National Aeronautics and Space Administration

Information Resources Management (IRM) Strategic Plan

Office of the Chief Information Officer

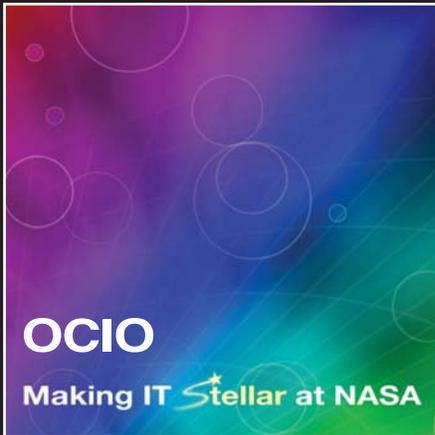April 2010

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OCIO

Making IT Stellar at NASA

Table of Contents

CIO's Introductory Message

Information technology at NASA has been, and will re-main, a critical enabling capability for the Agency, whether in NASA's main themes of Space Flight, Exploration, Sci-ence, Aeronautics, and Mission Support, or any iteration thereof for the foreseeable future. It is this linkage and embedment of IT with the mission of the Agency that en-ables mission success and continuous advancements in the use of technology across the Agency. However, this dependence on IT across NASA is exactly the reason we, the IT community, have to perform the function properly, if not perfectly, for there is much at stake.

I assumed the position of NASA CIO in October 2009 and immediately announced my intention for the collec-tive NASA IT organization to be the very best in govern-ment based on project execution, results, innovation, and value to the mission. My priorities for the near term center around five areas of improvement:
1. Improved IT management and planning, enterprise architecture, and governance processes to optimize the NASA mission;
2. Improved cyber-security through risk-based measures to secure NASA's information and systems from threats;
3. Improved management and effectiveness of NASA business systems, including new solutions to address gaps in business system capabilities as prioritized by the customer base;
4. Developing common IT infrastructure to satisfy Agency requirements; and
5. Focused innovation to address NASA's biggest IT challenges.

In addition to these priorities, there are other significant focus areas. For instance, our ability to be the very best IT organization in government rests with the people within the IT community. Success in all facets will be dependent on effective teamwork among a workforce with diverse education, disciplines, capabilities, skills, experiences, preferences, and thoughts. As well, we must become a more outcome-focused IT organization to ensure activities and initiatives provide meaningful results.

This plan represents the collective goals and objectives for which the leadership of the NASA IT community will be accountable. For sure, there will be challenges along the way that may slow us down, but they will not stop us. As a community with a challenging mission, inspired by a common vision and guided by core principles and values, we will transform the state of IT at NASA, help to modernize government IT, and enable better mission results for NASA.

Linda Cureton

Introduction

Purpose and Audience

The NASA IT Strategic Management Plan establishes the mission, vision, guiding principles and values, goals, and objectives to guide the IT community in achieving results that matter to the mission of the Agency. The plan is intended to serve multiple audiences, from the senior leadership of the Agency who represent the IT demand side and service expectations of customers, to the IT community and vendors that represent the supply side and fulfillment within service level parameters, as well as the entities external to NASA that rightfully expect transparency and accountability.

Recent IT Accomplishments

IT Security

NASA implemented the initial phase of the Security Operations Center (SOC) and initiated the second phase to improve incident management. We re-architected NASA's identity, credentialing, and authentication management services to align with Federal HSPD-12 requirements. At several NASA Centers, we implemented a single directory service for managing desktops and laptops, enabling smartcard (HSPD-12 badges) access to desktops. Additionally, significant progress was achieved in implementation of Federal Desktop Core Configurations to mitigate system vulnerabilities.

IT Infrastructure Transformation

NASA finalized Requests for Proposals for new IT contracts that will consolidate and improve NASA's IT infrastructure. We initiated development of an enterprise service desk and ordering system at the NASA Shared Services Center, which will effectively serve the entire Agency. Finally, we completed design of a defense-in-depth network architecture and procured necessary hardware for a common border infrastructure at the network perimeter to improve network security.

Business Systems

NASA implemented several enhancements to Agency business systems, such as e-Travel (FedTraveler), the Human Capital Information Environment, and the Aircraft Management System to capitalize on industry best practices.

Application Portfolio Management

NASA implemented Application Portfolio Management processes at all Centers, creating accurate application inventories and increased application visibility. We established an enterprise licensing office at the NSSC that manages 375,000 licenses across eight product suites, resulting in $4.5M cost savings/avoidance for the Agency. These efforts were recently recognized with the NASA Acquisition Improvement Award and on the White House website.

http://www.whitehouse.gov/omb/procurement_index_gov_contracting/#memo

End User Services

NASA upgraded e-mail services by increasing mailbox sizes and improving availability in the event of a disaster. We implemented a secure virtual team meeting solution to support mission needs to share sensitive information. Also, we implemented a social networking capability at GSFC, with an Agency-wide pilot (Spacebook), to facilitate collaboration and support the evolving workforce culture.

Key NASA IT Processes

NASA IT Governance

Effective IT governance at NASA is the key to considering the myriad interests of stakeholders internal and external to the Agency and making decisions that balance compliance, cost, risks, and mission success to appropriate degrees. It helps enable IT security and system effectiveness across the Agency. This is essential at NASA, which contains a highly skilled workforce that integrates IT in nearly all aspects of their work. While the NASA CIO maintains responsibility for all IT at NASA and is the principle IT advisor to the Administrator, NASA's accomplishments are the result of the collective workforce introducing new technologies and capabilities in concert with IT policies and procedural requirements, such as systems engineering, enterprise architecture, and IT security, with oversight of responsible NASA organizations and governance bodies.

NASA uses boards in the governance of IT:
- IT Strategy and Investment Board, which is composed of NASA senior management at Centers, Mission Directorates and Mission Support organizations;
- IT Program Management Board, which is composed of a rotating membership from Centers and technical organizations; and
- IT Management Board, which is composed of Center and Mission Directorate CIOs.

In addition, the Management and Business Systems Integration Group (M/BSIG) is a supporting group composed of customer organization representatives charged with prioritization of system and process gaps that may have IT system implications.

As we forge ahead, improvements in IT governance must address information owners' place within governance to help drive security risk mitigation and changes to systems within their functional responsibility.

Enterprise Architecture (EA)

Enterprise Architecture forms the planning and investment framework for aligning IT with the NASA mission and mission support needs in a structured, prioritized and integrated fashion. Identification of the desired target state, complete with a transition plan, investment profile, and linkages to other systems, forms the basis for effective investment decisions and purposeful transformation to enable improved mission outcomes and value from IT. The NASA Chief Enterprise Architect will execute the NASA EA Program Plan in collaboration with Center Enterprise Architects to ensure planning, prioritization and alignment of investments that enable mission and mission support objectives and results.

Sourcing of Services

Beginning in FY11, NASA will implement a new sourcing model for enterprise-level IT services as follows:
- Communications and network services will be centrally managed by the Marshall Space Flight Center (MSFC), with mission network services managed by the Goddard Space Flight Center (GSFC).
- End-user services, such as desktops and laptops, will be centrally managed by the NASA Shared Services Center (NSSC).
- Enterprise Web Services for the Agency will be managed by NASA Headquarters.
- Enterprise business applications will be managed by the NASA Enterprise Applications Competency Center (NEACC) at MSFC.
- An Enterprise Service Desk and Central IT Ordering System will be managed by the NSSC.
- NASA will continue efforts to improve data center security and efficiency, which is currently managed at Kennedy Space Center (KSC).
- Reporting directly to the NASA CIO, Center Chief Information Officers oversee the provisioning of IT services for their respective Centers. NASA will use the IT Infrastructure Library (ITIL) Version 3.0 framework to integrate and manage IT service delivery.

Strategic Framework

NASA IT Strategic Framework

The NASA IT strategic framework aligns IT vision and mission, principles and values, goals, objectives, initiatives, and outcomes to the Agency and Administration's priorities. [See graphic at right.] By understanding these priorities and purposefully aligning and committing IT resources to initiatives in support of those priorities, IT advances the mission of the Agency.

NASA and Administration Priorities

The NASA Strategic Plan is under development to reflect programmatic redirects based on the President's FY11 budget submission. This IT Strategic Plan will be updated with the NASA priorities once the new NASA Strategic Plan is approved and disseminated. There are several Administration priorities that NASA will support and implement under this plan to include the areas of cyber-security, open government, innovation, consolidation of infrastructure, and reduction of IT energy consumption.

NASA IT Vision

By advancing NASA's space and research program results through secure, efficient, innovative, reliable, and responsive services that are valued by stakeholders, the NASA IT organization is one of the most highly regarded Federal IT organizations, a sought-after innovator, and respected partner for NASA's mission and mission support organizations.
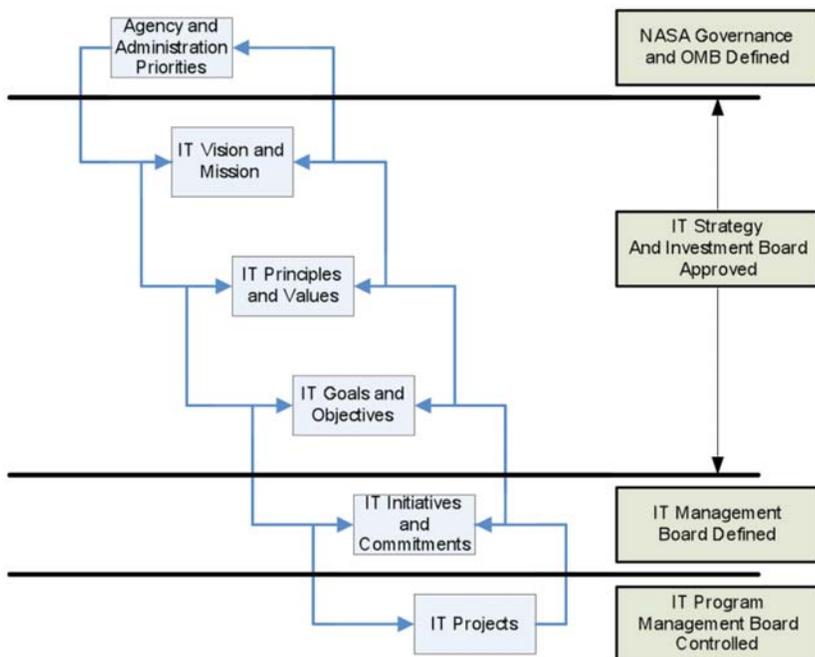
NASA IT Mission

The mission of the NASA IT organization is to increase the productivity of scientists, engineers, and mission support personnel by responsively and efficiently delivering reliable, innovative and secure IT services.

NASA IT Values

In addition to NASA's core values of Safety, Teamwork, Integrity and Excellence, the NASA IT organization shares common values that guide workforce behaviors. The IT values are:
- Customer obsession,
- Openness and transparency,
- Credibility,
- Respect,
- Innovation,
- Collaboration,
- Accountability,
- Discipline, and
- Continuous learning.

NASA IT Principles

The following principles will guide tactical decisions and planning, as well as provide guidance that is relevant now and in the future:
1. Mission Enabling and Customer-Focused: IT at NASA serves to enable NASA's mission in a customer-focused manner.
2. Integrated: NASA will implement IT that enables the integration of processes and information across organizational boundaries and empowers NASA through information sharing.
3. Effective and Efficient: NASA will implement value-added IT that balances efficiency, effectiveness, and risks.
4. Secure: NASA will proactively manage IT security risks, while ensuring mission success.
5. Innovative: NASA will identify, analyze and appropriately adopt value-added emerging technologies in support of current and future mission, research and development, and mission support requirements.

Strategic Goals, Objectives, Initiatives, and Commitments

Goal 1: Strengthen Management and Delivery of IT

Objective 1.1: Strengthen organizational alignment and governance for providing IT services. Intended outcome is an IT organization with clearly defined responsibilities, reporting relationships, accountability, and allocation of decision rights.

Initiative 1.1.1: Assess and Improve Governance Model

Performance Commitment:
1. By Q3 FY10, conduct an assessment of IT governance to establish a baseline. (ACIO for Policy and Investments)
2. By Q3 FY10, in collaboration with Stakeholders, develop a plan of actions and milestones for improving IT governance as measured against the baseline. (ACIO for Policy and Investments)
3. By Q3 FY11, reassess IT governance for improvement. (ACIO for Policy and Investments)

Objective 1.2: Develop an Enterprise Architecture Program to inform and guide decisions and increase IT value. Intended outcome is use of segment architectures to plan and select solutions that meet business and mission needs, and to integrate resulting systems and information prior to investing in systems.

Initiative 1.2.1: Enterprise Architecture Program Plan.

Performance Commitment:
1. Develop an EA program plan for approval by the IT Management Board (ITMB) by Q3 FY10. (Chief Enterprise Architect)
2. Develop an EA implementation plan for approval by the ITMB by Q4 FY10. (Chief Enterprise Architect)
3. Execute the EA implementation plan in accordance with approved milestones. (Chief Enterprise Architect)

Objective 1.3: In collaboration with Office of Human Capital Management and Office of Protective Services, leverage enterprise IT systems to enhance employee on-boarding experiences. Intended outcome is efficient on-boarding of employees and contractors by taking advantage of common workflow tools and business process automation.

Initiative 1.3.1: On-Boarding Initiative for NASA (OBIN) Employees

Performance Commitment:
1. In collaboration with Office of Human Capital Management (OHCM) and Office of Protective Services (OPS), develop a plan for successful on-boarding of employees (95 percent have a computer and accounts on first day of arrival). (Center CIOs, with oversight of ACIO for Enterprise Portfolio Management, in collaboration with OHCM and OPS)
2. Execute on-boarding improvement plans in accordance with approved milestones, with no milestones extending beyond Q4 FY10. (Center CIOs, with oversight of ACIO for Enterprise Portfolio Management)

Initiative 1.3.2: On/Off Boarding of Contractor Employees

Performance Commitment:
1. In collaboration with Office of Human Capital Management (OHCM) and Office of Protective Services (OPS), develop a plan for successful on-boarding and off-boarding of contractor employees (90 percent have a computer and accounts by second day of arrival and 100 percent of contractor accounts are terminated on their last day of service). (Center CIOs, with oversight of ACIO for Enterprise Portfolio Management, in collaboration with OHCM and OPS)
2. Execute on/off boarding improvement plan in accordance with approved milestones, with no milestone extending beyond Q4 FY11. (Center CIOs, with oversight of ACIO for Enterprise Portfolio Management)

Objective 1.4: Improve leadership and IT competency of NASA IT workforce to improve service delivery. Intended outcome is alignment of NASA IT workforce competencies with desired competency levels.

Initiative 1.4.1: IT Workforce and Leadership Competency Improvement Plans

Performance Commitment:
1. By Q4 FY10, develop an IT workforce and leadership competency model. (ACIO for Policy and Investments)
2. By Q1 FY11, develop IT workforce and leadership plan of actions and milestones, to include defining the current baseline and completing development plans. (Center CIOs, with oversight of ACIO for Policy and Investments)
3. Annually, in September, report outcomes in improving IT workforce and leadership competencies in relation to plans and established baselines. (Center CIOs, with oversight of ACIO for Policy and Investments)

Objective 1.5: Ensure that NASA's information is easy to find, access, and use by employees, citizens, and partners while maintaining a secure environment. Intended outcome is the ability for stakeholders to readily find, access, and use NASA information relative to search requests.

Initiative 1.5.1: NASA Information Management Initiative

Performance Commitment:
1. By Q3 FY10, establish a Search Architecture and implementation plan with one- to three-year milestones for improving information search, access, and use. (ACIO for Architecture and Infrastructure and the Langley Research Center CIO)

Objective 1.6: Improve consistency and reasonableness of IT project management standards and processes that are scaled to project type to balance project management rigor and cost of management. Intended outcome is successful IT programs and projects across NASA through optimally-managed projects that adhere to cost, schedule, and technical commitments.

Initiative 1.6.1: Coordination and Sharing of IT Project Management Information

Performance Commitment:
1. Promote project management collaboration between and among centers by conducting a minimum of two meetings per year of the Center Information Technology Project Management Working Group that focus on sharing best practices, lessons learned, and other information exchanges that will raise the level of IT project management at NASA centers. (ACIO for Enterprise Portfolio Management)
2. By Q4 FY10, develop a feedback mechanism (e.g., wiki, Spacebook page) for 2011 PMO planning that allows the IT PM Working Group members to propose improvements to Agency PMO products and services. (ACIO for Enterprise Portfolio Management)
3. By Q4 FY10, incorporate efficient coordination/ continuity practices into the NASA IT Investment Management processes to ensure accurate cost, schedule, and scope reporting. (ACIO for Enterprise Portfolio Management and ACIO for Policy and Investments)
4. By Q4 FY10, implement a portal for program managers, project managers, and Center PMOs as a consolidated reference point for IT project management and system engineering products, tools, references, and resources. (ACIO for Enterprise Portfolio Management)

Initiative 1.6.2: Common documents and templates for IT projects

Performance Commitment:
1. By Q4 FY10, publish common templates for IT system engineering reviews and Key Decision Point (KDP) reviews by projects in the scope of NPR 7120.7. (ACIO for Enterprise Portfolio Management)
2. By Q3 FY11, publish common annotated outlines of IT system engineering documents/technical products for projects in the scope of NPR 7120.7. (ACIO for Enterprise Portfolio Management)

Initiative 1.6.3: Common training material for IT projects and the PMO for mentoring/coaching IT project team members

Performance Commitment:
1. By Q4 FY10, publish common training material to address, at a minimum, standard Agency approaches to IT project scheduling, cost management, risk management, and project reporting. (ACIO for Enterprise Portfolio Management)
2. By Q4 FY10, publish common training materials on Agency policies for baselining/rebaselining and standard level 2 WBS for IT projects subject to NPR 7120.7. (ACIO for Enterprise Portfolio Management)
3. Annually review IT PM training materials for effectiveness and/or incorporation of additional Agency requirements. (ACIO for Enterprise Portfolio Management)

Objective 1.7: Solutions and programs that promote increased science, technology, engineering, and math (STEM) goals. Intended outcome is implementation of IT solutions that increase performance against NASA's STEM goals.

Initiative 1.7.1: STEM EA Roadmap

Performance Commitment:
1. By Q3 FY10, conduct an assessment of NASA's use of IT to meet STEM goals and identify opportunities for "quick wins". (NASA OCIO Chief Technology Officer)
2. By Q4 FY10, and annually thereafter, present a brief report regarding IT enabled STEM goals and plans for the upcoming year for IT implementation, or process changes with expected benefits. (NASA OCIO Chief Technology Officer)

NASA IT Goals

Goal 1: Strengthen Management and Delivery of IT in Support of the Agency's Mission.

Goal 2: Improve Management of Cyber-Security Risks to Balance System Operability and Security.

Goal 3: Improve Management, Efficiency, and Effectiveness of NASA Applications and Systems.

Goal 4: Develop and Implement Common IT Infrastructures to Improve Effiency and Effectiveness.

Goal 5: Develop and Implement a Framework for More Effective, Efficient, And Responsive IT Innovation Across NASA In Support of the Agency's Mission.

Goal 2: Improve Management of Cyber-Security Risks to Balance System Operability and Security

Objective 2.1: Increase use of intrusion detection monitoring to include mission networks. Intended outcome is improved operational cyber security via monitoring of the mission and non-mission networks for intrusions and correlation/analysis of data across the Agency.

Initiative 2.1.1: Mission Network Intrusion Detection

Performance Commitment:
1. By Q3 FY10, develop a plan (approved by the ITMB) for deploying IDS on mission networks. (Deputy CIO for IT Security)
2. By Q2 FY11, all NASA networks, including mission networks, will have intrusion detection sensors monitored by the NASA SOC. (Deputy CIO for IT Security)

Objective 2.2: Implement risk-based, user friendly, strong authentication and authorization to systems, including the ability to accept credentials issued by other certified providers. Intended outcome is the risk-based use of two-factor authentication for systems rated as Moderate, or higher, and the capability for all validated users, internal and external to NASA, to access systems and share information.

Initiative 2.2.1: Two Factor Trust Initiative

Performance Commitment:
1. By Q4 FY10, 100 percent of NASA systems rated as Moderate will integrate with Agency authentication architecture (or operate with approved deviation and mitigating controls). (Center CIOs)
2. By Q4 FY11, 100 percent of NASA systems rated as Low will integrate with Agency authentication architecture. (Center CIOs)
3. By Q4 FY11, the capability to accept authentication credentials issued by other certified providers will be implemented at NASA. (ACIO for Architecture and Infrastructure)

Initiative 2.2.2: Authentication Architecture User Satisfaction Assessment

Performance Commitment:
1. By Q4 FY10, conduct a baseline assessment of authentication and authorization from a customer perspective. (ACIO for Architecture and Infrastructure)
2. By Q1 FY11, develop a plan for improving the customer experience as compared to the baseline. (ACIO for Architecture and Infrastructure)

Objective 2.3: Expand use of integrated defense tools to provide for situational awareness. Intended outcome is an IT infrastructure and applications environment that uses a combination of tools and technologies to maintain awareness of assets and vulnerabilities, automatically mitigate vulnerabilities, and/or provide intelligence to the SOC and appropriate personnel for action.

Initiative 2.3.1: IT Security Segment Architecture

Performance Commitment:
1. By Q3 FY10, develop an integrated segment architecture of security tools and technologies, including concept of operations, business case, and investment profile, for approval by the NASA CIO and IT SIB. (Deputy CIO for IT Security)
2. Based on approval of the IT SIB and available funding, develop a project plan for implementation of the approved architecture. (Deputy CIO for IT Security)

Initiative 2.3.2: Implementation of Prioritized Defense Tools

Performance Commitment:
1. In accordance with the approved project plan and funding, implement defense tools in alignment with the segment architecture. (Deputy CIO for IT Security)

Objective 2.4: Identify Web application vulner-abilities to inform mitigation and reduce the attack surface on NASA networks. Intended outcome is a significant reduction in incidents and damage associated with Web application vulnerabilities.

Initiative 2.4.1: Web Application Vulnerability Reduction

Performance Commitment:
1. By Q4 FY10, begin scans of the NASA Web space for known vulnerabilities and take corrective action to mitigate. (Deputy CIO for IT Security, with assistance of Center CIOs)

2. By Q4 FY11, Internet facing Web application known vulnerabilities will be decreased by 50 percent. (Center CIOs, with oversight by the Deputy CIO for IT Security)

Initiative 2.4.2: Web Site Hosting in Managed Environments

Performance Commitment:
1. By Q4 FY10, all new Web sites will be created in a managed environment (e.g., Nebula, www.nasa.gov). (ACIO for Architecture and Infrastructure)
2. By Q4 FY11, 25 percent of existing Web sites in unmanaged environments shall be migrated to a managed environment. (ACIO for Architecture and Infrastructure)

Objective 2.5: Implement effective encryption solutions. Intended outcome is for loss of sensitive but classified information to be near zero as a result of equipment loss or theft.

Initiative 2.5.1: Data at Rest Encryption

Performance Commitment:
1. By Q3 FY11, implement an acceptable data at rest solution for personnel handling sensitive but unclassified information, including training associated with use. (ACIO for Architecture and Infrastructure)

Initiative 2.5.2: PKI Performance Improvement

Performance Commitment:
1. By Q3 FY10, assess Entrust PKI performance issues and develop a plan to improve performance. (ACIO for Architecture and Infrastructure)
2. By Q3 FY11, implement performance improvement plan that improves customer satisfaction by 50 percent from an existing baseline. (ACIO for Architecture and Infrastructure)

Objective 2.6: Nurture a culture of security account-ability. Intended outcome is a culture at NASA that im-proves the accountability of IT resources and maintains awareness of IT security and "bakes" it into solutions and everyday work habits.

Initiative 2.6.1: IT Security User Awareness Training

"We are absolutely com-mitted to inspiring young people. We want to ignite their passion for science and math, technology and engineering, professions that are critical now and will only grow more important in the future. The President shares my dedication to this work and has provided additional resources to help young minds connect with the world of space exploration."
**– Charlie Bolden,
NASA Administrator**

Performance Commitment:
1. By Q3 FY10, tailor NASA annual IT security training to focus on most common user mistakes affecting IT security. (Deputy CIO for IT Security)
2. By Q4 FY10, ensure at least 97 percent of NASA personnel (civil servants and contractors) have completed user awareness training that maximizes effectiveness of employees' time. (Center CIOs)

Initiative 2.6.2: System design discipline for IT Security

Performance Commitment:
1. By Q4 FY10, train at least one class of system developers and/or IT security managers in designing and identifying system software code vulnerabilities. (Deputy CIO for IT Security, in collaboration with the NASA Chief Engineer)
2. By Q4 FY10, develop a plan to implement an Agency capability to scan software code before system deployment to ensure it is free of known vulnerabilities. (Deputy CIO for IT Security)
3. By Q3 FY11, implement pilot software code scanning capability. (Deputy CIO for IT Security)
4. By Q4 FY11, assess effectiveness of the capability and plan for improvements. (Deputy CIO for IT Security)
5. Annually, present to Agency IT governance boards the trend analysis of IT security incidents caused by software code vulnerabilities. (Deputy CIO for IT Security)
6. Analyze existing policy for security gaps, determine what needs to change, and integrate in NPR 7120.5 and NPR 7150. (Deputy CIO for IT Security)
7. Work with the Office of Safety and Mission Assurance (OSMA) on processes and OCE relative software and system security. (Deputy CIO for IT Security)
8. Develop a metric system that articulates risk in terms that missions understand. (Deputy CIO for IT Security and Center CIOs)

Initiative 2.6.3: Assignment of Accountability and Internal Controls

Performance Commitment:
1. By Q4 FY10, implement a governance model that assigns accountability for security incidents to system owners. (NASA CIO)
2. By Q4 FY11, develop an internal audit capability to identify system vulnerabilities for mitigation by system owners. (Deputy CIO for IT Security and Center CIOs)

Goal 3: Improve Management, Efficiency and Effectiveness of NASA Applications and Systems

Objective 3.1: Improve the efficiency and effectiveness of Agency enterprise business systems. Intended outcome is for enterprise business systems to be efficiently and effectively developed, maintained and used, with new deployments and enhancements focused on usability, user-friendly access, and professional designs.

Initiative 3.1.1: Improve Effectiveness of the Personal Property System

Performance Commitment:
1. By Q4 FY10, increase reutilizations of accountable personal property by two percent from the baseline of five percent. (ACIO for Enterprise Portfolio Management and MSFC CIO)

Initiative 3.1.2: Improve efficiency of the e-Travel system

Performance Commitment:
1. By Q4 FY10, increase percentage of total travel bookings completed online to at least 60 percent. (ACIO for Enterprise Portfolio Management and MSFC CIO)

Initiative 3.1.3: Increase utilization of the NASA procurement system

Performance Commitment:
1. By Q4 FY10, increase the total number of solicitations developed in PRISM to at least 80 percent. (ACIO for Enterprise Portfolio Management and MSFC CIO)

Initiative 3.1.4: Improve efficiency and effectiveness of the Business Warehouse system

Performance Commitment:
1. By Q4 FY10, reduce run times of the most heavily accessed Business Warehouse reports by at least 40 percent. (ACIO for Enterprise Portfolio Management and MSFC CIO)

Initiative 3.1.5: Improve effectiveness and efficiency of enterprise business system support

Performance Commitment:
1. By Q1 FY11, transition to a Firm Fixed Price contract for NASA Enterprise Applications Services and Technologies that provides best value to the government. (ACIO for Enterprise Portfolio Management)

Objective 3.2: Improve documentation of the Agency's applications environment. Intended outcome is for NASA decision makers to have adequate information when considering new investments in applications.

Initiative 3.2.1: Identify and categorize Agency and Center applications

Performance Commitment:
1. By Q3 FY10, categorize 1,000 applications. (ACIO for Enterprise Portfolio Management and Center CIOs)
2. By Q4 FY10, categorize an additional 1,000 applications, for a total of 2,000. (ACIO for Enterprise Portfolio Management and Center CIOs)
3. By Q3 FY11, categorize an additional 500 applications, for a total of 2,500. (ACIO for Enterprise Portfolio Management and Center CIOs)

Initiative 3.2.2: Conduct outreach to Centers and Programs/Projects on the benefits of Applications Portfolio Management (APM)

Performance Commitment:
1. By Q3 FY10, conduct on-site APM outreach sessions at four Centers. (ACIO for Enterprise Portfolio Management)
2. By Q3 FY11, conduct on-site APM outreach sessions at six additional Centers. (ACIO for Enterprise Portfolio Management)

Initiative 3.2.3: Improve applications related data

Performance Commitment:
1. By Q4 FY10, update data repository to identify additional applications and improve available data related to center applications. (Center CIOs, Center APMs and Agency APM Lead)

Objective 3.3: Decommission the administrative systems mainframe computer and legacy applications as soon as practical following the last Shuttle launch. Requires either retirement and/or migration of applications and data. Intended outcome is reduced operating costs for NASA once the mainframe is retired.

Initiative 3.3.1: Migrate the NASA Supply Management System from the mainframe to the SAP environment.

Performance Commitment:
1. Deploy SAP capability to provide supply management by Q4 FY12. (NEACC, with oversight by ACIO for Enterprise Portfolio Management)

Initiative 3.3.2: Migrate Center legacy applications from the mainframe

Performance Commitment:
1. By Q4 FY12, all Center applications shall be migrated from the mainframe environment. (Center CIOs, with oversight by the ACIO for Enterprise Portfolio Management)

Objective 3.4: Use Common Government Accounting Classification (CGAC). Intended outcome is the ability to transfer funds from Treasury to NASA in FY-2014.

Initiative 3.4.1: Deploy SAP system upgrade that aligns with CGAC

Performance Commitment:
1. Deploy CGAC upgrade by Q4 FY14. (NEACC, with oversight by ACIO for Enterprise Portfolio Management)

Objective 3.5: Implement solutions that support multi-generational workforce expectations. Intended outcome is a set of customer-focused tools that meet expectations of the NASA workforce in conducting mission and mission support activities.

Initiative 3.5.1: End User Segment Architecture

Performance Commitment:
1. By Q4 FY10, develop a segment architecture (current, target, transition plan and roadmap, and investment profile) for IT end users for approval by the NASA CIO and IT SIB. (ACIO for Architecture and Infrastructure)

2. By Q2 FY11, develop a project plan for executing the transition plan. (ACIO for Architecture and Infrastructure)
3. Beginning in Q3 FY10, document customer satisfaction with IT end users. (ACIO for Architecture and Infrastructure)

Objective 3.6: Implement Product Lifecycle Management/Product Data Management (PLM/PDM) interfaces that enable data sharing. Intended outcome is a set of PLM/PDM capabilities at NASA that can share data between them through defined interface standards.

Initiative 3.6.1: PLM/PDM Interface Standards

Performance Commitment:
1. By Q3 FY10, define minimum interface standards for PLM/PDM tools. (Chief Enterprise Architect, in collaboration with the NASA Chief Engineer)

Objective 3.7: Transition or decommission Shuttle systems. Intended outcome is successful transition of systems previously used by the Space Shuttle to future space flight programs or decommissioning of systems and effective retention of records.

Initiative 3.7.1: Shuttle IT System Transition

Performance Commitment:
1. By Q3 FY10, identify systems affected by Space Shuttle retirement, along with a plan for transition or decommissioning. (Space Operations Mission Directorate CIO)
2. Beginning Q4 FY10, report on a quarterly basis the progress of transitioning and/or decommissioning per plan, until all systems have been transitioned or retired. (Space Operations Mission Directorate CIO)

Objective 3.8: Deploy an enterprise Real Property System to account for NASA's real property. Intended outcome is a system integrated with the Agency financial system that will sufficiently track NASA's real property to the satisfaction of auditors.

Initiative 3.8.1: NASA Real Property System and Retirement of the Existing Real Property Inventory (RPI) system

Performance Commitment:
1. Deploy SAP module to provide real property capabilities by Q1 FY11. (NEACC, with oversight by ACIO for Enterprise Portfolio Management)

Objective 3.9: Improve the FedTraveler user experience. Intended outcome is to make system, policy, and process changes to improve the end user's experience and reduce the time required to plan and execute travel.

Initiative 3.9.1: Implement system, process and policy changes to improve the travel experience. (ACIO for Enterprise Portfolio Management)

Performance Commitment:
1. By Q3 FY10, work with FedTraveler vendor to address issues as documented in December 2009.
   a. Work to accelerate delivery of modifications in support of long term TDY calculations corrections.
   b. Establish focus group to address ticketing issues.
2. By Q3 FY10, work with OCFO to modify NPR where appropriate to address issues documented in December 2009.
3. By Q3 FY10, work with OCFO to evaluate process changes needed to improve the end user's experience.
4. By Q3 FY10, complete a proof of concept with the e-Travel vendor to demonstrate the use of eAuth to provide single sign on to FedTraveler.

Objective 3.10: Implement a new agency forms management solution. Intended outcome is an agency-wide forms management solution that meets agency requirements and replaces the existing system that has reached end of life support.

Initiative 3.10.1: Conduct benefit/cost analysis to determine and recommend a suitable replacement forms management solution. (ACIO for Enterprise Portfolio Management)

Performance Commitment:
1. By Q1 FY10, identify and document agency requirements.
2. By Q3 FY10, complete a business case analysis to determine the best solution for the agency.
3. By Q4 FY10, conduct briefings, secure support and funding, and initiate a project to implement the new solution.

Goal 4: Develop and Implement Common IT Infrastructures to Improve Effiency and Effectiveness

Objective 4.1: Establish a service delivery framework aligned with the Agency service catalog architecture to guide delivery of common enterprise services. Intended outcome is integrated, secure, and customer-focused IT infrastructure solutions.

Initiative 4.1.1: Implement an Enterprise Service Desk and Ordering System

Performance Commitment:
1. ESD and EOS deployed in accordance with the I3P schedule. (ACIO Infrastructure and Architecture)

Initiative 4.1.2: Implement consolidated enterprise web services for the www.nasa.gov portal

Performance Commitment:
1. Management structure and supporting contract(s) in place in accordance with the I3P procurement schedule. (ACIO Infrastructure and Architecture)

Initiative 4.1.3: Implement consolidated and centralized management of NASA IT communications services

Performance Commitment:
1. Management structure and supporting contract(s) in place in accordance with the I3P procurement schedule. (ACIO Infrastructure and Architecture)

Initiative 4.1.4: Implement consolidated and centrally managed end-user services

Performance Commitment:
1. Management structure and supporting contract(s) in place in accordance with the I3P procurement schedule. (ACIO Infrastructure and Architecture)

Initiative 4.1.5: Implement a Program Management Officer to oversee the successful implementation and operation of the I3P

Performance Commitment:
1. Establish a program management office for I3P by Q3 FY10 that includes, at a minimum, risk management, customer relationship management, change management, service integration, performance management, and technology assessment capabilities. (ACIO for Infrastructure and Architecture)

Objective 4.2: Use IT capabilities that enable world-class research and development. Intended outcome is a match of high-end computing capabilities with bona fide researcher demand, considering a multitude of possibilities for meeting demand.

Initiative 4.2.1: High End Computing Planning and Governance

Performance Commitment:
1. Gain approval from NASA management on planning and governance model for high-end computing by Q3 FY10. (ACIO Policy and Investments)
2. Implement the planning and governance model by Q4 FY10. (ACIO Policy and Investments)
3. Develop segment architecture (as-is, to-be, transition plan, and funding profile) by Q4 FY10. (NASA Chief Architect, HEC Portfolio Manager)

Objective 4.3: Reduce IT energy consumption by 30 percent during a three-year period. Intended outcome is a 30 percent reduction of energy associated with IT from FY-10 through FY-12.

Initiative 4.3.1: Center IT energy reduction plans

Performance Commitment:
1. Develop IT energy reduction plans for each NASA Center by Q3 FY10. (Center CIOs, with oversight of ACIO for Policy and Investments)
2. Execute IT energy reduction plans at each Center in accordance with approved milestones. (Center CIOs, with oversight of ACIO for Policy and Investments)

Objective 4.4: Achieve network architecture transformation and renewal. Intended outcome is a NASA network environment that meets the requirements of mission and mission support organizations, while protecting sensitive information.

Initiative 4.4.1: Zoned Network Architecture

Performance Commitment:
1. Complete pre-formulation by Q3 FY10. (ACIO for Architecture and Infrastructure)
2. Pending outcome of pre-formulation, proceed to formulation of iZone project by Q3 FY10. (ACIO for Architecture and Infrastructure)
3. Develop an integrated cost and schedule baseline for iZone project by Q4 FY10. (ACIO for Architecture and Infrastructure)
4. Execute iZone project within 10 percent of cost and schedule baseline. (ACIO for Architecture and Infrastructure)

Initiative 4.4.2: NASA Communications Initiative (NCI)

Performance Commitment:
1. Deploy new gateway hardware by Q3 FY10. (ACIO for Architecture and Infrastructure)

Initiative 4.4.3: NASA WAN Expansion

Performance Commitment:
1. Deploy 10 gb/sec corporate backbone by Q3 FY10. (ACIO for Architecture and Infrastructure)

Initiative 4.4.4: Center LAN Upgrades

Performance Commitment:
1. Execute Center network renewal cost sharing initiatives using FY09 strategic institutional investment funding by Q3 FY10. (Center CIOs at ARC, GRC, GSFC, KSC, LaRC, MSFC, SSC, with oversight by ACIO for Policy and Investments)
2. Prioritize Center network renewal cost sharing initiatives using FY11 strategic institutional investment funding by Q3 FY10. (IT Management Board, with approval by IT Strategy and Investment Board)
3. Execute approved FY11 network renewal cost sharing initiatives by Q4 FY11. (Center CIOs, with oversight by ACIO for Policy and Investments)

Objective 4.5: Consolidate Data Centers and Transition to Cloud Computing. Intended outcome is reduced data center operating costs, reduced data center carbon footprint, and significant facilities and utilities cost avoidance for NASA.

Initiative 4.5.1: Data Center Consolidation Plans for NASA

Performance Commitment:
1. Develop Agency-wide data center consolidation plan by Q3 FY10 that accounts for cloud computing, the National Center for Computational Information Processing and Storage (NCCIPS), and other existing capabilities. (ACIO for Architecture and Infrastructure)
2. Integrate OMB-approved data center consolidation plans into FY12 budget submissions by Q3 FY10. (ACIO for Policy and Investments)
3. Implement the OMB-approved data center consolidation plan in accordance with approved milestones. (ACIO for Architecture and Infrastructure)

Members of NASA's IT Management Board and support staff pose during a meeting break at Stennis Space Center.

Goal 5: Develop the Framework to Support More Effective IT Innovation at NASA

Objective 5.1: Create, test and implement a formal innovation structure, processes and innovative partnerships to solve NASA's IT challenges. Intended outcome is focused innovation pilots with high adoption rates that solve NASA's most pressing IT issues.

Initiative 5.1.1: IT Innovation Framework

Performance Commitment:
1. Develop options and recommendations for an innovation structure and concept of operations for innovation for presentation to the IT Management Board by Q2 FY10. (ARC CIO, GRC CIO, JPL CIO)
2. Develop a plan to implement the ITMB-approved concept of operations for IT innovation by Q3 FY10. (NASA CTO)

3. Prioritize IT issues for innovation and partnering to address by Q3 FY10. (NASA CTO)
4. Assign prioritized IT issues for innovation, research, and implementation by Q4 FY10. (NASA CTO)
5. Report annually, in September, demonstrated results of implemented innovation and partnering. (NASA CTO)

Objective 5.2: Communicate Innovation Initiatives. Intended outcome is an up to date information source to track innovation pilots, progress and plans.

Initiative 5.2.1: Innovation Web site

Performance Commitment:
1. By Q2 FY10, create a Web site on the NASA portal (per Open Government Directive) to communicate innovation initiatives. (ACIO for Architecture and Infrastructure)

Objective 5.3: Collaboratively share IT Innovation successes, failures and lessons learned. Intended outcome is an active intake of innovation possibilities from external sources that may have applicability to NASA.

Initiative 5.3.1: Seeking ideas from external sources

Performance Commitment:
1. By Q3 FY10, engage the NASA Advisory Council IT Sub-Committee to gain ideas for implementation at NASA. (NASA CIO)

NASA Headquarters
Washington, D.C.