Cross-Agency Support

Overview

NASA's Cross-Agency Support (CAS) provides critical mission support activities that are necessary to ensure the efficient and effective operation and administration of the Agency but cannot be directly aligned to a specific program or project requirement. These functions align and sustain institutional and program capabilities for the purpose of supporting NASA's mission portfolio by leveraging resources to meet mission needs, establishing Agency-wide capabilities, and providing institutional checks and balances. NASA's CAS includes two themes: Center Management and Operations and Agency Management and Operations. CAS institutional and program capabilities ensure core services are ready and available for performing NASA Mission roles and responsibilities. CAS institutional capabilities ensure agency operations are effective and efficient and activities are conducted in accordance with all statutory, regulatory, and fiduciary responsibilities. CAS program capabilities ensure vital skills and assets are ready and available to meet technical milestones for programs and projects; missions and research are technically and scientifically sound; and that Agency practices adhere to standards and processes that provide safety and reliability through proper management of risk.

Center Management and Operations directly supports Agency programs and projects that are hosted and executed at NASA Centers. This theme provides for the care of institutional assets, for establishing and maintaining the staff and their competencies, and for the facilities required by current and future programs and projects at nine field Centers. Center Institutional Capabilities provides resources, oversees the assignment of workforce and facilities, and manages Center operations. Center Program Capabilities sustains the technical facilities, workforce expertise and skills, equipment, tools, and other resources required to facilitate program and project execution.

NASA's Agency Management and Operations activities provide policy and oversight to assure compliance with external and internal requirements, assure safety and mission success, and sustain Agency-wide critical capabilities. These activities provide management of human capital, acquisitions, financial performance, information technology, and performance improvement, including additional funding to improve the capability and capacity of the Agency's acquisition workforce. Agency Management and Operations provides for near and long-term alignment of its human capital policy and a corporate approach to managing its unique or highly-specialized facilities. It maintains a core complement of civil service professionals to resolve its financial, acquisition, and business challenges.

FY 2011 Budget Request

Budget Authority ($ millions)	FY 2009 Actual	FY 2010 Enacted	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
FY 2011 President's Budget Request	**3,356.4**	**3,095.1**	**3,111.4**	**3,189.6**	**3,276.8**	**3,366.5**	**3,462.2**
Center Management and Operations	2,024.3	2,067.0	2,270.2	2,347.4	2,427.7	2,509.7	2,594.3
Agency Management and Operations	921.2	941.7	841.2	842.2	849.1	856.8	867.9
Institutional Investments	343.7	23.4	0.0	0.0	0.0	0.0	0.0
Congressionally Directed Items	67.2	63.0	0.0	0.0	0.0	0.0	0.0
FY 2010 President's Budget Request	**3,356.4**	**3,400.6**	**3,468.4**	**3,525.7**	**3,561.4**	**3,621.4**	**--**
Center Management and Operations	2,024.0	2,084.0	2,119.2	2,142.5	2,166.1	2,189.9	--
Agency Management and Operations	921.2	961.2	956.9	964.5	972.3	981.5	--
Institutional Investments	343.7	355.4	392.3	418.7	423.0	450.0	--
Congressionally Directed Items	67.5	0.0	0.0	0.0	0.0	0.0	--
Total Change from FY 2010 President's Budget Request	**0.0**	**-305.5**	**-357.1**	**-336.2**	**-284.6**	**-254.9**	**--**

Note: In all budget tables, the FY 2011 President's Budget Request depicts the July 2009 Operating Plan including American Recovery and Reinvestment Act for the FY 2009 Actual column and the Consolidated Appropriations Act, 2010 (P.L. 111-117) without the Administrative transfers for the FY 2010 enacted column. The Institution Investments (II) budget has transferred to the new Construction and Environmental Compliance and Restoration (CECR) appropriation for FY 2010 and beyond. The remaining FY 2010 enacted funding includes labor and travel to support CECR activities. The II labor and travel budget will transfer to Center Management and Operations in FY 2011. The Innovative Partnerships Program (IPP) has transferred to the new Aeronautics and Space Research and Technology appropriation.

Plans for FY 2011

Cross-Agency Support

Center Management and Operations

New Initiatives:

None

Major Changes:

Labor to support the construction and environmental activities of the Construction and Environmental Compliance and Restoration account was transferred to Center Management and Operation from Institutional Investments.

Major Highlights for FY 2011

Center Management and Operations provides for continuing operations of nine field Centers, including four major component facilities, in ten separate states in support of NASA's mission portfolio. It ensures that Centers can provide the basic support required to meet internal and external requirements; effectively manage its human capital, information technology, and facility assets; responsibly execute its financial management and acquisition responsibilities; ensure independent technical oversight of NASA's programs and projects in support of safety and mission success; and provide a safe, secure, and environmentally sustainable workplace. These center capabilities provide the services and products required by the programs and projects; enable technology innovation for NASA and the broader science and engineering communities; and serve as unique national capabilities to industry, academia, and government.

Agency Management and Operations

New Initiatives:

None

Major Changes:

The Agency Management and Operations (AMO) FY 2011 budget request includes increased funding for two new requirements. The first requirement is for a new government-wide initiative to improve the capability and capacity of our acquisition workforce. An additional $3.6M is designated for training, recruiting, retention, and hiring of the agency's acquisition workforce as well as for information technology and management solutions to improve the agency's acquisition management. The second requirement is for the Independent Verification and Validation (IVV) activities that are increased by $10.0M to increase the software analysis activities on NASA's critical software systems.

A funding augmentation of $5.1M is designated to Agency Management to complete electrical metering of all appropriate Center buildings as required by Executive Order 13423. An addition of $3.0M is designated to fund natural gas metering effort at the NASA Centers in FY 2011.

This FY 2011 request includes three zero-sum transfers of content and budget into Agency Management and Operations all pertaining to the Agency Information Technology Services (AITS) activities.

To improve Information Technology (IT) security and efficiency, NASA is implementing new Agency-wide IT service contracts that consolidate or replace Agency and Center specific contracts. Currently, there are multiple approaches in place for funding for IT services across the NASA Centers making it difficult to efficiently execute critical IT services. This budget request includes a zero-sum transfer of content and budget from program budgets to Cross Agency Support to replace these multiple approaches with common, consolidated approach. As a result, the Agency Management and Operations includes an increase of $18.3M due to the transfer of common enterprise IT activities, such as integrated email, calendaring, instant messaging, and directory services into Agency IT Services (AITS).

In addition, $11.8M was transferred to Agency IT Services (AITS) for transformation and renewal of the NASA IT network infrastructure at the NASA Centers. This IT initiative will mitigate IT security threats and vulnerabilities through network security zones and provide enterprise-wide benefits of consolidated network management and monitoring, coupled with sufficient capacity and reliability to support increasing mission-related data transfer requirements.

To achieve cost savings and efficiencies, NASA will also retire the NASA Data Center (NDC) mainframe six months following the last planned shuttle flight. To facilitate this, $8.5M was transferred from the program and center budgets into AITS to transition the legacy NASA Supply Management System application from the NASA Data Center mainframe to the NASA's Enterprise Resource Planning suite.

Major Highlights for FY 2011

The Agency Management and Operations programs deliver policies, controls, and oversight across a range of functional and administrative management service areas including procurement, finance, human capital, real property and infrastructure, security, diversity, equal opportunity, and small business. For FY 2011 and beyond, the Innovative Partnerships Program has transferred to the new Aeronautics and Space Research and Technology appropriation.

The Safety and Mission Success program will continue to administer and refine policies, procedural requirements, and technical standards. Safety and Mission Success program activities are a key component of the forums that provide advice to the Administrator, Mission Directorates, Program Managers and Center Directors who are ultimately accountable for the safety and mission success of all NASA programs, projects, and operations. The plans for FY 2011 provide for an effective NASA Engineering and Safety Center, NASA Safety Center, and Independent Verification and Validation Facility as established and recognized components of a comprehensive remedial response to lessons learned from NASA's greatest tragedies. The plans include the required support for independent research, audit, and assessment of NASA activities that have risk for loss or failure.

NASA will complete deployment of several initiatives to improve security, efficiency and integration of information and systems. The NASA CIO will consolidate several IT contracts and implement centralized management of the IT infrastructure, which is expected to yield efficiencies and improved security of networks, end-user devices, and data center services. The NASA Communications Improvement (NCI) project will reconfigure border routers, gateways and circuits to better control and secure the network perimeter, enabling implementation of Trusted Internet Connections. The Center Zoned Architecture Project (CZAP) will establish network security zones to enable secure collaboration across NASA Centers and programs, while still allowing necessary connectivity with external partners and universities for research. Finally, the use of Smart Cards for logical access to many NASA systems will complete testing and undergo initial implementation.

Strategic Capabilities Assets Program (SCAP) will continue to provide strategic management and funding for critical facilities. The current portfolio consists of thermal vacuum chambers which provide for the thermal testing of spacecraft, flight simulators which provide for simulation of air and space vehicle flight characteristics, and an arc jet facility for critical testing of re-entry materials.

THIS PAGE INTENTIONALLY BLANK

Mission Directorate:	Cross-Agency Support
Theme:	Center Management and Operations

Theme Overview

NASA's Center Management and Operations (CMO) budget request funds the ongoing management, operations, and maintenance of nine NASA field Centers, including four major component facilities, in ten separate states across the Country. It provides Center Institutional and Program Capabilities to satisfy program requirements and schedules. The Center Management and Operations budget request enables execution of NASA's mission at the Centers by providing the resources required to effectively oversee the assignment of workforce and facilities and manage Center operations to facilitate program and project execution while ensuring that statutory, regulatory, and fiduciary compliance requirements are met.

FY 2011 Budget Request

Budget Authority ($ millions)	FY 2009 Actual	FY 2010 Enacted	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
FY 2011 President's Budget Request	**2,024.3**	**2,067.0**	**2,270.2**	**2,347.4**	**2,427.7**	**2,509.7**	**2,594.3**
Center Management and Operations	2,024.3	2,067.0	2,270.2	2,347.4	2,427.7	2,509.7	2,594.3
FY 2010 President's Budget Request	**2,024.0**	**2,084.0**	**2,119.2**	**2,142.5**	**2,166.1**	**2,189.9**	**--**
Center Management and Operations	2,024.0	2,084.0	2,119.2	2,142.5	2,166.1	2,189.9	--
Total Change from FY 2010 Request	**0.3**	**-17.0**	**151.0**	**204.9**	**261.6**	**319.8**	**--**

Plans for FY 2011

Center Management and Operations

Activities funded within the CMO budget request include a wide variety of essential operations:

Security, environmental management, and safety services to ensure that Centers meet basic workplace standards for the public and for the NASA workforce;

Facility maintenance and operations, including utility funding, to support the Agency's infrastructure, including support to more than 5,500 facilities with a Current Replacement Value of over $23B;

Information Technology services to provide video, voice, network, data center, and desktop computer support at the Centers;

Program Capability support required to ensure that the Agency's Science, Engineering, and Technical Authority staff have the resources, services, and laboratory support required to achieve the Agency's technical mission;

Training, logistics, occupational health, and human resources services required to support the Agency's 16,600 Center civil servants;

Senior management, legal, Equal Employment Opportunity, and public affairs support at the Centers;

Procurement and Financial services supporting contract and financial management; and

Labor for the civil servants and on-site contractors that provide the above essential services at the Centers.

Relevance

Relevance to national priorities, relevant fields, and customer needs:

Center program capability support to NASA's mission contributes to the development of advances in U.S. leadership in human space exploration,aeronautics, space and earth sciences, advancement of technical partnerships in the commercial space sector, and development of innovative technologies that benefit society.

Relevance to education and public benefits:

Strategic communications and education activities at the Centers keep stakeholders and the public informed in a way that helps them understand our policies, programs, and plans. It also fulfills the mandate of the National Aeronautics and Space Act of 1958 "[to] provide for the widest practicable and appropriate dissemination of information concerning its activities and results thereof."

Performance Achievement Highlights:

NASA Centers continued to provide high quality support for the execution of Programs and Projects. NASA faces the challenge of providing adequate levels of institutional support to the current programs while absorbing labor and utility cost increases and new requirements such as inititatives to reduce Green House Gas emissions.

To partially offset these increasing costs, NASA has implemented energy savings initiatives, consolidated activities, and reduced or deferred some Center Management and Operations activities, particularly in the area of facility maintenance.

To support energy savings, NASA updated its facilities maintenance and operations practices to strengthen the commitment to and use of sustainable procedures and methods within existing facilities as outlined by the U.S. Green Building Council LEED re-commissioning guidelines. NASA continued implementing its plans to provide electrical service metering and monitoring for facilities, installing metering, as appropriate, in most facilities. This enables a reduction in electrical power use by monitoring real-time usage to identify and resolve inefficient practices. NASA conducted water conservation assessments at many of its sites to enable progress towards its goal of reducing water usage 15% by FY 2015.

Mission Directorate:	Cross-Agency Support
Theme:	Center Management and Operations
Program:	Center Management and Operations

FY 2011 Budget Request

Budget Authority ($ millions)	FY 2009 Actual	FY 2010 Enacted	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
FY 2011 President's Budget Request	2,024.3	2,067.0	2,270.2	2,347.4	2,427.7	2,509.7	2,594.3
Center Institutional Capabilities	1,542.1	1,591.7	1,776.1	1,830.5	1,890.9	1,956.3	2,021.8
Center Programmatic Capabilities	482.2	475.3	494.0	516.8	536.8	553.4	572.5
FY 2010 President's Budget Request	2,024.0	2,084.0	2,119.2	2,142.5	2,166.1	2,189.9	--
Center Institutional Capabilities	1,579.0	1,608.6	1,626.1	1,631.7	1,637.2	1,644.5	--
Center Programmatic Capabilities	445.0	475.4	493.1	510.8	528.9	545.4	--
Changes from FY 2010 Request	0.3	-17.0	151.0	204.9	261.6	319.8	--

Project Descriptions and Explanation of Changes

Center Institutional Capability

NASA's Center Institutional Capability encompasses a diverse set of activities including financial and human capital management; acquisition services; facility maintenance; utilities; information technology; and safety and security. This capability manages and sustains the Center staff, facilities and operations required for program and project execution and provides for the ongoing operations of nine NASA field Centers, including four major component facilities to maintain a safe, healthy, and environmentally responsible workplace. Center institutionally-sustained services are the most efficient approach to providing services and products required by programs to implement their assigned missions as well as to preserve unique national capabilities relied upon by industry, academia and government.

Center Institutional Capability is critical to the successful execution of the programs and projects executed at NASA Centers. For years, center facility maintenance and operations has been underfunded as labor, utility, and operations costs continue to grow at a higher rate than the budget. The impact of this under-funding is most evident in aging and deteriorating buildings and other infrastructure. In FY 2009, total CMO costs were $2127M, funded with FY 2009 and prior year unobligated funds. This FY 2011 request funds Center Institutional Capability at FY 2009 levels plus 4% inflation to cover increases in utilities and labor. Without this increase Centers will be forced to reduce services, increasing deferred maintenance and the risk of costly unplanned repairs, unscheduled outages and disruption to program activities.

Additionally, this request includes three zero-sum transfers of content and budget into Center Institutional Capability:

To improve Information Technology (IT) security and efficiency, NASA is implementing new Agency-wide IT service contracts that consolidate or replace Agency and Center specific contracts. Currently, there are multiple approaches in place for funding IT services across the NASA Centers making it difficult to efficiently execute critical IT services. This budget request includes a zero-sum transfer of content and budget from program budgets to Cross-Agency Support to replace these multiple approaches with a common, consolidated approach. As a result, the Center Institutional Capability request includes an increase of $17M due to the transfer of IT activities into Center Institutional Capability.

This request reflects an increase of $4.4M above the FY 10 level due to a transfer of facility support at Kennedy Space Center from program budgets to CMO. This zero-sum transfer of content and budget better aligns the Kennedy facility services CMO content with that of the rest of the Agency to improve efficiency, consistency and clarity.

$29.5M for labor to support the construction and environmental activities of the Construction and Environmental Compliance and Restoration account was transferred to Center Institutional Capability from Institutional Investments.

Center Program Capability

NASA's Center Program Capability supports the scientific and engineering staff across the Agency tasked with providing engineering assessment and safety oversight pertaining to the technical readiness and execution of NASA programs and projects. It also sustains NASA's analysis, design, research, test services, and fabrication capabilities; enabling efficient execution of the programs and projects hosted at the Centers. A key component of NASA's overall system of checks and balances is provided within Technical Capabilities through formally delegated Technical Authorities. The Technical Authorities at NASA's nine Centers number 800 civil servant FTE who provide independent oversight and review of programs and projects in support of safety and mission success. This is to assure that NASA's activities are safely implemented in accordance with accepted standards of professional practice and applicable NASA requirements.

CENTER MANAGEMENT AND OPERATIONS TECHNICAL AUTHORITY

SMA Technical Authority	FY 2010 Enacted	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total $M	**$51.6**	**$55.6**	**$57.6**	**$59.9**	**$62.0**	**$64.2**
Ames Research Center	$3.4	$3.8	$3.9	$4.1	$4.2	$4.4
Dryden Flight Research Center	$4.6	$4.9	$5.0	$5.2	$5.4	$5.6
Glenn Research Center	$2.1	$2.2	$2.3	$2.4	$2.5	$2.6
Goddard Space Flight Center	$12.6	$14.5	$15.1	$15.8	$16.4	$17.1
Johnson Space Center	$6.8	$6.6	$6.8	$7.1	$7.3	$7.6
Kennedy Space Center	$9.3	$10.7	$11.0	$11.3	$11.6	$11.9
Langley Research Center	$3.1	$3.2	$3.3	$3.4	$3.6	$3.7
Marshall Space Flight Center	$8.2	$8.5	$8.8	$9.2	$9.4	$9.8

Engineering Technical Authority	FY 2010 Enacted	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total $M	**$124.3**	**$130.7**	**$135.6**	**$140.9**	**$145.9**	**$151.2**
Ames Research Center	$2.3	$3.3	$3.5	$3.6	$3.8	$3.9
Dryden Flight Research Center	$6.9	$7.1	$7.4	$7.6	$7.9	$8.2
Glenn Research Center	$13.8	$14.4	$15.0	$15.7	$16.4	$17.1
Goddard Space Flight Center	$11.6	$12.4	$12.9	$13.6	$14.3	$15.0
Johnson Space Center	$21.4	$22.4	$23.2	$24.0	$24.8	$25.7
Kennedy Space Center	$12.2	$12.8	$13.2	$13.6	$14.0	$14.5
Langley Research Center	$16.0	$16.7	$17.4	$18.2	$18.9	$19.7
Marshall Space Flight Center	$37.1	$38.4	$39.7	$41.2	$42.3	$43.7
Stennis Space Center	$3.1	$3.2	$3.3	$3.4	$3.5	$3.5

Mission Directorate:	Cross-Agency Support
Theme:	Agency Management and Operations

Theme Overview

Agency Management and Operations provides for the management and oversight of Agency missions, programs, functions and performance of NASA-wide activities. Agency Management and Operations activities at NASA Headquarters ensure that 1) core services are ready and available Agency-wide for performing our Mission roles and responsibilities, 2) the Agency operations are effective and efficient, and 3) our activities are conducted in accordance with all statutory, regulatory, and fiduciary responsibilities. NASA Headquarters develops policy and guidance for the Centers and provides strategic planning and leadership on the issues concerning availability, readiness, and sustainability. They also establish programs and initiatives to maximize individual and organizational capabilities. NASA Headquarters establishes Agency-wide requirements and capabilities that improve collaboration, efficiency, and effectiveness. Agency management leverages resources and capabilities to meet mission needs, eliminate excess Agency capacity, and scale assets accordingly.

Agency Management and Operations includes the Headquarters management of all essential corporate functions such as human capital, finance, information technology, infrastructure, procurement, chief counsel, protective services, occupational health and safety, equal opportunity and diversity, small business programs, external relations, and strategic communications. This theme is divided into the following four programs: Agency Management, Safety and Mission Success, Agency Information Technology Services, and Strategic Capabilities Assets Program. Beginning in this FY 2011 budget request, Innovative Partnerships Program has been transferred from Agency Management and Operations to Space Technology.

FY 2011 Budget Request

Budget Authority ($ millions)	FY 2009 Actual	FY 2010 Enacted	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
FY 2011 President's Budget Request	**921.2**	**941.7**	**841.2**	**842.2**	**849.1**	**856.8**	**867.9**
Agency Management	389.3	398.9	432.0	451.1	455.8	460.6	467.0
Safety and Mission Success	179.8	192.9	201.6	203.8	205.8	206.6	208.7
Agency IT Services (AITS)	163.9	145.3	177.8	157.5	157.7	159.5	161.7
Innovative Partnerships Program	160.2	175.2	0.0	0.0	0.0	0.0	0.0
Strategic Capabilities Assets Program	28.0	29.4	29.8	29.8	29.8	30.1	30.5
FY 2010 President's Budget Request	**921.2**	**961.2**	**956.9**	**964.5**	**972.3**	**981.5**	**--**
Agency Management	390.0	412.7	417.4	422.0	426.6	431.3	--
Safety and Mission Success	179.1	183.9	186.1	188.6	190.9	193.0	--
Agency IT Services (AITS)	163.9	150.4	138.3	138.0	138.3	139.7	--
Innovative Partnerships Program	160.2	184.8	184.9	185.7	186.3	187.0	--
Strategic Capabilities Assets Program	28.0	29.4	30.2	30.2	30.2	30.5	--
Total Change from FY 2010 Request	**0.0**	**-19.5**	**-115.7**	**-122.3**	**-123.2**	**-124.7**	**--**

Plans for FY 2011

Agency Management

The Agency Management program will continue to deliver policies, controls, and oversight across a range of functional and administrative management service areas including procurement, finance, human capital, real property and infrastructure, protective services, diversity, equal opportunity, and small business. The Agency Management program will continue to provide infrastructure support and facility operations for NASA Headquarters.

Safety and Mission Success

The Safety and Mission Success program will continue to administer and refine the pertinent policies, procedural requirements, and technical standards. The program will participate in forums that provide advice to the Administrator, Mission Directorates, Program Managers and Center Directors who are ultimately accountable for the safety and mission success of all NASA programs, projects, and operations. The plans for FY 2011 provide for an effective NASA Engineering and Safety Center, NASA Safety Center, and Independent Verification and Validation Facility as established and recognized components of a comprehensive remedial response to lessons learned from NASA's greatest tragedies. These organizations form a basis for a disciplined execution of safety, reliability, quality and system engineering needed for the successful pursuit of NASA's missions.

Agency IT Services (AITS)

NASA will continue operations for essential Agency IT services such as the Agency business applications, the NASA Scientific and Technical Information (STI) program, NASA Public Web portal, NASA Enterprise Architecture, and E-Government in FY 2011. The NASA Information Resources Management Strategic Plan focuses on four goals in this budget year associated with the Agency IT Services program. The four goals are: 1) improve the management of information and information technology, 2) improve the security of NASA information and information technology, 3) improve IT efficiency and collaboration capabilities, and 4) improve IT service delivery and visibility.

Strategic Capabilities Assets Program

Strategic Capabilities Assets Program (SCAP) will continue to provide management oversight and critical funding for our current portfolio of assets. These portfolios include thermal vacuum chambers which provide capability for thermally testing spacecraft, flight simulators which test air and space vehicles flight characteristics, and arc jet which provides capability for critical testing of re-entry materials.

Mission Directorate:	Cross-Agency Support
Theme:	Agency Management and Operations

Performance Achievement Highlights:

AMO supported on-going management and operations activities across the Agency and was responsible for operational efficiency gains in many mission support areas during this past year.

NASA implemented the initial phase of Security Operations Center (SOC) and initiated the second phase to improve incident management. The Agency re-architected NASA's identity, credentialing, and authentication management services to align with Federal Homeland Security Presidential Directive (HSPD-12) requirements. Several NASA Centers implemented a single directory service for managing desktops and laptops, enabling smartcard (HSPD-12 badges) access to desktops. As well, significant progress was achieved in implementation of Federal Desktop Core Configurations to strengthen Federal IT security by reducing opportunities for hackers to access and exploit government computer systems.

NASA finalized Requests for Proposals for new IT contracts that will consolidate and improve NASA's IT infrastructure. The Agency initiated development of an enterprise service desk and ordering system at the NASA Shared Services Center, which will effectively serve the entire Agency. NASA also 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.

NASA implemented Application Portfolio Management processes at all Centers, creating accurate application inventories and increased application visibility. The Agency established an enterprise licensing office at the NASA Shared Services Center (NSSC) that manages 375,000 licenses across eight product suites, resulting in $2.5M cost efficiencies and cost avoidance for the Agency.

NASA established a fully integrated state-of-the-art photo and ID/access control system in compliance with HSPD-12 requirements and deadlines. Currently, NASA has issued 100% of HSPD-12 compliant credentials/badges to NASA's eligible workforce. Noted counterintelligence accomplishments included conducting 17 full field investigations and producing Agency and Center-specific counterintelligence (CI) and counterterrorism (CT) threat assessments for all 9 centers and JPL.

The Agency established a solid baseline for the successful implementation of an Agency Safety Center in Cleveland, Ohio. Accomplishments include the 1) development of a technical qualification program for Agency Safety and mission assurance technical excellence, 2) trending of root causes and communication of lessons learned from Agency mishap investigations, and 3) continuation and improvement of the Agency safety and mission assurance review and audit program.

The NASA Engineering and Safety Center made progress resolving NASA's most critical mission success issues including the Shuttle Engine Cut-off Sensor reliability, Shuttle Wing Leading Edge reinforced carbon spallation, ISS rotary joint bearing life, and Orion seat landing loads attenuation, power system optimization, and acceleration options. The Agency developed a strategy for Agency-wide support of Product Data Management/Product Lifecycle Management standards and implementation.

Mission Directorate:	Cross-Agency Support
Theme:	Agency Management and Operations
Program:	Agency Management

FY 2011 Budget Request

Budget Authority ($ millions)	FY 2009 Actual	FY 2010 Enacted	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
FY 2011 President's Budget Request	389.3	398.9	432.0	451.1	455.8	460.6	467.0
Agency Management	389.3	398.9	432.0	451.1	455.8	460.6	467.0
FY 2010 President's Budget Request	390.0	412.7	417.4	422.0	426.6	431.3	--
Agency Management	390.0	412.7	417.4	422.0	426.6	431.3	--
Changes from FY 2010 Request	-0.8	-13.8	14.6	29.1	29.2	29.3	--

Mission Directorate:	Cross-Agency Support
Theme:	Agency Management and Operations
Program:	Agency Management

Program Overview

Agency Management provides governance and functional and administrative management oversight for the Agency and operational support for NASA Headquarters. Through Agency Management, policies, controls, and oversight are delivered across a range of functional and administrative management service areas. This program function primarily supports on-going operations. Agency Management support reflects the activities required for being in business in the federal sector and provides the capability to respond to legislated or other mandated services that the Agency must provide.

Agency Management activities are performed at NASA Headquarters with critical support provided by the NASA field centers. Distributed Agency Management activities are also performed at the NASA Management Office (NMO) at the Jet Propulsion Laboratory, Applied Physics Laboratory (APL), and the NASA Shared Services Center (NSSC) at Stennis Space Center. The Agency Management program supports over thirty-five discrete operations and mission support projects with over 210 separate activity line items.

Agency Management governance and oversight activities include the NASA Administrator and staff, finance, protective services, general counsel, public affairs, external relations, legislative affairs, training, human capital, procurement, real property and infrastructure, budget management, systems support, internal controls, diversity, equal opportunity, program analysis and evaluation, and small business programs.

The Agency Management program provides for the operational activities of Headquarters as an installation. These activities include building lease costs, facility operations costs such as physical security, maintenance, logistics, information technology hardware and software costs, and automated business systems implementation and operations costs including e-Government initiatives.

Agency Management provides for all the Headquarters civil service labor and related personnel costs (e.g. employee training, relocation allowances, workers' compensation) including the civil service labor for all the Mission Directorates. The program also covers the travel and business costs for over twenty mission support and staff offices of the Headquarters workforce.

The program is responsible for conducting independent technical assessments of Agency programs and delivers strategic planning services. Through Agency Management efforts, NASA program and mission performance are assessed and evaluated.

Plans For FY 2011

Agency Management will deliver policies, controls, and oversight across a range of functional and administrative management service areas, and provide independent technical assessments and strategic planning service, and direct the activities in procurement, finance, human capital, real property and infrastructure, protective services, diversity, equal opportunity, and small business.

Determination will be made in FY 2011 for the future housing of Headquarters office operations following the expiration of the current office building lease in July 2012. Award is tentatively scheduled for the summer of 2010. If any additional funding is required in FY 2011, it will be paid for by reallocations within the requested CAS funding level.

Project Descriptions and Explanation of Changes

Agency Management

The Agency Management budget includes Headquarters personnel salaries, benefits, travel, training, and operational costs such as rents, IT support, payroll information services, and facility services. Civil Service labor components include employee salaries and benefits and associated employee costs, such as, employee awards, promotions, lump sum retirement payments, worker's compensation, permanent change of station, recruit and retention allowances, transit subsidy program, student loan repayments and employee training. The FY 2011 labor budget supports 1,224 FTE.

HQ Operations elements include the lease costs for the rent of the HQ office building, and Inspector General leased space in New Jersey and California. Other significant operations activities include: IT and Communications infrastructure hardware and software acquisitions and maintenance, contracted IT support services, printing, graphics; facility operations support including physical security, custodial and maintenance services, equipment, expendable supplies, mail services, motor pool operations, logistics services, emergency preparedness, employee occupational health/fitness and medical services; human resources staffing, employee payroll and benefits processing, retirement services, grants awards, and employee training; costs of support provided by the Goddard Space Flight Center for accounting and procurement operations; costs of operations support, configuration maintenance, automated business and administrative systems; contract close-out services and payments to the Office of Naval Research for grants management ; equal opportunity alternate dispute resolution services, EEO complaint investigations and special emphasis diversity recognition program; and human resources.

Agency Management also provides the agency-wide management functions of finance, protective services, and program analysis. The Chief Financial Officer (CFO) is responsible for the financial leadership of NASA and its primary duty is to uphold strong financial management and accountability while providing timely, accurate, and reliable financial information and enhancing internal control. The Office of Protective Services (OPS) serves as the focal point for policy formulation, oversight, coordination and management of the Agency security, counter-intelligence (CI), counter-terrorism (CT), emergency preparedness planning, and continuity of operations functions. Independent Program and Cost Evaluation is an independent assessment organization that provides objective, transparent, and multidisciplinary analysis to support strategic decision making.

HEADQUARTERS BUDGET BY OFFICE

Agency Management Budget by Offiice ($ in miilions)	FY 2009 Funding	FY 2010 Enacted	FY 2011 Estimated	FY 2012 Estimated	FY 2013 Estimated	FY 2014 Estimated	FY 2015 Estimated
Total Agency Management	**389.3**	**398.9**	**432.0**	**451.1**	**455.8**	**460.6**	**467.0**
Missions	**60.9**	**67.5**	**71.2**	**74.0**	**75.5**	**78.4**	**80.2**
Science	23.7	26.2	27.6	28.7	29.3	30.4	31.1
Aeronautics Research	4.9	6.1	6.5	6.7	6.9	7.1	7.3
Space Technology (includes IPP)*	2.0	2.1	2.2	2.3	2.4	2.5	2.5
Exploration Systems	13.1	14.1	14.9	15.4	15.8	16.4	16.7
Space Operations	14.5	15.7	16.6	17.3	17.6	18.3	18.7
Education	2.7	3.2	3.4	3.5	3.6	3.7	3.8
Staff Offices	**121.3**	**124.4**	**129.2**	**132.3**	**132.6**	**136.6**	**138.9**
Office of the Administrator	3.3	4.2	4.3	4.5	4.6	4.7	4.8
Chief Engineer	4.0	4.6	4.9	5.0	5.1	5.3	5.5
Chief Financial Officer	27.4	27.8	29.1	29.9	30.2	31.3	31.6
Chief Health and Medical Officer	1.2	1.3	1.4	1.4	1.5	1.5	1.6
Chief Information Officer	5.1	6.7	7.1	7.3	7.5	7.8	8.0
Chief Scientist*							
Communications	17.4	14.5	10.8	10.7	10.6	10.9	11.2
Diversity and Equal Opportunity	5.7	4.5	4.6	4.6	4.7	4.8	4.9
General Counsel	9.0	8.9	9.4	9.7	9.8	10.1	10.3
Independent Program and Cost Evaluation	24.2	25.7	30.5	31.1	31.5	32.1	32.6
International and Inter-Agency Relations	11.8	13.0	13.5	13.9	13.3	13.6	13.9
Legislative and Intergovernmental Affairs	3.8	4.0	4.2	4.3	4.3	4.5	4.6
Safety and Mission Assurance	6.4	6.8	7.2	7.4	7.6	7.9	8.1
Small Business Programs	1.9	2.3	2.4	2.4	1.9	1.9	2.0
Mission Support	207.0	207.0	231.6	244.8	247.7	245.6	247.9
Budget Management and Systems Support	7.3	7.7	8.0	8.0	8.1	8.0	8.0
Human Capital Management	31.5	32.7	34.4	35.4	35.4	36.1	36.9
Headquarters Operations	115.9	114.0	124.3	123.0	126.1	122.1	122.6
Infrastructure	18.8	16.4	24.7	41.9	41.6	42.0	42.3
Internal Controls and Management Systems	2.4	2.4	2.5	2.6	2.6	2.7	2.7
Procurement	7.0	7.6	11.5	8.0	7.7	7.9	8.1
Program and Institutional Integration	10.5	10.6	11.2	10.8	10.9	11.1	11.2
Protective Services	13.7	15.7	15.1	15.2	15.4	15.7	16.0

*** Budget for the offices of the Chief Scientist and Technology Innovation have not yet been allocated**

HEADQUARTERS TRAVEL BUDGET BY OFFICE

Headquarters Travel Budget ($ in millions)	FY 2009 Actual	FY 2010 Current	FY 2011 Estimated
Total Headquarters Travel Budget	**11.2**	**11.5**	**11.4**
Missions	5.2	5.3	5.3
Science	1.3	1.2	1.2
Aeronautics Research	0.6	0.6	0.6
Space Technology (includes IPP)*	0.3	0.2	0.2
Exploration Systems	1.3	1.4	1.4
Space Operations	1.6	1.7	1.7
Education	0.2	0.2	0.2
Staff Offices	4.6	4.8	4.7
Office of the Administrator	0.4	0.4	0.4
Chief Engineer	0.5	0.5	0.5
Chief Financial Officer	0.4	0.6	0.6
Chief Health and Medical Officer	0.1	0.1	0.1
Chief Information Officer	0.4	0.4	0.3
Chief Scientist			
Communications	0.2	0.2	0.2
Diversity and Equal Opportunity	0.1	0.1	0.1
General Counsel	0.1	0.1	0.1
Independent Program and Cost Evaluation	0.9	1.1	1.2
International and Inter-Agency Relations	0.8	0.7	0.7
Legislative and Intergovernmental Affairs	0.1	0.1	0.1
Safety and Mission Assurance	0.3	0.3	0.3
Small Business Programs	0.1	0.1	0.1
Mission Support	1.4	1.4	1.4
Budget Management and Systems Support	0.0	0.0	0.0
Human Capital Management	0.1	0.1	0.1
Headquarters Operations	0.1	0.1	0.1
Infrastructure	0.4	0.4	0.4
Internal Controls and Management Systems	0.1	0.1	0.1
Procurement	0.2	0.2	0.2
Program and Institutional Integration	0.2	0.2	0.2
Protective Services	0.4	0.4	0.4

HEADQUARTERS FTE ASSIGNMENTS BY OFFICE

Headquarters	Total FTE FY 2009	SES FY 2009	Non-Career FY 2009	Contract WYE FY 2009	Total FTE FY 2010	SES FY 2010	Non-Career FY 2010	Contract WYE FY 2010	Total FTE FY 2011	SES FY 2011	Non-Career FY 2011	Contract WYE FY 2011
Total Agency Management	1179	128	11	729	1225	146	11	699	1225	146	11	666
Missions	374	40	0	213	393	48	0	171	393	48	0	138
Science	142	16	0	78	150	17	0	62	150	17	0	62
Aeronautics Research	31	5	0	12	36	9	0	7	36	9	0	7
Space Technology (includes IPP)*	12	1	0	1	12	1	0	1	12	1	0	1
Exploration Systems	81	6	0	44	84	8	0	14	84	8	0	14
Space Operations	91	9	0	62	93	10	0	71	93	10	0	38
Education	17	3	0	16	18	3	0	16	18	3	0	16
Staff Offices	472	63	11	171	490	71	11	163	490	71	11	164
Office of the Administrator	20	5	7	0	24	6	7	0	24	6	7	0
Chief Engineer	23	8	0	30	25	8	0	15	25	8	0	15
Chief Financial Officer	109	9	1	28	113	10	1	31	113	10	1	31
Chief Health and Medical Officer	8	1	0	3	8	1	0	3	8	1	0	4
Chief Information Officer	30	5	0	25	38	6	0	35	38	6	0	35
Chief Scientist												
Communications	51	5	1	26	48	6	1	26	48	6	1	26
Diversity and Equal Opportunity	20	3	0	13	20	3	0	5	20	3	0	5
General Counsel	44	5	0	0	43	6	0	0	43	6	0	0
Independent Program and Cost Evaluation	48	5	0	21	50	7	0	21	50	7	0	21
International and Inter-Agency Relations	51	7	0	12	53	7	0	6	53	7	0	6
Legislative and Intergovernmental Affairs	27	3	2	0	26	4	2	0	26	4	2	0
Safety and Mission Assurance	37	6	0	11	37	6	0	19	37	6	0	19
Small Business Programs	5	1	0	3	5	1	0	2	5	1	0	2
Mission Support	333	25	0	345	342	27	0	365	342	27	0	364
Budget Management and Systems Support	17	1	0	24	18	1	0	21	18	1	0	21
Human Capital Management	37	4	0	39	38	5	0	17	38	5	0	17
Headquarters Operations	91	3	0	273	96	4	0	302	96	4	0	302
Infrastructure	61	7	0	2	61	7	0	10	61	7	0	10
Internal Controls and Management Systems	11	1	0	1	11	1	0	1	11	1	0	1
Procurement	36	4	0	0	35	4	0	0	35	4	0	0
Program and Institutional Integration	34	3	0	3	35	3	0	5	35	3	0	4
Protective Services	46	2	0	5	49	2	0	9	49	2	0	9

FY 2011 Budget Request

Budget Authority ($ millions)	FY 2009 Actual	FY 2010 Enacted	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
FY 2011 President's Budget Request	179.8	192.9	201.6	203.8	205.8	206.6	208.7
Safety and Mission Assurance	44.3	48.2	49.0	49.5	49.9	50.5	51.2
Chief Engineer	87.0	101.1	103.6	105.2	106.8	106.9	108.4
Chief Health and Medical Officer	3.6	3.6	4.1	4.1	4.1	4.1	4.2
Independent Verification and Validation	45.0	40.0	45.0	45.0	45.0	45.0	45.0
FY 2010 President's Budget Request	179.1	183.9	186.1	188.6	190.9	193.0	--
Safety and Mission Assurance	42.9	48.3	48.8	49.3	49.7	50.4	--
Chief Engineer	87.0	102.2	103.6	105.3	106.8	107.0	--
Chief Health and Medical Officer	4.1	3.7	3.7	3.7	3.8	3.8	--
Independent Verification and Validation	45.0	29.7	30.0	30.3	30.6	31.9	--
Changes from FY 2010 Request	0.8	9.0	15.5	15.2	14.9	13.6	--

Mission Directorate:	Cross-Agency Support
Theme:	Agency Management and Operations
Program:	Safety and Mission Success

Program Overview

The Safety and Mission Success (SMS) program includes the NASA Headquarters programs for technical excellence, mission assurance and technical authority. SMS includes the corporate work managed by the offices of the Chief, Safety and Mission Assurance (including the NASA Safety Center and the Independent Verification and Validation Facility), the Chief Engineer (including the NASA Engineering and Safety Center), and the Chief Health and Medical Officer. The elements of SMS reflect the recommendations of many studies, boards and panels including the direct recommendations from two major accident investigations resulting in the loss of 14 astronauts (Challenger, 1986 and Columbia, 2003). The features of these programs directly support NASA's core values and serve to improve the likelihood for safety and mission success for NASA's programs, projects, and operations while protecting the health and safety of NASA's workforce. Aerospace technology advancement, because it is leading the edge of known capability, will always present a risk of catastrophe. SMS is the only resource that has the reduction of risk of failure as its exclusive focus.

SMS is responsible for developing policy and procedural requirements. The program provides advice to the Administrator, Mission Directorates, Program Managers and Center Directors who, due to their line management responsibilities, are ultimately accountable for the safety and mission success of all NASA programs, projects and operations and the safety and health of the associated workforce. In addition, SMS resources provide the foundation for NASA's system of "checks and balances" enabling the effective application of the strategic management framework and the technical authorities defined in NASA's Strategic Management and Governance Handbook. SMS funding maintains and trains a competent technical workforce within the disciplines of system engineering (including system safety, reliability, and quality) and space medicine.

Resources provided by SMS are essential for judging the implications on safety and mission success, as well as the health and medical aspects of new requirements and departures from existing requirements. With this funding, discipline experts judge the criticality of the associated risk and evaluate the risk acceptability through an established process of independent review and assessment. The information and advice from these experts is critical for developing key decision information for the proper execution of the delegated technical authority applied at program and project decision forums.

Plans For FY 2011

For FY 2011, the individual plans for each element of the SMS align with and directly support the objectives of the Agency's Mission Directorates by helping to improve the likelihood of safety and mission success for all NASA programs, projects, and operations. SMS managers will continue to administer and refine the pertinent policies, procedural requirements, and technical standards. The managers will participate in forums that provide advice to the Administrator, Mission Directorates, Program Managers and Center Directors who are ultimately accountable for the safety and mission success of all NASA programs, projects, and operations.

The plans for FY 2011 provide for an effective NASA Engineering and Safety Center, NASA Safety Center, and Independent Verification and Validation Facility as adjuncts and necessary to fulfilling the organization's assigned missions. This support assures that NASA civil service employees have, and continue to apply, the appropriate knowledge, skills, abilities, and tools for sound and well-informed decision-making on matters critical to safety and mission success. The plans will include prioritized development, maintenance, and conduct of training and education necessary for assuring the existence of a competent technical workforce. The plans include the required support for independent research, audit, and assessment of NASA activities that have risk for loss or failure.

These organizations charter independent reviews under SMS resources that judge the safety and likelihood of success of NASA activities and the health of those individuals exposed to risks that are not commonplace. The ability to author effective requirements, evaluate precisely the departures from conformance with existing requirements, and determine the criticality of the risk and evaluate and advise on its acceptability are totally reliant on the proper investment in SMS. This established process of independent review supports informed decision-making through the execution of delegated technical authority applied to program and project decisions. Without a robust application of these resources, the Agency strategy to challenge the validity of complex engineering and operational plans and proposals is flawed and subject to incuring unneccessary risks.

Due to the tremendous energies possessed by space debris, the collision between a piece of debris only a half-inch in diameter and an operational spacecraft has the potential for catastrophic consequences. The intentional destruction of the Chinese Fengyun-1C weather satellite in January of 2007 and the accidental collision of American and Russian spacecraft in February 2009 have increased the cataloged debris population by nearly 40 percent, in comparison with all the debris remaining from the first 50 years of the Space Age. For FY 2011, NASA, in connection with the U.S. Space Surveillance Network, will increase its effort in scientific studies to characterize the near-Earth space debris environment, to assess its potential hazards to current and future space operations, and to identify and to implement means of mitigating its growth. Enhancements to this space situational awareness data program during FY 2011, especially close approach predictions, offer the greatest near-term and lowest cost improvement to space safety.

Project Descriptions and Explanation of Changes

Safety and Mission Assurance

The SMS supports the Office of Safety and Mission Assurance (OSMA) by providing resources for independent evaluations of their approaches to improving mission success. OSMA is responsible for establishing and maintaining an acceptable level of technical excellence and competence in safety, reliability, maintainability and quality engineering within the Agency. OSMA assures that the risk presented by either a lack of safety requirement or from lack of compliance with a safety requirement is analyzed, assessed, communicated and used for proper decision-making and risk acceptance by the appropriate organizational leader.

Fundamental to these two responsibilities is the definition and execution of a robust and well understood methodology and process for the application of the disciplines of safety, reliability and quality (S, R and Q) in defining the level of risk. In addition, the organization conducts a schedule of review and assessments that focus on the life cycle decision milestones for crucial NASA programs and projects and S, R, and Q processes. Embodied in this program is a structured development of methodology and investigation into system attributes that improve the probability of mission success.

The NASA Safety Center (NSC) in Cleveland, OH assists OSMA in achieving its objectives in consolidating SMS efforts agency-wide in four key areas: safety and mission assurance (SMA) technical excellence, knowledge management, audits and assessments, and mishap investigation support. Since being established in FY 2007, the NSC has: (1) established a Technical Excellence initiative to improve and formalize training and qualification requirements for five SMA engineering disciplines (system safety; reliability and maintainability; quality; software assurance; and operational and aviation safety); (2) undertaken streamlined processes to increase and sustain domain knowledge within the SMA community through the facilitation, storage and retrieval of important documents and lessons learned; by providing data analysis and trending of mishap-related data; by rapidly disseminating mishap-related Agency Safety Alerts; and improving the Agency Incident Reporting Information System, a comprehensive, Agency-wide tool used for reporting mishaps and close calls; (3) continued to evaluate and streamline the conduct of facilities, programmatic and supplier audits; and (4) assembled and deployed a trained team of mishap investigators to support mishap investigations boards. The end result of these activities is to promote the highest level of safety and reliability for NASA's programs and projects. This increase in request is to make the NASA Safety Center in Cleveland, OH fully operational.

Chief Engineer

The SMS supports the Office of Chief Engineer (OCE) by providing the resources for independent and senior engineering expertise to enhance mission success. The OCE promulgates policy and requirements for program and project management, for the engineering excellence of the Agency, system engineering methodology, and for the Agency's system of engineering standards. The Office of Chief Engineer manages the NASA Engineering and Safety Center (NESC), which is responsible for rapid, cross-Agency response to mission-critical engineering issues and for improving the state of practice in critical engineering areas. OCE also sponsors the Academy of Program/Project and Engineering Leadership (APPEL) to develop Program and Project Management and Systems Engineering skills.

APPEL delivers the necessary program/project management and engineering competence learning through the application of learning strategies, methods, models and tools. APPEL provides professional development products and services for individual practitioners and program and project teams. This includes a formal training curriculum designed to address four career levels from recent college graduate to executive; direct support to project teams in the field through workshops, coaching, and technical experts; and conferences, forums and publications.

The NESC, established in FY 2003 in response to the Columbia accident, responds rapidly to cross-Agency mission-critical engineering issues and for improving the state of the practice in critical engineering areas. The NESC performs value-added independent testing and analyses and technical assessments of NASA's projects and technical activities to enhance safety and mission success. The NESC works proactively to help NASA avoid problem recurrence and to prevent future problems. SMS funding provides for the core NESC organization of senior engineering experts from across the Agency, including the NASA Technical Fellows and their Technical Discipline Teams composed of experts from NASA, industry, and academia.

Chief Health and Medical Officer

The Office of the Chief Health and Medical Officer (OCHMO) promulgates Agency health and medical policy, standards, and requirements, assuring the medical technical excellence of the Agency, assuring the physical and mental health and well being of the NASA workforce, and assuring the safe and ethical conduct of NASA-sponsored human and animal research. OCHMO exercises oversight of NASA medical and health related activities through audit processes, and monitors the implementation of health and medical related requirements and standards in all developmental human spaceflight programs through designated discipline experts at NASA Centers. OCHMO also provides oversight of medical and health related activities in operational human spaceflight through Center-based discipline experts and clinical boards. On-going medical and health discipline professionalism and licensure is supported through annual certified Continuing Medical Education (CME) activities, and flight surgeon education and clinical currency is provided through OCHMO-sponsored, university based physician training programs. NASA's biomedical research programs in support of human spaceflight are guided by OCHMO-developed health and medical standards. Center-based review boards under OCHMO sponsorship provide direct supervision of NASA-sponsored human and animal research safety and ethics, completing a comprehensive system of oversight to maintain robust health and medical support of NASA personnel at all levels.

Independent Verification and Validation

The NASA Independent Verification and Validation (IV&V) Project, as a part of the Agency's overall Safety and Mission Success Program, supports the Office of Safety and Mission Assurance (OSMA) by providing software expertise, services and resources to improve the likelihood for safety and mission success for NASA's programs, projects, and operations while protecting the health and safety of NASA's workforce. The NASA IV&V Project performs independent software analysis activities on NASA's most critical software systems as a "checks and balances" to assure safety and mission success of those systems.

The IV&V Project provides systems engineering activities that improve software safety, reliability, and quality of NASA programs and projects through effective applications of systems and software IV&V methods, practices, techniques, and tools. The NASA IV&V Facility applies software engineering best practices to evaluate the correctness and quality of critical and complex software systems throughout the project's System Development Life Cycle.

The IV&V Project provides resources and expertise to other OSMA elements in support of independent evaluations of software related approaches and processes, developing software related policy and procedural requirements, evaluating risks associated with new software requirements and/or departures from existing requirements, sustaining software technical excellence in the SMA community, sustaining software domain knowledge within the SMA organization, and in developing software development improvement recommendations to the Agency.

Mission Directorate:	Cross-Agency Support
Theme:	Agency Management and Operations
Program:	Agency IT Services (AITS)

FY 2011 Budget Request

Budget Authority ($ millions)	FY 2009 Actual	FY 2010 Enacted	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
FY 2011 President's Budget Request	163.9	145.3	177.8	157.5	157.7	159.5	161.7
IT Management	18.1	28.6	16.1	16.6	16.4	16.7	17.0
Applications	64.0	68.4	79.1	70.6	70.9	71.7	72.6
Infrastructure	81.8	48.3	82.6	70.4	70.4	71.1	72.1
FY 2010 President's Budget Request	163.9	150.4	138.3	138.0	138.3	139.7	--
IT Management	17.3	31.9	25.8	25.1	24.0	23.0	--
Applications	67.2	70.2	66.1	66.7	67.1	68.8	--
Infrastructure	79.4	48.3	46.4	46.2	47.2	47.9	--
Changes from FY 2010 Request	0.0	-5.1	39.5	19.5	19.4	19.8	--

Mission Directorate:	Cross-Agency Support
Theme:	Agency Management and Operations
Program:	Agency IT Services (AITS)

Program Overview

The principles underlying the Agency IT Services (AITS) program are for NASA's information and information technology to enable the NASA mission, to provide for efficiencies and be efficiently delivered, and to be secure and integrated. Accordingly, the program provides for centrally-managed, consolidated enterprise-level services benefitting the entire Agency. The three following projects constitute the AITS program: IT Management, Applications, and IT Infrastructure (which includes IT security).

Within the IT Management project, NASA incorporates the necessary budget for the NASA Chief Information Officer to ensure effective management of the Agency's IT resources in accordance with federal laws and regulations, OMB guidance, and industry best practices. It enables the Agency to meet requirements in areas such as privacy, records management, information collections, and information quality, as well as value-added activities such as enterprise architecture, capital planning and investment control, and IT project management. Additionally, it incorporates payments to other Federal agencies for E-Government services.

Within the Applications project, NASA incorporates the development and sustaining support of Agency applications for mission support functions, such as financial management, supply management, procurement management, human capital management, etc. These services are provided by the NASA Enterprise Applications Competency Center in Huntsville, Alabama. It also includes enterprise licensing agreements and Scientific and Technical Information management on behalf of the Agency.

Within the IT Infrastructure project, NASA incorporates core IT and infrastructure services such as the NASA Public Web Portal, email, calendaring, directory services, enterprise license management, identity and credential management. Due to the close relationship between IT infrastructure and IT security, NASA incorporates IT security-related initiatives within the IT Infrastructure project. These initiatives include the NASA Security Operations Center, Agency penetration testing, vulnerability scanning, patch management and reporting, and other proactive measures to mitigate security threats.

Plans For FY 2011

For FY 2011, the AITS program will largely provide sustaining operations for essential Agency information management and IT needs under the IT Management project, Applications project and the IT Infrastructure project, with some development, modernization and enhancement (DME) planned.

The Applications project is planning significant DME activities for FY 2011 including the implementation of the SAP module for Supply Management, which will enable NASA to decommission the existing NASA Supply Management System (NSMS). NSMS currently runs on the only remaining mainframe computer at NASA, which NASA intends to decommission in concert with termination of the Space Shuttle program.

The IT Infrastructure and Security project is planning significant DME activities for FY 2011 including implementation of new contracts for for End-User Services, Integrated Communications Services (local and wide area networks), Consolidated Data Center Services, and Public Web Services. In addition, the Agency plans to implement an Enterprise Service Desk and Ordering System for Agency IT services beginning in FY 2011. The implementation of these new contracts and services will pave the way towards consolidation of NASA's networks and network management to gain efficiencies, improve security and enable cross Center data sharing required to effectively execute the NASA mission. In addition, it provides the means to consolidate data center capabilities in order to gain efficiencies and reduce related infrastructure on NASA Centers. Under the consolidated End User Services contract, NASA expects improved standardization of desktop and laptop configurations, as well as increased effectiveness in applying patches. In addition, NASA will invest in renewal of network infrastructure where necessary to mitigate risks of prolonged network outages, most notably by replacing obsolete routers on the mission network and replacing outdated wiring and electronics within some Center networks.

Project Descriptions and Explanation of Changes

IT Management

The IT Management Project provides Agency level services for managing IT and meeting internal and external requirements relative to Agency CIO responsibilities. Included in this project are fees paid to E-Gov managing partners for the various E-Gov activities and Federal CIO Council Committees in which NASA participates. This project also constitutes the budget for the NASA Office of the CIO to meet OMB guidance, Executive Orders, laws and regulations relative to E-Government, Paperwork Reduction and Information Collection, the Federal Information Security Management Act, Records Management, Mail Management, Forms Management, Privacy, Capital Planning and Investment Control, and IT Budget Formulation under Circular A-11.

Applications

The Applications Project provides steady state operations of NASA's business and management systems developed under the Integrated Enterprise Management Program, such as, the Core Financial System (SAP), Integrated Asset Management System, the Human Capital Information Environment, and Aircraft Management Module. This project also provides Scientific and Technical Information (STI) services for the Agency. It also supports the implementation of E-Gov initiatives across the Agency, such as, E-Travel, Grants.gov and E-Training. Changes for FY 2011 include $8.45M to transition the existing NASA Supply Management System off of the mainframe computer, which is being decommissioned by NASA.

Infrastructure

The IT Infrastructure Project provides common core infrastructure services across the Agency, such as, the NASA Public Web portal, enterprise licensing, Personal Identification Verification (PIV) card systems required for identity and credential management for logical access control, and configuration control capabilities for networks, end-user services, and data centers. This project also provides IT security capabilities at the Agency level, such as the Security Operations Center (SOC), third party penetration testing, vulnerability scanning, and patch management. For FY 2011, an increase in funding will be applied to renew the aging IT network infrastructure including the mission network. Additionally, NASA has realigned IT funds within the Agency in order to implement a common funding model for IT services beginning in FY 2011. Under this model, email, calendaring, directory services, software management and other core Agency infrastructure services will be provided by the Agency End User Services contract and funded by the AITS IT Infrastructure project.

Mission Directorate:	Cross-Agency Support
Theme:	Agency Management and Operations
Program:	Strategic Capabilities Assets Program

FY 2011 Budget Request

Budget Authority ($ millions)	FY 2009 Actual	FY 2010 Enacted	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
FY 2011 President's Budget Request	28.0	29.4	29.8	29.8	29.8	30.1	30.5
Simulators	11.5	11.7	11.7	11.7	11.7	11.8	12.2
Thermal Vacuum Chambers	7.2	8.3	8.4	8.4	8.4	8.5	8.5
Arc Jets	9.3	9.4	9.7	9.7	9.7	9.8	9.8
FY 2010 President's Budget Request	28.0	29.4	30.2	30.2	30.2	30.5	--
Simulators	11.5	11.7	12.1	12.1	12.1	11.9	--
Thermal Vacuum Chambers	7.2	8.3	8.4	8.4	8.4	8.7	--
Arc Jets	9.3	9.4	9.7	9.7	9.7	9.9	--
Changes from FY 2010 Request	0.0	0.0	-0.4	-0.4	-0.4	-0.4	--

Program Overview

NASA's Strategic Capabilities Assets Program (SCAP) ensures that identified operational core assets and capabilities are available to support NASA's current and future missions. The SCAP establishes an alliance between all centers with like assets; makes decisions on disposition of capabilities no longer required; identifies re-investment/re-capitalization requirements within and among classes of assets; and implements changes. SCAP reviews the assets' capabilities each year to ensure the requirements continue to be valid.

SCAP ensures that essential test facilities are in a state of "ready to test". It maintains the skilled operational workforce and performs essential preventative maintenance to keep core facilities available to meet program requirements. The core capabilities supported within SCAP are Thermal Vacuum Chambers, Simulators, and Arc Jet facilities.

For additional information on SCAP, please see: http://oim.hq.nasa.gov/oia/scap/index.html.

Plans For FY 2011

SCAP will sustain the strategic technical capabilities needed by NASA for successful missions. SCAP will institute consistency in reimbursable pricing policies, perform quarterly program performance reviews continually reassess the strategy and provide a forum for cooperation between all centers within asset classes.

SCAP will ensure maximum benefit across government by broadening its alliances outside of the Agency for capabilities, such as, thermal vacuum chambers. By initiating new organizations, such as, the Space Environments Simulation Facilities Alliance (SESFA) between NASA, DOD, and other entities. This year an arc jet alliance will be established to allow coordination between DOD and NASA in this test area. SCAP will examine and scrutinize new proposals for additional capabilities that are submitted as part of the FY 2011 budget process.

SCAP is committed to continue developing and implementing disposition plans for assets which are no longer required by the Agency.

Project Descriptions and Explanation of Changes

Simulators

SCAP sustains operations of simulators which are critical components of the success of NASA's Aeronautics Research in the areas of fundamental aeronautics and aviation safety. This capability includes an array of research and development manned flight simulator assets at ARC and LaRC which are in the operations phase. Principal assets include the Vertical Motion Simulator, a large motion system, and its supporting cabs, laboratories, and equipment at ARC which provides scientists and engineers with tools to explore, define, and resolve issues in both vehicle design and missions operations. The Cockpit Motion Facility and its supporting suite of simulators (the Differential Maneuvering Simulator and the Visual Motion Simulator) and other central support facilities at LaRC are designed to support aeronautics and spaceflight vehicle research studies in which motion cues are critical to the realism of the experiments being conducted.

Thermal Vacuum Chambers

SCAP sustains thermal-vacuum, vacuum, and acoustic chambers at NASA facilities (Glenn Research Center, Goddard Space Flight Center, Jet Propulsion Laboratory, Johnson Space Center, Kennedy Space Center, Marshall Space Flight Center, and Plum Brook Station) that simulate conditions in the launch and space environments. These assets are large enough to accommodate a spacecraft with adequate space surrounding the structure for safe, easy access while inside the chamber. Chambers with minimum outline dimensions of 10 ft. by 10 ft. will generally meet this provision. These chambers have the capability of producing pressures of 1 X 10-2 torr or lower and thermal shrouds capable of liquid nitrogen temperatures or lower. Acoustic chambers are capable of generating approximately 150 dB at frequencies in the range of 25 to 1000 Hertz. These chambers perform significant risk mitigation for most of NASA payloads launched into space as well as many in other government agencies such as NOAA, and DOD. Almost all spacecraft launched into space must first be tested in one of NASA's thermal vacuum chambers.

Arc Jets

The NASA SCAP sustains arc-jet complexes located at Ames Research Center and the Johnson Space Center. An arc jet provides simulated high temperature, high velocity environments that support the design, development, test and evaluation (DDT&E) activities in thermal protection materials, vehicle structures, aerothermodynamics, and hypersonics. A gas (typically air) is heated and accelerated to supersonic/hypersonic speeds by a continuous electrical arc. This high-temperature gas passes over a test sample, producing an approximation of the surface temperature and pressure environments experienced by a vehicle on atmospheric entry. Arc jet testing has been critical in the safe return of Space Shuttles from orbit with tile damage. In addition, arc jet testing performed essential validation of materials for the Mars entry missions such as Mars Science Laboratory. NASA maintains two of the four arc jets in the United States providing a critical national capability.