



U.S. Department of Energy

Information Resources Management Strategic Plan

FY 2006 - 2008

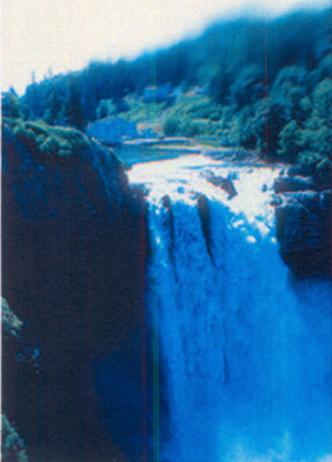


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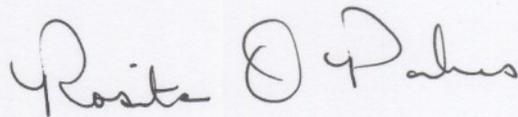
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MESSAGE FROM THE CHIEF INFORMATION OFFICER

I am pleased to present the Department's FY 2006-2008 Information Resources Management (IRM) Strategic Plan. This plan represents a vision for utilizing information management resources to effectively meet the Nation's Energy and National Security challenges.

The IRM Strategic Plan outlines the information technology (IT) strategic goals, outcomes, and the means for accomplishing these goals over the next three years. Through employing e-business technologies, protective cyber security controls, enterprise architecture principles, effective portfolio management, and strategic human capital practices, the Department is better positioned for implementing effective information resources management processes and addressing future IT challenges. The IRM Strategic Plan communicates the IT strategies as they link to the overall Departmental Strategic Plan and, thereby, ensures proper guidance and technological support to accomplish DOE's critical-mission requirements.

In addition to supporting DOE's immediate IT needs, the IRM Strategic Plan also outlines a strategy for supporting government-wide initiatives documented in the President's Management Agenda, e-Government Strategies, and Homeland Security Strategies. By working collaboratively, the Department can meet its program needs, support its customers, and utilize IT to further its mission.



1.0 INTRODUCTION

The Chief Information Officer (CIO) at the U.S. Department of Energy (DOE) has primary responsibility to ensure that Information Technology (IT) is acquired and information resources are managed in a manner consistent with statutory, regulatory, and Departmental requirements and priorities. With this responsibility, the CIO provides information resources management advice and assistance to the Secretary of Energy and to other senior managers. The CIO also coordinates and articulates a shared vision and corporate perspective among the Department's information activities, which permits the CIO to champion Departmental initiatives that effectively manage information and provide for value-added corporate systems. It is in this capacity that the CIO has prepared and now presents DOE's Information Resources Management (IRM) Strategic Plan for FY 2006 - 2008.

Strategic planning is the process by which the Office of the Chief Information Officer (OCIO) determines its future direction, identifies the resources and transformational agenda needed to meet that direction and establishes an accountability system by which to manage progress towards that direction. The IRM Strategic Plan serves as the strategic document for the OCIO, and it builds from the operational and tactical plans of each OCIO element ranging from IT human resources to e-Government. The IRM Strategic Plan describes what will be done over the next three years, while the tactical and operational plans execute the strategy and describe how these goals will be accomplished. Together, these plans permit the OCIO to more effectively know if its efforts are accomplishing its strategic goals, objectives, and outcomes, thereby supporting DOE in its efforts to meet its mission.

In addition to this internal focus, DOE recognizes the need to integrate external policy directions as defined by Congress and the Administration into its IT initiatives. The DOE IRM Strategic Plan responds to the Government Paperwork Elimination Act (GPEA) of 1998, the e-Government Act of 2002, the Clinger-Cohen Act of 1996, the Federal Information Security Management Act (FISMA), Office of Management and Budget (OMB) Circular A-130, the Government Performance Results Act of 1993, the Federal Enterprise Architecture, and the President's Management Agenda (PMA).

The scope of the IRM Strategic Plan addresses all information resource elements including, but not limited to: Business and Information Management, IT Human Resource Management, Enterprise Architecture, Capital Planning and Investment Control (CPIC), Cyber security, IT Operations, and e-Government. The scope also includes all DOE locations: Federal sites, laboratories, and management and operational facilities.

The OCIO recognizes that the success of an organization goes beyond just identifying an IT strategy. The strategy must be envisioned, accepted, aligned, communicated and governed within the organization. A strategy-focused organization links IT strategy with internal processes to deliver value to the organization. The following sections of this Strategic Plan identify the primary IT strategic goals and objectives for the Department and the means for achieving these goals.

2.0 IT STRATEGY OVERVIEW

2.1 Department of Energy Mission

DOE is responsible for fulfilling its mission of

“advancing the national, economic, and energy security of the United States; promoting scientific and technological innovation in support of that mission; and ensuring the environmental cleanup of the national nuclear weapons complex.”

2.2 Department of Energy Information Technology Vision

DOE’s IT Vision aims to affect governance and processes in order to provide access to modern, reliable, and secure IT infrastructure and systems to support and enhance DOE’s mission in the 21st century.

2.3 Strategic Goals Overview

DOE views IRM as a critical component in achieving the Department’s Mission, Strategic Goals, the PMA initiatives, e-Government strategies, and Homeland Security strategies. The OCIO has carefully selected IRM Strategic Goals and Objectives that reflect the Department’s commitment.

Figure 1 — Information Resources Management Strategic Goals

Strategic Goal 1:	Simplify access to DOE information and products
Objective 1:	Partner and support the Presidential e-Government Initiatives.
Objective 2:	Support the Department’s e-Government activities.
Strategic Goal 2:	Institute a robust IT governance program within DOE
Objective 1:	Enhance CPIC processes for Information Technology.
Objective 2:	Maintain a complete, mature enterprise architecture.
Objective 3:	Ensure effective IT project performance.
Objective 4:	Implement enterprise licensing.
Objective 5:	Recruit, develop, and retain a qualified, professional IT workforce.
Strategic Goal 3:	Improve cyber security by reducing the number of vulnerabilities at DOE
Objective 1:	Improve the information security posture and reduce the number of vulnerabilities of the Department by improving compliance with FISMA and all other cyber-security Government-wide regulations, policies and procedures.
Objective 2:	Implement a comprehensive DOE-wide security-management program to improve cyber security.
Objective 3:	Implement a comprehensive vulnerability management program to identify and mitigate vulnerabilities in DOE information systems.

In accordance with OMB Circular A-130, DOE's IRM Strategic Plan supports the Department's strategic goals and direction. The IRM Strategic Plan provides a description of how information resources management activities help accomplish the Department's mission and ensures that IRM decisions are integrated with organizational planning, budget, procurement, financial management, human resources management, and program management.

In September 2003, the Department released a new Strategic Plan that will meet the Nation's Energy and National Security challenges. The DOE Strategic Plan provides direction for the next 25 years by "focusing our capabilities to meet today's needs and provide innovative solutions to tomorrow's challenges." The Department has further integrated the Strategic Plan's long-term and intermediate goals into the annual performance budget. This performance structure establishes a concrete link between the Strategic Plan's goals and the Department's annual budgets, performance metrics, and performance reporting. Table 1 below illustrates the strategic goal for each of the four business lines to which the performance structure ultimately aligns.

Table 1 — Alignment of DOE Business Lines and Strategic Goals

DOE Business Lines	DOE Strategic Goal
Defense	To protect our national security by applying advanced science and nuclear technology to the nation's defense.
Energy	To protect our national and economic security by promoting a diverse supply and delivery of reliable, affordable, and environmentally sound energy.
Science	To protect our national and economic security by providing world-class scientific research capacity and by advancing scientific knowledge.
Environment	To protect the environment by providing a responsible resolution to the environmental legacy of the Cold War and by providing for the permanent disposal of the Nation's high-level radioactive waste.

By aligning the IRM Strategic Goals to the Department's Strategic Goals, the IRM activities are positioned to support the Department's mission and can be integrated within the overall DOE performance structure. This integration further solidifies IRM activities throughout organizational planning, budget, procurement, financial management, human resources, and program processes. Table 2 below illustrates how the IRM Strategic Goals link to the Department's Strategic Goals.

Table 2 — DOE IRM Strategic Goals to DOE's Strategic Goals

IRM Strategic Goal	DOE Business Line Strategic Goals ¹			
	Defense	Energy	Science	Environment
Simplify access to DOE information and products	Direct	Direct	Direct	Direct
Institute a robust IT governance program within DOE	Crosscutting	Crosscutting	Crosscutting	Crosscutting
Improve cyber security by reducing the number of vulnerabilities at DOE	Direct	Direct	Direct	Direct

¹ Note that "Direct" indicates that the IRM Strategic Goal provides direct support (i.e., the support provided can be related to information explicitly stated in DOE Business Line Strategic Goal). "Crosscutting" indicates that the IRM Strategic Goal provides crosscutting support (i.e., the support provided supports all goals and is not directly attributable to only one Business Line.)

The next section provides a detailed background on how DOE utilizes the IRM Strategic Plan to ensure its IRM planning, decisions, management responsibilities, and accountability are positioned to meet the Department's present and future needs.

3.0 IRM OUTLOOK

3.1 Identify Target Opportunities

As a companion to IRM strategic planning, DOE developed an Enterprise Architecture (EA) framework that identifies opportunities for management to leverage both strategic and operational IRM planning activities. Through utilizing its EA, DOE can identify and analyze "points of entry" (e.g., number of investments supporting a business line/sub function) that can result in recommendations for long-term savings and increased efficiency. The EA is also aligned with the annual budget cycle and provides updates that further define the baseline and target architectures based on decisions made in the IT investment portfolio selection process (part of IT CPIC). The framework operates to reduce performance gaps in the overall portfolio by retiring obsolete systems, developing e-Government solutions that incorporate greater quality and access, and supporting the development of reusable application components.

Overall, DOE's EA guides both the strategic and operational IRM planning activities through its baseline and target oversight as well as its integration with other Departmental processes. As the section below illustrates, these parallel and integrated processes enable the Department to best select, align and maximize its IT portfolio to fulfill its mission.

3.2 IT Investment Portfolio

IRM strategic planning and establishing the EA targets/standards precedes the selection of IT investments to ensure that annual investments and operations fully support established organizational goals and directions. The annual selection of IT investments is done in concert with the budget-formulation process under the direction of the CIO and the Chief Financial Officer (CFO) so that IT investment needs and requests are fully integrated into DOE's annual budget request.

Each year, the Department selects IT investments that meet mission needs, close performance gaps, align with EA targets, and align with external drivers such as Government-wide e-Government initiatives. DOE's IT investment activities exceed \$2.9 billion per year, constituting approximately 4% of the total Federal budget expended on IT investments. Figure 2 and Table 3 show the breakout of DOE's FY 2006 IT portfolio based on DOE strategic goal supported or on cross-cutting/infrastructure activities. In addition, Appendix A highlights the CIO priorities and strategic initiatives for FY 2006.

Figure 2 — DOE's FY 2006 IT Portfolio Breakout

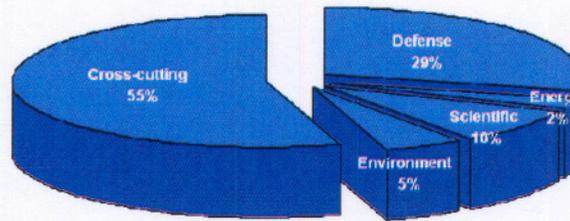


Table 3 — DOE Total IT Investments FY 2006 (in Millions)

Strategic Area	Total Portfolio	
	Dollars	Percentage
Defense	\$ 838.448	28.95%
Energy	\$ 68.967	2.38%
Scientific	\$ 257.167	8.88%
Environment	\$ 143.873	4.97%
Cross-Cutting	\$ 1,587.773	54.82%
Total:	\$ 2,896.228	100%

Derived from the Department's FY 2006 OMB Exhibit 53 submission

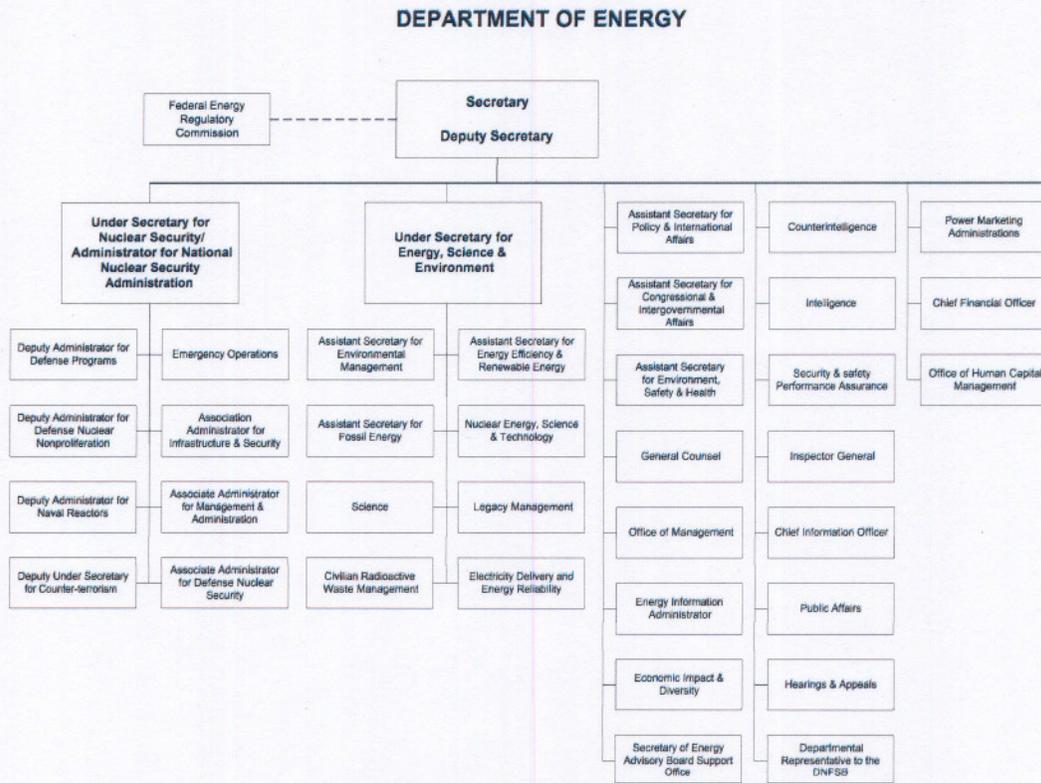
As indicated in Table 3, 45% of DOE's Total Portfolio can be directly attributed to the four strategic goals. Conversely, while a large percentage of the IT Portfolio directly supports DOE's strategic goals, a significant amount of the Department's investments are for cross-cutting capabilities such as networks, telecommunications, general corporate and staff functions, and cyber-security functions/services. DOE is demonstrating its ability to meet the needs of individual strategic goals while leveraging opportunities across DOE to increase efficiency and lower costs.

DOE's IT Portfolio is characterized by a wide array of initiatives ranging in size and sophistication, all of which are aimed at improving public service and efficiency. The success of an IT initiative and the Department's portfolio depends on end-to-end management that ensures that DOE accomplishes its mission and goals while actively pursuing the Federal Government's strategic agenda.

3.3 Organization of the Department

The missions of the Department are accomplished through 23 laboratories and technology centers, four Power Marketing Administrations, nine Program Offices, 18 Staff Offices, operations and field organizations located in 13 locations across the United States, the Energy Information Administration, and the National Nuclear Security Administration. Supporting these entities are over 100,000 federal and contractor employees.

Figure 3 — DOE Organizational Structure



DOE's organizational structure is decentralized and aligned with its multiple missions. Department senior management provides strategic plans, IRM strategic plans, EA targets, and standards to Program Offices to guide program planning, decision making, and investing. Program Officials are responsible for acquiring and implementing approved programs and investments to achieve performance goals. In this way, the Department ensures that within the decentralized organizational structure, all decisions and activities continue to support the overall strategic goals of the organization.

The CIO's role is to provide advice and assistance to the Secretary of Energy and other senior managers to ensure that IT is acquired and information resources are managed in a manner that implements the policies and procedures of relevant legislation. Within the structure, the Department has established a strategic plan which guides program, mission and activities. The CIO has established this companion document, the IRM Strategic Plan, to guide IT acquisition, operations and management. As a result, IT is fully aligned to support program, missions, and activities.

The IRM Strategic Plan also details a vision of how DOE will use IT to ensure the effective management and delivery of high-quality information to be used and shared in a secure and cost-effective manner. The strategy includes goals, objectives, and outcomes to support mission accomplishment, close performance gaps, and establish a solid infrastructure foundation for the Department. The following sections detail the IRM strategy for the Department.

4.0 IRM STRATEGIC GOALS

4.1 Goal 1: Simplify Access to DOE Information and Products

The overarching mission of DOE is to advance the national, economic, and energy security of the United States; to promote scientific and technological innovation in support of that mission; and to ensure the environmental cleanup of the national nuclear-weapons complex. Within this program context—in its goal of simplifying access to DOE's information and products—this IRM strategic goal becomes an enabler to achieving DOE's mission. The Department will successfully realize this goal through e-Government and its development of the Department e-Government Strategy.

DOE's e-Government Strategy directly supports the PMA, the Federal Lines of Business initiative, and the Department's core mission requirements by evaluating and applying new information technologies and modernizing the way we govern by unifying core applications through a secure environment and simplifying access to energy-related Government information and services. The goal is to adhere to the three basic principles established by the PMA:

1. **to be Citizen-centered**, not bureaucracy or Agency-centered;
2. **to be Results-oriented**, producing measurable improvements for citizens; and
3. **to be Market-based**, actively promoting innovation.

Objective 1: Partner and Support the Presidential e-Government Initiatives

DOE continues to support the President's e-Government Initiatives. DOE is an active participant in 19 of 24 of these initiatives. DOE is also involved in the six federal Lines of Business initiatives and is the managing partner for the Financial Management Line of Business (FM LoB). Finally, DOE is developing an enterprise IT acquisition program that will govern Department IT acquisitions in accordance with the government-wide SmartBUY program. DOE recognizes that active partnership in these important initiatives will result in government cost reductions, improved services to citizens, business-process and technology standardization, and elimination of duplicative systems.

In DOE's role as managing partner (in conjunction with the Department of Labor) of the FM LoB, DOE is continuing the efforts to provide streamlined financial management services across the Federal Government. Through the FM LoB, partner agencies will use EA based principles and best practices, proven through the e-Gov initiatives and Federal Enterprise Architecture (FEA), to implement financial management Centers of Excellence (COEs) and standardize core financial business processes and data elements across the Federal Government. The consolidation of each agency's financial systems into centralized COEs will decrease system redundancy while driving cost savings through full time equivalents (FTE) re-deployment, system development and operation cost reductions, and process standardization. The end result of the FM LoB efforts will be to save taxpayer dollars, reduce administrative burdens, and significantly improve financial management services across the government.

Outcomes:

- Reduced cost of government operations
 - Continue active partnership in the e-Government, Line of Business, and SmartBUY initiatives in order to effectuate cost reductions across the government
 - Identify existing DOE investments that align to government-wide initiatives and implement migration and alignment plans
- Streamlined delivery of services and products to the customer
 - Work with customers and federal agency partners to identify ways to more efficiently provide services and information

- Standardized business processes across Agencies
 - Collaborate with similar mission agencies to develop joint efforts and promote best practices across the Federal Government
 - Continue leadership role on the Financial Management Line of Business in order to standardize core financial business processes and data elements across the Federal Government
 - Continue to transition to Internet Protocol Version 6 (IPv6) capable technology

Objective 2: Support the Department's e-Government Activities

DOE continues to experience significant success with its internal e-Government initiatives known as the Innovative Department of Energy e-Government Applications (IDEA). In a continual effort to become more effective and efficient, the Department has integrated the Innovative Department of Energy e-Government Applications (IDEA) project with the Department's EA effort. The EA program will institutionalize semi-annual strategic portfolio reviews to ensure that the Department's information technology investments are in line with its strategic goals and missions.

Outcomes:

- Realize cost savings through streamlined information technology activities
- Implement change management processes to support organizational realignments to maximize information technology efficiencies

4.2 Goal 2: Institute a Robust Information Technology Governance Program within DOE

Information Technology is a key supporting element in accomplishing DOE goals. As such, it must be acquired, managed, and used in a way that maximizes its efficiency and effectiveness in supporting missions. To achieve this, the OCIO has established an IT governance structure and process that enables sound management of IT assets. This governance structure includes a Departmental IT capital-planning and investment-control process, EA activity, IT project- and asset-management processes, and enterprise-licensing opportunities to achieve efficiency. Descriptions of objectives, strategies, and outcomes for the IT governance program are described below.

Objective 1: Enhance Capital Planning and Investment Control (CPIC) Processes for IT

By enhancing the established CPIC process, the Department has the ability to manage its IT investments as a financial portfolio. Implementing a comprehensive CPIC process ensures that the Department's portfolio of IT investments adequately addresses DOE's business strategies and are managed to achieve the expected benefits in accordance with accurate and complete cost, schedule, technical, and performance baselines. Additionally, monitoring and controlling investments are as important to ensure success as selecting the right portfolio of projects or investments. Investments are monitored over time and resources are shifted to investments that perform best, keeping in mind the established investment rules and parameters with regard to risks and returns. DOE recognizes that effective IT portfolio-management practices result in significant savings of Departmental annual IT budgets, enhanced efficiency, and increased mission alignment.

To date, the Department has made significant progress in enhancing the CPIC process through the use of scorecards at the investment-portfolio level and at the Program level. In addition, improved linkages between IT investments and the annual budget process have been implemented in partnership with the Office of the CFO. To further leverage these accomplishments, DOE is continuing to review its CPIC processes in an effort to identify additional opportunities for improvement. The Department envisions a CPIC process that provides decision-making bodies with the appropriate information to ensure that optimal decisions are made with regard to the selection and maintenance of the Department's IT portfolio.

Outcomes:

- Business cases aligned to the Department's missions
 - Implement IRM Strategic Plan with "line-of-sight" linkages to DOE Strategic Plan
 - Modify review/approval criteria for all major IT investments to include demonstrated "line-of-sight" linkages to appropriate program and strategic plans
 - Document closure of performance gaps facilitated by IT
- Investment funding aligned to DOE priorities
 - Ensure that all major IT investments are reviewed and that data relevant to annual IT selection is provided to the Corporate Review Budget (CRB)
 - Work in partnership with Program Offices and the CFO to identify, align, and redirect funding for investments targeted for migration to corporate or Government-wide e-Government initiatives

Objective 2: Maintain a Complete, Mature Enterprise Architecture

DOE is currently undertaking an EA effort to clearly define its business, strategy, performance, technology, applications, data, and stakeholders that support meeting the Department's mission. While the development and maintenance of the EA is mandated by OMB, DOE approaches EA as a tool for business transformation and progress. DOE has steadily built an active EA practice to meet the business needs of the Department. The EA practice is led by DOE's Chief Architect within the OCIO, but its activities rely heavily on a partnership with the business and IT communities across the Department.

The development and implementation of an architecture is an ongoing and iterative cycle. With each iteration of the cycle, DOE's architecture matures and progresses. It is, to some extent, a gradually shifting target that continually strives to improve upon the current state as dictated by mission requirements. It is one element in a broader set of inter-related planning activities that collectively enable DOE managers and staff to define a vision, develop strategies and plans for achieving the vision, make resource decisions, implement strategies, and evaluate performance. By defining the desired future state from several distinct perspectives (e.g. business, data, etc.), the Target EA also provides stakeholders with a "line of sight" into the complex relationships that exist among these different perspectives.

The DOE EA practice will continue to further refine and implement a Target EA through a number of related and coordinated efforts. The Target EA will evolve through a series of releases or versions. The DOE EA practice will use the current version of the Target EA as a communication document to begin bringing a broader community of stakeholders more actively into the discussion about the desired future state for the Department. This Target EA will also serve as a framework for managing investments and developing recommendations for improving DOE's IT investment portfolio.

DOE recently completed an EA Transition Strategy to describe the approach the Department will employ to achieve its target architecture. It will be augmented by Enterprise Architecture Implementation Plans that will provide greater detail on specific milestones, schedules, resources, and activities associated with the key EA implementation efforts. This information will evolve over the next few years in order to implement many of the business and technology changes that are required to support DOE's overarching mission.

Outcomes:

- Identify and implement common solutions and eliminate redundant systems
 - Implement a segment architecture approach that is focused on providing structured business analysis to achieve improved mission performance

- Use EA to drive IT investment decisions
 - Use the Target Architecture and Transition Strategy to guide IT investments decision-making and develop recommendations for improving the IT investment portfolio for the Department
 - Enhance the CPIC select process to better utilize EA information
 - Enhance the IT governance process to ensure that EA information is provided to senior managers in a timely way to better inform decision making
- Establish a single, consolidated, integrated DOE-wide infrastructure
 - Use the DOE EA as the coordinating mechanism to make infrastructure consolidation and integration decisions

Objective 3: Ensure Effective Information Technology Project Performance

Technology investments provide DOE with the necessary means to achieve its four strategic goals as well as those goals identified in the PMA. However, as with any type of investment, the success of IT investments requires thorough planning and effective management throughout the investment life cycle. Currently, the Department evaluates the business cases on their baseline goals each year to ensure that milestones and costs are accurately planned and documented. Subsequent to the evaluation of planned baseline goals, DOE has implemented a quarterly review process that evaluates investments on their ability to achieve the planned cost, schedule, and performance goals that were established in the business cases. This review process is facilitated by the OCIO, and the Department's IT Council is responsible for the final investment evaluations each quarter.

DOE will continue to mature its methodologies for ensuring effective IT project performance by implementing standardized processes for developing and evaluating baseline goals for investments, as well as enhancing the quarterly review process for assessing the achievement of those goals. This effort will provide more stringent reporting requirements and evaluation criteria to ensure that each Program Office is accurately reporting their baseline goals and performing regular reviews of their investments.

Outcomes:

- Adherence to cost, schedule, and performance targets
 - Develop standardized requirements for defining cost and schedule baseline goals and for reporting actual results
 - Validate that cost and schedule reporting requirements are met during the business-case reviews that are conducted in support of the annual budget submission process
 - Implement performance-goal reviews during the Select phase that evaluate "line-of-sight" connections to program plans and the DOE Strategic Plan and also ensure that performance goals define the current baseline and provide quantifiable measures/metrics
 - Develop an automated template for the quarterly review process that is linked to the Cost and Schedule table and the Performance Goals table in the Exhibit 300 to improve the ease of reporting and ensure that the achievement of planned goals is continuously evaluated throughout the year
 - Institute requirements where IT project managers report monthly cost and schedule variances
 - Certify the Earned Value Management (EVM) activities and systems used by major IT investments that meet DOE internal e-Government criteria
- Timely decisions on projects in remediation
 - Implement the use of corrective-actions strategies into the quarterly review process for IT investments that have demonstrated negative performance trends for two quarters or more
 - Provide performance-review data to DOE's senior leaders when investments show continued performance issues for two or more quarters
 - Adhere to cost, schedule, and performance targets
 - Ensure timely decisions on projects in remediation
 - Verify the validity and the accuracy of EVM data

Objective 4: Implement Enterprise Licensing

Procuring software licenses that apply across DOE, known as enterprise licensing, consolidates information technology contracts. DOE achieves contract administration efficiencies by reducing multiple contracts to one. DOE negotiates a better price by leveraging the Department's total buying power thereby reducing total cost of ownership and cost for each individual user. Aggregating enterprise software requirements and having a single contract vehicle facilitates and streamlines software acquisition efforts while achieving the same level of quality. By implementing these buying practices, acquisitions and support costs will be reduced, leading to the increase use of standards-compliant software.

Outcomes:

- Leverage buying power
 - Identify opportunities for consolidation of legacy information technology contracts into Enterprise Licensing Agreements (ELAs) through review and analysis of financial contract data, asset inventories and the target enterprise architecture
- Reduce costs
 - Implement a SmartBUY program in collaboration with the General Services Administration to assist in negotiation of lower prices for some types of software
- Reduce total cost of ownership
 - Identify software through the enterprise licensing program that is widely used across the Department

Objective 5: Recruit, Develop, and Retain a Qualified, Professional IT Workforce

DOE recognizes the strategic management challenge required to hire and retain a highly skilled IT workforce and is working to address the criticality of strengthening human capital as a driver for organizational effectiveness. The PMA has identified a specific human-capital initiative that is directed toward aligning a professional workforce in support of a Department's mission, goals, and strategies. DOE has developed recruitment requirements to focus efforts on identifying qualified candidates who are easily able to adapt to changes brought about by new technologies. In addition, initiatives have been implemented that focus on maximizing employee performance by instituting development programs and enrichment opportunities that motivate and inspire employees. DOE has already made significant progress in the area of human capital with the implementation of Corporate Human Resource Information System (CHRIS) Workflow.

DOE will continuously strive to maintain a high-performing workforce through enrichment opportunities, comprehensive training programs, leadership development, and an open culture that promotes the sharing of intellectual capital and demonstrates high standards of integrity for employees. Because of competitive sourcing and constantly emerging technologies, a workforce must be maintained that is both easily adaptable and highly skilled in mission critical competencies.

Outcome:

- Align workforce skills with DOE missions and priorities
 - Implement a new performance-management system to better recognize and reward superior performance ensuring a high-performing and accountable workforce
 - Implement a performance framework for accountability at the employee level

4.3 Goal 3: Improve Cyber Security by Reducing the Number of Vulnerabilities at DOE

The range of risks confronting the operation of DOE's complex global networks include, but are not necessarily limited to natural disasters, intentional malicious acts, inadvertent errors, unforeseen software/hardware conflicts and/or cascading failures from interconnected systems. Risk sources from malicious actors include foreign powers, terrorist groups and, sadly, occasional corrupt insiders, each of which can compromise or otherwise do significant damage to DOE classified national security and/or unclassified systems. As a result, active internal controls are vitally necessary to assure uninterrupted availability of information system resources; confidentiality and integrity of information systems and their contents; user authentication and access controls; non-repudiation of identity, and accountability mechanisms assuring compliance for access to and use of information and data under DOE control.

Objective 1: Improve the Information Security Posture and Reduce the Cyber Security Vulnerabilities of the Department by Improving Compliance with FISMA and All Other Cyber-Security Government-Wide Regulations, Policies, and Procedures

With an eye to reducing cyber security vulnerabilities, the OCIO will continue to develop Department-wide directives, manuals and/or other standards that comply with the kaleidoscope of Federal statutory and regulatory requirements. Compliance with the directives, manuals and/or other guidance by DOE Program Offices and contractor-run facilities will demonstrate improved cyber security performance to the satisfaction of external review bodies such as the Government Accountability Office (GAO), OMB, and the Independent Public Auditor.

Outcomes:

- Provide a comprehensive set of cyber security performance expectations across the Department
- Enable Program Offices and contractor-run facilities to improve their FISMA annual grades
 - Increase oversight and monitoring of FISMA compliance requirements within DOE
- Standardized cyber security performance requirements that incorporate government requirements and industry best practices
 - Institute a review cycle for statutory and regulatory requirements for new polices and procedures to ensure continual update to address changing requirements.
- Identify and proliferate common cyber security controls and measures
 - Rules of behavior
 - Training, awareness and professionalization program
 - Pre-Acquisition security considerations
 - Risk-management-based certification and accreditation
 - Contingency planning, testing, and updates
 - System categorization (sensitivity and criticality)

Objective 2: Implement a Comprehensive DOE-Wide Security Management Program to Improve Cyber Security

DOE is working internally to develop and implement an improved comprehensive cyber security management program. DOE is focusing on those cyber-security initiatives that have a significant role to play in continuous improvement of the program and demonstrate improved cyber security performance to the satisfaction of external review bodies such as GAO, OMB, and the Independent Public Auditor.

Outcomes:

- Improved continuity/contingency planning, testing and remediation
- Continuous Independent Validation and Verification (IV&V) testing of system controls
- A common approach to operating system and application software configuration controls through an integrated asset management program

- Standards for cyber security enterprise architecture and system development life cycle
- Diskless workstation implementation for classified environments
- Cyber security early warning and incident response, recovery and reconstitution of services support
- Significant enhancements to the logical access control process (authentication and authorization) through implementation of HSPD-12 and FIPS-201 requirements
- Improved identification, categorization and prioritization of critical infrastructure assets and other responsibilities assigned by HSPD-7
- Implementation and validation of interconnection agreements
- Built-in security and privacy in 100% of IT investments
- 100% C&A of operational systems
 - Continue, as well as improve, the monitoring of all C&A processes to encourage 100% compliance to ensure, with relatively limited resources, that systems are evaluated and meet the minimal security-control requirements for their established level of sensitivity and risk
 - Leverage existing plans of action and milestones (POA&M) and FISMA Quarterly Updates to track the progress of system certification and, where needed, provide additional emphasis and resources
- Create a process for providing multilayer cyber security protections in sufficient depth to mitigate risk to an acceptable level

Objective 3: Implement a Comprehensive Vulnerability Management Program to Identify and Mitigate Vulnerabilities in DOE Information Systems

DOE continues to focus resources on preventing harmful events, as opposed to responding to unwanted activities. By identifying vulnerabilities and implementing corrective measures, DOE is able to effectively reduce the number of opportunities for system compromise, resulting in an overall improvement in the level of protection afforded our information resources. Ongoing monitoring is used to continuously assess the security posture of our operational environments to detect new or unpatched vulnerabilities, offering opportunities for proactive remediation and control.

Outcomes:

- Establish and implement minimum baseline security configuration standards
 - Develop platform-specific security configuration standards to ensure implementation of appropriate security controls prior to systems being placed in production
 - Ensure implementation of security controls to protect DOE information commensurate with the risk and magnitude of loss from unauthorized activities
- Perform periodic vulnerability assessments to continuously monitor production environments
 - Establish a vulnerability assessment program to effectively monitor DOE information technology systems to detect known, unpatched vulnerabilities
 - Measure effectiveness of the vulnerability remediation activities through ongoing analysis of vulnerability metrics, including the ratio of vulnerabilities to the number of systems scanned
- Formulate vulnerability remediation and tracking efforts to ensure mitigation of identified vulnerabilities
 - Institute mandates for remediation of identified vulnerabilities within specified timeframes, dependent upon the risk and magnitude of harm from compromise
 - Track remediation of vulnerabilities, and take appropriate action for systems found to be out of compliance with remediation requirements

APPENDIX A: STRATEGIC IT INITIATIVES

Homeland Security Presidential Directive 12

This investment will bring the Department in compliance with Homeland Security Presidential Directive 12. The initiative establishes and maintains an enterprise standards-based authentication and authorization infrastructure that provides secure seamless business transactions and information exchange within DOE and across many disparate agencies and organizations. The objective is to improve DOE's business processes using commercial-of-the-shelf based products that enable DOE to implement a more robust authentication and authorization infrastructure.

The program will reduce existing logical and physical security vulnerabilities and mitigate risks to establish the prerequisite level of security for critical enterprise business functions. Both the technology solutions and ongoing support provided by the initiative will enable DOE to ensure that system users are who they claim to be (authentication), allow effective use of digital signatures (data integrity and accountability), and restrict access to appropriately authorized users (access control).

Planned Outcomes

- Establish a standardized DOE ID Card, compliant with HSPD 12 and capable of supporting physical and logical access requirements such as cryptographic storage of digital credentials, integrated standards-based building proximity support, and a printed format that complies with federal ID card requirements.
- Develop a public key infrastructure solution that complies with federal standards, and supports DOE requirements for confidentiality, integrity and authenticity.
- Implement an Identity and Access Management solution that serves as the basis of a common security infrastructure that can support diverse systems

Consolidated Infrastructure, Office Automation, and Telecommunications (I,OA&T) Program

Infrastructure, Office Automation and Telecommunications (I, OA&T) are the underpinnings required for DOE to perform its most basic business functions. Neither business activities nor the mission functions can operate effectively without sound infrastructure, office automation, and telecommunications. The goal of the I,OA&T Consolidated Infrastructure Program is to successfully implement and manage all of its underlying projects and contribute to the overall achievement of the Department's mission goals.

The Consolidated I,OA&T is defined by six service lines: telecommunications and networks; application and data hosting/housing; office automation; telephony; enterprise collaboration service; and cyber security. The service lines provide the necessary foundation across all the Business Lines to facilitate the achievement of the Department's mission goals and objectives. Consolidating the I,OA&T projects will create a more solid network infrastructure supporting collaboration across the DOE sites. The sharing of resources across sites allows for more efficient use of human capital and more effective sharing of resources across the enterprise.

Planned Outcomes

- Coordinate the management of I,OA&T through a Department-wide process
- Minimize the costs of operations and allow program offices to spend more time focused on mission
- Meet the needs of end users while minimizing support and maintenance costs
- Improve cyber security by enabling unified security patches and virus protection through the standardization of platforms and applications
- Reduce trouble resolution time through use of automated tools (remote control, software distribution, management of desktops and infrastructure)

Geospatial Science Program Management Office

DOE shall establish a Geospatial Sciences Program Management Office (GS-PMO) to maximize the complex-wide investment in geospatial activities as they support the mission of the Department. The GS-PMO, led by Program Offices, will provide the framework and strategic direction to coordinate, manage, and deploy an integrated investment in the application of geospatial sciences technology for DOE National Laboratories, Facilities and Operations, Power Administrations, and Headquarters Program Offices.

Each of the four strategic goals of the Department involves the collection, analysis, and display of geospatial data as an element of their respective program activities. The applied geospatial sciences, and the underpinning technology of geographic information systems (GIS), have become an important and embedded capability of the Department's Program operations. The geospatial sciences activities across the DOE complex have emerged from the need for basic scientific research and applied solutions requiring the integration capabilities of GIS.

The establishment of the GS-PMO will align with the goals and objectives of the Department's Information Resources Management Strategic Plan to simplify access to DOE information and products and provide a robust governance structure in support of IT programs.

Planned Outcomes

- Guide the efficient and effective deployment of the geospatial sciences technology to increase performance both across DOE and with other federal partners
- Contribute to Federal Geographic Data Committee geospatial standards, guidance, and Geospatial One-Stop
- Avoid redundant cost expenditures and reinvest leveraged expenditures to strengthen the geospatial sciences program
- Minimize risk due to emergency management/response procedures
- Improve legacy data records management practices.

Spectrum Management

Continued support of the President's Spectrum Policy Initiative (SPI) has provided the Department with a solid foundation for continuing to enhance its spectrum management processes. Responding to the November 30, 2004, Presidential Determination, the latest step in the SPI, ensures that DOE continues to evaluate and improve its methods of efficiently and effectively managing the way the Department uses spectrum. DOE also recognizes the importance of contributions to the SPI, which will culminate in a national spectrum plan that will facilitate national and homeland security, foster economic growth, and effectively support vital U.S. spectrum needs.

In response to the Presidential Determination, DOE is evaluating its current spectrum management processes and developing the Department's Strategic Spectrum Plan (SSP). The SSP will examine three distinct issues—spectrum requirements, including bandwidth and frequency location for future technologies or services; the planned uses of new technologies or expanded services requiring spectrum; and suggested spectrum efficient approaches to meet identified spectrum requirements. Examining the planned uses for new and future technologies allows DOE to incorporate spectrum resources into the EA, further enhancing that framework. The SSP is being organized around the DOE's LOB structure to provide a more organized and holistic approach to the spectrum management process regarding resource allocation and future investments.

Planned Outcomes

- Respond to the Presidential Determination and support the President's Spectrum Policy initiative
- Improve spectrum management processes
 - Align the SSP and submit to the Department of Commerce
 - Implement and maintain DOE's SSP

APPENDIX B: DOE E-GOVERNMENT PARTICIPATION

DOE Participation in Inter-Agency Initiatives and Federal Lines of Business

Inter-Agency Initiative	Role
Government to Citizen (G2C)	
USA Services	Participant
GovBenefits.gov	Participant
Government to Business (G2B)	
Business Gateway	Participant
e-Rulemaking	Participant
Consolidated Health Informatics	Participant
Federal Asset Sales	Participant
Government to Government (G2G)	
Grants.gov	Participant
SAFECOM	Participant
Disaster Management	Participant
Geospatial One-Stop	Participant
Internal Efficiency and Effectiveness (IEE)	
e-Clearance	Participant
e-Records Management	Participant
e-Travel	Participant
USA Learning	Participant
Enterprise HR Integration	Participant
e-Payroll	Participant
Integrated Acquisition Environment	Participant
Recruitment One-Stop	Participant
Cross-Cutting Initiatives	
e-Authentication	Participant

Line of Business	Role
Financial Management	Lead Partner
Grants Management	Participant
Human Resources Management	Participant
Federal Health Architecture	Participant
Case Management	Participant
Information System Security	Participant

Ongoing Internal DOE e-Government Initiatives

Innovative Department of Energy e-Government Applications (IDEA)	
Government to Business (G2B)	
e-Assessment of FOCI Companies	
e-R&D Portfolio Management, Tracking and Reporting	
Government to Government (G2G)	
Nuclear Materials Accountability	
CN e-Case Management System	
e-Gov Department Integrated Security System	
Internal Efficiency and Effectiveness	
I-MANAGE	
eXCITE (Extended Common Integrated Technology Environment)	

APPENDIX C: LIST OF ACRONYMS

APP	Annual Performance Plan
C&A	Certification and Accreditation
CFO	Chief Financial Officer
CIO	Chief Information Officer
CHRIS	Corporate Human Resource Information System
COE	Center of Excellence
CPIC	Capital Planning and Investment Control
CRB	Corporate Review Budget
DOE	Department of Energy
EA	Enterprise Architecture
eXCITE	Extended Common Integrated Technology Environment
FEA	Federal Enterprise Architecture
FISMA	Federal Information Security Management Act
FM LoB	Financial Management Line of Business
GAO	General Accountability Office
GC	General Council
GPEA	Government Paperwork Elimination Act
GPRA	Government Performance and Results Act
GSA	General Services Administration
IDEA	Innovative Department of Energy e-Government Applications
I, OA&T	Infrastructure Office Automation and Telecommunications
I-MANAGE	Integrated Management Navigation System
IRM	Information Resources Management
IT	Information Technology
LOB	Line of Business
NIST	National Institute of Standards and Technology
NNSA	National Nuclear Security Administration
OCIO	Office of the Chief Information Officer
OMB	Office of Management and Budget
PIA	Privacy Impact Assessment
PMA	President's Management Agenda
POA&M	Plan of Action and Milestones
R&D	Research and Development