Inspector General

Overview

The NASA Office of Inspector General (OIG) budget request for FY 2011 is $37.0 million. The NASA OIG consists of 192 auditors, analysts, specialists, investigators, and support staff at NASA Headquarters in Washington, DC, and NASA Centers throughout the United States. The FY 2011 request supports the OIG mission to prevent and detect crime, fraud, waste, abuse, and mismanagement while promoting economy, effectiveness, and efficiency within the Agency.

The OIG Office of Audits (OA) conducts independent, objective audits and reviews of NASA and NASA contractor programs and projects to improve NASA operations, as well as a broad range of professional audit and advisory services. It also comments on NASA policies and is responsible for the oversight of audits performed under contract. OA helps NASA accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the economy, efficiency, and effectiveness of NASA operations.

The OIG Office of Investigations (OI) identifies, investigates, and refers for prosecution cases of crime, waste, fraud, and abuse in NASA programs and operations. The OIG's federal law enforcement officers investigate false claims, false statements, conspiracy, theft, computer crimes, mail fraud, and violations of federal laws, such as the Procurement Integrity Act and the Anti-Kickback Act. Through its investigations, OI also seeks to prevent and deter crime at NASA.

NASA's FY 2011 OIG request is broken out as follows:

- $30.9M (83.5 percent) of the proposed budget is dedicated to personnel and related costs, including salaries, benefits, monetary awards, worker's compensation, permanent change of station costs, as well as the Government's contributions for Social Security, Medicare, health and life insurance, retirement accounts, and matching contributions to Thrift Savings Plan accounts. Salaries include the required additional 25 percent law enforcement availability pay for criminal investigators.

- $1.2M (3.3 percent) of the proposed budget is dedicated to travel, per diem at current rates, and related expenses. The OIG staff is located at 12 offices on or near NASA installations and contractor facilities.

- $1.7M (4.6 percent) of the proposed budget is dedicated to operations and includes funding for training, government vehicles, special equipment for criminal investigators, metro subsidies, and information technology equipment unique to the OIG.

- $3.2M (8.6 percent) of the proposed budget is funding for the Agency's annual financial audit.

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	**35.6**	**36.4**	**37.0**	**37.8**	**38.7**	**39.6**	**40.5**
Inspector General	35.6	36.4	37.0	37.8	38.7	39.6	40.5
FY 2010 President's Budget Request	**35.6**	**36.4**	**37.0**	**37.8**	**38.7**	**39.6**	**--**
Inspector General	35.6	36.4	37.0	37.8	38.7	39.6	--
Total Change from FY 2010 President's Budget Request	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**--**

Note: In accordance with Public Law 110-409, Inspector General Reform Act of 2008, the Inspector General certifies that the $.4M for staff training and $.1M to support the Council of Inspectors General on Economy and Efficiency included in the budget request satisfy all known training requirements and planned contributions to the Council.

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. Budget shown is the same as the IG's original request to the Agency.

Plans for FY 2011

Inspector General

Inspector General

New Initiatives:

None

Major Changes:

None

Major Highlights for FY 2011

The FY 2011 budget estimates for the IG is a total of $37.0 million:
Personnel and related costs $30.9 million
Travel $1.2 million
Operations and Equipment $4.9 million

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CIVIL SERVICE FULL-TIME EQUIVALENT DISTRIBUTION BY CENTER

The workforce level proposed in the budget supports NASA's traditional investments in space exploration, aeronautics research, space technology development, science investigation, and sharing the results of Agency activities with the public, educators, and students.

Average Agency FTE levels of nearly 18,300 are expected from FY 2010 through FY 2015. The workforce will demonstrate the relevance to society of its work, apply itself to contemporary problems, lead or participate in emergent technology opportunities, and communicate the results of Agency programs and activities.

The Agency will apply its capabilities to the range of mission, research and technology work while continuing workforce reshaping and realignment to adjust to emerging requirements. The Agency anticipates offering buyouts in selected surplus skill areas, and it expects to identify, recruit, and retain employees who possess essential/critical skills and competencies. To promote workforce revitalization and adaptability, the Agency has set a goal of having no more than 85% of all Civil Service Science and Engineering (S&E) employees employed as Full-Time Permanent (FTE) Employees. These strategies are making good use of the flexibilities granted to the Agency in the NASA Flexibility Act of 2004.

	Actuals[1]	FTE Estimates[2]					
	FY09	FY10	FY11	FY12	FY13	FY14	FY15
ARC	1,254	1,233	1,234	1,222	1,222	1,222	1,222
DFRC	556	553	555	551	547	547	547
GRC	1,607	1,659	1,662	1,652	1,642	1,634	1,634
GSFC	3,131	3,263	3,272	3,252	3,232	3,212	3,212
JSC	3,342	3,336	3,338	3,322	3,322	3,322	3,322
KSC	2,131	2,153	2,156	2,136	2,136	2,136	2,136
LaRC	1,895	1,945	1,946	1,927	1,927	1,927	1,927
MSFC	2,609	2,566	2,567	2,561	2,561	2,561	2,561
SSC	268	275	276	272	272	272	272
HQ	1,179	1,225	1,225	1,225	1,225	1,225	1,225
NSSC	128	146	146	146	146	146	146
TOTAL	**18,100**	**18,354**	**18,377**	**18,266**	**18,232**	**18,204**	**18,204**

[1]Includes 250 student FTE *[2]Includes 267 student FTE each FY*

BUDGET FOR FY 2011 BY OBJECT CLASS CODE

The following tables reflect projections of obligations for FY 2011 based on FY 2009 actual obligations. The tables and data are organized to reflect the Mission Directorate structure which began in the FY 2009 budget with the exception of the Construction and Environmental Compliance and Restoration mission which was initiated in FY 2010.

FY 2011 Total and Mission Directorate Estimates ($M)	NASA	SCIENCE	AERONAUTICS AND SPACE RESEARCH AND TECHNOLOGY	EXPLORATION	SPACE OPERATIONS	EDUCATION	CROSS AGENCY SUPPORT	CONSTRUCTION AND ENVIRONMENTAL COMPLIANCE AND RESTORATION
Personnel compensation								
Full-time permanent	1,906	213	209	368	275	4	837	0
Other than full-time permanent	148	16	17	42	26	0	48	0
Other personnel compensation	52	1	2	3	3	0	43	0
Special personal service payments	1	0	0	0	0	0	1	0
Total Personnel compensation	**2,108**	**230**	**228**	**413**	**304**	**4**	**929**	**0**
Civilian personnel benefits	534	59	57	109	77	0	231	0
Benefits to former personnel	5	0	0	1	1	0	3	0
Travel & transportation of persons	85	16	8	20	15	1	25	0
Transportation of things	837	1	0	1	832	0	3	0
Rental payments to GSA	26	0	0	0	0	0	26	0
Rental payments to others	8	5	0	0	1	0	2	0
Communications, utilities & misc charges	126	6	8	7	26	0	79	0
Printing and reproduction	8	2	0	0	1	0	5	0
Advisory and assistance services	660	121	31	289	52	3	164	0
Other services	811	249	50	66	118	7	322	0
Other purchases of goods & services from Gov accounts	310	111	6	52	86	0	54	0
Operation and maintenance of facilities	2,059	20	45	187	1,144	1	279	382
Research & development contracts	8,594	3,488	490	2,475	1,822	7	312	0
Medical care	4	0	0	0	0	0	4	0
Operation and maintenance of equipment	625	63	21	50	175	2	315	0
Supplies and materials	155	24	21	41	39	0	30	0
Equipment	207	41	19	19	81	0	47	0
Land and structures	281	9	10	65	26	0	172	0
Grants, subsidies, and contributions	880	551	53	85	4	127	60	0
TOTAL DIRECT	**18,322**	**4,996**	**1,047**	**3,880**	**4,804**	**151**	**3,062**	**382**

STATUS OF UNOBLIGATED FUNDS

The figures below represent actual unobligated balances within NASA's individual appropriation accounts as of September 30, 2009, and estimates for the disposition of those accounts at the future dates specified.

FY 2009 – FY 2011 Appropriations ($ in millions)	Unobligated Balances Sept. 30, 2009 [1]	Estimated Unobligated Balances Sept. 30, 2010	Estimated Unobligated Balances Sept. 30, 2011
Science	317	91	100
Aeronautics and Space Research & Technology	154	10	115
Exploration	229	47	430
Space Operations	12	63	147
Education	28	27	22
Cross-Agency Support	80	22	71
Construction and Environmental Compliance and Restoration		112	127
Inspector General	2	0	0
Total NASA	**822**	**372**	**1,012**

Prior Year Appropriations ($ in millions)	Unobligated Balances Sept. 30, 2009	Estimated Unobligated Balances Sept. 30, 2010	Estimated Unobligated Balances Sept. 30, 2011
Science, Exploration, & Aeronautics	27		
Exploration Capabilities	31		
Science			
Aeronautics			
Exploration			
Space Operations			
Education			
Cross-Agency Support			
CoF & ECR			
Total NASA	**58**	**0**	**0**

[1] FY 2009 Unobligated balances includes $608 million of 2009 Recovery Act funding

REIMBURSABLE ESTIMATES

Reimbursable agreements are agreements where the NASA costs associated with the undertaking are borne by the non-NASA partner. NASA undertakes reimbursable agreements when it has equipment, facilities, and services that it can make available to others in a manner that does not interfere with NASA mission requirements. As most reimbursable requests to NASA do not occur until the year of execution, the FY 2011 estimate is based on historical data.

Budget Authority ($ in millions)	FY 2009 Actual	FY 2010 Enacted	FY 2011
Cross Agency Support	1,351.4	1,717.2	1,700.0
Office of Inspector General	0.5	1.2	1.2
Total	**1,351.9**	**1,718.4**	**1,701.2**

ENHANCED USE LEASING

In 2003, NASA was authorized by Congress to demonstrate leasing authority and collections at two Centers. In 2007 and in 2008, that authority was amended by Congress such that NASA may enter into leasing arrangements at all Centers after December, 2008. After deducting the costs of administering the leases, Centers are then permitted to retain 65% of net receipt revenue, and the balance is made available Agency-wide for NASA. These funds are in addition to annual appropriations. To ensure annual oversight and review, the 2010 Consolidated Appropriations Act, P.L. 111-117, contains a provision that requires NASA to submit an estimate of gross receipts and collections and proposed use of all funds collected in the annual budget justification submission to Congress. There are no civil servants funded from EUL income. The table below depicts the estimated FY 2011 Enhanced Use Leasing (EUL) expenses and revenues. The amounts identified under Capital Asset Account Expenditures may be adjusted between projects listed based on actual contract award.

FY2011 EUL Expenses and Revenues ($K)	ARC	KSC	Agency	Total
Base Rent	$6,612.2	$57.9		$6,670.1
Institutional Support Income	$1,747.5	$14.4		$1,761.9
Total Rent Income	**$8,359.7**			**$8,359.7**
Institutional Support Costs	-$1,747.5	-$14.4		-$1,761.9
Lease Management and Administration	-$720.0			-$720.0
Tenant Building Maintenance and Repair	-$320.0			-$320.0
Total Cost Associated with Leases	**-$2,787.5**	**-$14.4**		**-$2,801.9**
Net Revenue from Lease Activity	**$5,572.2**	**$57.9**		**$5,630.1**
Beginning Balance, Capital Asset Account	**$0.0**	**$0.0**		**$0.0**
Net Revenue from Lease Activity	**$3,621.9**	**$37.6**	**$1,970.5**	**$5,630.0**
- Planned Maintenance, Various building (ARC)	$1,600.0			$1,600.0
- Life Safety and Seismic Repairs, Various Buildings (ARC)	$212.0			$212.0
- Replace Roofs, Various Building (ARC)	$1,750.9			$1,750.9
- Replace Roof on Building N231 ARC Jet Lab & Machine Shop (ARC)	$59.0			$59.0
- Energy and Sustainability Upgrades, Various Buildings (Various Centers)			$1,970.5	
Center Capital Asset Account Expenditures	**$3,621.9**	**$0.0**	**$1,970.5**	**$5,592.4**
Capital Asset Account Ending Balance	**$0.0**	**$37.6**	**$0.0**	**$37.6**
Additional Reimbursable Demand Services Requested by Leasees (including overhead)	$1,091.8			$1,091.8
Cost to Fulfill Reimbursable Demand Services (including overhead)	-$1,091.8			-$1,091.8
Net activity due to Reimbursable Demand Services	**$ -**	**$ -**		**$0.0**
In Kind	**$425.0**	**$ -**		**$425.0**

Enhanced Use Leasing Definitions:

Base Rent - Revenue collected from tenant for rent of land or buildings.
Institutional Support Costs - Cost for institutional shared services such as fire, security, first responder, communications, common grounds, road, and infrastructure maintenance, and routine administrative support and management oversight (i.e., environmental).
Total Rental Income - Total gross proceeds from EUL activities for expenses due to renting NASA property.
In-Kind - Consideration accepted in lieu of rent payment. (Only applies to selected leases signed prior to Jan 1, 2009).
Reimbursable Demand Services - Services such as janitorial, communications, and maintenance that solely benefit the tenant and provided for their convenience. There is no net income received by NASA, as these payments may only cover the costs of NASA and its vendors providing these services.
Overhead - General and administrative costs associated with management of the specified demand services.

BUDGET FOR SAFETY OVERSIGHT

The following table provides the safety and mission assurance budget estimates. This includes the Agency-wide safety oversight functions as well as the estimated project specific safety, reliability, maintainability and quality assurance elements embedded within individual projects. The figures shown in the table below do not include safety and mission assurance costs associated with lower level NASA projects. The out-year numbers are estimates.

$ In Millions	FY 2009 Actual	FY 2010 Enacted	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total Safety Oversight	**485.3**	**498.2**	**494.8**	**498.2**	**507.8**	**517.5**	**527.5**
Agency-wide Safety Oversight	**115.7**	**121.2**	**123.0**	**125.0**	**127.1**	**129.2**	**131.5**
Safety and Mission Assurance	44.3	48.3	48.8	49.3	49.8	50.4	51.0
Institutional Operational Safety	25.2	25.7	26.2	26.7	27.3	27.8	28.4
Technical Authority	23.4	23.9	24.3	24.8	25.3	25.8	26.4
Safety & Mission Assurance Spt.	22.8	23.3	23.7	24.2	24.7	25.2	25.7
Program Specific	**369.6**	**377.0**	**371.8**	**373.2**	**380.7**	**388.3**	**396.0**
Exploration	43.4	44.3	185.0	275.0	280.5	286.1	291.8
Science	69.0	70.4	71.8	73.2	74.7	76.2	77.7
Space Operations	257.2	262.3	115.0	25.0	25.5	26.0	26.5

Agency-wide Safety Oversight: Agency level programs and activities that support the overarching NASA Safety and Mission Success program.

Safety and Mission Assurance
The Safety and Mission Assurance program administers and refines the pertinent policies, procedural requirements, and technical safety standards. The program 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. Specific program responsibility include, among other activities, managing NASA's Orbital Debris program, NASA's Electronic Parts program and the NASA Safety Center.

Institutional Operational Safety
NASA's institutional operational safety program is driven by OSHA 29 CFR 1960, OSHA Standards, NPR 8715.1, NASA Safety and Health Handbook Occupational Safety and Health Programs, NPR 8715.3, and NASA's general safety program requirements. The program includes construction safety, the mishap prevention program including reporting and investigations, safety training, safety awareness, the safety management program, safety metrics and trend analysis, contractor insight/oversight, support to safety boards and committees, support to emergency preparedness and fire safety program, aviation safety, explosives and propellants safety, nuclear safety requirements, radiation safety protection, confined space entry, fall protection, lifting devices, pressure vessel safety, hazard reporting and abatement systems, cryogenic safety, electrical safety requirements (lock out/tag out), facility systems safety, risk management, institutional safety policy development, visitor and public safety, and institutional safety engineering. The institutional operational safety program requires significant federal state and local coordination.

Supporting Data: Budget for Safety Oversight (continued)

Safety and Mission Assurance (S&MA) Technical Authority
The S&MA technical authority program includes labor and travel only for all S&MA supervisors, branch chiefs or above and designated deputies. In addition, where the principal job function of a non-supervisory S&MA person consists of rendering authoritative decisions on S&MA requirement matters relating to the design or operation of a program or project, that person's salary is included. These positions often are the lead S&MA manager positions for large programs where the decision making process is nearly a full time demand. This category does not include salary for those whose work only occasionally falls as an authority task. This includes travel funds in direct support of these individuals.

Safety & Mission Assurance Mission Support
S&MA mission support, including administrative support, which cannot be directly charged to a program. This budget includes policy development across the programs, range safety, payload safety (ground processing), independent assessments, metrology and calibration (for Center), reliability and maintainability policy, Center-wide S&MA program integration and analysis, business and administrative support to S&MA Directorates, and quality assurance for facilities and ground support hardware.

Program Specific: Project specific activities that support the safety and mission success needs of an individual project.

BUDGET FOR PUBLIC RELATIONS BY CENTER

The NASA budget for Public Affairs is not funded by programs. Instead, it is budgeted in two separate accounts under 1) Center Management and Operations (CMO) and 2) Agency Management and Operations (AMO). All the Installations listed below with the exception of Headquarters are in the CMO account. The Headquarters budget is in the AMO account.

These budgets include dissemination of information to the news media and the general public concerning NASA programs. Content includes support for public affairs/public relations, Center newsletters, internal communications, guest operations (including bus transportation), public inquiries, NASA TV, nasa.gov portal and other multimedia support. Funding by installation is shown below.

Center ($ in millions)	FY 2009 Actual	FY 2010 Enacted	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Ames Research Center	1.0	1.5	1.6	1.7	1.7	1.8	1.9
Dryden Flight Research Center	0.7	0.7	0.7	0.8	0.8	0.8	0.8
Glenn Research Center	1.9	2.6	2.7	2.8	2.9	3.1	3.2
Goddard Space Flight Center	3.6	4.3	4.4	4.6	4.8	5.0	5.2
Headquarters	7.9	3.8	3.8	3.8	3.8	3.8	3.8
Johnson Space Center	6.6	6.8	5.6	5.8	6.2	6.1	6.7
Kennedy Space Center	4.7	1.9	2.0	2.0	2.1	2.2	2.2
Langley Research Center	2.1	2.5	2.5	2.6	2.7	2.7	2.7
Marshall Space Flight Center	2.7	1.3	1.4	1.4	1.4	1.4	1.5
Stennis Space Center	1.4	11.1	8.6	8.5	8.7	9.1	9.2
Total	**32.6**	**36.5**	**33.3**	**34.0**	**35.1**	**36.0**	**37.2**

SUMMARY OF CONSULTING SERVICES

NASA uses paid experts and consultants to provide advice and expertise to or beyond that which is available from its in-house civil service workforce. Management controls are established which assure that before entering into a consultant or expert services arrangement with an individual that there is ample justification.

Most of the expert and consultant services are used by the NASA Advisory Council and the Aerospace Safety Advisory Panel. NASA uses experts and consultants to provide expertise on the selection of experiments for future space missions. The use of these experts and consultants provides the Agency with an independent view that assures the selection of experiments likely to have the greatest scientific merit. Other individuals are used to provide independent looks at technical and functional problems in order to give top management the widest possible range of views before making major decisions.

Expert / Consultants (Total NASA)	FY 2009 Actual	FY 2010 Current	FY 2011 Estimate
Number of Paid Experts and Consultants	46	40	40
Annual FTE Usage	6	5	5
Salaries	$0.5	$0.3	$0.3
Total Salary and Benefits Costs	$0.6	$0.4	$0.4
Travel Costs	$0.3	$0.3	$0.3
Total Costs	**$0.9**	**$0.7**	**$0.7**

Note: Definition of Consultants and Experts

A *consultant* is a person who can provide valuable and pertinent advice generally drawn from a high degree of broad administrative, professional, or technical knowledge or experience. When an agency requires public advisory participation, a consultant also may be a person who is affected by a particular program and can provide useful views from personal experience.

An *expert* is a person who is specially qualified by education and experience to perform difficult and challenging tasks in a particular field beyond the usual range of achievement of competent persons in that field. An expert is regarded by other persons in the field as an authority or practitioner of unusual competence and skill in a professional, scientific, technical or other activity.

These definitions are located under 5 CFR 304.102. The appointments are made under 5 U.S.C. 3109. and the use of this authority is reported to the Office of Personnel Management (OPM) annually.

E-GOV INITIATIVES AND BENEFITS

NASA is providing funding contributions in FY 2011 for each of the following E-Government Initiatives:

Initiative	2011 Contributions (Includes In-Kind)	2011 Service Fees *
E-Rulemaking 026-00-01-99-04-0060-24		$55,113
Grants.gov 026-00-01-99-04-0160-24	$208,424	
E-Training 026-00-01-99-04-1217-24		$700,000
Recruitment One-Stop		$96,791
EHRI 026-00-01-99-04-1219-24		$362,772
E-Payroll 026-00-01-99-04-1221-24		$3,825,650
E-Travel 026-00-01-99-04-0220-24		$1,552,396
Integrated Acquisition Environment 026-00-01-99-04-0230-24		$1,783,828
IAE-Loans and Grants 026-00-01-99-04-4300-24		$2,156
Financial Management LoB 026-00-01-99-04-1100-24	$75,000	
Human Resources Management LoB 026-00-01-99-04-1200-24	$65,217	
Grants Management LoB 026-00-01-99-04-1300-24	$59,316	
Geospatial LoB 026-00-01-99-04-3100-24	$15,000	
Budget Formulation and Execution LoB 026-00-01-99-04-3200-24	$105,000	
NASA Total	**$527,957**	**$8,378,706**

* Service Fees are estimates as provided by the E-Government Initiative Managing Partners

NASA's FY 2010 Exhibit 300 IT business cases will be posted at: www.nasa.gov/offices/ocio/reports/exhibit300.html within two weeks of the release of the President's Budget. NASA's Congressional Justification, which will be posted online, will include a link to the Exhibit 300s. Additional information about these NASA investments (along with other Federal IT investments) can be explored in more detail at the IT Dashboard, located at: http://it.usaspending.gov/.

Supporting Data: E-Gov Initiatives and Benefits (continued)

The E-Government initiatives serve citizens, businesses, and federal employees by delivering high quality services more efficiently at a lower price. Instead of expensive "stove-piped" operations, agencies work together to develop common solutions that achieve mission requirements at reduced cost, thereby making resources available for higher priority needs. Benefits realized through the use of these initiatives for NASA in FY 2011 are as follows:

E-Rulemaking (Managing Partner EPA) FY 2011 Benefits

NASA's benefits for the E-Rulemaking initiative are largely focused on public benefits. One-stop access to NASA and other Federal agency information on rulemakings and non-rulemaking activities is included in the more than 2 million documents posted on *Regulations.gov*. The rate at which the public uses *Regulations.gov* to submit comments (known as public submissions) is increasing rapidly. The public initially submitted about 1,000 comments per month during the first 18 months of the public site. Now, the public submits nearly 40,000 comments per month. The public has also visited *Regulations.gov* more than 200 million times, averaging 5 million hits per month in 2006, 6.2 million in 2007, and 12.5 million in 2008.

Regulations.gov site active is illustrated by the following statistics for FY 2009:

- Monthly average number of site hits is 10.5 million;
- Monthly average number of page views is 6.6 million;
- Approximately 39,000 documents added per month on average; and
- Nearly 2.2 million documents are available to the public on the site;

Since FY 2008, over thirty departments and independent agencies (constituting more than 90% of Federal rulemaking activity) have fully implemented the Federal Docket Management System (FDMS) and additional agencies continue to join the program each year. The E-Rulemaking program currently supports nearly 7,500 Federal agency users from more than 160 rulemaking entities.

In addition to the process benefits the E-Rulemaking solution offers, it is estimated to provide cost avoidance benefits over traditional baseline paper processes to a level of $30 million over five years. The electronic docket solution selected by E-Rulemaking governance bodies is a centralized architecture that is configurable for each participating entity allowing role-based access to develop workflow and collaboration processes to manage their content. This centrally managed solution is estimated to save a range of $106 – $129 million over five years as compared to other alternatives that seek the same benefits but are based on decentralized architectures. These figures were calculated in the summer of 2007 by an independent economist hired by the E-Rulemaking Program to develop a Cost-Benefit Model.

NASA benefits in several ways through its participation and reliance on FDMS and *Regulations.gov*. NASA reaps substantial benefits by improving the transparency of its rulemaking actions as well as increasing public participation in the regulatory process. Direct budget cost savings and cost avoidance result from NASA's transition to FDMS and *Regulations.gov*, enabling the Agency to discontinue efforts to develop, deploy and operate specific individual online docket and public comment systems. Over a five-year period, NASA is estimated to save over $700 thousand over alternative options that would provide similar services.

Grants.gov (Managing Partner HHS) FY 2011 Benefits

The *Grants.gov* Initiative benefits NASA and its grant programs by providing a single location to publish grant (funding) opportunities and application packages, making the process easier for applicants to apply to multiple agencies. *Grants.gov* achieved tremendous growth during FY 2009 exceeding the previous Fiscal Year total of 202,366 submissions. *Grants.gov* received a total of 309,771 submissions in FY 2009 – a 53% increase.

All 26 major Federal grant making agencies posted 100% of their synopses for discretionary funding opportunity announcements on *Grants.gov*. 4,547 discretionary application packages were posted in FY 2009, 717 of those accompanying a matching synopsis. The remaining 3,830 approved exemptions included some fellowships and collaborative grants (government-wide processing is still in initial government-wide functional requirements phase with the agencies and *Grants.gov*), or were not discretionary applications but were requests for information (RFI), broad agency announcements (BAA), or by the nature of their business process had not been posted within the quarter that was being measured. By the end of FY 2009, 717 opportunities were available for electronic application through *Grants.gov*, representing an increase of more then 20% over FY 2008.

Additionally, 886 discretionary synopses were posted in FY 2009, with 12,927 posted since the launch of the *Grants.gov* website and 795,915 application submissions have being processed by *Grants.gov* since full processing was deployed in FY 2004. These submissions cover all agency and application populations – small to large, research to state and local governments, not-for-profit, etc.

Through the government-wide *Grants.gov* Memorandum of Understanding (MOU) and Service Level Agreement (SLA) with all 26 Federal agencies, *Grants.gov* provided contact center operations servicing on over 220,862 phone calls and 64,180 emails for a total of 285,042 contacts on behalf of the grant making agencies. The *Grants.gov* Program Management office serviced and trained over 8,500 people including Federal, state and local grant administrators, Congressional workshops, and grant organizations. Additionally, over 24,198 registration brochures were distributed during FY 2009. Grants.gov instituted quarterly satellite webcasts to provide outreach, status,technical and program management status and support servicing to the grant community.

The Grants.gov Initiative benefits NASA and its grant programs by providing broader exposure to a wider community who could potentially apply for NASA funding. In addition, Grants.gov provides a single site for the grantee community to apply for grants using a standard set of forms, processes and systems giving greater access and ability to apply for Federal funding. Through the use of Grants.gov NASA is able to reduce operating costs associated with online posting and application of grants. Additionally, the Agency is able to improve operational effectiveness through use of Grants.Gov by increasing data accuracy and reducing processing cycle times.

E-Training (Managing Partner OPM) FY 2011 Benefits

The E-Training Initiative provides a premier electronic training environment to support the development of the Federal workforce. The initiative advanced the accomplishment of agency missions through simplified and one-stop access to E-Training products and services. The availability of an electronic training environment enhances the ability of the Federal government to attract, retain, manage, and educate the highly skilled professionals needed for a flexible and high-performing government workforce.

The E-Training Initiative benefits NASA and other Federal workforce by reducing redundancies and achieving economies of scale in the purchase and/or development of E-Learning content and in purchase of learning technology infrastructure. In 2006, NASA streamlined its three separate online training systems into one centralized learning management system, SATERN. SATERN is a “one-stop” approach offering Web-based access to training and career development resources. This centralized approach has allowed NASA to reduce costs through the consolidation of multiple learning systems.

Through these consolidations in SATERN, employees can more comprehensively view required training, launch online content, view training history, and self-register for courses. In addition, the system allows NASA to identify offices that have not met training requirements and bring them in line with Federal mandates. SATERN also offers employees access to career planning tools, individual development plans, and competency management tools. Currently SATERN has more than 2,000 online courses and 10,000 online books in its catalog, and recently added new SkillSoft courses covering a wide variety of topics and subject areas for business, information technology, and engineering. SkillSoft and Books 24x7 are available through SATERN at anytime, so they can easily be accessed at the employee's convenience either at work or at home.

Recruitment One-Stop (Managing Partner OPM) FY 2011 Benefits

USAJOBS is the United States Government's official system and program for Federal jobs and employment information. The USAJOBS system delivers the service by which Federal agencies meet their legal obligation (5 USC 3327 and 5 USC 3330) to provide public notice of Federal employment opportunities to Federal employees and American citizens. USAJOBS receives revenue from other government agencies through a fee-for-service funding model. In FY 2010, USAJOBS expects to collect $9.780 million in revenue and incur expenses of $9.058 million.

Since the inception of the Recruitment One Stop (ROS) Initiative, Federal agencies have enjoyed the uninterrupted use of the USAJOBS System. In previous years, the Competitive Service Components bore the cost of maintaining the site and the functionality associated with the system. Beginning in FY 2008, all agencies using USAJOBS shared in the cost of operation. The FY 2009 fee assessment was lowered by 21% to return FY 2008 savings to agency stakeholders in a manner that allowed funds to be used for other HR programs in FY 2009.

The following program enhancements and major initiatives are scheduled during FY 2010:

- Billing and Collection of fees from agencies using a historically based "per-posting" model that mimics the private sector fee structure.
- Continuous Monitoring and Independent Verification and Validation program will be managed by the USAJOBS Program Office. All vendor systems entering through the Business Gateway (BGW) and connecting to USAJOBS must meet minimal connectivity standards prior to access being granted.
- Expiration of the current master technology contract and the re-compete for services contract.
- Intensified and targeted Marketing and Outreach Program

Integration with Recruitment One-Stop allows NASA to better attract individuals who can accomplish the Agency's mission. The USAJOBS interface allows job seekers to view and apply for all NASA employment opportunities, as well as those from other Federal agencies. On average, *USAJOBS.gov* has over 250,000 visitors per day (the online portal serviced over 50 million applications during FY 2008) and over 100,000 resumes are created monthly.

NASA adopted the USAJOBS resume as the basic application document for all NASA positions, except for Astronaut positions, with Phase II implementation completed in 2005. Although the Agency believes that implementation of ROS has resulted in significant intangible benefits in terms of providing better vacancy information to applicants, it has not resulted in any specific cost savings to NASA. However, numerous intangible benefits ROS provides to NASA and other agencies include:

- Decreasing hiring time for managers;
- Providing an integrated solution to agency applicant assessment systems;
- Providing a cost effective marketing and recruitment tool;
- Realizing cost savings over commercial job posting boards;

- Reducing the delay associated with filling critical agency vacancies; and
- Enhancing competition with the private sector for the best and brightest talent for Federal service.

Enterprise HR Integration (Managing Partner OPM) FY 2011 Benefits

The Enterprise HR Integration (EHRI) Program supports the strategic management of human capital by providing agency customers with access to timely and accurate Federal workforce data. In support of this objective, EHRI has the following goals: 1) streamline and automate the exchange of Federal employee human resources (HR) information government-wide; 2) provide comprehensive knowledge management and workforce analysis, forecasting, and reporting across the Executive Branch; 3) maximize cost savings captured through automation; and 4) enhance retirement processing throughout the Executive Branch.

A key initiative of EHRI is the electronic Official Personnel Folder (eOPF), a web-based application that is capable of storing, processing, and displaying the OPFs of all current, separated, and retired Federal employees. When fully implemented, the eOPF will cover the entire Executive Branch as well as some other Federal and Local Governments with a total user population of more than 1.9.million The system will replace the existing manual HR process by automating the Federal Government's HR processes and thereby creating a streamlined Federal HR system for all Federal employees. The initiative is achieving cost savings that are recognized on a per-folder basis. The total cost avoidance per folder is estimated at $55.56. In FY 2009, EHRI increased the number of converted folders to more than 1.2 million for more than 30 agencies.

Specific EHRI/eOPF benefits to NASA include improved convenience in searching, better security and safety to electronic files, is more economical streamlined business processes, and enabled the ability to have a central repository of OPF records for the Agency. Specific NASA employee benefits include secure online access to OPFs, automatic notification when documents are added, exchange of retirement and HR data across agencies and systems, and the elimination of duplicate and repetitive personnel data in personnel folders. NASA completed its implementation to eOPF in March, 2008, and transitioned personnel action processing to the NASA Shared Service Center (NSSC).

E-Payroll (Managing Partner OPM) FY 2011 Benefits

The E-Payroll Initiative standardizes and consolidates government-wide Federal civilian payroll services and processes by simplifying and standardizing human resources (HR)/payroll policies and procedures and better integrating payroll, HR, and finance functions. Prior to beginning the initiative, 26 Federal agencies provided payroll services. Now four providers furnish payroll services for the Executive Branch. In 2004, the Department of Interior (DOI) began serving as NASA's payroll provider, using their system called the Federal Personnel and Payroll System (FPPS), to process NASA's HR and Payroll transactions. The E-Payroll initiative benefits NASA by permitting the Agency to focus on its mission related activities rather than on administrative payroll functions. Payroll processing costs are reduced through economies of scale and cost avoidance of duplicative capital system modernization activities. The initiative also promotes standardization of business processes and practices and a unified service delivery.

E-Travel (Managing Partner GSA) FY 2011 Benefits

The E-Gov Travel Service (ETS) is a government-wide web-based service that provides standardized travel management practices to consolidate federal travel, minimize cost and produce superior customer satisfaction. The ETS is commercially hosted to minimize technology development costs to the government and guarantee refreshed functionality for basic travel services included in the master contract. From travel planning and authorization to the review and approval of post-travel reimbursement, this end-to-end service streamlines travel management and enables the government to capture real-time visibility into the buying choices of travelers while assisting agencies in optimizing their travel budgets thus producing a savings to the taxpayer.

The benefits of the ETS include:

- Increased cost savings associated with overall reduction to Travel Management Center transaction service fees;
- Improved strategic source pricing through cross-government purchasing agreements;
- Improved business process functionality as a result of streamlined travel policies and processes;
- Enhanced security and privacy controls for the protection of government and personal data; and
- Improved Agency oversight and audit capabilities.

As the ETS is a fully integrated, end-to-end travel solution, program cost avoidance is realized by a reduction of traveler and manager time for planning, arranging, authorizing, approving and post-travel reimbursement processing. Travelers also benefit from ETS' increased efficiency in the end-to-end electronic solution as their reimbursements are expedited. Additional initiative savings are realized from the elimination of costly paper-based systems, the decommissioning of legacy travel systems and the reduction of agency overhead by consolidating the number of travel contracts. Prior to ETS, the estimated overall government-wide on-line adoption rate for travel reservations was approximately 6%. To date, in agencies using the ETS end-to-end, the on-line booking engine (OBE) adoption rate is over 76% resulting in dramatic cost savings as a result of lowering travel agent service fees.

NASA completed migration of its travel services to Electronic Data Systems Corporation (EDS), one of the three designated E-Travel service providers, in mid-2009. Completing this migration has allowed NASA to provide more efficient and effective travel management services. Potential benefits include cost savings associated with cross-government purchasing agreements and improved functionality through streamlined travel policies and processes, strict security and privacy controls, and enhanced Agency oversight and audit capabilities. NASA employees are also benefitting through more efficient travel planning, authorization, and reimbursement processes.

Integrated Acquisition Environment (Managing Partner GSA) FY 2011 Benefits

The Integrated Acquisition Environment (IAE) initiative is designed to streamline the process of reporting on subcontracting plans and to provide agencies with access to analytical data on subcontracting performance. Use of the IAE common functions and services allows agencies to focus on agency-specific needs such as strategy, operations, and management while leveraging shared services for common functions. Furthermore, use of a government-wide business focused service environment reduces funding and resources for technical services and support for acquisition systems originally housed by individual agencies. Over 6.5 million hours were saved by the contributing agencies in completing over 14.4 million recorded acquisition business process transactions. Contributing agencies received estimated benefits of $341.6 million based upon the processes, personnel, roles, steps, and actions involved. Additionally, agencies realized an estimated cost avoidance of $5.8 million and estimated operational cost savings of $31.5 million.

The IAE services were greatly impacted by the passage of the American Recovery and Reinvestment Act of 2009 ("the Recovery Act"). In order to provide greater transparency and openness for Recovery Act opportunities, the FedBizOpps (FBO) team quickly took several actions to flag Recovery Act actions and simplify searches for Recovery actions. The Federal Procurement Data System (FPDS) team also was able to respond quickly to the demands for transparency related to Recovery Act expenditures by insertion of Treasury Account Symbols into FPDS and providing a report to track recovery spending.

IAE facilitates and supports cost-effective acquisition of goods and services by agencies. The IAE initiative provides common acquisition functions and shared services that benefit all agencies, such as the maintenance of information about business-partner organizations (e.g., banking, certifications, business types, capabilities, performance). IAE provides benefits to the government and business-partner organizations by improving cross-agency coordination that helps to improve the government's buying power, while providing business partners maximum visibility and transparency into the process. IAE provides various services, tools and capabilities that can be leveraged by the acquisition community including buyers, sellers, and the public to conduct business across the Federal government space.

Government buyers can:

- Search for commercial and government sources
- Post synopses and solicitations
- Securely post sensitive solicitation documents
- Access reports on vendors' performance
- Retrieve vendor data validated by SBA and Internal Revenue Service (IRS)
- Identify excluded parties
- Report contract awards

Business suppliers can:

- Search business opportunities by product, service, agency, or location
- Receive e-mail notification of solicitations based on specific criteria
- Register to do business with the Federal government
- Enter representations and certifications one time
- Revalidate registration data annually
- Report subcontracting accomplishments

Citizens can:

- Retrieve data on contract awards
- Track Federal spending
- Search to find registered businesses
- Monitor business opportunities

Through adoption of the tools and services provided by IAE, NASA improves its ability to make informed and efficient purchasing decisions and allows it to replace manual processes. If NASA were not allowed to use the IAE systems, they would need to build and maintain separate systems to record vendor and contract information, and to post procurement opportunities. Agency purchasing officials would not have access to databases of important information from other agencies on vendor performance and could not use systems to replace paper-based and labor-intensive work efforts.

Integrated Acquisition Environment – Loans & Grants FY 2011 Benefits

All agencies participating in the posting and/or awarding of Federal Contracts, Grants and Loans are required by the Federal Funding Accountability and Transparency Act (FFATA) of 2006, as well as the American Recovery and Reinvestment Act of 2009 (ARRA) reporting requirements, to disclose award information on a publicly accessible website. FFATA requires OMB to lead the development of a single, searchable website through which the public can readily access information about grants and contracts provided by Federal government agencies.[1]

[1] More information on the development of this website can be found at: http://www.federalspending.gov.

Based on the recommendations of the Transparency Act Taskforce, the website leverages functionality provided by the Integrated Acquisition Environment (IAE) initiative to provide Data Universal Numbering System (DUNS) numbers as the unique identifier. An existing IAE Dun and Bradstreet (D&B) transaction-based contract for the contract community was expanded to provide government-wide D&B services for the Grants & Loans community. These services include parent linkage, help desk support, world database lookup, business validation and linkage monitoring, matching services, as well as the use of DUNS numbers. The enterprise D&B contract provides substantial savings to the participating agencies over their previous agency transaction-based D&B contracts.

On December 14, 2007, OMB launched www.USASpending.gov to meet the FFATA statutory requirements, ahead of schedule. Since launch, OMB has and will continue to work with agencies to improve the quality, timeliness, and accuracy of their data submissions and has released a series of enhancements to the site. USASpending.gov complements other websites providing the public Federal program performance information (e.g., USA.gov, Results.gov and ExpectMore.gov).

USASpending.gov provides:

- the name of the entity receiving the award;
- the amount of the award;
- information on the award including transaction type, funding agency, etc;
- the location of the entity receiving the award;
- a unique identifier of the entity receiving the award.

In addition to routine enhancements to improve usability and maintainability, USASpending.gov is focused on supporting implementation of sub-contract and sub-grant awards reporting.

Cross government cooperation with OMB's IAE initiative allows agencies and contributing bureaus to meet the requirements of the FFATA by assigning a unique identifier, determining corporate hierarchy, and validating and cleaning up incorrect or incomplete data. The FFATA enhances transparency of Federal program performance information and funding.

The FY 2011 IAE Loans and Grants funding requirement supports the FFATA for the relationship with D&B and DUNS support services. In addition to provision of DUNS numbers, D&B is now providing business and linkage data seamlessly, and the business arrangement supports the quality of data by real-time updates. NASA and other agencies will leverage the linkages to corporate organizational rollups based on parental and subsidiary relationships.

LINES OF BUSINESS

Financial Management LoB (Managing Partners DOE and DOL) FY 2011 Benefits

The Financial Management Line of Business (FM LoB) leverages shared service solutions that improve the quality of Federal financial data and decrease known inefficiencies—and costs—that are typical of redundant financial management systems. FM LoB's Shared Services Providers (SSPs) offer participating agencies the economies of scale and expertise in IT and financial reporting not always available within a single agency. An emphasis is being placed on greater standardization, transparency and business process improvements as opposed to solely technology improvements.

The FM LoB initiative uses standard business practices and meets federal accounting standards for financial reporting. This level of standardization across all Federal agencies would provide executive decision makers with accurate information from which to assess program performance and risks, evaluate costs, and improve stewardship across the Federal government. Agencies will be able to improve financial management decision making and program performance.

Current OMB FM LoB policy requires agencies to conduct a competition among Federal and Commercial Shared Services Providers (SSPs) before attempting to modernize financial systems. Commercial SSPs have not yet been designated to support the same range of services provided by Federal SSPs.

Benefits of these SSPs include:

- Cost Avoidance:
  - Agencies using SSPs will not have to configure, operate and maintain individual financial systems, whether customized or commercial off-the-shelf (COTS);
  - Share common costs for standard application management and IT support functions; and
  - Minimize costs of testing and evaluation for upgrades.
- Facilitate Best Practices:
  - Agency SSP customers leverage IT and financial processing expertise to provide shared services to multiple agencies, boards, and commissions;
  - Share consistent, reliable financial data that can be shared across agency business systems
  - Use standardized, government-wide financial codes and categorizations of financial transactions that improve financial reporting and accountability;
  - Increase efficiency of financial transactions through reengineered and stream-lined business processes; and
  - Minimize risks associated with financial system implementation by providing a uniform starting point for configuration

In October 2009, FMLoB released the standard business processes for Reporting and Reimbursable Management. Currently, FM LoB is creating tools that will offer agencies a boilerplate solicitation template and guidelines for completing an RFP or system migrations. FMLoB is also incorporating public feedback to draft core financial system requirements. Once the requirements have been updated, the certified core accounting software products will be tested and a federal configuration will be implemented to help agencies upgrade their existing financial management software or migrate to an SSP.

NASA implemented their core financial system the year preceding establishment of the FMLoB and has already invested and consolidated much of its financial transaction processing to a central Shared Services Center. NASA has expressed interest in becoming an FMLoB Shared Service Provider for the Federal government.

Human Resources Management LoB (Managing Partner OPM) FY 2011 Benefits

Through the HR LoB, OPM is using Enterprise Architecture (EA)based principles and best practices, proven through the E-Gov initiatives and Federal Enterprise Architecture (FEA), to identify common solutions for HR business processes and/or technology-based shared HR services to be made available to government agencies. Driven from a business perspective rather than a technology focus, the solutions will address distinct business improvements that enhance government's performance of HR services in support of agency missions delivering services to citizens. The end result of the HR LoB efforts will be to save taxpayer dollars, reduce administrative burdens, and significantly improve HR service delivery.

The revised HR LOB Cost Benefit Analysis (CBA) identified cost savings and avoidance to be realized by the Federal government as agencies migrate their HR and p ayroll systems to Shared Service Centers. Through FY 2015, the projected cost savings will exceed $1.3 billion with total lifecycle benefits of nearly $3 billion and total lifecycle costs of $1.6 billion. As the HR LOB continues to move forward with agency migrations to the approved Shared Service Centers (SSCs), significant cost savings and avoidance are achieved and other benefits such as improved management, operational efficiencies, and improved customer services are realized.

To date five U.S. government agencies have been designated as public sector SSCs: Department of Agriculture (USDA), Department of the Interior, Department of the Treasury, Department of Health and Human Services and Department of Defense (DoD). The four private sector SSCs are: Accenture National Security Services, Allied Technology Group, Inc., Carahsoft Technology Corporation, and IBM. In addition, four U.S. government agencies serve as payroll providers: DoD's Defense Finance and Accounting Service (DFAS), the General Services Administration (GSA), the Department of Interior's National Business Center (NBC) and the USDA's National Finance Center (NFC).

Selected HR LoB accomplishments from 2009 include:

- HR and Payroll Benchmarking
    - Performed the first-ever HR Benchmarking study of Shared Service Centers and agencies providing a snapshot of current HR operational performance and set a baseline of performance in 2009 against which to compare future progress. Updated the Payroll Benchmarking study, which continues to demonstrate the success of the four Federal E-Payroll providers when compared to industry benchmarks.

- Provider Assessment
    - Completed the design and development of an assessment process to appraise HR LOB Shared Service Centers and Payroll Providers on their ability to deliver services to their customers emphasizing compliance, transparency and modernization. The assessments are designed to deliver benefits to both providers and their customer agencies.

- Cost Benefit Analysis
    - Updated the HR LOB Cost Benefit Analysis and established a new baseline for measuring cost savings and cost avoidance associated with the initiative. The CBA calculates the cost savings and avoidance that will be realized across the government as a result of the HR LOB initiative and agency migration of core HR IT and payroll services to an HR LOB SSC or Payroll provider. By the end of FY 2015, the HR LOB is projected to generate over $1.3 billion in total cost savings and avoidance for the government. After FY 2015, the HR LOB is expected to generate over $200 million in cost savings annually.

- HR Systems Integration
  - Completed version 1.0 of the *Integration Support Project* which provides the first-ever end-to-end integration view of government-wide HR systems at OPM. Building on version 1.0 of the ISP, the HR LOB also launched an effort to address multiple feeds and redundant data, and enhance the user experience of OPM government-wide systems. In addition, the HR LOB established an E-Authentication workgroup to develop a standardized approach for implementing E-Authentication across agencies and government-wide systems.

- HR Enterprise Architecture
  - Mapped HR LOB Target Requirements to the Service Component Model to provide customers and providers a common understanding of HR services that can serve as a basis for negotiating service-delivery expectations.

In FY 2010 the HR LoB will conduct the following activities designed to achieve the initiative's goals:

- HR IT Transformation
  - Provide and manage a government-wide Human Resources Information Technology (HR IT) strategy that integrates Office of Personnel Management (OPM) systems to address multiple feeds and redundant data and enhance the end user experience; put into place the standards, guidelines, architectural specifications, and governance to achieve integration; and establish a government-wide vision for HR IT that enables HR transformation.
- Standards and Requirements
  - Monitor the evolution of the Federal Enterprise Architecture (FEA) and ensure HR IT innovation through updating the HR LOB FEA models and target requirements.
- SSC Oversight and Assessment
  - Oversee agency migrations to Shared Service Centers and implement the Provider Assessment program designed to assess SSC's ability to deliver services to their customer agencies with a focus on compliance, modernization, and transparency.
- SSC Performance Measurement and Agency HR Benchmarking
  - Work with agencies and SSCs to identify and pursue opportunities to become more efficient, customer service-oriented, cost effective, and more strategically focused. Conduct HR and payroll benchmarking studies and results to promote best practices.
- Strategy Formulation
  - Develop and execute the HR LOB strategy to achieve the initiative goals and objectives. Promote effective and efficient collaboration across partner agencies and other stakeholders through the HR LOB governance structure.

NASA works in partnership with one of the approved service providers, the Department of Interior's National Business Center (NBC). Through this partnership, NASA shares and receives "best-in-class" HR solutions. NBC delivers NASA developed solutions to their customer agencies, enabling improved efficiencies and system integrations at a fraction of the cost and delivery time than similar solutions could have been produced by NBC. NASA achieves the benefits of "best-in-class" HR solutions through implementation and integration of NBC and NASA developed HR solutions. NASA's participation in HR LoB allows the agency to participate in the implementation of modern HR solutions and benefit from best practices and government-wide strategic HR management.

Grants Management LoB (Managing Partners HHS and NSF) FY 2011 Benefits

The Grants Management Line of Business (GMLoB) will ultimately offer the development of a government-wide solution to support end-to-end grants management activities promoting citizen access, customer service, and financial and technical stewardship for the Agency. The end result is intended to be a government-wide streamlined grant making process providing transparency and efficiency in the grant decision-making process. The benefits of GMLoB include increased service to citizens through standardized processes; cost savings for grant-making agencies through use of shared IT infrastructure; a reduction in the number of redundant grants management systems; and improved reporting on government-wide grant activities and results. The GMLoB adopted a "consortia-based" approach to implementation and developed a process for forming consortia and having agencies participate in consortia as members.

In FY07 NASA signed a Memorandum of Understanding (MOU) with its selected consortia partner, the National Science Foundation (NSF). In 2008 NASA implemented NSF's new research-focused initiative, *Research.gov*, improving public access to detailed information about NASA awards. *Research.gov* is a collaborative partnership of Federal research-oriented agencies working together for the ultimate benefit of the research community. The Research Spending and Results Service lets Congress, the general public, and the broader research community easily search and find grant award information for NASA and NSF in one place. For 2010 and beyond, NASA and NSF are continuing to together to serve the research community and to provide access to information and services for both agencies in one location. NASA news and information is also now available in *Research.gov's* Policy Library and Research Headlines. Moving forward, NASA will continue to collaborate with NSF to explore and implement future *Research.gov* service offerings based on NASA and research community needs.

Geospatial LoB (Managing Partner DOL) FY 2011 Benefits

The Geospatial LoB will better serve the agencies' missions and the Nation's interests developing a more strategic, coordinated, and leveraged approach to producing, maintaining, and using geospatial data and services across the Federal government. Specific goals of the Geospatial LoB include establishing a collaborative governance mechanism, coordinating a government-wide planning and investment strategy, and optimizing and standardizing geospatial data and services.

Contributing agencies and bureaus will receive value from the development of the LoB primarily through improved business performance and cost savings. Enhanced governance processes, improved business planning and investment strategies, and optimization and standardization of geospatial business data and services will produce the following results:

- Collaborative management of geospatial investments will be made more adaptable, proactive and inclusive;
- Enterprise business needs and agency core mission requirements will be identified, planned, budgeted, and exploited in a geospatial context;
- Long-term costs of geo-information delivery and access will be reduced while minimizing duplicative development efforts;
- Effective, yet less costly commercial off the shelf systems and contractual business support operations will replace legacy geospatial applications; and
- Business processes will be optimized and knowledge management capabilities will exist for locating geospatial data and obtaining services.

As a science agency, the work of NASA's science and mission professionals is inherently different from duties and functions performed by operational agencies. These differences lead NASA to organize and manage data to best facilitate science activities rather than a central focus of data dissemination. Scientific inquiry often leads scientist to use different schemas for analyzing data and information produced from remote sensing data (e.g. a common grid or projection). NASA will continue to apply the elements of FGDC standards where these are appropriate. In FY 2008 and FY 2009, NASA signed MOUs with DOL to continue its participation in the Geospatial LOB.

Budget Formulation and Execution LOB (Managing Partner Education) FY 2011 Benefits

The Budget Formulation and Execution Line of Business (BFELoB) provides significant benefits to partner agencies by encouraging best practices crossing all aspects of Federal budgeting -- from budget formulation and execution to performance to collaboration to human capital needs. To benefit all agencies, BFELoB continues to support the idea of shared service budget systems. NASA procured a budget system prior to the establishment of the BFELoB. NASA is an active participant in the BFELoB's weekly and bi-weekly meetings.

BFELoB's "*MAX Federal Community*", a secure government-only collaborative website, provides significant benefits for collaboration across and within agencies, as well as knowledge management. The Community site is commonly used for sharing information, collaboratively drafting documents (including the direct-editing of documents posted on the site), supporting workgroups, submitting central reports, and much more. NASA has begun exploring the use of BFELoB's online meeting tool for NASA meetings. Currently, NASA has 536 active users in the community. NASA has been using the MAX Community site for the hosting of NASA emergency preparedness materials and as the launch pad for guidance and execution of the American Recovery and Reinvestment Act of 2009 activities, including, but not limited to, NASA internal audits.

The BFELoB released *MAX Collect* to facilitate the rapid collection and reporting of agency information. NASA expects to benefit from reduced errors, and reduced time spent manually consolidating and publishing data by using *MAX Collect*'s data collection capabilities. NASA is investigating the possible benefits of using *MAX Collect* and its publishing capabilities to collect, store, process and publish information from multiple sources in an extremely efficient and effective manner, producing professional quality output. NASA has already begun looking into the benefits from using MAX Analytics' data visualization tools.

In October, 2009, the *Budgeting Capabilities Self Assessment Tool* was published providing agency budget managers and their staff with a simple survey-like method to assess and gain perspective on how their current operations and processes compare against best practices in a broad range of budgeting capability categories, allowing managers to strategically focus improvement efforts on areas of highest value to their particular organization's activities. NASA will look into the benefits of using it to assess organizational practices and develop strategic plans to address areas of need.

BFELoB's *Human Capital Federal Budget Core Competency Framework* is a resource for NASA to use in their internal workforce planning initiatives in FY 2010. BFELoB is working toward adding proficiency levels to each Core Competency as well as aligning training with competencies and proficiencies to assist budget professionals in determining a training roadmap for development. BFELoB will continue to expand this framework in 2010. In addition, the BFELoB Human Capital work group offers multiple technical and developmental training opportunities throughout the year. NASA benefitted with half a dozen agency staff attending BFELoB sponsored trainings in FY 2009.

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Management and Performance

Overview

The Management and Performance section provides a comprehensive record of the past and planned performance for NASA's programs and projects. This section includes an update to the FY 2010 Performance Plan based on Congressional budget action; a summary of the cost and schedule performance of NASA's projects with estimated life cycle cost above $250 million; and progress on NASA's performance improvement initiatives. The NASA FY 2011 Performance Plan, typically included in this section, will instead accompany the NASA 2010 Strategic Plan later this spring, to be consistent with the Agency's updated strategic goals.

NASA's planning and performance management processes are an essential part of the Agency's governance and strategic management system. The Agency has an integrated system to: plan strategy and implementation; monitor, assess, and evaluate performance toward commitments; identify issues; gauge programmatic and organizational health; and provide appropriate data and information to NASA decision-makers.

Through its strategic management system, NASA: identifies the Agency's long-term Strategic Goals, multi-year Outcomes, and other key performance measures; develops and implements plans to achieve these Goals; and continuously measures the Agency's progress toward these Goals. NASA managers use performance results as a basis for key investment decisions, and NASA performance data provides a foundation for both programmatic and institutional decision-making processes.

NASA's planning and performance management processes provide data to Agency management via: ongoing monthly and quarterly analysis and reviews; annual assessments in support of budget formulation (for budget guidance and issue identification, analysis, and disposition); annual reporting of performance, management issues, and financial position; periodic, in-depth program or special purpose assessments; and recurring or special assessment reports to internal and external organizations.

NASA's performance system is designed to align with the Agency's internally and externally imposed performance measurement and reporting requirements, tools, and practices, including the Government Performance and Results Act and Executive Order 13450, Improving Government Program Performance. Examples of recent activities are provided in the Performance Improvement narrative that follows.

NASA continues to use independent program assessments, which are listed in the theme and program sections of this document, and commits to improvement actions in response to the findings.

NASA strives to find new ways to use performance information to support decisions concerning strategy and budget. A continued focus for NASA in FY 2010 is to improve the metrics and analysis processes for life cycle cost and schedule performance monitoring and reporting. The Major Program Annual Reports discussed in this section is one of the reporting tools used to determine how NASA performs this task.

Performance Improvement

NASA's Mission demands high levels of performance from our diverse workforce, whose knowledge, skills, and dedication are the backbone of our achievements. NASA has aligned the Agency's performance systems, organizational structure, policies, and processes to ensure programmatic content, institutional capabilities, and other resources are focused on successfully completing the programs and projects tied to our Strategic Goals. The Agency governance councils have joint responsibility for sustaining this alignment through a set of clear, transparent, and repeatable processes that flow to all organizational elements and levels within the Agency. Aligning the entirety of NASA with our Strategic Goals is essential for organizational effectiveness and efficiency. NASA communicates priorities and directions for all components of the Agency through a planning and decision process based on prior year performance and future year objectives. This annual guidance is the benchmark for other processes, including feedback on internal control needs, risk concerns, and safety and mission assurance issues that ripple through our programmatic and institutional framework, ultimately influencing the allocation of resources for each budget year.

The Agency continues to find value in, and improve upon its monthly forum, the Baseline Performance Review. As an integrated review of institutional and program activities, inter-related issues that impact performance and program risk are highlighted and actions are assigned for resolution. In 2009 quarterly reviews for the topics of diversity, small business, and information technology were added. The Baseline Performance Review forum fosters communication across organizational boundaries to address mutual concerns and interests.

In FY 2009 a requirement to improve the agency's program management was met by NASA's Academy of Program/Project Engineering Leadership (APPEL). A comprehensive set of actions to integrate training and certification of program managers was implemented and over 70 project managers were certified (ahead of plan). In FY 2010 and beyond, certification will keep pace by training new managers as they are identified. APPEL will continue to enhance NASA's mission through learning opportunities for individuals, project teams, and the program and project management community. In FY 2010, APPEL's new knowledge-sharing initiative, "Pass the Torch," will share lessons learned from the Space Shuttle Program, and its Hands on Project Experience (HOPE), in partnership with the Science Mission Directorate, will build training opportunities for young engineers.

In FY 2010, NASA will begin tracking its four High Priority Performance Goals developed in response to a White House initiative for building a high-performing government. NASA's goals focus on research and operational activities in the areas of air transportation, climate change, "green government," and future workforce preparation.

In FY 2011, NASA will participate in an OMB pilot program for impact evaluations. NASA will participate as a way of assessing programs in NASA's portfolio that do not fall within the flight program management process, and to build additional internal capability for this type of assessment. The NASA evaluation pilot will begin efforts to examine the broader societal benefits of the Applied Sciences Program in facilitating use of NASA's Earth science data products by partner organizations in their decision making activities for areas such as resource allocation, early warning systems, general planning, and disaster response.

In FY 2011, NASA will continue to examine its policies and processes to enhance its performance management system and use of performance information in planning and decision-making.

2010 Major Program Annual Report Summary

The 2010 Major Program Annual Report (MPAR) is provided to meet the requirements of section 103 of the National Aeronautics and Space Administration Authorization Act of 2005 (P.L. 109-155; 42 U.S.C. 16613; the Act). The 2010 MPAR consists of this summary along with the 2011 Budget Estimates *Project in Development* pages for the fourteen projects included in this year's report. The later documents constitute each project's annual report, or baseline report, if this is the first year for which it is in reporting. This summary also includes, for the first time, the confidence level information requested in the Conference Report accompanying the FY 2010 Consolidated Appropriations Act (P.L. 111-117).

Table 1 provides cost, schedule, and confidence level information for NASA projects currently in development with lifecycle cost (LCC) estimates of $250M or above.

Changes in MPAR Composition since the 2010 NASA Budget Estimates

One project, the Wide-field Infrared Survey Explorer (WISE) mission is no longer included in this report, since WISE successfully launched in December 2009 and is operational.

Four projects with estimated life cycle costs greater than $250M received authority to proceed into development since the 2009 MPAR was prepared for the 2010 NASA Budget Estimates, and are baselined in this report:

- Global Precipitation Measurement (GPM) mission;
- Landsat Data Continuity Mapper (LDCM) mission;
- Magnetospheric Multiscale (MMS) mission; and
- Tracking and Data Relay Satellite (TDRS-K/L) mission.

Updated cost and schedule estimates are provided for six projects baselined in previous MPAR reports:

- Aquarius mission;
- Glory mission;
- James Webb Space Telescope (JWST);
- National Polar-orbiting Operational Environmental Satellite System (NPOESS) Preparatory Project (NPP),
- Solar Dynamics Observatory (SDO), and
- Stratospheric Observatory for Infrared Astronomy (SOFIA).

The Mars Science Laboratory (MSL) project baseline has been re-established, as required by the Act when the development cost estimate for a project exceeds 30% of its original baseline. This new baseline reflects previously-reported cost and schedule growth associated with technical difficulties resulting in a change in launch date from the 2009 to the 2011 launch window.

Changes in Cost and Schedule Estimates from the 2009 MPAR

Two projects exceeded a cost or schedule threshold since the 2009 MPAR: the Glory and Aquarius missions.

The Glory mission schedule has grown by 17 months and costs have grown by 31% since the project established a new baseline in 2008. This growth is due predominantly to testing failures of the spacecraft computer, that only became evident after a year of successful testing. After work on the existing computer was unable to correct the failures, NASA opted to replace the computer with another model. The cost and schedule estimates reported in Table 1 reflect the redesign, modification, and re-testing required as a result of this technical change, in addition to the cost of the computer equipment itself. The schedule estimate and associated costs also reflect the need to accommodate the Taurus corrective action plan following the Orbiting Carbon Observatory (OCO) launch failure, as both missions relied on the same launch vehicle.

The Aquarius project cost estimate has grown by 15 percent of its MPAR baseline cost, as established in the 2008 NASA Budget Estimates, due to additional delays by its international partner. NASA is providing additional support to this partner and has rephased its planned costs to reduce the overall impact of these schedule delays on project costs.

The Agency is completing the report required under the Act providing additional information on growth of the Glory mission, which includes the reasons for these changes in cost and schedule, alternatives assessed by the Agency, and the selected actions. A report will not be provided for Aquarius, as there had already been one produced when the original schedule breach occurred,

Confidence Levels

The Conference Report accompanying the FY 2010 Consolidated Appropriations Act requires "NASA to include in its annual budget justifications the reserve amount assumed by the agency to be necessary for the program and the amount actually proposed for each directorate, theme, program, project and activity, or if the proposed funding level is based on confidence level budgeting, the confidence level assumed in the proposed funding level."

NASA utilizes a confidence level approach to budgeting. This approach incorporates program and project risks directly into cost and budget estimates and, as such, is suited to NASA's complex, high-risk portfolio. This approach affords project managers the necessary flexibility to pro-actively manage and mitigate the large technical and other risks associated with NASA's missions. The likelihood of meeting any given estimate is referred to as the confidence level (CL). Implementation of this approach varies depending on the type of program, as described below. To fulfill the Congressional direction, per the 2010 Appropriations Conference Report, where applicable to the type of NASA project, the confidence level is reflected in table 1 below. NASA distinguishes between Space Flight and Ground System projects in development; projects in operations, and Research & Technology projects. All of the projects that are currently subject to MPAR reporting fall within the Space Flight category.

Space Flight Projects in Development. NASA's acquisition strategy policy (NPD 1000.5) requires space flight projects and programs to develop probabilistic cost estimates, which incorporate the likely cost impacts of project risks. NASA targets a confidence level of about 70 percent for most of its projects and programs.

NASA is in the process of transitioning its probabilistic cost estimation from consideration of cost risk only to a joint cost and schedule approach designed to increase the likelihood of project success at the specified funding level. The application of the this joint cost and schedule confidence level (JCL) approach is expected to increase insight into uncertainties and contingencies within an integrated technical, cost, schedule, and risk plan. Because this approach requires the employment of new tools and techniques, full implementation will take some time to deploy. NASA's space flight projects

are in various states within this transition, hence not all have a JCL that has been produced, and many were grandfathered into MPAR reporting under past cost estimation techniques.

The confidence levels provided in Table 1 for three projects (LDCM, MMS, and MSL) represent a JCL. Two projects (SOFIA and JWST) have JCLs in progress. Two of the projects (NPP and SDO) were baselined prior to NASA's transition to probabilistic cost estimation, so do not have a CL to report. A confidence level for the re-baselined Glory project was not part of the project's continuation (rebaseline) review. Further details are provided in the footnotes to Table 1.

Space Flight Projects in Operations. The annual costs for operational programs are estimated based on the likely costs required to maintain required operational performance given identified risks to this performance. Reserves are not explicitly budgeted, but these risks are managed as liens against the program budget over the course of the operating year. As with space flight development programs, NASA does not budget for all known risks; as a result liens are often larger than available budget. Program Managers focus their mitigation and risk management efforts on the risks with the largest potential consequences or which have a high probability of occurring. The level of operational confidence reflected in each operational program's cost estimate varies depending on the consequences of a loss of performance and are provided in the Agency's Annual Performance Plan Update also found in this section.

Research and Technology Programs. Research and technology programs address technical and science challenges and outcomes. These programs do not include reserves or specific confidence levels within their estimated costs. Rather, they operate on a 'level of effort' basis; matching progress to available funding and using interim milestones to assess on-going progress towards key research or technology goals.

Table 1: MPAR Summary and Confidence Levels

Project	Base Year	Confidence Level[1]	Development Cost Est. ($M) Base	Development Cost Est. ($M) 2010	Cost Change (%)	Key Milestone[2]	Key Milestone Base	Key Milestone 2010	Schedule Change (months)	Cost Change > 15%[3]	Schedule Change > 6 Mo[3]	Factors Contributing to Breaches since 2009 MPAR: Internal	Factors Contributing to Breaches since 2009 MPAR: External
Aquarius	2007	75%[5]	$193	$223	16	LRD	Jul-09	Jan-11	18	**X**	X		Additional delays by international partner.
Glory	2009	N/A [6]	$259	$339	31	LRD	Jun-09	Nov-10	17	**X**	**X**	Current estimates reflect decision to replace spacecraft computer after failure.	
GPM	2010	70%	$555	$555	0	LRD	Jul-13	Jul-13	0				
GRAIL	2009	70%	$427	$427	0	LRD	Sep-11	Sep-11	0				
Juno	2009	70%	$742	$742	0	LRD	Aug-11	Aug-11	0				
JWST	2009	JCL in-process	$2,581	$2,710	5	LRD	Jun-14	Jun-14	0				
LDCM[4]	2010	70% (JCL)	$583	$583	0	LRD	Jun-13	Jun-13	0				
MMS[4]	2010	70% (JCL)	$857	$857	0	LRD	Mar-15	Mar-15	0				
MSL	2010	70% (JCL)	$1,720	$1,720	0	LRD	Nov-11	Nov-11	0				
NPP	2006	N/A[7]	$593	$725	22	LRD	Apr-08	Sep-11	41	X	X		
RBSP	2009	70%	$534	$534	0	LRD	May-12	May-12	0				
SDO	2006	N/A[7]	$624	$667	7	LRD	Aug-08	Feb-10	18		X		
SOFIA	2007	JCL in-process	$920	$1,097	19	FOC	Dec-13	Dec-14	12	X	X		
TDRS-K,L[4]	2010	75%	$209	$209	0	LRD	Dec-13	Dec-13	0				

[1]The confidence level estimates reported here reflect an evolving process as NASA improves its probabilistic estimation techniques and processes. Each estimate reflects the practices and policies at the time it was developed. For example, levels provided in Table 1 for three projects (LDCM, MMS, and MSL) represent a JCL. Two projects (SOFIA and JWST) have JCLs in progress. Estimates which include combined cost and schedule risks are denoted as Joint Confidence Level (JCL) estimates; all other Confidence Levels (CL) reflect cost confidence without necessarily factoring the potential impacts of schedule changes on cost.
[2]Key Milestone LRD = Launch Readiness Date; and FOC = Full Operational Capability.
[3]Bolded "X" indicates new changes compared to 2009 MPAR
[4];The confidence level estimate addresses the full partnership; the developments cost reflect the NASA portion of project costs.
[5]CL estimate reflects NASA portion of project; the cost increases reflected here represent the impact of partnership delays.
[6]A confidence level for the re-baselined Glory project was not part of the project's continuation (rebaseline) review.
[7]Pre-dates use of probabilistic analysis.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION PROPOSED APPROPRIATION LANGUAGE

SCIENCE

For necessary expenses, not otherwise provided for, in the conduct and support of science research and development activities, including research, development, operations, support, and services; maintenance and repair, facility planning and design; space flight, spacecraft control, and communications activities; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by 5 U.S.C. 5901–5902; travel expenses; purchase and hire of passenger motor vehicles; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, $5,005,600,000, to remain available until September 30, 2012.

AERONAUTICS AND SPACE RESEARCH AND TECHNOLOGY

For necessary expenses, not otherwise provided for, in the conduct and support of aeronautics and space research and development activities, including research, development, operations, support, and services; maintenance and repair, facility planning and design; space flight, spacecraft control, and communications activities; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by 5 U.S.C. 5901–5902; travel expenses; purchase and hire of passenger motor vehicles; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, $1,151,800,000, to remain available until September 30, 2012; of which $579,600,000 shall be for aeronautics activities; and of which $572,200,000 shall be for space research and technology activities.

EXPLORATION

For necessary expenses, not otherwise provided for, in the conduct and support of exploration research and development activities, including research, development, operations, support, and services; maintenance; construction of facilities including repair, rehabilitation, revitalization, and modification of facilities, construction of new facilities and additions to existing facilities, facility planning and design, and restoration, and acquisition or condemnation of real property, as authorized by law; space flight, spacecraft control, and communications activities; program management, personnel and related costs, including uniforms or allowances therefor, as authorized by 5 U.S.C. 5901–5902; travel expenses; purchase and hire of passenger motor vehicles; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, $4,263,400,000, to remain available until September 30, 2012: Provided, That when any activity has been initiated by the incurrence of obligations for construction of facilities or environmental compliance and restoration activities as authorized by law, such amount available for such activity shall remain available until September 30, 2016.

SPACE OPERATIONS

For necessary expenses, not otherwise provided for, in the conduct and support of space operations research and development activities, including research, development, operations, support, and services; maintenance; construction of facilities including repair, rehabilitation, revitalization, and modification of facilities, construction of new facilities and additions to existing facilities, facility planning and design, and restoration, and acquisition or condemnation of real property, as authorized by law; space flight, spacecraft control and communications activities; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by 5 U.S.C. 5901–5902; travel expenses; purchase and hire of passenger motor vehicles; and purchase, lease, charter, maintenance and operation of mission and administrative aircraft, $4,887,700,000, to remain available until September 30, 2012: Provided, That when any activity has been initiated by the incurrence of obligations for construction of facilities or environmental compliance and restoration activities as authorized by law, such amount available for such activity shall remain available until September 30, 2016.

EDUCATION

For necessary expenses, not otherwise provided for, in carrying out aerospace and aeronautical education research and development activities, including research, development, operations, support, and services; program management; personnel and related costs, uniforms or allowances therefor, as authorized by 5 U.S.C. 5901–5902; travel expenses; purchase and hire of passenger motor vehicles; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, $145,800,000, to remain available until September 30, 2012.

CROSS AGENCY SUPPORT

For necessary expenses, not otherwise provided for, in the conduct and support of science, aeronautics, exploration, space operations and education research and development activities, including research, development, operations, support, and services; maintenance and repair, facility planning and design; space flight, spacecraft control, and communications activities; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by 5 U.S.C. 5901–5902; travel expenses; purchase and hire of passenger motor vehicles; not to exceed $120,000 for official reception and representation expenses; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, $3,111,400,000, to remain available until September 30, 2012.

CONSTRUCTION AND ENVIRONMENTAL COMPLIANCE AND RESTORATION

For necessary expenses for construction of facilities including repair, rehabilitation, revitalization, and modification of facilities, construction of new facilities and additions to existing facilities, facility planning and design, and restoration, and acquisition or condemnation of real property, as authorized by law, and environmental compliance and restoration, $397,300,000, to remain available until September 30, 2016.

OFFICE OF INSPECTOR GENERAL

For necessary expenses of the Office of Inspector General, in carrying out the Inspector General Act of 1978, $37,000,000.

ADMINISTRATIVE PROVISIONS
(INCLUDING TRANSFER OF FUNDS)

Funds for announced prizes otherwise authorized shall remain available, without fiscal year limitation, until the prize is claimed or the offer is withdrawn.

Not to exceed 5 percent of any appropriation made available for the current fiscal year for the National Aeronautics and Space Administration in this Act may be transferred between such appropriations, but no such appropriation, except as otherwise specifically provided, shall be increased by more than 10 percent by any such transfers. Any transfer pursuant to this provision shall be treated as a reprogramming of funds under section 505 of this Act and shall not be available for obligation except in compliance with the procedures set forth in that section.

The unexpired balances of previous accounts, for activities for which funds are provided under this Act, may be transferred to the new accounts established in this Act that provide such activity. Balances so transferred shall be merged with the funds in the newly established accounts, but shall be available under the same terms, conditions and period of time as previously appropriated.

Section 20 of the National Aeronautics and Space Administration Authorization Act of FY 1992 (Public Law 102–195, 42 U.S.C. 2467a) is amended by adding at the end thereof: "(d) Availability of Funds—The interest accruing from the National Aeronautics and Space Administration Endeavor Teacher Fellowship Trust Fund principal shall be available in FY 2011 and hereafter for the purpose of the Endeavor Science Teacher Certificate Program.".

Of funds provided under the headings "Science" and "Exploration" in this Act, up to $15,000,000, shall be available for a reimbursable agreement with the Department of Energy for the purpose of re-establishing facilities to produce fuel required for radioisotope thermoelectric generators to enable future missions.

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Reference: Acronyms

AA	Associate Administrator
AAD	Aircraft Aging and Durability
ACCESS	Advanced Collaborative Connections for Earth System Science
ACE	Advanced Composition Explorer
ACRIMSat	Active Cavity Radiometer Irradiance Monitor Satellite
ADCAR	Astrophysics Data Curation and Archival Research
AEDC	Arnold Engineering Development Center
AESP	Aerospace Education Services Program
AFB	Air Force Base
AFOSR	Air Force Office of Scientific Research
AFRL	Air Force Research Laboratory
AISR	Applied Information Systems Research
AITS	Agency Information Technology Services
ALI	Advanced Land Imager
AMM	Aircraft Management Module
AMMOS	Advanced Multi-Mission Operations System
AMMP	craft Maintenance and Modification Program
AMO	Agency Management and Operations
AMS	Alpha Magnetic Spectrometer
AMSR-E	Advanced Microwave Scanning Radiometer for the Earth Observing System
AO	Announcement of Opportunity
APG	Annual Performance Goal
APL	Applied Physics Laboratory (Johns Hopkins University)
APPEL	Academy of Program/Project and Engineering Leadership
APR	Annual Performance Report
ARC	Ames Research Center
ARISS	Amateur Radio on the International Space Station
ARMD	Aeronautics Research Mission Directorate
AS&T	Aeronautics Science and Technology
ASAP	Aerospace Safety Advisory Panel
ASI	Agenzia Spaziale Italiana (Italian Space Agency)
ASP	Airspace Systems Program
ASPERA-3	Analyzer of Space Plasma and Energetic Atoms-3
ASR	Aviation Safety Report
ASRG	Advanced Stirling Radioisotope Generator
ASSP	Architecture for Survivable System Processing
AST	Advanced Subsonic Technology
ATLO	Assembly, Test and Launch Operations
ATM	Air Traffic Management
ATMS	Advanced Technology Microwave Sounder (NPOESS Preparatory Project instrument)
ATP	Aeronautics Test Program
ATV	Automated Transfer Vehicle
AU	Astronomical unit
AvSP	Aviation Safety Program
AvSa	Aviation Safety
BARREL	Balloon Array for Radiation-belt Relativistic Electron Losses
BATC	Ball Aerospace and Technology Corporation
BCP	Ball Commercial Platform
BE	Beyond Einstein
BEPAC	Beyond Einstein Program Assessment Committee
C&DH	Command and Data Handling
C3S	Command, Control, and Communication Segment
CAEP	Committee on Aviation Environmental Protection
CALIPSO	Cloud–Aerosol Lidar and Infrared Pathfinder Satellite Observations
CAPTEM	Curation and Analysis Planning Team for Extraterrestrial Materials
CAS	Cross-Agency Support
CAST	Commercial Aviation Safety Team
CCD	Charge Coupled Device
CDC	Centers for Disease Control
CDI	Congressionally Directed Items
CDR	Critical Design Review
CERES	Clouds and the Earth's Radiant Energy System
CESR	Centre d'Etude Spatiale des Rayonnements
CFD	Computational Fluid Dynamics
CFO	Chief Financial Officer
ChemCam	Chemistry Camera
CheMin	Chemistry & Mineralogy Instrument
CHS	Crew Health and Safety
CI	Counter-intelligence
CINDI	Coupled Ion Neutral Dynamics Investigation
CIO	Chief Information Officer
CIPAIR	Curriculum Improvement Partnership Award for the Integration of Research
CLARREO	Climate Absolute Radiance and Refractivity Observatory
CM&O	Center Management and Operations
CMB	Cosmic Microwave Background
CMC	Cargo Mission Contract
CME	Continuing Medical Education
CME	Coronal Mass Ejection
CMO	Center Management and Operations
CO	Carbon Monoxide
CO2	Carbon Dioxide
CoF	Construction of Facilities
CONAE	Argentina's National Committee of Space Activities
CoNNeCT	Communication Navigation and Networking Reconfigurable Testbed
CO-OP	Cooperative-Education

COTF	Classroom of the Future
COTR	Contracting Officer Technical Representative
COTS	Commercial Orbital Transportation Services
C/NOFS	Communication/Navigation Outage Forecast System
CRI	Center for Rotorcraft Innovation
CSA	Canadian Space Agency
CSAR	Cost and Schedule Analysis Report
CT	Counter-terrorism
CY	Calendar Year
CZAP	Center Zoned Architecture Project
DAAC	Distributed Active Archive Centers
DAN	Dynamic Albedo of Neutrons
DAP	Data Analysis Program
DCAA	Defense Contract Audit Agency
DCAS	Defense Contract Audit Service
DESDynI	Deformation, Ecosystem Structure, and Dynamics of Ice
DFRC	Dryden Flight Research Center
DLN	Digital Learning Network
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of Interior
DRS	Disturbance Reduction System
DSN	Deep Space Network
DTN	Disruption Tolerant Networking
E&PO	Education and Public Outreach
EA	Enterprise Architecture
EarthKAM	Earth Knowledge Acquired by Middle School Students
ECLSS	nvironmental Control and Life Support System
ECR	Environmental Compliance and Restoration
ECT	Energetic Particle, Composition and Thermal Plasma
ED	Education
EDL	Entry, Descent, and Landing
EDMD	Exploration Technology Development Program
EEE	Evolution of EOSDIS Elements
EELV	Evolved Expendable Launch Vehicle
EEO	Equal Employment Opportunity
EFASC	Electric Field and Search Coil
EF	Exposed Facility
EFPO	Education Flight Projects
EFW	ic Field and Waves
EIS	Extreme Ultraviolet Imaging Spectrometer
EJSM	Europa Jupiter System Mission
ELV	Expendable Launch Vehicle
EMFISIS	Electric and Magnetic Field Instrument Suite and Integrated Science
EOS	Earth Observing System
EOSDIS	Earth Observing System Data and Information System
EPA	Environmental Protection Agency
EPN	Effective Perceived Noise
EPNdB	Effective Perceived Noise in Decibels
EPOCh	Extrasolar Planet Observations and Characterization
EPSCoR	Experimental Program to Stimulate Competitive Research
ERA	Environmentally Responsible Aviation
ESA	European Space Agency
ESD	Earth Science Division
ESDR	Earth System Data Records
ESM	Earth Systematic Missions
ESMD	Exploration Systems Mission Directorate
ESSP	Earth System Science Pathfinder
ESTO	Earth Science Technology Office
ESTP	Earth Science Technology Program
ET	External Tank
ETD	Exploration Technology Development
ETDP	Exploration Technology Development Program
ETM	Enhanced Thematic Mapper
EUV	Extreme-Ultraviolet
EXEP	Exoplanet Exploration Program
FA	Fundamental Aeronautics
FAA	Federal Aviation Administration
FAP	Fundamental Aeronautics Program
FAR	Federal Acquisition Regulation
FAST	Facilitated Access to the Space Environment for Technology Development and Training
FCIP	Federal Career Intern Program
FGS	Fine Guidance Sensor
FLITECAM	First Light Infrared Test Experiment Camera
FMI	Finnish Meteorological Institute
FOC	Full Operational Capability
FPA	Focal Plane Array
FPP	Focal Plane Package
FS	First Stage
FY	Fiscal Year
GALEX	Galaxy Evolution Explorer
GCCE	Global Climate Change Education
GCRP	Global Change Research Program
GEO	Geosynchronous Earth Orbit
GES DAAC	GSFC Earth Science Distributed Active Archive Center
GI	Guest Investigator
GISS	Goddard Institute for Space Studies
GLOBE	Global Learning and Observations to Benefit the Environment
GMAO	Global Modeling and Assimilation Office
GN	Ground Networks
GO	Ground Operations
GOES	Geostationary Operational Environmental Satellite
GPM	Global Precipitation Measurement

GPS	Global Positioning System
GRACE	Gravity Recovery and Climate Experiment
GRAIL	Gravity Recovery and Interior Laboratory
GRB	Gamma Ray Burst
GRC	Glenn Research Center
GRC-PBS	Glenn Research Center–Plum Brook Station
GREAT	German Receiver for Astronomy at Terahetz
GRGT	Guam Remote Ground Terminal
GS	Ground Support
GSFC	Goddard Space Flight Center
GWAC	Government Wide Acquisition Contracts
HBCU	Historically Black Colleges and Universities
HCIE	Human Capital Information Environment
HECC	High End Computing Capability
HgCdTe	Mercury-Cadmium-Telluride
HIPO	High-speed Imaging Photometer for Occultation
HIRES	High Resolution Echelle Spectrometer
HPS	Heliophysics Subcommittee
HQ	NASA Headquarters
HR	Human Resource
HRP	Human Research Program
HSB	Humidity Sounder for Brazil
HSFO	Human Space Flight Operations
HSPD	Homeland Security Presidential Directive
HSR	High-Speed Research
HST	Hubble Space Telescope
HTV	H-II Transfer Vehicle
HVAC	Heating, Ventilating and Air Conditioning
HWB	Hybrid Wing Body
I&T	Integration and test
IAM	Integrated Asset Management
IBEX	Interstellar Boundary Explorer
ICAO	International Civil Aviation Organization
ICESat	Ice, Cloud, and Land Elevation Satellite
IDIQ	Indefinite Delivery Indefinite Quantity
IDPS	Interface Data Processing Segment
IDS	Interdisciplinary Science
IEMP	Integrated Enterprise Management Program
IG	Inspector General
IIFD	Integrated Intelligent Flight Deck
ILN	International Lunar Network
INPE	Brazilian Institute for Space Research
INSPIRE	Interdisciplinary National Science Program Incorporating Research and Education Experiences
IOM	Institute of Medicine
IP	Intellectual Property
IPO	Integrated Program Office
IPP	Innovative Partnerships Program
IPS	Integrated Planning System
IR	Infrared
IRA	Institutional Research Awards
IRM	Information Resources Management
IRT	Independent Review Team
ISIM	Integrated Science Instrument Module
ISM	Interstellar Medium
ISRP	Integrated Systems Research Program
ISS	International Space Station
IT	Information Technology
ITF	Integrated Training Facility
IUVS	Imaging Ultraviolet Spectrometer
IVHM	Integrated Vehicle Health Management
IV&V	Independent Verification and Validation
IXO	International X-ray Observatory
JADE	Jovian Auroral Distributions Experiment
JAXA	Japan Aerospace Exploration Agency
JCAA	Joint Council on Aging Aircraft
JDAP	Jupiter Data Analysis Project
JDEM	Joint Dark Energy Mission
JEDI	Jupiter Energetic particle Detector Instrument
JHU-APL	Johns Hopkins University–Applied Physics Laboratory
JOI	Jupiter Orbit Insertion
JPDO	Joint Planning and Development Office
JPL	Jet Propulsion Laboratory
JSC	Johnson Space Center
JSC-WSTF	Johnson Space Center–White Sands Test Facility
JWST	James Webb Space Telescope
KaPR	Ka-band Precipitation Radar
KI	Keck Interferometer
KNMI	Royal Netherlands Meteorological Institute
KSC	Kennedy Space Center
KuPR	Ku precipitation radar
LADEE	Lunar Atmosphere and Dust Environment Explorer
LANL	Los Alamos National Laboratory
LaRC	Langley Research Center
LASER	Lunar Advanced Science and Exploration Research
LASP	Laboratory for Atmospheric and Space Physics (University of Colorado, Boulder)
LBT	Large Binocular Telescope
LBTI	Large Binocular Telescope Interferometer
LCC	Launch Control Center
LCC	Life-Cycle-Cost
LDCM	Landsat Data Continuity Mission
LDEX	Lunar Dust EXperiment
LEARN	Learning Environments and Research Network
LEO	Low Earth Orbit
LISA	Laser Interferometer Space Antenna
LN2	Liquid Nitrogen
LQP	Lunar Quest Program
LRD	Launch Readiness Date
LRO	Lunar Reconnaissance Orbiter
LRR	Launch Readiness Review

LSAH	Longitudinal Study of Astronaut Health
LSP	Launch Services Program
LTP	Learning Technologies Project
LV	Launch Vehicle
LWS	Living with a Star
MA	Multiple Access
MAG	Magnetometer
MAVEN	Mars Atmosphere and Volatile EvolutioN
MCC	Mission Control Center
MCR	Mission Confirmation Review
MD	Mission Directorate
MDAO	Multidisciplinary Design Analysis and Optimization
MDR	Mission Design Review
MEaSUREs	Making Earth System data records for Use in Research Environments
MEP	Mars Exploration Program
METI	Ministry of Economy Trade and Industry (Japan)
MEX	Mars Express
MFMTC	National Force Measurement Technology Capability
MI	Minority Institutions
MIC	Mission Integration Contract
MIDEX	Medium-Class Explorer
MIs	Minority Institutions
MIT	Massachusetts Institute of Technology
MLP	Mobile Launch Platform
MLS	Microwave Limb Sounder
MMS	Magnetospheric Multiscale
MO	Missions of Opportunity
MO&DA	Mission Operations and Data Analysis
MOE	Mission Operations Element
MoO	Mission of Opportunity
MOPITT	Measurements of Pollution in the Troposphere
MPLM	Multi-Purpose Logistics Module
MRO	Mars Reconnaissance Orbiter
MSFC	Marshall Space Flight Center
MSG	Magnetic Spectrometer
MSL	Mars Science Laboratory
MSR	Mars Sample Return
MUREP	Minority University Research and Education Program
NAC	NASA Advisory Committee
NAS	National Airspace System
NCAR	National Center for Atmospheric Research
NCAS	NASA Contract Assurance Services
NCI	NASA Communications Improvement
NCSER	National Center for Space Exploration Research
NEAR	Near-Earth Asteroid Rendezvous
NEN	Near Earth Network
NEO	Near-Earth Object
NES	NASA Explorer School
NESC	NASA Engineering and Safety Center
NETS	NASA Educational Technology Services
NextGen	Next Generation Air Transportation System
NFS	NASA FAR Supplement
NG	Northrop Grumman
NGATS	Next Generation Air Transportation System
NGIMS	Neutral Gas and Ion Mass Spectrometer
NIP	New Investigator Program
NIRCam	Near-Infrared Camera
NIRSpec	Near-Infrared Spectrometer
NISN	NASA Integrated Services Network
NIVR	Netherlands Agency for Aerospace Programmees
NLS	NASA Launch Services
NLT	NASA Learning Technologies
NMO	NASA Management Office
NMP	New Millennium Program
NOAA	National Oceanic and Atmospheric Administration
NOx	Nitrogen Oxide
NPOESS	National Polar–orbiting Operational Environmental Satellite System
NPP	NPOESS Preparatory Project
NPR	NASA Procedural Requirement
NRA	NASA Research Announcement
NRC	National Research Council
NRC	Nuclear Regulatory Commission
NRL	Naval Research Laboratory
NRO	National Reconnaissance Office
NSC	NASA Safety Center
NSF	National Science Foundation
NSSC	NASA Shared Services Center
NSSDC	National Space Science Data Center
NSTC	National Science and Technology Council
NSTI-MI	NASA Science and Technology Institute for Minority Institutions
NSWPC	National Space Weather Program Council
NuSTAR	Nuclear Spectroscopic Telescope Array
NWP	Numerical Weather Prediction
OA	Office of Audits
OCE	Office of the Chief Engineer
OCHMO	Office of the Chief Health and Medical Officer
OCIO	Office of Chief Information Officer
OCO	Orbiting Carbon Observatory
OGAs	Other Government Agencies
OHCM	Office of Human Capital Management
OI	Office of Investigations
OIG	Office of Inspector General
OMI	Ozone Monitoring Instrument

	Office National d'Études et de Recherches
ONERA	Aérospatiales
ORR	Operations Readiness Review
OSC	Orbital Sciences Corporation
OSMA	Office of Safety and Mission Assurance
OSTM	Ocean Surface Topography Mission
OSTP	Office of Science and Technology Policy
OSTST	Ocean Surface Topography Science Team
OTE	Optical Telescope Element
OVWST	Ocean Vector Winds Science Team
PA&E	Program Analysis and Evaluation
PAR	Performance and Accountability Report
PAR	Program Acceptance Review
PB	President's Budget
PBR	President's Budget Request
PBS	President's Budget Submit
PCA	Program Commitment Agreement
PCOS	Physics of the Cosmos Program
PDR	Preliminary Design Review
PDS	Planetary Data System
P&F	Particles and Fields
PI	Principal Investigator
PIC	Program Integration Contract
PIR	Program Implementation Review
PIV	Personal Identification Verification
PMC	Program Management Council
PMCs	Polar Mesospheric Clouds
PNAR	Preliminary Non-Advocate Review
PNT	Positioning, Navigation, and Timing
PPS	Precipitation Processing System
PR	Precipitation Radar
PSBR	Proton Spectrometer Belt Research
QTR	Quarter
QuickSCAT	Quick Scatterometer
R&A	Research and Analysis
R&D	Research and Development
RBSP	Radiation Belt Storm Probes
REMS	Rover Environmental Monitoring System
RF	Radio Frequency
RFI	Request for Information
RFP	Request for Proposal
RI	Research Institutions
RMB	Reimbursable
RMP	Risk Mitigation Phase
ROSES	Research Opportunities in Space and Earth Science
Roskomos	Russian Federal Space Agency
RPS	Radioisotope Power System
RPT	Rocket Propulsion Testing
RR	Readiness Review
RSDO	Rapid Spacecraft Development Office
RSP	Radioisotope Power Systems
RW	Reaction Wheel
S&MA	Safety and Mission Assurance
SA	Single Access
SAA	Space Act Agreement
SAC-D	Satellite de Aplicaciones Cientificas–D (Argentina)
SALMON	Stand Alone Missions of Opportunity
SAM	Sample Analysis at Mars
SAP	Core Financial System Software
SAR	Synthetic Aperture Radar
SBIR	Small Business Innovative Research
SCEM	Scientific Context for Exploration of the Moon
SCFO	Space Flight Crew Operations
SCP	Space Communications Program
SDLC	System Development Life Cycle
SDO	Solar Dynamics Observatory
SEC	Sun–Earth Connection
SE&I	System Engineering and Integration
SEMAA	Science Engineering Mathematics Aerospace Academy
SESFA	Space Environments Simulation Facilities Alliance
SFS	Space and Flight Support
SFW	Subsonic Fixed Wing
SGSS	Space Network Ground Segment Sustainment
SHERE	Shear History Extensional Rheology Experiment
SHFH	Space Human Factors and Habitability
SIM	Space Interferometry Mission
SIR	System Integration Review
SLI	Student Launch Initiative
SMA	Safety and Mission Assurance
SMAP	Soil Moisture Active and Passive
SMD	Science Mission Directorate
SMEX	Small Explorer
SMS	Safety and Mission Success
SN	Space Network
SNI	Simultaneous, non-interfering
SOC	Security Operations Center
SOC	Solar Orbiter Collaboration
SOFIA	Stratospheric Observatory for Infrared Astronomy
SOMD	Space Operations Mission Directorate
SORCE	Solar Radiation and Climate Experiment
SPF	Software Production Facility
SPOC	Space Program Operations Contract
SR	Senior Review
SRB	Standing Review Board
SRG	Stirling Radioisotope Generator
SRR	System Requirement Review
SRW	Subsonic Rotary Wing
SS	Steady State
SSC	Stennis Space Center

SSE	Solar System Exploration
SSME	Space Shuttle Main Engines
SSP	Space Shuttle Program
SSS	Sea Surface Salinity
SST	Solid State Telescope (Thermal Emission Imaging System instrument)
ST	Space Technology
STATIC	SupraThermal And Thermal Ion Composition
STaR	Shuttle Transition and Retirement
STEM	Science, Technology, Engineering, and Mathematics
STEREO	Solar Terrestrial Relations Observatory
STI	Scientific and Technical Information
STOL	Short take-off and landing
STP	Solar Terrestrial Probes
STS	Space Transportation System
STScI	Space Telescope Science Institute
SwRI	Southwest Research Institute
SXS	Soft X-ray Spectrometer
T2	Technology transfer
TA	Technical Authority
TBD	To Be Determined
TCU	Tribal Colleges and Universities
TDRS	Tracking and Data Relay Satellite
TDRSS	Tracking and Data Relay Satellite System
TE	Technical Excellence
THEMIS	Time History of Events and Macroscale Interactions during Substorms
TIMED	Thermosphere, Ionosphere, Mesosphere, Energetics and Dynamics
TIMS	Thermal Infrared Multispectral Scanner
TIRS	Thermal Infrared Sensor
TMC	Technical, Management and Cost
TM	Technical Monitors
TMI	TRMM Microwave Imager
TOC	Test Operations Contract
TPS	Thermal Protection System
T&R	Transition and Retirement
TRL	Technology Readiness Level
TRMM	Tropical Rainfall Measuring Mission
TSDIS	TRMM Science Data and Information System
TVC	Thermal Vacuum Chambers
TWINS	Two Wide–angle Imaging Neutral–atom Spectrometers
UAS	Uninhabited Air Systems
UAV	Unmanned Aerial Vehicle
UAZ	University of Arizona
UCLA	University of California at Los Angeles
UI	University of Iowa
ULA	United Launch Alliance
URC	University Research Center
USA	United Space Alliance
USAF	United States Air Force
UTD	University of Texas at Dallas
UV	Ultraviolet
UVS	UV Spectrometer
VAB	Vehicle Assembly Building
VAO	Virtual Astronomical Observatory
VCL	Vegetation Canopy Lidar
WATR	Western Aeronautical Test Range
WISE	Wide-field Infrared Survey Explorer
WMAP	Wilkinson Microwave Anisotropy Probe
WRS	Water Recovery System
WSC	White Sands Complex
WSTF	White Sands Test Facility
XRT	X-Ray Telescope
XMM	X-ray Multi-mirror Mission (Newton Observatory)