proposed new baseline to become the new operating baseline. The Treasury CPIC Desk Officer will notify the Bureau CPIC Coordinator when this has been completed.
6. The investment PM shall begin reporting against the newly-corrected baseline during the next monthly update to the IT Dashboard.

Baseline Changes – Special Situations

Points of emphasis were provided in the BY2017/FY2016 Annual Submission training for two special situations.

1. To CLOSE a Project:

    a. The last activity must be closed.

    b. During the course of monthly reporting, activities are "closed" by entering an Actual Completion Date, which essentially "runs out the clock."

    c. Once an Actual Completion Date is entered, the Actual Costs are required within 60 days of this date.

    d. If an activity spans fiscal years (FYs), that activity will be included in the CY Variance Report of the last activity based on Projected/Actual Completion Date.

    e. Closed activities will continue to be included in variance reporting with any project period of performance.

    f. Closed activities must not be deleted.

    g. The Treasury IT portfolio management tool (SPIKE) recognizes a closed project once all activities have an Actual Completion Date, i.e., all activities have ended and are closed.

2. To PAUSE a Project:

From time to time, executive management may want to "re-think" a project due to a variety of reasons that may include external driver(s), technology upgrades, acquisition issues, available resources or risks.

To correctly PAUSE a project, all open activities must be closed, with special care taken to close the last activity with an Actual Start Date.

To correctly PAUSE an activity:

a. The date of the pause should be set as the Actual Completion Date, and the costs incurred up to the pause date should be entered as the Actual Costs.

b. Any future activities should be closed with an immediate Replan BCR. The Replan BCR must be submitted no later than the Planned Start Date of the next future activity. A delay in the submission of the Replan BCR will cause additional variances to be created due to the Planned Start Date of a subsequent activity passing. It is imperative to submit the Replan BCR in a timely manner.

c. A Bureau TechStat will be required if the total variance is greater than 10%. A Department Techstat will be required if the total variance is greater than 30%. Any scope change or impact(s) should be captured in the TechStat results memo.

d. See Figure 5 for an example to pause an activity.

- Activity B: Set the Pause Date to the Actual Completion Date.
- Activities C and D: Delete through a Replan BCR.

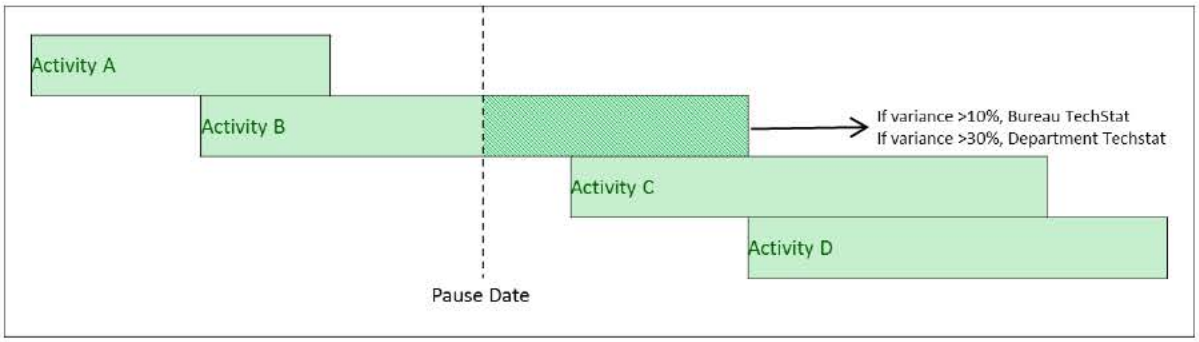


Figure 5: Activity Pause

General Notes

- General cost overruns and schedule slippages are not sufficient reasons to request a baseline change; they should be recorded as variances. Project plans are never revised to hide variances.
- Planned Dates cannot be changed for closed activities.

- Adding further activity detail to one or more existing Projects or Activities does not constitute a baseline change as long as there is no change in overall scope, duration, or cost; it is considered an update but a correction BCR is required. Example: In the initial baseline submission, there is a single project for "Collections Pilot" lasting 3 years with a planned cost of $5M. After the contract has been awarded and all negotiations completed, this type of “update” may break the single project into 3 separate development phases, iterations, or sub-projects: “Design Review – Collections Pilot" taking 12 months with a planned cost of $2M, "Test Readiness Review – Collections Pilot" taking 18 months with a planned cost of $1M; and "Full Operational Capability – Collections Pilot" taking 6 months with a planned cost of $2M. The essential characteristic of this “update” is that the start and end dates of these development activities and the overall cost remain the same.
- When entering Actuals in the Department’s IT Portfolio Management Tool, Actuals should be entered within 60 days of the actual end of the activity. A Correction BCR may be submitted after that to correct, (up to 6 months) Activity Actuals.
- All new major investments will be allowed to update any operational metric for 12 months after the initial production launch and it is considered an update but a correction BCR is required.
- The addition of Operational Metrics to existing investments is considered an update but a correction BCR is required.

SECTION 5. TechStat – CONTROL PHASE

A. INTRODUCTION

OMB released the 25 Point Implementation Plan to Reform Federal Information Technology Management on December 9th 2010 that initiatesTechStat reviews for major IT investments. Treasury has implemented the department-level TechStat reviews and the bureau-level TechStat reviews to ensure the effective management of large IT investments.

For more detailed information on conducting a Techstat and obtaining the TechStat Toolkit go to the Federal CIO Counsil website at https://cio.gov/deliver/techstat/

What is a TechStat?

- A TechStat is a face-to-face, evidence-based accountability review of a major IT investment
- A TechStat results in concrete actions to address weaknesses
- A TechStat reduces wasteful spending by turning around trouble programs and terminating failed programs sooner

TECHSTAT IS	TECHSTAT IS NOT
Actionable: participants should leave the session armed with next steps to improve outcomes	**Routine:** sessions should not be used for routine, small impact change request
A Spotlight: sessions should highlight problem areas and focus deeply on pain points	**Comprehensive:** not an IV&V, IBR,PIR (though these could be inputs or requested actions of a TechStat)
Prescriptive: sessions should be limited to 60 minutes and result in clear actions, with owners and deadlines	**One-Size-Fits-All:** the roles and responsibilities of the CIO, IRB, and TechStat will vary by agency
A Tool: sessions should be used when executive level influence is needed	**A Review:** sessions should not be used for cyclical control reviews ("business as usual")

Figure 5.A: TECHSTAT Drivers

B. TECHSTAT POLICY

Treasury has set up a Red and Yellow Overall Rating for IT investments that are underperforming.

- When the overall Rating is Red for an IT investment, the Department will conduct the TechStat
- When the overall Rating is Yellow for an IT investment, the bureau will conduct the TechStat

In addition to this overall investment rating trigger for a formal TechStat, the Treasury CIO, Deputy CIO or Director, CPIC, may direct that either a bureau-level or Department-level TechStat be conducted. An example of a TechStat being directed independent of its overall rating is when the investment's cost or schedule variances, or operational performance, is cause for the investment to be reviewed at the CIO – CPIC monthly review meeting.

One outcome of a TechStat is that the Treasury CIO can stop any activity, project, investment or acquisition as a result of the session.

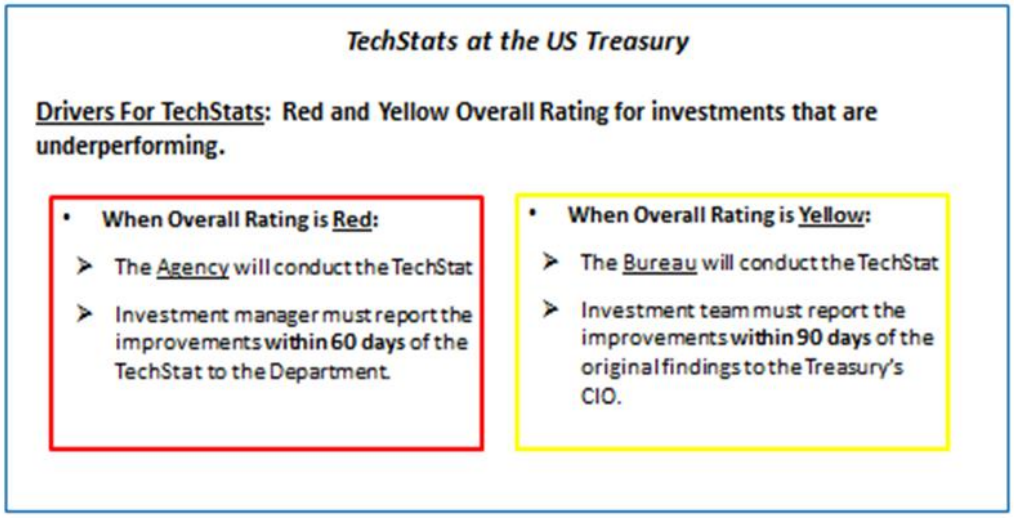


Figure 5.B: TECHSTAT Drivers

C. TECHSTAT PROCESS FLOW

TechStat Process Flow

- **Discovery**
  - Identify Investment for Review
  - Notify Investment Manager and Business Owner
- **Analysis**
  - Collect Investment Documentation
  - Engage Subject Matter Experts
  - Formulate Thesis, Validate Facts and Synthesize Analysis
- **Preparation**
  - Invite Relevant Attendees
  - Prepared Executive Briefing
  - Complete Administrative and Logistic Support
  - Pre-Brief CIO
- **TechStat Facilitation**
  - TechStat Facilitation-Record Action Items with Owners and Timelines
- **Follow-Up**
  - Distribute Memo of Record
  - Enter and Track Action Items to Conclusion in Repository
  - Incorporate Lessons Learned in Enterpri

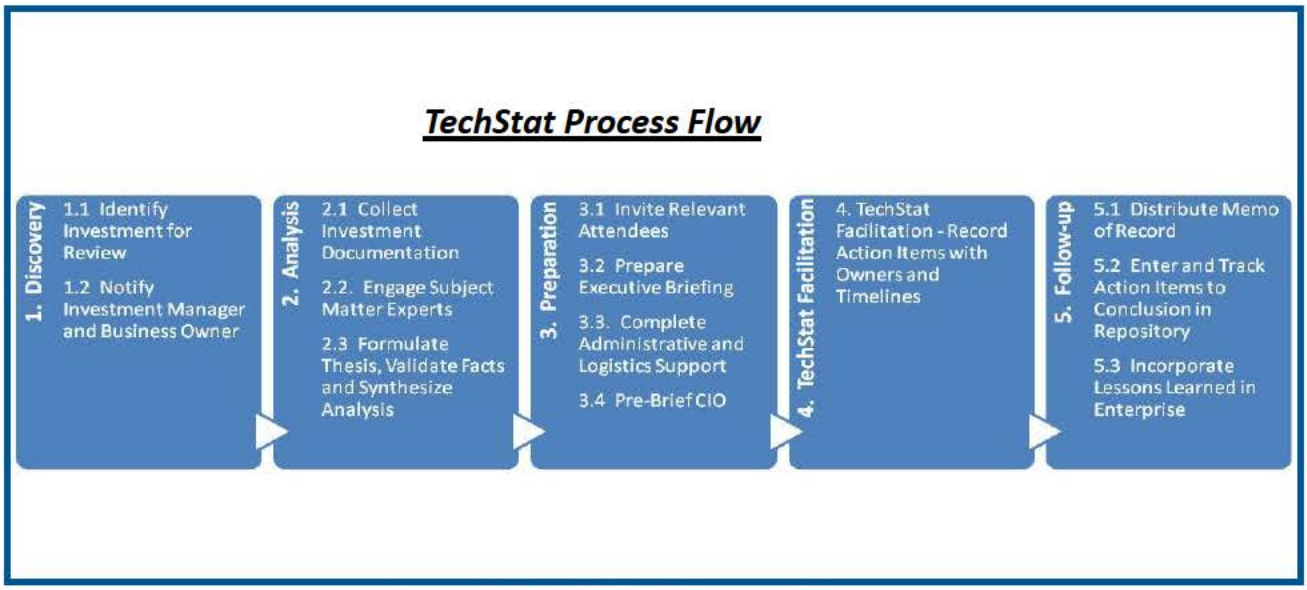


Figure 5.C: TECHSTAT Process Flow

D. TECHSTAT RESULTS

The results of the Recommended Actions from the TechStat need to be completed in the following time frames:

- For investments with a Red Treasury CIO Rating the bureau must report improvements within 60 days of the TechStat to the Department.
- For investments with a Yellow Treasury CIO Rating the bureau must conduct a bureau level TechStat on the investment and the Investment Manager must report the improvements within 90 days of the original findings.

The results of the recommended actions will be reported to the Department or Bureau as appropriate including the Treasury CPIC Desk Officer. Two TechStat results memos are provided as templates in Section 09. FORMS AND TEMPLATES section of this CPIC Guide.

Managing Outcomes

Once the Techstat has been completed the following possible decisions will be made:

- Potential Outcomes
  - Continue as planned with minor recovery and corrective action plans;
  - Continue with modifications such as:
    - Rescope and rebaseline,
    - Reassess make/buy approach,

        - Reassign project team and/or vendor,
        - Implement extensive corrective action plans,
        - Thorough root cause analysis of performance issues;
    - Halt investment and:
        - Determine if the project is still necessary,
        - Recharter – agency performs a deeper analysis of the program,
        - Stabilize the application to a point of non-impact to users and business operations.
    - Stop any activity, project, investment or acquisition as a result of the TechStat session:
        - Formalize the decision to stop the activity, project or program elements through the appropriate replan or rebaseline BCR (Baseline Change Request) process.
        - See Section 4 of this CPIC Guide, BASELINE CHANGE REQUEST (BCR) – CONTROL PHASE to stop or pause the activity, project or program elements.
- Manage Action Items
- Incorporate Lessons Learned

SECTION 6. Operational Analysis – EVALUATE PHASE

A. INTRODUCTION

As part of the Evaluate Phase, an Operational Analysis (OA) must be conducted annually for all non- infrastructure major investments that have components or usable functionality in production as per OMB requirements documented in the Capital Programming Guide. This analysis is to examine whether an IT investment continues to meet its intended objectives and yield expected benefits. As noted in GAO's *Assessing Risks and Returns: A Guide for Evaluating Federal Agencies' IT Investment Decision-Making*, the Evaluate phase "closes the loop on the IT investment management process by comparing actuals against estimates in order to assess the investment's performance and identify areas where decision-making can be improved."

The purpose of the OA is to document investments that are potential candidates for modernization, enhancement, replacement or retirement. This is accomplished by assessing the ability of an operational investment to continue meeting user needs and performance goals based upon the performance of the component systems. The outcome of the OA is a recommendation to either: further invest in the existing systems to improve performance, replace them with new technology, or simply retire them if they are no longer useful. Recommendations from the OA may be evaluated as required by the Annual Planning Process as defined in Section 2 of the CPIC Manual.

B. OPERATIONAL ANALYSIS POLICY

The OA process is required annually for any non-infrastructure investment that has a component or usable functionality in production. OAs for major IT investments must be submitted to Treasury through the Department's existing portfolio management system or as directed by the Departments. OAs for non-major IT investments will be conducted by and maintained by the bureau. The process and format of non-major OAs is left to the discretion of the bureau but the documentation is subject to review by the Department, when requested.

Major IT investments that have already been identified as requiring complete replacement will be exempt from completing an OA unless the retirement date slips beyond that reported in the OA that recommended the retirement, or the most recent OA.

OAs are required for new major IT investments in the first annual cycle after the initial component or usable functionality has been in production for at least 12 months.

C. ENTRY CRITERIA

The evaluation of investments for an OA occurs once per year in sufficient time for the outcomes to be considered as part of the bureau's annual planning process leading to the next budget submission (see Section 2 of this Manual). This will generally occur during either the last quarter of the prior year (PY) or the first quarter of the current year (CY) leading to the next budget year (BY). Because OAs may occur at any time during the year to support the bureau's planning cycle, it is not required that the performance data match the FY boundaries. The period of performance will be identified in Section A1 of the report.

Bureaus are required to conduct an annual OA once the first component or usable functionality has been in the operational environment for at least twelve months. This implies that the first OA for an investment may cover more than a twelve month period. Investments previously identified as requiring complete replacement are exempt from the OA requirement.

D. OPERATIONAL ANALYSIS PROCESS

An Operational Analysis is required annually for all IT investments that have components or usable functionality in production (operations and maintenance). The OA assists in determining the investment's remaining useful life and validates that options to modernize the current system have been investigated. The cost of maintaining the system in light of the performance goals, as defined by the performance metrics, is also examined. The ability of the investment to meet end-user/customer needs is documented as defined by the operational metrics.

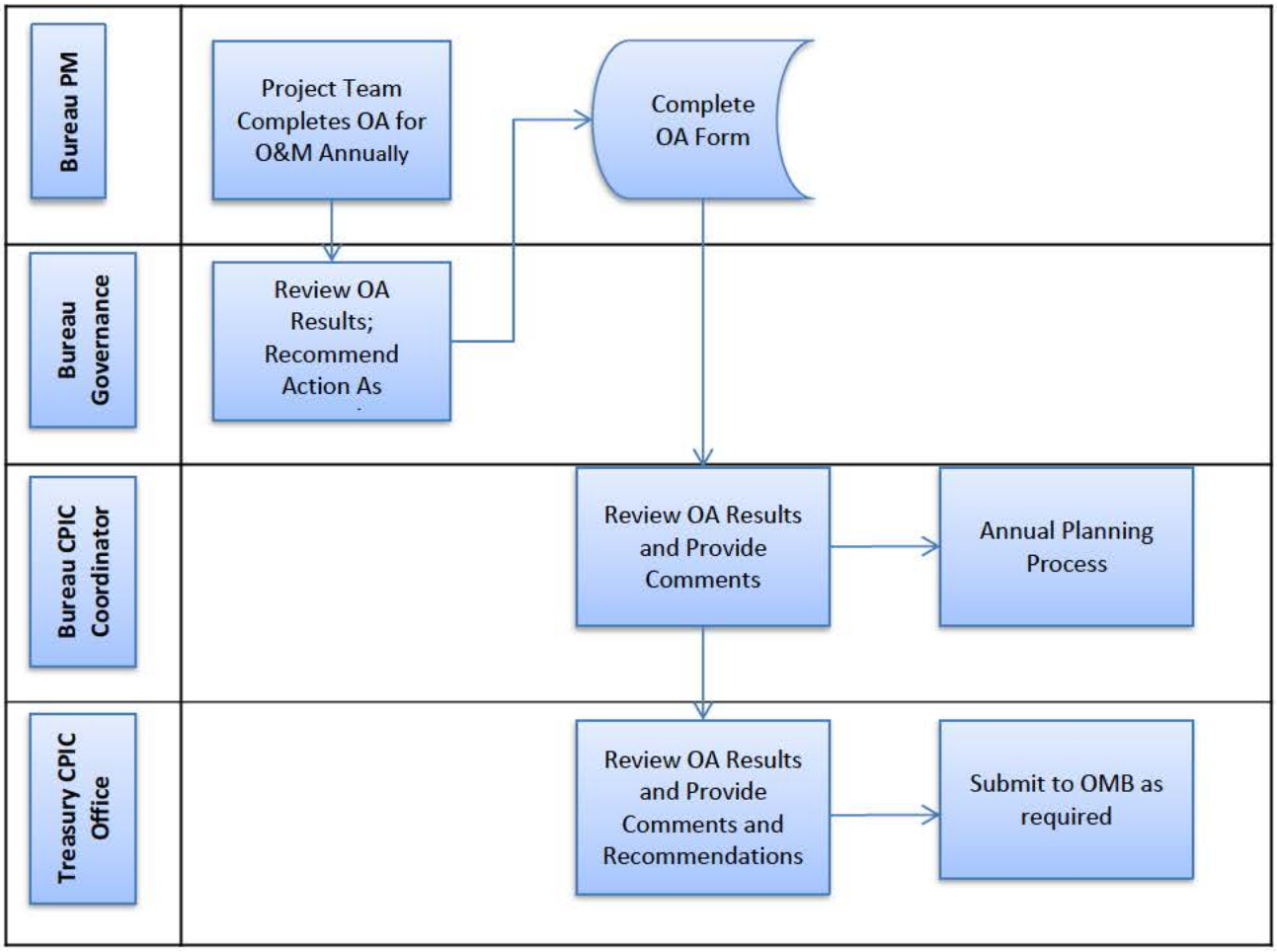


Figure 6.1: Operational Analysis Development, Review and Approval Process

Results from the OA could be as simple as recommending the given investment continues operating as is, or as significant as recommending the investment be modified, replaced or terminated. In addition to the OA documentation filed with the Department, the Bureau should include the outcomes as justification during the annual budget review with the Treasury-wide Investment Review Board.

Results from the OA should be fed back into the Select, and Control Phases as lessons learned, and also by occasionally identifying a need for a new investment to begin in Select (e.g., if an investment is going to be replaced, then a new investment would be initiated via the Select process).

The Department of Treasury will address the development of the Operational Analysis by focusing on two key areas; program objectives and end-user/customer needs. Program objectives will be primarily focused on unit costs, performance, and operational assessment. This data will be captured on an annual basis and will most likely come from already established sources, such as the monthly submission to Treasury which is used to feed OMB's IT Dashboard. Projected investment costs and benefits will be used to determine whether the component or usable functionality in production is meeting their original or revised objectives. End user/customer needs will be assessed by reviewing performance against the business value metrics as defined in section E300 of the OMB Circular A11.

E. OPERATIONAL ANALYSIS TEMPLATE INSTRUCTIONS

An Operational Analysis Report must be completed annually for all non-infrastructure investments that have component or usable functionality in a production or operational state as described above. The template includes two sections; an Overview and a Performance Detail section, each broken down into sub-sections (see OPERATIONAL ANALYSIS (OA) FORM in Section 9 FORMS and TEMPLATES).

Overview

A1 – Executive Summary: Includes the Investment Name and Operational Analysis Completion Date. The analysis should be completed in time to support decision making for the following annual submission of the E300 and the budget to OMB. For example, analyses for BY 2015 submitted to OMB in September 2013 should be completed during the last quarter of FY 2012 or the first quarter of FY 2013. The evaluation period (EP) is generally the 12 month (or longer for new investments as necessary) period over which the OA is reporting performance data (see A2). The recommendation is for the entire investment and not the individual components (system/application/module/other useful component) within an investment and should be selected from the drop down menu and includes:

- Re-Invest – Modernize (Technical upgrades but no new functionality)
- Re-Invest – Enhance (Any addition of new functionality, new requirements)
- Re-Invest – Both (Modernization and Enhancement)
- Replace/Retire – Develop Replacement Investment (Identify the new investment in 3a and 3b, when known. May map to more than one new investment. Provide planned retirement date for the investment being analyzed in 3c.)
- Retire – Investment no longer necessary/useful (ex. Elimination of mission or overlaps another investment in functionality. Provide planned retirement date for the investment being analyzed in 3c.)
- Continue As-Is (Includes regular operations and maintenance)

Provide a short explanation of the analysis and decision. This should map to and support the E300A section B question 6 for the upcoming BY submission.

A2 – Performance Summary (Calculated from the most recent completed twelve months results in the Department's portfolio management tool(: The units to be used are dollars for Cost, days for Schedule, and percent for OMV, CIO Rating, and Overall Rating. Report the average of the previous completed twelve monthly reports for units and percentages. The color rating for each category is based on this calculation and not the number of Reds/Yellows/Greens during the year. These fields will be automatically calculated by Treasury's Portfolio Management Tool.

A3 – Financial Summary: This section does not apply to infrastructure investments. Question 10 covers the Cost-Benefit Assessment from the most recent Alternatives Analysis for the investment. The Department is developing a standard model that defines a period of performance of five years. In the absence of this direction, please provide the time covered (fiscal years) of the model used for this analysis. Question 11 covers the same data as revised by this OA or a revised Alternatives Analysis, if appropriate. (See CPIC Guide Section 2b – Alternatives Analysis.) Question 12 documents the key changes in the assumptions between the two analyses captured in the previous questions. DME is the total DME for the defined period of performance. The Number of years with O&M is the years in which the investment has any component or useful functionality in production and does not include years in which only DME work is being conducted. The Average Annual O&M Cost is the total O&M Cost for this period divided by the Number of years with O&M. The Business Value Metrics fields identify the metrics used to define the business benefit of the investment. Performance data for these metrics should appear in Table B1.4.

Performance Detail

B1 – Investment Performance: Section 1 includes total consolidated data as reported in the last month of the chosen reporting period for all projects, divided between DME and Maintenance projects. Additional detail for only the Maintenance projects is then presented in Section 2 from the same report. The information in sections 1 and 2 will reflect the CY data as calculated in the most recent Monthly Variance Report and not the entire twelve month period of performance covered in the OA. Section 3 captures the total actual O&M spending (including projects and operational activities) for years PY-3 through PY and a projected total spending for CY. The graph is calculated from this table. All fields come directly from the Treasury Portfolio Management system.

B1.4 -- Section 4 includes all the Operational Metrics that have been reported for this investment over the previous five years. While there is a minimum of five metrics reported since the beginning of FY2012, this table is intended to capture all the metrics that have been reported to OMB since PY-4, including metrics that have been retired. The Department understands that requirements in this area have been inconsistent so please communicate with your Treasury Desk Officer if the investment will have difficulty complying with this requirement. The values captured in this table should be the average annual value and not the year-end value. The PY Target and the Average PY OMV% should come from the September Monthly Variance Report. For metrics that have been retired, this field will capture the target for the last year for which the metric was reported. Please create a graph in Section B1.4.a for any metric that has at least three years of values reported.

B2 – Component Assessment: This section breaks the investment into its most reasonable operational component levels. Most investments in Treasury are complex aggregations of different components such as systems, applications, modules or other similar units that are often developed and deployed at different times throughout the life of an investment. Understanding and managing complexity at this level allows the Department to align investments to ongoing business functionality rather to discrete technical developments, and to manage and report non-lifecycle types of investments in a realistic way. While the definition of a component is flexible, bureaus should consider the following guides:

- Only consider components in operation, not in development.
- Report the components like you manage them. Avoid complex allocation methodologies by grouping related components in ways the work is managed.
- Measurement Units (or Units) are defined as the unit of measure that best defines the cost benefit of the investment over the entire period of performance. They are intended to identify cost trends that would indicate when there is a need to change the investment to improve business performance. Similar to other cost drivers, they are often measured as the number of users or transactions that the component supports. This data is intended to

identify trends across the life of the component so definitional consistency throughout the life of the component is important.

- Define a component as a major release of a particular system/application, not the entire life of an application. A new major release retires its predecessor. Part of the intent of this section is to demonstrate technology refreshes or identify where they need further investment to stay with current technology. Retired components should be included as separate components until they fall outside of the PY-4 window. Since this is a new requirement, it may be difficult or impossible to capture the historic detail. Please contact your desk officer if this is an issue.
- Total costs of the sum of the individual components must equal the total cost captured in Section B1.3. If this requires the creation of a consolidated "Other Component", the costs for this component should be less than 5% of the total for the investment. Centralized costs should be allocated to the Components consistently whenever possible.

Complete one section for each individual component identified by the investment and create as many components as needed to fully describe the investment. Use Component Names that support a chronology of a particular system/application (ex. Release 2.0 of XYZ system should have some small overlap with Release 3.0 of XYZ system). Capture all Operations and Maintenance Costs associated with the investment, including Maintenance Projects.

This template describes information requested by the Department to assess the operational health and investment direction of an IT investment at a high level. It should not be considered a full annual review and operational analysis for the purposes of bureau decision making and planning. Because of their direct responsibility and operational urgency, the bureaus need to consider all the technical aspects and business context of the investment to make a complete informed decision. This could include the number of help desk calls, change requests, system failures, the evolution of the technical environment, and the target architecture of the bureau among a variety of other measures. As a result, each bureau should develop their own OA policy, related to this guidance that satisfies the decision making needs of that bureau.

Section 7. Post-Implementation Review – EVALUATE PHASE

INTRODUCTION

A Post-Implementation Review (PIR) should be conducted at the project level as the transition between the Control Phase and the Evaluate Phase. The PIR should be performed within ninety days of the completion of a project, unless otherwise authorized by the Department, within a major IT investment that resulted in the deployment of a useful segment into the production environment. The PIR is a process to examine whether the integrated project team (IPT) met its intended objectives and yielded expected functionality on time and within budget. At the Department level, it should also identify lessons learned that might be applicable to other project teams across the Department.

POST-IMPLEMENTATION REVIEW POLICY

Post Implementation Reviews are required to be submitted to the Treasury CPIC Office within ninety days, or unless otherwise authorized by the Department, of the end of an IT project that deploys a useful segment into production. The completion of the PIR marks the boundary from the Control phase to the Evaluate phase for that particular piece of functionality. This timeframe permits the IPT to address issues identified in the initial production deployment before declaring the useful segment ready for day-to-day usage.

ENTRY CRITERIA

A PIR is required within ninety days of initial deployment, unless otherwise authorized by the Department, of a useful segment into the production environment.

POST-IMPLEMENTATION REVIEW PROCESS

A Post-Implementation Review evaluates how the investment's IPT implements major IT investments or useful segments. A PIR seeks to answer the question, "Did the IPT execute their project appropriately; and what did we learn that might be useful for other project teams across the Department?"

The PIR at the Department level includes two documents:

1. Project Performance Report

2. Lessons Learned

The Project Performance Report includes final cost and schedule results for the entire project by activity, metrics on change control (BCR history, etc.), assessment on delivery of initial functional requirement, and a comment section to explain final variances and other mitigating issues.

The Lessons Learned would include lessons from planning through initial deployment and problem resolution. It should also identify reasons for adjustments to planned functionality, schedule, cost and quality targets.

A useful segment is defined as any end product or module of an investment that, when completed, has utility independent of other development modules and provides a measurable performance outcome for

which the benefits exceed the costs, even if no further funding is appropriated. Intermediate milestones or deliverables that are not end products or modules with independent utility are not regarded as useful segments.

POST-IMPLEMENTATION REVIEW TEMPLATE INSTRUCTIONS

A Post-Implementation Review should be completed for large projects of a major investment within ninety (90) days of the completion and deployment of a useful segment into production. The template includes six sections; an Overview, Performance Detail, Scope & Functionality Assessment Detail, Innovation, Customer Assessment, and Lessons Learned (see POST IMPLEMENTATION REVIEW (PIR) FORM in Section 9 FORMS and TEMPLATES).

Overview

A1 – Executive Summary: Includes the Investment Name, Project Name, and Post-Implementation Review Completion Date. The PIR analysis should be completed within ninety (90) days, unless otherwise authorized by the Department, of the deployment of a useful segment of a project into production. The PIR Completion Date is the date when the PIR is completed. The Executive Summary section should also include Bureau name, Business Owner, Project Manager, and the Treasury CPIC Desk Officer responsible for the investment.

Performance Detail

B – PERFORMANCE DETAIL: Section B of the PIR form contains two sections – 'B1 – Project Performance (Final Project Baseline)' and 'B2 – Project Performance (Original Baseline).' Original baseline is the first project plan entered into the portfolio management tool. The final baseline is the baseline in place when the project is complete and includes all BCRs processed to date.

B1 – Project Performance (Final Project Baseline): This section has Project Activities being evaluated. This section has information about the project activity (ies) in their current state. It includes the final project Planned Cost, Actual Cost, Cost Variance, and Cost Variance % (percent). All the amounts are in millions and the variance percentage is rounded to two decimal places. Section B1 contains project schedule information to include – Planned Start Date, Planned End Date, Actual Start Date, Actual End Date, Schedule Variance in Calendar Days, and Schedule Variance % (percent).

> **NOTE:** All information in this section of the PIR form is pre-populated with data from the Treasury CPIC tool (e.g., Investment Knowledge Exchange (IKE) or SharePoint Investment Knowledge Exchange (SPIKE)).

B2 – Project Performance (Original Baseline): This section has information that looks back at the planning process for the project. It assesses the planning process to provide lessons learned for developing the project budget and cost, project schedule, developing the work breakdown structure, etc. This section should also include an explanation or interpretation of cost and schedule variances.

Scope & Functionality Assessment Detail

C – SCOPE & FUNCTIONALITY ASSESSMENT DETAIL: This section of the PIR form tracks changes from the original planned project to the final project implementation, including scope statement(s), statements to verify that the original scope for the project was achieved and/or delivered accurately and on time, list of baseline change requests (BCR), date of the BCR, what

changed, and the reason for the change. The section contains the following data fields and should be provided by the project manager:

- List of original planned scope statement(s) (i.e., prior to any approved BCRs for the investment)
- Verify that the above scope statement(s) were implemented by this project/activity, explaining any gaps
- List all approved BCRs related to the project, except correction BCRs, including approval date and description. Record the BCR approval date, what changed, and reason.

Innovation

D – INNOVATION: This section of the PIR form should be used to describe the type and the reason for the technology used, how the technology used correlates to improved services, and description or discussion to identify opportunities to improve performance and functionality. This section contains the following fields and should be completed by the program or project manager/lead:

- Is advanced Technology used in the implementation of the project? Please explain.
- How could better use of technology improve service?
- Identify opportunities to improve functionality and/or performance. These opportunities may include: Investing in the latest technology; Reengineering business processes; and, more efficient delivery in a web-based or cloud computing environment. Please explain.

Customer Assessment

E – CUSTOMER ASSESSMENT: This section is completed by the program or project manager (PM) and contains the PM's summary of customer/business owner survey responses. The summary should include responses to some or all of the following customer responses to the following questions:

- How does the project align to the organization's strategic goals?
- How does the project support the business process?
- How closely does the project meet expected business benefits? Are there gaps in meeting expected business benefits?
- Does the project meet the functional requirements and/or performance requirements?
- Was the project deployed in a timely manner and with adequate communication with the stakeholders?
- Overall project satisfaction

The PM should also use this section to rate the project for the efficiency in carrying out its activities with the least amount of resources, the degree to which the project is achieving its desired outcomes, accuracy and timeliness of the project in performing its tasks, and the currency of the technology used in the project.

Lessons Learned

F – LESSONS LEARNED: The PM should provide a description of lessons learned during all phases of the project, from inception to implementation/deployment. This discussion should include, but not limited to the following:

- Cost (budget, estimating, WBS, etc)
- Schedule
- Scope
- Risks and mitigation plans
- Technology
- Organizational readiness
- What went well/wrong?