



Capital Planning and Investment Control Policy and Overview

Office of the Chief Information Officer
Capital Planning and Investment Control Team

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Revision History

<u>Date</u>	<u>Version</u>	<u>Summary of Changes</u>	<u>Author</u>
09/28/2015	1.0	Updated IT CPIC policy to reflect FITARA and associated OMB requirements. Under FITARA, this policy is now publicly available. ADAMS Accession No. ML15247A497.	Vickie Smith, OIS/PMPD/IPMB Approved by Darren Ash, OEDO/DEDCM
12/28/2015	1.1	Updated to reflect organizational changes effective on 11/01/2015. ADAMS Accession No. ML15288A545.	Vickie Smith, OCIO/PMPD/IPMB Approved by Darren Ash, CIO
10/21/2016	2.0	Significant updates were made to reflect new policy requirements in the revised OMB Circular A-130, "Managing Information as a Strategic Resource" (July 2016); OMB Memorandum, "Federal Source Code Policy: Achieving Efficiency, Transparency, and Innovation through Reuseable and Open Source Software" (M-16-21); and OMB Category Management Policy for Common IT. ADAMS Accession No. ML16272A383	Vickie Smith, OCIO/PMPD/IPMB Approved by David Nelson, CIO
12/31/2017	2.1	Updated to add clarity on the Chief Information Officer's (CIO's) role in information technology (IT) contracting and incremental development, make minor changes to definitions, update the major IT investment criteria, and make other minor updates. ADAMS Accession No. ML17346A193	Leah Kube, OCIO/GEMS/PIMB Approved by David Nelson, CIO
12/31/2018	2.2	Added updated definitions and other minor updates.	Leah Kube, OCIO/GEMS/IPSMB Approved by David Nelson, CIO
12/31/2019	2.3	Added and updated definitions and other minor editorial updates.	Leah Kube, OCIO/GEMS/IPSMB Approved by David Nelson, CIO



Note: The U.S. Nuclear Regulatory Commission maintains detailed processes and operating procedures in separate documents to support continuous refinement of the agency's maturing investment management. This document sets forth Capital Planning and Investment Control (CPIC) policy and gives an overview of CPIC processes.



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Background and Authorities

Capital Planning and Investment Control (CPIC) for information technology (IT) investments refers to “a decision-making process that ensures IT investments integrate strategic planning, budgeting, procurement, and management of IT in support of agency missions and business needs.”¹ The Clinger-Cohen Act of 1996 (CCA) (Public Law 104-106, formerly known as the IT Management Reform Act of 1996) requires Federal agencies to use a disciplined CPIC process to acquire, use, maintain, and dispose of IT assets. Although other laws (e.g., the Paperwork Reduction Acts of 1980 and 1995, Government Performance and Results Act of 1993 (GPRA), GPRA Modernization Act of 2010 (GPRAMA), and Federal Acquisition Streamlining Act of 1994) also require agencies to develop and implement a disciplined process to maximize the value of IT investments while balancing risks, the CCA went a step further by mandating a specific, more rigorous methodology for managing IT investments that integrates IT capital planning with other agency processes.

Specifically, the CCA mandates that agencies implement CPIC processes to do the following:

- Provide for the selection, control, and evaluation of agency IT investments.
- Integrate with the processes for budget, financial, and programmatic decision-making.
- Include minimum criteria for considering whether to undertake an IT investment.
- Identify IT investments that would result in shared benefits or costs for other Federal agencies or State or local governments.
- Provide the means for identifying quantifiable measurements for IT investment net benefits and risks.
- Provide the means for senior management to obtain timely information on an investment's progress.

More recently, the Federal Information Technology Acquisition Reform Act (FITARA), enacted on December 19, 2014, established additional requirements. The Office of Management and Budget (OMB) issued guidance on implementing FITARA in Memorandum M-15-14, “Management and Oversight of Federal Information Technology,” dated June 10, 2015. FITARA builds on the CCA by empowering Federal Chief Information Officers (CIOs) with increased oversight over (1) budget planning, (2) governance structures, (3) portfolio risk management, (4) hiring practices within the IT offices, (5) data center consolidation planning and execution, and (6) reporting progress and metrics to OMB. To build on and strengthen the CPIC requirements of the CCA, FITARA establishes the Common Baseline for IT Management, defining the roles and responsibilities of the CIO and other senior agency officials while ensuring the CIO retains accountability.

¹ The Office of Management and Budget provides this definition in the “Integrated Data Collection Common Definitions.” See 40 U.S.C. 11302 for statutory requirements and the Clinger-Cohen Act of 1996.



To further assist agencies in meeting the requirements of the CCA and FITARA, the OMB issues the annual IT Budget and Capital Planning Guidance as part of OMB Circular A-11, "Preparation, Submission, and Execution of the Budget," and maintains its supplement, the "Capital Programming Guide," to assist agencies with the implementation of CPIC processes and meeting reporting requirements to Congress. OMB Circular A-130, "Managing Information as a Strategic Resource," revised July 2016, provides additional guidance for implementing CPIC and FITARA requirements. The OMB updates these circulars based on current, relevant statutes and executive orders.

As part of FITARA, OMB has also issued the category management policy in a series of memoranda, including the following:

- OMB Memorandum, "Category Management Policy 15-1: Improving the Acquisition and Management of Common Information Technology: Laptops and Desktops," dated October 16, 2015
- OMB Memorandum, "Category Management Policy 16-1: Improving the Acquisition and Management of Common Information Technology: Software Licensing," dated June 2, 2016
- OMB Memorandum, "Category Management Policy 16-3: Improving the Acquisition and Management of Common Information Technology: Mobile Devices and Services," dated August 4, 2016

On August 8, 2016, OMB also issued Memorandum M-16-21, "Federal Source Code Policy: Achieving Efficiency, Transparency, and Innovation through Reusable and Open Source Software." The CCA, FITARA, and associated OMB policy, circulars, and guidance serve as the basis for CPIC policy, processes, and procedures at the U.S. Nuclear Regulatory Commission (NRC).

Purpose

This document sets forth the CPIC policy for the NRC. It establishes the business rules and guidelines for consistency and compliance in executing the NRC CPIC processes and procedures, including the procurement of IT assets. This document contains updates that reflect FITARA, Circular A-130, OMB category management policy, and OMB Memorandum M-16-21 requirements; therefore, it supersedes all previous versions of the NRC's CPIC policy. This document also gives a brief overview of the NRC CPIC processes. It is worth noting that CPIC processes and procedures are continuously evaluated and refined; therefore, detailed processes and procedures are maintained in separate documents. This allows for timely updates and implementation and is consistent with best practices. It also supports the NRC's goal to continuously mature its IT investment management practices to achieve an IT portfolio that leverages IT for strategic outcomes in support of the NRC's mission.



Definitions

The definitions in this section help lay the foundation for, and build better understanding of, the CPIC policy and processes.

Adequate Incremental Development refers to the planned and actual delivery of new or modified technical functionality to users at least every 6 months during the development of software or services (and must be identified in OMB reported).

Agile Software Development refers to an approach to software development under which requirements and solutions evolve through the collaborative effort of self-organizing and cross-functional teams and their customer(s)/end user(s). It advocates adaptive planning, evolutionary development, early delivery, and continual improvement, and it encourages rapid and flexible response to change.

Alternatives Analysis refers to a method for addressing the various options for meeting the performance objectives of an Investment, including the return on Investment of the various options. The analysis is performed prior to the initial decision to implement a solution and updated periodically, as appropriate, to capture changes in the context for an Investment decision. Alternatives Analysis should be performed for Investments with projects in the planning or DME stages, whereas strictly operational Investments should instead perform operational analyses until such time as a decision is made to re-evaluate the Investment or to resume development, modernization or enhancement. This term refers to best practices outlined in the Capital Programming Guide under "I.4-Alternatives to Capital Assets" and "Evaluate Asset Options."

Note: An alternatives analysis shall be performed for investments with projects in the planning or DME stages, whereas strictly operational investments shall instead perform operational analyses until a decision is made to reevaluate the investment or to resume DME.

Baseline refers to the approved work breakdown structure, costs, schedule, and performance goals for a given investment. For additional information on baselines and baseline management, see OMB Memorandum M-10-27, "Information Technology Investment Baseline Management Policy."

Benefit-Cost Analysis (BCA) refers to the recommended technique to use in a formal economic analysis of government programs or projects. OMB Circular A-94, "Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs," contains guidance for performing a BCA.

Capital Programming refers to an integrated process within an agency that focuses on the planning, budgeting, procurement, and management of the agency's portfolio of IT investments to achieve the agency's strategic goals and objectives with the lowest overall cost and least risk.



CIO Evaluation refers to the CIO's best judgment of the current level of risk for an investment in terms of its ability to accomplish its goals (40 U.S.C. 11315(c)(2)). The evaluation should be informed by factors such as (1) risk management, (2) requirements management, (3) contractor oversight, (4) historical performance, (5) human capital, and (6) other factors that the CIO deems important to forecasting future success. Each evaluation includes a narrative to explain the rating; this is particularly important when the rating has changed since the last evaluation.

Cloud Computing refers to a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. Cloud computing promotes availability and is composed of five essential characteristics (On-demand self-service, Broad network access, Resource pooling, Rapid elasticity, Measured Service); three service models (Cloud Software as a Service (SaaS), Cloud Platform as a Service (PaaS), Cloud Infrastructure as a Service (IaaS)); and, four deployment models (Private cloud, Community cloud, Public cloud, Hybrid cloud). Key enabling technologies include: (1) fast wide-area networks, (2) powerful, inexpensive server computers, and (3) high-performance virtualization for commodity hardware.

Cloud-First Policy refers to OMB's Cloud First policy, launched in December 2010, which is intended to accelerate the pace at which the government realizes the value of cloud computing by requiring agencies to evaluate safe, secure cloud computing options before making any new investments.

Note: Under the Federal Cloud Computing Strategy, agencies shall do the following:

- *Evaluate their technology sourcing plans to include consideration and application of cloud computing solutions as part of the budget process.*
- *Seek to optimize the use of cloud technologies in their IT portfolios to take full advantage of the benefits of cloud computing to maximize capacity utilization, improve IT flexibility and responsiveness, and minimize costs.*
- *Default to cloud-based solutions when evaluating options for new IT deployments, if a secure, reliable, cost-effective cloud option exists.*
- *Continually evaluate cloud computing solutions across their IT portfolios, regardless of investment type or life-cycle stage.*

Commodity IT refers to a category of back-office IT services whose functionality applies to most, if not all, agencies (e.g., infrastructure and asset management, e-mail, hardware and software acquisition, and help desks). This also relates to the OMB's PortfolioStat initiative and a CIO-led business approach to the delivery of IT infrastructure, enterprise IT, and administrative and business systems that emphasizes pooling agencies' purchasing power across their entire organization through shared services as a provider or consumer, instead of standing up separate independent services. This approach aims to eliminate duplication, rationalize the agency's IT investments, and drive down costs.



There are three categories of Commodity IT:

- Enterprise IT – Items that pertain to this are: Email; Collaboration; Identity and Access Management; IT Security (Not Identity and Access Mgmt.); and Web Hosting, Infrastructure, and Content.
- IT Infrastructure - Items that pertain to this are: Desktop Systems; Mobile Devices; Mainframes and Servers; and Telecommunications.
- Business Systems - Items that pertain to this are: Financial Management; Human Resources Management; Grants-Related Federal Financial Assistance; Grants-Related Transfer to State and Local Governments.

Cost is defined in Statement of Federal Financial Accounting Concepts (SFFAC) 1, “Objectives of Federal Financial Reporting,” as the monetary value of resources used. It is defined more specifically in Statement of Federal Financial Accounting Standards (SFFAS) No. 4, “Managerial Cost Accounting Concepts and Standards for the Federal Government,” as the monetary value of resources used or sacrificed or liabilities incurred to achieve an objective, such as to acquire or produce a good or to perform an activity or service. Depending on the transaction, cost may be charged to operations immediately (i.e., recognized as an expense of the period) or to an asset account for recognition as an expense of subsequent periods. In most contexts within SFFAS No. 7, “Accounting for Revenue and Other Financing Sources and Concepts for Reconciling Budgetary and Financial Accounting,” “cost” is used synonymously with expense.

Cost Avoidance is an action taken in the immediate timeframe that will decrease costs in the future. For example, an engineering improvement that increases the mean time between failures and thereby decreases operation and maintenance costs is a cost avoidance action, as defined in OMB Circular A-131, “Value Engineering.”

Cost Savings refers to the reduction in actual expenditures to achieve a specific objective, as defined in Circular A-131.

Development, Modernization, and Enhancement (DME) refers to projects and activities leading to new IT assets or systems, as well as projects and activities that change or modify existing IT assets to substantively improve capability or performance, implement legislative or regulatory requirements, or meet an agency leadership request. DME activity may occur at any time during a program’s life cycle. As part of DME, capital costs can include hardware; software development and acquisition; commercial off-the-shelf acquisition; government labor; and contracted labor for planning, development, acquisition, system integration, and direct project management and overhead support.

Disposition Cost refers to the cost of retiring a capital asset (generally a system or investment) once its useful life is completed or a replacement asset has superseded it; disposition costs may be included in operational activities near the end of the useful life of an asset.



Earned Value Management (EVM) refers to an integrated management system that coordinates the work scope, schedule, and cost goals of a program or contract and objectively measures progress toward these goals. EVM is a tool used by program managers to (1) quantify and measure program or contract performance, (2) provide an early warning system for deviation from a baseline, (3) mitigate risks associated with cost and schedule overruns, and (4) provide a means to forecast final cost and schedule outcomes. A description of the qualities and operating characteristics of earned value management systems (EVMS) appears in American National Standards Institute/Electronic Industries Alliance Standard-748-1998, "Earned Value Management Systems," dated May 19, 1998.

Note: For lower cost programs and projects for which the high cost of using EVM may be prohibitive, an alternative approach must be described under risks in the program or project plan or a separate risk management plan, as appropriate.

Enterprise Architecture (EA) refers to the strategic business, technology, and documentation of the current and desired relationships among business and management processes and the IT of an organization. An EA includes the rules, standards, and systems lifecycle information to optimize and maintain the environment that the agency wishes to create and maintain through its IT portfolio. An EA must provide a strategy that enables the agency to support its current state and contain a roadmap for transition to its target environment. An EA defines principles and goals and sets a direction for such issues as the promotion of interoperability, open systems, public access, end user satisfaction, and IT security.

Note: Although this document does not establish EA standards, the selection and evaluation criteria found within should align with, and be reflected in, the NRC's target EA and Enterprise Roadmap.

Enterprise Roadmap refers to a document that describes the business and technology plan for the entire organization using EA methods. The roadmap provides current views, future views, and transition plans at an appropriate level of detail for all IT investments, services, systems, and programs.

Federal IT Dashboard (ITDB) refers to a Web site (www.itdashboard.gov) that enables Federal agencies, industry, the general public, and other stakeholders to view details of the performance of Federal IT investments. The administration and Congress use the ITDB to inform budget and policy decisions.

Financial Management Systems refers to systems necessary to support financial management, including automated and manual processes, procedures, controls, data, hardware, software, and support personnel dedicated to the operation and maintenance of system functions. Examples of financial management systems include (1) core financial systems, (2) procurement systems, (3) loan systems, (4) grants systems, (5) payroll systems, (6) budget formulation systems, (7) billing systems, and (8) travel systems. OMB Circular A-127, "Financial Management Systems," contains additional information and guidance.



Functional/Business Sponsor refers to the agency official who is responsible for the program or function, supported or implemented by the investment (44 U.S.C. 3501(a)(4)). The sponsor is responsible for expressing the value of the IT investment, ensuring its successful implementation, and providing accurate and timely data to the agency CIO and OMB. The designated person may (or may not) be the same as the “Business Process owner/Subject Matter Expert” serving on the Integrated Program Team (IPT). Each major and non-major IT investment must include the name of the functional or business sponsor as well as the individual’s title.

Information and Communication Technology (ICT) is information technology and other equipment, systems, technologies, or processes, for which the principal function is the creation, manipulation, storage, display, receipt, or transmission of electronic data and information, as well as any associated content. Examples of ICT include software; applications; Web sites; videos; electronic documents; computers and peripheral equipment; information kiosks and transaction machines; telecommunications equipment; customer premises equipment; multifunction office machines; and digital signs.

Information Resources Management (IRM) Strategic Plan refers to a document that addresses all information resources management of an agency. Agencies must develop and maintain their IRM strategic plans as required by 44 U.S.C. 3506(b)(2) and OMB Circular A-130. IRM strategic plans should support the agency’s strategic plan required in OMB Circular A-11; describe how information resources management activities help accomplish the agency’s mission delivery area and program decisions; and ensure that IRM decisions are integrated with management support areas, including organizational planning, budget, procurement, financial management, and human resources management.

Information Security refers to all functions pertaining to the protection of Federal information and information systems from unauthorized access, use, disclosure, disruptions, modification, or destruction, as well as the creation and implementation of security policies, procedures, and controls. It includes the development, implementation, and maintenance of security policies, procedures, and controls across the entire information life cycle. These functions should include implementation and activities associated with National Institute of Standards and Technology (NIST) 800-37, “Guide for Applying the Risk Management Framework to Federal Information Systems,” including (1) security awareness training (but not the technical infrastructure required for the delivery of training), (2) compliance reporting under the Federal Information Security Management Act, (3) development of a security policy, and (4) security audits and testing.

Note:

- *IT security should include systems that oversee agency IT needs.*
- *IT security does not include IT costs related to identity or access management systems or solutions.*
- *IT security does not include physical protection of an organization (e.g., guards, cameras, and facility protection).*



Information System refers to a discrete set of information resources organized for the collection, processing, maintenance, use, sharing, transmission, or dissemination of information, in accordance with defined procedures, whether automated or manual.

Information Technology (IT) is defined as follows:

- IT includes any services or equipment, or interconnected system(s) or subsystem(s) of equipment, that are used in the automatic acquisition, storage, analysis, evaluation, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the agency.
- Such services or equipment is considered “used by an agency” if the agency uses it directly or if it is used by a contractor under a contract with the agency that requires either use of the services or equipment to a full or significant extent in the performance of a service or the furnishing of a product.
- IT includes computers; ancillary equipment (such as imaging peripherals, input, output, and storage devices necessary for security and surveillance); peripheral equipment designed to be controlled by the central processing unit of a computer; software; firmware; and similar procedures, services (including provisioned services such as cloud computing and support services that support any point of the life cycle of equipment or services), and related resources.
- IT includes high -performance computing capabilities, including those that are not communal in nature.
- IT does not include any equipment that is acquired by a contractor incidental to a contract that does not require use of the equipment.

IT Asset refers to anything (tangible or intangible) that has value to an organization, including, but not limited to, a computing device, IT system, IT network, IT circuit, software (both an installed instance and a physical instance), virtual computing platform (common in cloud and virtualized computing), and related hardware (e.g., locks, cabinets, keyboards), as well as people and intellectual property (including software).

***Note:** Assets are the lowest level at which IT is planned, acquired, implemented, and operated. All IT hardware and software shall be associated with the comprising system or investment and tracked and monitored throughout its life cycle, in accordance with the NRC’s IT Asset Management processes.*

IT Investment refers to the expenditure of IT resources to address mission delivery and management support. An IT investment may include a project or projects for the DME or maintenance of a single IT asset or group of IT assets with related functionality and the subsequent operation of those assets in a production environment.



Note: All IT investments shall have a defined life cycle with start and end dates, with the end date representing the end of the currently estimated useful life of the investment, consistent with the investment's most current alternatives analysis, if applicable. When the asset is essentially replaced by a new system or technology, the replacement shall be reported as a new, distinct investment, with its own defined life-cycle information.

There are five types of IT investments:

- (1) **Funding Transfer Investment** refers to the portion of funding contributions a partner agency provides to another IT investment. The description of the IT investment should indicate the unique investment identifier (UII) of the managing partner investment.

Note: The NRC is a partner agency of multiple funding transfer investments (i.e., E-Govs, Lines of Business (LoBs), and shared services) and therefore shall budget for and report the funding provided to the agency managing the investment on its IT Portfolio Summary submitted to OMB. During the selection process, funding transfer investments shall be included as an alternative considered in the alternatives analysis. If not selected, a business justification for the solution selected must be approved by the CIO and submitted to OMB for approval.

- (2) **IT Migration Investment** refers to the migration costs associated with systems in a shared service partner agency that are not captured by the agency lead when the partner agency is migrating to the shared system. The description of the IT investment should indicate the UII of the major IT investment of the managing partner.

Note: The NRC shall plan, budget for, and report the IT cost of migrating to new investments or to funding transfer investments. When migrating to a funding transfer investment, the NRC shall do so under an IT migration investment on its IT Portfolio Summary. When migrating to a new investment that is not a funding transfer investment, the cost will be reported as planning DME on the new investment's life-cycle cost table.

- (3) **Major IT Investment** refers to an IT investment requiring special management attention because of its importance to the mission or function of the Government; significant program or policy implications; high executive visibility; high development, operating, or maintenance costs; unusual funding mechanism; or definition as major by the agency's CPIC process. This includes all "major automated information systems" as defined in 10 U.S.C. 2445 and all "major acquisitions" consisting of information resources as defined in the "Capital Programming Guide." The OMB may work with the agency to declare IT investments as major IT investments. Agencies must consult with assigned OMB desk officers and resource management offices about which investments are considered "major."
- (4) **Nonmajor Investment** refers to any IT investment in the agency's IT portfolio that does not meet the definition of "major IT investment," "funding transfer investment," or "IT migration investment."



- (5) **Standard Investment** refers to an IT infrastructure investment that has disaggregated to its discrete components and is managed separately.

IT Program Managers and IT Project Managers refer to the IPT members responsible for IT investments who lead the required IPT for the investment. In some cases, IT program and project managers can hold positions in other classification series; however, they must still meet the requisite Federal certification or IT program management experience requirements. Further definitions are available in the Office of Personnel Management's Job Family Standard for Administrative Work in the Information Technology Group (Series 2200 in the Federal Classification and Job Grading Systems).

IT resources include all of the following:

- agency budgetary resources, personnel, equipment, facilities, or services that are primarily used in the management, operation, acquisition, disposition, and transformation or other activity related to the life cycle of IT
- acquisitions or interagency agreements that include IT and the services or equipment provided by such acquisitions or interagency agreements

IT resources do not include grants to third parties that establish or support IT not operated directly by the Federal Government.

IT Service refers to a means of delivering IT, in combination with any inherent people or processes of value, to customers by facilitated outcomes that customers want to achieve without the ownership of specific costs and risks.

Integrated Program/Project Team (IPT) is defined as a multidisciplinary team led by an IT program/project manager responsible and accountable for planning, budgeting, and procurement, as well as life-cycle management of the investment to achieve its cost, schedule, and performance goals. Team skills include budgetary, financial, capital planning, procurement, user, program, architecture, EVM, security, and other staff skills, as appropriate.

***Note:** For the OMB to approve the budget for a major IT investment, its IPT must include the following at a minimum:*

- *a qualified, fully dedicated IT program/project manager*
- *a contracting specialist, if applicable*
- *an IT specialist*
- *an IT security specialist*
- *a business process owner or subject matter expert (SME)*

Other members of the IPT might include the following:

- *an enterprise architect*



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- *an IT specialist with specific expertise in data, systems, or networks*
 - *a capital planner*
 - *a budget contact*
 - *a contracting officer's representative*
 - *an information system security officer*
 - *a performance specialist*

Key members of the IPT should be co-located during the most critical junctures of the program, to the maximum extent possible. Agencies should establish IPT members' individual performance goals to hold team members accountable for both individual functional goals and the overall success of the program. The investment IPT should be defined in a program or an IPT charter.

Interagency Acquisition refers to the use of the Federal Supply Schedules; a multiagency contract (i.e., a task order or delivery order contract established by one agency for use by multiple Government agencies to obtain supplies and services, consistent with the Economy Act, 31 U.S.C. 1535) or a Governmentwide acquisition contract (i.e., a task order or delivery order contract for IT established by one agency for Governmentwide use operated by an executive agent, as designated by the OMB pursuant to CCA Section 11302(3)).

Lifecycle Costs refers to all investment costs, including Government full-time equivalents (FTEs), from the beginning of the investment through its estimated useful life (or the composite estimated useful life of the assets within the investment), independent of the funding source (e.g., revolving fund, appropriated fund, working capital fund, trust fund). The "Capital Programming Guide" and Circular A-131 contain more information about life-cycle costs.

Maintenance refers to the activity necessary to keep an asset functioning as designed during the operations and maintenance phase of an investment. Maintenance activities may also include, but are not limited to, operating system upgrades, technology refreshes, and security patch implementations. As defined in the Federal Accounting Standards Advisory Board SFFAS 10, "Accounting for Internal Use Software," maintenance excludes activities aimed at expanding the capacity of an asset or otherwise upgrading it to serve needs different from or significantly greater than those originally intended. Such activities are considered DME.

***Note:** Maintenance activities of notable cost or duration with predetermined start and end dates should be managed as projects and reported on the project and activities tables in Section B of Major IT Investment Update.*

Managing Partner refers to the lead agency that is responsible for coordinating the implementation of the funding transfer investments. The managing partner maintains an IT shared service with approval by agency leadership for intra-agency services and also by the OMB for interagency services. The managing partner organization, often referred to as the Program Management Office, develops, implements, and maintains financial and service models, as well as contracts with customers and suppliers using strategic sourcing vehicles whenever practicable. The managing partner Program Management Office is responsible for the success of the IT shared service and reports using metrics developed by the Federal agency for



its own intra-agency IT shared services and by the Federal CIO Council's Shared Services Subcommittee for interagency LOBs. Managing partners are also responsible for maintaining contracts with customer agencies that allow the customer agency to terminate the contract if specified levels of service are not maintained.

Modular Development refers to an approach that focuses on the delivery of specific investments, projects, or activities of an overall capability by progressively expanding on delivered capabilities until the full capability is realized. Investments may be decomposed into discrete projects, increments, or useful segments, each of which is undertaken to develop and implement products and capabilities that the larger investment delivers. For more information, see the OMB's "Contracting Guidance to Support Modular Development," dated June 14, 2012.

Operational Analysis refers to a method of examining the ongoing performance of an operating asset investment and measuring that performance against an established set of cost, schedule, and performance goals. An operational analysis is, by nature, less structured than performance reporting methods applied to developmental projects and should trigger considerations of how the investment's objectives could be better met, how costs could be reduced, and whether the organization should continue performing a particular function. The "Capital Programming Guide" contains guidance on operational analysis. Best practices can also be found in the Government Accountability Office (GAO) report GAO-13-87, "Information Technology: Agencies Need to Strengthen Oversight of Billions of Dollars in Operations and Maintenance Investments," issued October 2012.

Operations refers to the day-to-day management of an asset in which the asset is in the operations production environment and produces the same product or provides a repetitive service. Operations include, but are not limited to, activities that operate data centers, help desks, operational centers, telecommunication centers, and end-user support services.

Operations and Maintenance refers to the expenses required to operate and maintain an IT asset that is operating in a production environment. It includes costs associated with operations, maintenance activities, and maintenance projects needed to sustain the IT asset at the current capability and performance levels. It includes Federal and contracted labor costs, corrective hardware and software maintenance, voice and data communications maintenance and service, replacement of broken or obsolete IT equipment, overhead costs, business operations and commercial services costs, and costs for the disposal of an asset. It is also commonly referred to as **steady state**.

Partner (Customer) Agency refers to the agency in an inter- or intra-agency collaboration, such as an E-Gov, LOB initiative, or Federal shared service, that contracts with and pays a managing partner to receive an IT shared service. The customer agency organization may be required to interact with a supplier to coordinate day-to-day service issues. The managing partner handles major contract issues and resolves escalation items with suppliers. The partner agency usually provides resources (e.g., funding, FTEs) for the management, development, deployment, or maintenance of a common solution. The partner agency is also responsible for including the appropriate line items in its own IT Portfolio Summary budget submission and for



reflecting the amount of the contribution for each of the initiatives to which the agency provides resources.

Planning refers to preparing, developing, or acquiring the information used to design the asset; assess the benefits, risks, and risk-adjusted costs of alternative solutions; and establish realistic cost, schedule, and performance goals for the selected alternative, before either proceeding to full acquisition of the capital project or useful component or terminating the project.

Note: Planning must progress to the point where the agency is ready to commit to achieving specific goals for the completion of the acquisition before proceeding to the acquisition phase. Information-gathering activities to support planning may include the following:

- *market research of available solutions (see Federal Acquisition Regulation (FAR) Part 10, "Market Research")*
- *architectural drawings*
- *engineering and design studies*
- *prototypes*

Note: Planning may be general to the overall investment or may be specific to a useful component. For investments developed or managed using an iterative or agile methodology, planning will be conducted throughout the entire acquisition, focusing on each iteration or sprint.

Post-Implementation Review (PIR) refers to an evaluation of how successfully the investment or project objectives were met and how effective the project management practices were in keeping the investment or project on track. A PIR can be conducted after a project has been completed or after an investment concludes the implementation phase. The "Capital Programming Guide" contains additional details on the PIR process.

Privacy Impact Assessment (PIA) refers to the process for examining the risks and ramifications of using IT to collect, maintain, and disseminate information from or about members of the public in an identifiable form. The process is also used to identify and evaluate protections and alternative processes to mitigate the impact on privacy of collecting such information. Consistent with OMB guidance on implementing the privacy provisions of the E-Government Act (M-03-22), agencies must conduct and make publicly available PIAs for all new or significantly altered IT investments that administer information in an identifiable form collected from or about members of the public.

Programming refers to an integrated process within an agency that focuses on the planning, budgeting, procurement, and management of a program to achieve the agency's strategic goals and objectives with the lowest overall cost and least risk.



***Note:** Any program that leverages IT to support its mission shall include the CIO in its programming to advise on and approve the IT aspects of the program.*

Project refers to a temporary endeavor undertaken to accomplish a unique product or service with a defined start and end point and specific objectives that, when attained, signify completion. Projects can be undertaken for the DME, disposal, or maintenance of an IT asset. Projects are composed of activities.

***Note:** When reporting project status, to the maximum extent practicable, agencies should detail the characteristics of “increments” under modular contracting, as described in the CCA, and the characteristics of “useful segments,” as described in Circular A-130.*

Risk Management refers to a systematic process of identifying, analyzing, and responding to risk. It includes maximizing the probability and consequences of positive events and minimizing the probability and consequences of adverse events to overall objectives. Risk management should be conducted throughout the entire life cycle of the program.

Risk Management Plan refers to a documented and approved plan developed at the onset of the investment and maintained throughout. The plan specifies the risk management process.

Shadow (Hidden) IT refers to spending on IT that is not fully transparent to the agency CIO and IT resources included as a portion of a program that does not primarily have an IT purpose, but delivers IT capabilities or contains IT resources. An example would be a grants program in which a portion of the spending goes to equipment, systems, or services that provide IT capabilities for administering or delivering the grants.

Shared Service refers to a service that is provided by one Federal organization to other Federal organizations that are outside the provider’s organizational boundaries. Shared services may be intra-agency or interagency. There are three categories of shared services in the Federal Government:

- (1) **Common Solutions**—technology and/or contracts that can be used by more than one Federal agency. May be Government-to-Government or citizen-to-Government.
- (2) **Shared Services**—consolidating routine or standard operations to a limited number of organizations. Using common solutions (technology and contracts) and sharing human resource expertise either within an agency or across agencies.
- (3) **Centralized Services**—creating a single Federal-wide location for highly standardized activities, allowing organizations and users to benefit from consistent and uniform processes.

***Note:** Shared commodity IT and support services are considered to be IT; associated costs must be included and reported as part of the IT Portfolio Summary.*



Shared Service Provider refers to the provider of a technical solution or service that supports the business of multiple agencies using a shared architecture. For multiagency services, this is the managing partner of the investment.

Unique Investment Identifier (UII) refers to a persistent numeric code applied to an investment that allows the identification and tracking of an investment across multiple fiscal years of an agency's IT portfolio. The UII is composed of a three-digit agency code linked with a nine -digit unique investment number generated by the agency. Some nine-digit numbers are reserved for OMB to assign to funding transfer investments and may not be assigned by agencies.

Capital Planning and Investment Control Policy

All NRC IT resources shall be managed in accordance with Federal mandates, OMB requirements, and agency procedures. This policy establishes the business rules and guidelines for the management and oversight of IT resources, including FTEs, under all IT investments unless it is stated that the rules apply only to major IT investments.

Planning, Programming, Budgeting, and Selecting

- (1) All IT resources shall be planned, budgeted, executed, and reported under an approved IT investment in the NRC IT Portfolio Summary submitted to the OMB during the annual budget submissions.
- (2) For major IT investments, a Major IT Business Case must also be developed and maintained for justifying the budget request, including reporting performance and the expenditure of IT resources, to the OMB and Congress.
- (3) An IT investment shall be classified as a major IT investment if it meets one or more of the following OMB criteria:
 - importance to the mission or function of the Government
 - significant program or policy implications
 - high executive visibility
 - high development, operations, or maintenance costs, which the NRC defines as budget planning year costs of \$10 million or greater²
 - unusual funding mechanism
 - financial systems with annual cost and spending of \$500,000 or more, as dictated by mandates and guidance on financial systems, such as Circular A-127
 - defined as major by the NRC CPIC process

² The OMB establishes the criteria of a major IT investment but allows agencies to establish the dollar threshold.



All other IT investments are considered non-major or standard investments with the exception of funding transfer investments and IT migration investments used by the NRC. The NRC is a partnering agency to a number of investments managed by other agencies. These investments are considered major IT investments of the managing agencies, and the NRC shall report contributions to the managing partners on the NRC IT Portfolio Summary.

- (4) During the planning, programming, and budgeting processes, all IT resources shall be identified and separated from non-IT resources to allow visibility to the CIO and executive investment review board (IRB). Budgeting for IT resources in all programs (not just programs that are primarily IT oriented) shall be done in accordance with the IT budget guidance issued by the Office of the Chief Information Officer and in tandem with the overall agency budget formulation process issued by the Office of the Chief Financial Officer.
- (5) As a chair of the executive IRB, the CIO shall advise on and approve the IT aspects of all programs. In the case of major IT investments, additional, more extensive involvement shall occur through the monthly updates, CIO evaluations, and CIO TouchPoints.
- (6) The IT budget formulation process and annual agency IT Portfolio Summary and Major IT Business Case submission process shall ensure that the budget justification materials, in their initial budget submission, receive the appropriate CIO approvals and certifications and include affirmation statements of these approvals and certifications, as listed and described in Circular A-130 and Circular A-11.
- (7) The CIO and Chief Financial Officer (CFO) shall define and, as the co-chairs of the executive IRB, provide oversight of the process by which the CIO, CFO, Chief Acquisition Officer (CAO), and Chief Human Capital Officer shall work with program leadership to plan an overall IT portfolio that efficiently and effectively leverages IT for strategic outcomes in support of the NRC's program and business objectives aligned to the agency's Strategic Plan. This includes defining the level of detail at which IT resources are budgeted and, in consultation with the CAO, defining processes to track planned expenditures for IT resources against actual expenditures for all transactions that include IT resources.
- (8) An IT investment's justification, cost, schedule, measurement indicators, and other management and technical artifacts shall describe its discrete and unique set of IT products and services and how they support the NRC mission or mission support functions. All major IT investments shall document and report all of the above to the OMB through the formal Major IT Business Case and Required Artifacts (when requested).³

³ NRC CPIC procedures for Major IT Business Cases are based on the annual fiscal year IT Budget and Capital Planning Guidance issued as part of OMB Circular A-11.



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- (9) Major IT investments shall adhere to Principles of Budgeting for Capital Asset Acquisitions established by the OMB in Appendix 6, "Principles of Budgeting for Capital Asset Acquisitions," to the "Capital Programming Guide."
 - (10) Two or more IT investments shall not deliver the same discrete and unique set of IT products or services and shall not serve the same purpose. If duplicative investments are identified, an alternative analysis shall be performed and a plan developed to eliminate the duplication and associated cost.
 - (11) When two or more IT investments deliver IT products or services through the same IT component (i.e., system or platform), each IT investment's set of IT products or services shall be discrete and unique and clearly distinguishable from the sets of IT products and services delivered by the other IT investments through the same IT component. In addition, a consistent, reliable means for determining the equitable cost of the shared platform for each investment must be used to ensure planning, budgeting, and reporting of the total cost of ownership of each investment.
 - (12) All IT investments shall have a defined life cycle with start and end dates, with the end date representing the end of the currently estimated useful life of the investment, consistent with the investment's most current alternatives analysis, if applicable. When the asset(s) is essentially replaced by a new system or technology, the replacement shall be reported as a new, distinct investment, with its own defined life-cycle information.
 - (13) Information security, privacy, records management, public transparency, and supply chain security issues must be considered for all resource planning and management activities throughout a system's development life cycle.
 - (14) All major IT investments shall have a committed IPT comprising the required minimum members (as noted in the definition of IPT) and program charter, and all IT projects shall have an IPT, project charter, project management plan, and schedule.
 - (15) An alternatives analysis shall be performed for investments with projects in the planning or DME stages. The alternatives analysis shall include both Government-provided (internal, interagency, and intra-agency) commercially available options and cloud solutions, where applicable.
 - (16) When conducting an alternatives analysis for a new investment, the Three-Step Software Solutions Analysis shall be performed, as described in OMB Memorandum M-16-21, which addresses Federal source code policy.
 - (17) In the case of a new major IT investment, a full business case must be developed. Once approved by the CIO, the initial business case will serve as the basis for the Major IT Business Case submitted to the ITDB. The business case will then be maintained through the Major IT Business Case and Major IT Update submission processes.
 - (18) Qualitative and quantitative research methods shall determine the goals, needs, and behaviors of current and prospective managers and users of the service to strengthen the understanding of requirements.



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- (19) All acquisition planning shall adhere to the planning provisions given in FAR Subpart 7.1, "Acquisition Plans," and Part 10, "Market Research."
- (20) Planning for IT acquisitions shall substantiate the NRC's commitment to achieving specific goals for the completion of the acquisition. Planning activities and results shall be documented and final plans approved before proceeding to the acquisition phase. For investments developed or managed using an iterative or agile methodology, proper planning for each iteration or sprint shall be conducted throughout the entire acquisition.
- (21) All IT hardware and software will be planned, acquired, deployed, managed, and disposed of under an IT investment on the NRC's IT Portfolio Summary and in accordance with the NRC's IT asset life-cycle management processes and procedures.
- (22) When analyzing and prioritizing IT investments for selection into the agency IT portfolio, all decisions to select (acquire or develop) an information system technology or service shall be merit based and consider factors such as, but not limited to, the following:
- alignment to the NRC's Strategic Plan
 - ability to meet operational or mission requirements
 - conformance to the current and target EA and alignment to the enterprise roadmap
 - total life-cycle cost of ownership and ability to sustain such costs
 - performance
 - security risks
 - interoperability
 - privacy
 - accessibility
 - ability to share or reuse
 - resources required to switch vendors to avoid being "locked in"
 - availability of quality support at a reasonable cost
- (23) Decisions to improve, enhance, or modernize existing IT investments or to develop new IT investments will be made only after conducting an alternatives analysis that includes both Government-provided (internal, interagency, and intra-agency, where applicable) and commercially available options and selecting the option offering the best value to the Government.
- (24) Preference shall be given to using available and suitable Federal information systems, technologies, and shared services or information processing facilities, or to acquiring open source or commercially available off-the-shelf software and technologies, over developing or acquiring custom or duplicative solutions.



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- (25) Decisions to acquire custom or duplicative solutions must be justified based on overall life-cycle cost effectiveness or the ability to meet specific and high-priority mission or operational requirements.
 - (26) The security levels of information systems shall be commensurate with the risk that may result from unauthorized access, use, disclosure, disruption, modification, or destruction of such information consistent with NIST standards and guidelines.

Acquiring Information Technology and Services

When acquiring IT and IT services, the NRC shall adhere to the following:

- all relevant Federal mandates, such as 41 U.S.C. 2308, “Modular Contracting for Information Technology”
- OMB policy, including but not limited to, the category management policies for improving the acquisition and management of common IT, such as:
 - laptops and desktops (M-16-2)
 - software licensing (M-16-12)
 - mobile devices and services (M-16-20)
- the FAR, including the planning provisions in FAR Subpart 7.1 and Part 10 before an acquisition
- NRC Management Directive 11.1, “NRC Acquisition of Supplies and Services”

During the acquisition process, all of the above must be referenced and applied as appropriate. This includes, but is not limited to, the policy steps described below.

- (1) Develop a thorough cost benefit analysis of all procurement requirements based on market research, which includes an alternative analysis.
- (2) Use adequate competition, analyze risks (including supply chain risks) associated with potential contractors and the products and services they provide, and allocate risk responsibility between the Government and the contractor when acquiring IT.
- (3) Conduct definitive technical, cost, and risk analyses of alternative design implementations, such as consideration of the full life-cycle costs of IT products and services, including but not limited to, planning, analysis, design, implementation, sustainment, maintenance, re-competition, and retraining costs, scaled to the size and complexity of individual requirements.
- (4) Consider existing Federal contract solutions or shared services when developing planned information systems, available from within the same agency, from other agencies, or from the private sector, to meet agency needs and avoid duplicative IT investments.



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- (5) Ensure that decisions to improve existing information systems with custom -developed solutions or the development of new information systems are initiated only when no existing alternative private sector or Government source can efficiently meet the need, taking into account long-term sustainment and maintenance.
 - (6) Structure acquisitions for major IT investments into useful segments, with a narrow scope and brief duration, to reduce risk, promote flexibility and interoperability, increase accountability, and better match mission need with current technology and market conditions.
 - (7) To the extent practicable, award modular contracts for IT, including orders for increments or useful segments of work, within 180 days after the solicitation is issued. If award cannot be made within 180 days, agencies shall consider canceling the solicitation. The IT acquired should be delivered within 18 months after the solicitation resulting in award of the contract was issued.
 - (8) Align IT procurement requirements with the agency's strategic goals.
 - (9) Promote innovation in IT procurements, including conducting market research to maximize the use of innovative ideas.
 - (10) Include security, privacy, accessibility, records management, and other relevant requirements in solicitations.
 - (11) Ensure that the CIO reviews and approves all acquisition strategies, plans, and requirements (as described in FAR Part 7), or interagency agreements (such as those used to support purchases through another agency) that include IT. These approvals shall consider the following factors:
 - alignment with mission and program objectives in coordination with program leadership
 - appropriateness with respect to the mission and business objectives supported by the IRM Strategic Plan.
 - inclusion of innovative solutions
 - appropriateness of contract type for IT-related resources
 - appropriateness of IT-related portions of statement of needs or statement of work
 - ability to deliver functionality in short increments
 - inclusion of Governmentwide IT requirements, such as information security
 - opportunities to migrate from end-of-life software and systems and to retire those systems



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- (12) Consistent with the FAR, include in contracts for custom software development provisions that reaffirm the right to reuse the software throughout the Federal Government.
 - (13) Enter all acquired IT hardware and software into the NRC's IT asset inventory and management tool(s).

Information Technology Investment Design and Management

The NRC shall, to the extent practicable and financially responsible, implement the following requirements:

- (1) Information systems and processes shall support and maximize interoperability and access to information, where appropriate, by using documented, scalable, and continuously available application programming interfaces and open machine-readable formats.
- (2) Information systems and technologies must facilitate interoperability, application portability, and scalability across networks of heterogeneous hardware, software, and communications platforms.
- (3) When information and communication technology (ICT) is developed, procured, maintained, or used, it must be in compliance with the Standards for Section 508 of the Rehabilitation Act ([36 CFR § 1194.1](#)).
- (4) When designing, developing, integrating, or implementing IT solutions, the practices and architecture must conform to the NRC Information Technology/Information Management Technical Standards.
- (5) Records management functions and retention and disposition requirements must be fully incorporated into information life-cycle processes and stages, including the design, development, implementation, and decommissioning of information systems, particularly Internet resources, to include storage solutions and cloud-based services such as software as a service, platform as a service, and infrastructure as a service.
- (6) A PIA and Security Impact Assessment must be performed up front, and the appropriate security planned, budgeted, and built in at the start of the project.
- (7) IT investments use an EVMS and Integrated Baseline Review, when appropriate, as required by FAR Subpart 34.2. When an EVMS is required, agencies must have a documented process for accepting a contractor's EVMS. When an EVMS is not required, a baseline validation process must be implemented as part of an overall investment risk management strategy consistent with OMB guidance.
- (8) All IT development projects shall appropriately implement incremental development and modular approaches, as defined in the OMB's "Contracting Guidance to Support Modular Development," dated June 14, 2012.



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- (9) Maintenance activities of notable cost or duration with predetermined start and end dates should be managed as projects. In the case of major IT investments, project and activities tables in Section B of the Major IT Investment Update shall track, monitor, and report the cost and schedule.
 - (10) For operational investments, an operational analysis shall be performed until a decision is made to reevaluate the investment or to resume DME.
 - (11) All applicable decisions about system/service investments shall be reflected in new/updated entries (e.g., system, service, application) in the NRC information system inventory as required by statute (Title 44, "Emergency Management and Assistance," of the *Code of Federal Regulations*, Chapter 53, among others) and OMB policy.

Responsibilities

Responsibilities of the Chairman

Review the IT budget request included in the overall agency budget recommended by the Executive Director for Operations (EDO) and the CFO and submit final recommendations to the Commission.

Responsibilities of the Commission

Review and approve the agency's IT budget request included in the overall agency budget.

Responsibilities of the Executive Director for Operations

- (1) Serve as the Chief Operating Officer and, as such, supervise the activities of the Assistant for Operations, who serves as the Performance Improvement Officer, in accordance with the GPRAMA.
- (2) Ensure that the NRC's planning and budgeting process for IT investments is consistent and integrated with the agency's overall planning, budgeting, and performance management (PBPM) process.
- (3) Ensure that program office and IT officials participate in the PBPM process for IT investments throughout their life cycle.
- (4) Ensure that statutory responsibilities for IT investments and their oversight are appropriately assigned to the agency's CIO.
- (5) Together with the CFO, review and approve the selections and budget for the annual IT investment portfolio recommended by the executive-level IT IRB and submit recommendations to the Chairman.
- (6) The CIO is to be the Designated Approving Authority to assume formal responsibility for approving the operation of an IT system at an acceptable level of risk based on an agreed-on set of implemented security controls, in accordance with the Federal Information Security Management Act and NIST guidelines.



Responsibilities of the Chief Information Officer

- (1) Assist and act for the EDO in executing the EDO's responsibility for IT infrastructure, application development, project management, information management services, and information systems security oversight.
- (2) Provide oversight, guidance, and coordination with the Deputy Chief Information Officer and the Chief Information Security Officer.
- (3) Develop and implement an agencywide framework that includes policies, processes, and procedures for IT investment management, strategic planning and EA, information and records management, and information security that supports the NRC's mission, meets the requirements of Federal statutes and regulations and guidance from OMB and GAO, and is consistent with the NRC's overall PBPM programs.
- (4) Co-chair the executive-level IRB with the CFO, set the agenda for and facilitate meetings to meet the IRB's goals and objectives, and approve revisions to its charter, as needed.
- (5) As co-chair of the executive-level IRB, jointly with the CFO, define the level of detail with which IT resources are described distinctly from other resources throughout the planning, programming, and budgeting stages. The level of detail shall provide transparency for the IT budget and serve as the primary input to the IT CPIC documents submitted to the OMB with the agency's budget.
- (6) Review and approve the major IT portion of the budget request; the CFO shall affirm this CIO approval in the NRC's budget justification materials.
- (7) Review and collaborate with program leadership on planned IT support for major program objectives and significant increases and decreases in IT resources.
- (8) Jointly with the CFO, affirm that the IT portfolio contains appropriate estimates of all IT resources included in the IT budget request.
- (9) Jointly with the CFO and executive-level IRB, provide an executive IT investment review function as required by the OMB, make decisions on the IT portfolio, and recommend the IT budget to the EDO for consideration in the NRC's overall budget.
- (10) Establish other executive and technical review or advisory bodies, as necessary, to involve business and technical SMEs in IT investment planning and management oversight, ensure agencywide coordination, and comply with CPIC requirements for IT investments, strategic planning and EA, security, and information and records management policies, as stated in the "Capital Programming Guide" and Circular A-130.
- (11) Jointly with the CFO and CAO, define agencywide policy for the level of detail of planned expenditure reporting for all transactions that include IT resources.
- (12) As a member of the Strategic Sourcing Group, review and approve all acquisitions over \$1 million and provide oversight to acquisitions to ensure all acquisition strategies and plans that include IT apply adequate incremental development principles, use appropriate contract types, contain appropriate statements of work for the IT portions,



support the mission and business objectives included in the IT strategic plan, and align mission and program objectives in consultation with program leadership.

- (13) Review and approve all new IT purchases regardless of a dollar threshold.
- (14) Recommend to the Commission any movement of funds for IT resources that requires congressional notification.
- (15) Jointly with the Chief Human Capital Officer, develop a set of competency requirements for IT and IT acquisition staff (including IT and IT acquisition leadership positions) and develop and maintain a current workforce planning process to ensure that the agency can anticipate and respond to changing mission requirements, maintain workforce skills in a rapidly developing IT environment, and recruit and retain the IT talent needed to accomplish the mission.
- (16) Formally assume responsibility for operating a major system or network at an acceptable level of risk; evaluating the mission, business case, and budgetary needs for an NRC system in view of the security risks; and permitting or denying operations or use based on unacceptable security risk.
- (17) Jointly with the CAO, share acquisition and procurement responsibilities. The CIO reviews all cost estimates of IT-related costs and ensures that all acquisition strategies and acquisition plans that include IT apply adequate incremental development principles (see definitions).

Responsibilities of the Capital Planning and Investment Control Team

- (1) Facilitate IT SME reviews for policy compliance, security, IT project management, and infrastructure impact, and consolidate the SME recommendations for executive-level and management-level IRBs.
- (2) Facilitate IT investment reviews (e.g., control reviews, TechStats, CIO TouchPoints) with the CIO and appropriate IT governance boards.
- (3) Coordinate with the NRC's EA to verify mapping between the NRC's EA and the Federal EA to ensure that investments align with the NRC's Strategic Plan, information technology/information management (IT/IM) strategic plan, and enterprise roadmap.
- (4) Coordinate with the NRC's Program and Project Management Team to establish project control gates and to ensure that project management standards and best practices are implemented throughout the IT investment life cycle.
- (5) Coordinate with other functional areas of the Office of the Chief Information Officer on security-related requirements to support the development and review of IT business cases and project plans and the monitoring and evaluation of IT investments throughout their life cycle.
- (6) Assist IT investment owners in understanding and complying with the CPIC process and related OMB requirements, including preparation of the NRC's IT Portfolio Summary and Major IT Business Case submissions.



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- (7) Work with IPTs and IT Program Managers and IT Project Managers for each major investment to update Major IT Business Cases and ensure complete and timely submission of updates to OMB.
 - (8) Serve as a single point of contact for NRC inquiries about IT governance and CPIC processes and procedures.
 - (9) Coordinate input to the annual IT planning and budgeting guidance.
 - (10) Maintain an inventory of the agency's capitalized IT investments (i.e., Major IT Business Cases) and provide the current list to the Office of the Chief Financial Officer for inclusion in the NRC's budget justification materials.
 - (11) Provide input to educational outreach activities and training related to CCA, FITARA, and OMB requirements and present training related to CPIC's portfolio and investment management and submission tool, OMB reporting requirements, and the NRC's IT governance to IPTs and all project managers.
 - (12) Establish requirements and criteria for the selection of the IT investments that make up the NRC's IT portfolio.
 - (13) Define and implement processes and procedures to monitor and evaluate IT investments throughout their life cycle.
 - (14) Provide a secretariat function for the executive-level and management-level IT IRBs, including scheduling meetings, developing agendas, coordinating briefings and reviews, taking minutes to document decisions and action items, and tracking action items to completion.

Other Responsibilities

Current charters fully describe and maintain the responsibilities of all IRBs, acquisition review boards, and IPTs. NRC Management Directive 2.8, "Integrated Information Technology/Information Management (IT/IM) Governance Framework," describes the responsibilities of the EA and the project management function, and the NRC IT Asset Life-Cycle Management Policy describes the responsibilities of the IT asset manager for hardware and the agency software manager.

Capital Planning and Investment Control Overview

The NRC CPIC is critical to the management and oversight of the agency's IT resources. It is key to the NRC's IT investment management because it provides a mechanism for delivering quality information and recommendations to executive decisionmakers on IT investments for inclusion in the IT portfolio.

The NRC CPIC recognizes that IT investment management is dynamic. For this reason, the NRC selects and continuously monitors and evaluates IT investments to ensure that each IT investment in the NRC IT portfolio effectively and efficiently supports the NRC mission and strategic goals. The NRC CPIC processes are designed to facilitate sound IT governance and



the maturation of the NRC's IT investment management. The NRC CPIC model relies on three distinct, yet interdependent, sets of processes: (1) select, (2) control, and (3) evaluate. An IT investment can be active concurrently in more than one CPIC process. After an IT investment is initially selected and funded, it goes through the control and evaluation processes for review and reselection until it is determined that the investment has come to the end of its useful life. Upon this determination, the investment is decommissioned and removed from the IT portfolio.

Select

The purpose of the "select" process and procedures is to identify the IT investments, projects, and activities that best support the NRC mission and current business needs at an acceptable level of risk and as cost effectively as possible. The key objectives are to identify and analyze the risks and returns of each investment and project before committing funds and to select or reselect those IT investments and projects that will best support mission needs.

The select process and procedures capture IT investments and their supporting projects and IT resources for consideration in the overall IT portfolio. Investments considered include new investment proposals, as well as current investments being evaluated for reselection, either as-is or with enhancements. Investments being decommissioned also remain in the portfolio until they are completely removed from the production environment and require no further funding. These investments are captured, categorized, analyzed, prioritized, and either selected, denied, or placed on a lower priority or nonfunded list.

New IT investments proposed and selected for funding shall meet the following criteria:

- Support core or priority mission functions performed by the NRC.
- Fill a performance or capability gap in achieving NRC strategic goals and objectives with the maximum benefits at the lowest life-cycle cost among viable alternatives.
- Support a function that no alternative private sector or Government source can more efficiently support.
- Support work processes that have been simplified or otherwise redesigned to reduce costs, improve effectiveness, and make maximum use of commercial off-the-shelf technology.
- Demonstrate a projected best value, based on an analysis of quantifiable and qualitative benefits and costs and projected return on investment, which is clearly equal to or better than alternative uses of available public resources.
 - For best value, this may include improved mission performance in accordance with GPRAMA measures; reduced cost; increased quality, speed, or flexibility; and increased customer and employee satisfaction.
 - IT investment costs shall be adjusted for such risk factors as the IT investment's technical complexity, the organization's management capacity, the likelihood of cost overruns, and the consequences of under- or non-performance.



- Be consistent with applicable Federal and NRC enterprise and information architectures.
- Reduce risk by employing measures such as 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 into production; establishing clear measures and accountability for project progress; and securing substantial involvement and buy-in throughout the project from stakeholders.
- Be implemented in phased, successive segments, modules, or other useful units as narrow in scope and brief in duration as practicable, each of which solves a specific part of an overall mission problem and delivers a measurable net benefit independent of future segments or modules.
- Adhere to standards, including use of required artifacts, stated in the NRC's project management methodology.
- Adhere to security standards, including use of required artifacts.
- Employ an acquisition strategy that allocates risk between Government and contractor, effectively uses competition, ties contract payments to accomplishments, and takes maximum advantage of commercial technology.

Annually, the NRC shall review and evaluate all existing IT investments, based on data collected through the control process and procedures and the results of the evaluation process and procedures, to determine if they meet the following criteria for reselection and funding:

- Continues to meet the business needs and expected performance goals.
- Is capable of meeting business needs and expected performance goals with enhancements or modifications and is more cost effective than replacing the investment.
- Mitigates risk effectively according to its current risk management plan and risk log and includes the managing and closing of cybersecurity risks identified through continuous monitoring as listed on the investment's plan of actions and milestones (POA&Ms).
- Adheres to projected costs and expected benefits throughout the IT investment's life cycle.



Control

The purpose of the “control” process and procedures is to ensure, as projects develop and investment expenditures continue, that the investment and its associated projects and activities continue to meet mission or business needs at the expected levels of cost and risk. The key objectives are (1) to ensure that corrective actions are taken quickly to address any deficiencies in project or operational components and (2) to enable the NRC to adjust its objectives for an investment and to appropriately modify expected outcomes if mission or business needs have changed.

The control process and procedures encompass various tools and techniques used to monitor and report on the risks associated with IT investments and their performance. These are key to providing the quality data and information needed to monitor the status of projects’ costs and schedules, status of risks (including plans of actions and milestones), and performance of investments to make decisions on changes to investments, projects, or the portfolio. The control process and procedures include the annual Major IT Business Case updates and submissions, major IT investment monthly reviews and CIO evaluations, quarterly portfolio reviews, major IT investment control reviews, and CIO TouchPoints. Data and information collected during the monitoring of investments provide input into the evaluation of investments and support OMB reporting requirements.

Evaluate

The purpose of the “evaluate process” and procedures is to compare actual versus expected benefits and costs of investments and projects to determine the return on investment, customer satisfaction, and value to the NRC in meeting mission and business needs. The key objectives are as follows:

- Assess the capacity of a project or investment to meet performance expectations within cost and schedule thresholds and in compliance with IT policies.
- Identify any needed changes or modifications to an investment (including associated projects or activities).
- Update IT investment management policies, processes, and procedures based on lessons learned.

The evaluate process and procedures are used to analyze IT investment data to support the decision-making required to maximize the value of IT investments and the maturation of the IT portfolio and IT management practices. This entails analyzing the results of annual operational analyses, post-implementation reviews, and TechStats, as needed. Although each of these tools helps inform the selection, reselection, and deselection of projects and investments within the IT portfolio, the operational analysis is paramount. The NRC has based its operational analysis on the requirements stated in the “Capital Programming Guide,” Section III, “Management In-Use.” The analysis provides a periodic, structured assessment of the cost, performance, and risk trends over time to help determine when the cost and risk associated with an investment are no longer reasonable and outweigh the value received from the investment.