National Aeronautics and Space Administration

Governance and Strategic Management Handbook

NPD 1000.0A

CHANGE HISTORY
NPD 1000.0A, NASA Governance and Strategic Management

Chg #	Office/Center	Date	Distribution/Comments

P.1 PURPOSE

This NASA Policy Directive (NPD) has two primary aims: (1) to set forth NASA's governance framework—principles and structures through which the Agency manages mission, roles, and responsibilities; and (2) to describe NASA's strategic management system—processes by which the Agency manages strategy and its implementation through planning, performance, and results.

P.2 APPLICABILITY

This NPD applies to NASA Headquarters and NASA Centers, including component facilities and the Jet Propulsion Laboratory.

P.3 AUTHORITY

42 U.S.C. 2473 (c) (1), Section 203(c) (1) of the National Aeronautics and Space Act of 1958, as amended.

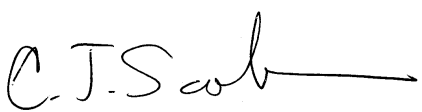
P.4 APPLICABLE DOCUMENTS

a. NPD 1001.0, NASA Strategic Plan, dated February 07, 2006.

b. NPD 1000.3, The NASA Organization, dated February 15, 2007.

P.5 CANCELLATION

NPD 1000.0, Strategic Management and Governance Handbook, dated August 2005.



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Associate Administrator

NASA POLICY DIRECTIVE

NPD 1000.0A

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NASA Governance and Strategic Management Handbook

Responsible Office: Office of the Associate Administrator

Dear Colleagues:

NASA exists to carry out programs in space exploration, scientific discovery, and aeronautics research on behalf of our Nation. These endeavors are among the most technically difficult a society can undertake. We at NASA are committed to seemingly impossible tasks, such as building a million-pound International Space Station as a foothold on the frontier, deploying complex scientific spacecraft to understand our Earth and sending similar spacecraft to other planets, building an enormous new telescope to study the birth of the universe, and establishing a human lunar outpost.

These pursuits require us to push the technological envelope, on a daily basis, in the most demanding and publicly visible manner of any human enterprise. Such work requires profound dedication from both NASA employees and contractors and the management framework and institutional processes to enable and promote the discipline essential to mission success.

In 2005, we released this document's predecessor, describing our approach to Agency strategic management and governance. Since then, we have placed high priority on deepening Agency-wide understanding and implementation of those principles and philosophy.

NASA's governance and strategic management structure is intentionally lean. It is executed through three councils: the Strategic Management Council, the Operations Management Council and, the Program Management Council. These councils are intended to enable efficient decision making and to promote effective communication between and among the various NASA elements.

Our management focus must be on mission success across a challenging portfolio of high-risk, complex endeavors, executed over decades. There is an inevitable and necessary tension between organizational goals and practices that promote mission success in the near term and those that promote success in the future. NASA's organizational governance structure promotes constructive management of these natural tensions.

Institutional facilities and capabilities are maintained for the purpose of supporting our mission portfolio. The lessons of past practice that are captured in Agency and Center policies, standards, procedures, and practices exist to facilitate the success of these missions. Institutional elements and processes which do not clearly serve NASA mission needs must be redirected or discontinued.

Success is dependent upon proper balance between the Authorities which are vested in program managers, whose job it is to promote programmatic efficiency, and those which are vested in institutional managers, who ensure resource availability and compliance with applicable standards of professional practice. The checks and balances built into our governance structure are designed to foster an integrated working relationship between programmatic and institutional managers as they execute their separate responsibilities. D

Governance also addresses the need for strategic acquisition, balancing the value of competition with the necessity for Centers to be capable of carrying out the inherently governmental functions required to execute the mission portfolio.

Strategic management augments the governance structure with processes to control the planning and implementation of Agency strategy to obtain efficient performance and desired results. This assures that programs are executable within budget portfolios and assures transparency in planning, programming, budgeting, and execution. It must be clear what NASA is buying with its funding, and programs must meet cost, schedule, and performance goals.

Perhaps most importantly, these principles and processes emphasize and encourage open communications among all team members. We tend to forget lessons learned from crises of years ago. As managers, we must check, re-check, and check again to hear the messages conveyed to us by our employees and our machines. Everyone—from assembly line technicians through early and mid-career engineers to Center Directors and Associate Administrators—has the responsibility to speak up if something is amiss. Through this we learn, manage risk, and make progress on the seemingly impossible tasks we attempt.

NASA's updated Governance and Strategic Management Handbook adds the practical detail that forges this needed discipline. Every page is directed toward mission success. I commend this handbook to all NASA and contractor personnel for the rigor we need on our journey of exploration and discovery.

Michael D. Griffin
Administrator

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CHAPTER 1. OVERVIEW AND PURPOSE

This handbook has two primary aims: (1) to set forth NASA's governance framework—principles and structures through which the Agency manages mission, roles, and responsibilities; and (2) to describe NASA's strategic management system—processes by which the Agency manages strategy and its implementation through planning, performance, and results.

NASA governance and strategic management provide the discipline and rigor to enable success of NASA's Mission—to pioneer the future in space exploration, scientific discovery, and aeronautics research. Together, governance and strategic management set in motion preparation for a comprehensive five-year plan and longer-range goals. The handbook presents:

- The governance structure by which the Office of the Administrator and senior staff provide leadership across the Agency;
- Governance principles by which NASA manages;
- NASA's organizational plan to conduct the Agency's Mission, including roles and responsibilities;
- Guidance for Mission Directorates and Centers to execute programs and projects;
- Guidelines consistent with external requirements for strategic planning, and identification of the Agency's key strategic planning roles;
- The process by which strategy is converted into implementation and outcomes; and
- The process for establishing performance measures and providing feedback on progress.

Workers at Kennedy Space Center's Parachute Refurbishment Facility prepare a parachute for an upcoming test. NASA will use the final parachute design to return the Ares I rocket and Orion spacecraft to Earth. Kennedy has transitioned many of the workers from the Shuttle Program as that program winds down and the Constellation Systems Program moves forward. (Photo: K. Shiflett/NASA)

Governance and strategic management must also ensure compliance with applicable laws and policies for the management of Federal agencies. The Agency must meet these requirements in a clear and traceable manner that demonstrates accountability.

Chapter 2 addresses NASA's values.

Chapter 3 describes NASA's governance principles:

- Lean governance.
- Clear roles, responsibility and decision making.
- Strategic acquisition.
- Checks and balances.

The strategic management system of Chapter 4 describes how the Agency establishes and conducts its missions through four fundamental processes:

- Planning.
- Programming.
- Budgeting.
- Execution.

The four chapters in this handbook each include a brief written explanation of the subject, and where useful, a visual graphic and/or table of the identified process. Documents that provide detail on given subjects are delineated in the appendices.

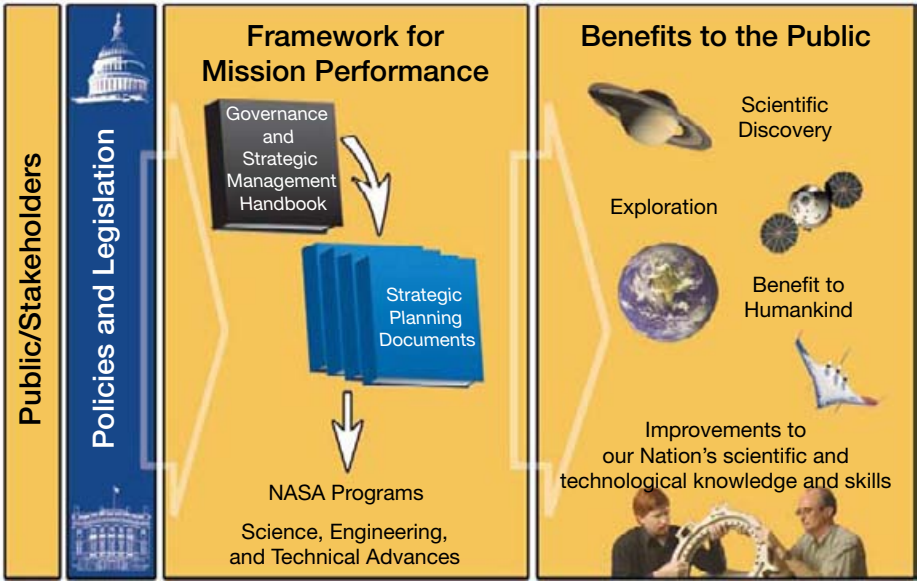


Figure 1.0-1 Public Accountability. NASA must meet the intent of the National Aeronautics and Space Act of 1958, which established the Agency for the purpose of expanding human knowledge in aeronautical and space activities for the benefit of all humankind. NPD 1000.0A conveys NASA's strategic approach to achieving the Agency's Mission.

CHAPTER 2. CORE VALUES

NASA engages in tasks of extraordinary risk, complexity, and national priority. Mission-driven, with mission success at the cornerstone of its culture, the Agency rigorously manages requirements, schedule, facilities, human resources, and budget.

As individuals, we also recognize our responsibilities and are accountable for the important work entrusted to us. As we execute our tasks, our shared core values guide our individual and organizational behavior. We value:

Safety—NASA's constant attention to safety is the cornerstone upon which we build mission success. We are committed, individually and as a team, to protecting the safety and health of the public, our team members, and those assets that the Nation entrusts to the Agency.

Excellence—To achieve the highest standards in engineering, research, operations, and management in support of mission success, NASA is committed to nurturing an organizational culture in which individuals make full use of their time, talent, and opportunities to pursue excellence in both the ordinary and the extraordinary.

Teamwork—NASA's most powerful tool for achieving mission success is a multi-disciplinary team of diverse competent people across all NASA Centers. Our approach to teamwork is based on a philosophy that each team member brings unique experience and important expertise to project issues. Recognition of and openness to that insight improves the likelihood of identifying and resolving challenges to safety and mission success. We are committed to creating an environment that fosters teamwork and processes that support equal opportunity, collaboration, continuous learning, and openness to innovation and new ideas.

Integrity—NASA is committed to maintaining an environment of trust, built upon honesty, ethical behavior, respect, and candor. Our leaders enable this environment by encouraging and rewarding a vigorous, open flow of communication on all issues, in all directions, among all employees without fear of reprisal. Building trust through ethical conduct as individuals and as an organization is a necessary component of mission success.

Mission success requires uncompromising commitment to: Safety, Excellence, Teamwork, and Integrity.

Figure 2.0-1 Values. NASA is committed to a core set of values in everything it does.

CHAPTER 3. GOVERNANCE PRINCIPLES

Mission success delivers on our commitment to be good stewards of the resources entrusted to us by the taxpayer. To enable Agency-wide accomplishments, NASA's governance framework is founded on the following tenets:

- Everyone in NASA has a responsibility to support the goals of its programs and projects.
- Lean management together with clear roles, responsibility, and decision making creates organizational effectiveness and efficiency.
- Program and project management and systems engineering capabilities must be maintained at the Centers for NASA's long-term institutional health.
- Programmatic and institutional perspectives will differ. This tension must be managed constructively to provide the appropriate balance between short-term efficiency and long-term sustainability.
- While maintaining the chain of command, information must be available to appropriate levels of management for visibility into programs, projects, and institutions.
- Each team member brings unique experience and important expertise to issues. Recognition of and openness to such knowledge improves the probability of identifying and resolving challenges to safety and mission success.
- Independent reviews by respected experts provide an objective measure of progress—no one "grades" his or her own work.

NASA's governance principles that provide this framework are:

- Lean governance.
- Clear roles, responsibility and decision making.
- Strategic acquisition.
- Checks and balances.

Sections 3.1 through 3.4 discuss these principles for governance at NASA.

Technicians at the Dryden Flight Research Center prepare for systems installation on an Orion boilerplate crew capsule, which will be used for launch abort testing. NASA has distributed work for Constellation Systems to take advantage of each Center's unique research and engineering capabilities and to use existing workforce and facilities to best advantage. (Photo: T. Landis/NASA)

3.1 Lean Governance

NASA governs with three Agency-level councils with distinct charters and responsibilities: the Strategic Management Council (SMC), the the Operations Management Council (OMC), and the Program Management Council (PMC). These councils are essential components of governance; no other Agency-wide chartered governing councils are required. Additional advice and assessment are solicited from external bodies within the science and research communities.

Governance by council is used in cases where decisions require high degrees of integration, visibility, and approval. Examples include approval of the Agency Strategic Plan by the SMC, approval of a new business system by the OMC, or approval for a major project to transition from formulation to implementation by the PMC. Governance by council also provides oversight, sets requirements and strategic priorities, and guides key assessments of the Agency as indicated in Figure 3.1-1, affecting all major processes.

The NASA Administrator is the chairperson of the SMC and appoints the chairperson for the OMC and the PMC. The decision making authority for each council is delegated to the chairperson and may not be further delegated. The Administrator or the chairperson appoints the standing members. The council chairs may appoint additional ad hoc or special members. Attendance at all three council meetings is limited to members and invited guests.

Figure 3.1-1 shows the functional relationships between NASA's governing councils, and Table 3.1-1 lists the principal council roles and membership.

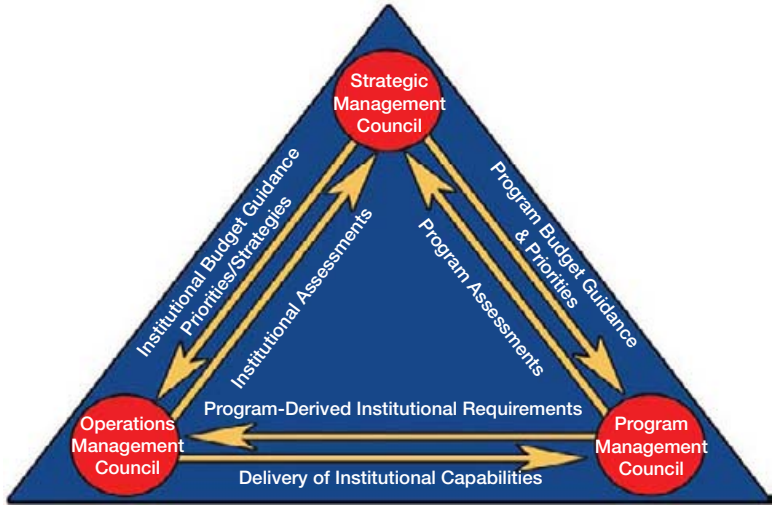


Figure 3.1-1 Functional Relationships between NASA's Governing Councils.

TABLE 3.1-1—NASA Management Councils, Roles, and Membership

NASA controls all strategic management processes through its governance structure, which consists of three Agency-level management councils. The appropriate principal or deputy must attend meetings.			
The **Strategic Management Council (SMC)** serves as the Agency's senior decision-making body for strategic direction and planning. The SMC determines NASA's strategic direction and assesses Agency progress toward achieving NASA's Vision. *Meets Monthly.*			
Purpose	• Setting NASA strategic direction, goals, architecture, and policies. • Providing guidance for the formulation of the NASA Strategic Plan. • Establishing the highest level metrics against which to measure Agency performance. • Establishing mission and budget priorities. • Approving Agency-level program requirements for all NASA programs. • Approving major new initiatives. • Serving as the senior leadership forum for making decisions on all strategic Agency-level issues. • Approving communications strategies.	**Membership**	• **Administrator—Chair** • Deputy Administrator—Alternate Chair • Associate Administrator • Chief of Staff • Associate Deputy Administrator • Chief, Safety and Mission Assurance • Associate Administrator, Program Analysis and Evaluation (PA&E) • Chief Engineer • Associate Administrators, Mission Directorates • Center Directors • Chief Financial Officer • Chief Information Officer • General Counsel • Chief Health and Medical Officer • Assistant Administrator, External Relations
The **Operations Management Council (OMC)** serves as NASA's senior decision-making body for institutional plans and implementation strategies. The council determines and assesses mission support requirements to enable the successful accomplishment of the Agency's Mission. *Meets As Needed.*			
Purpose	• Setting mission support goals and objectives. • Serving as the senior leadership forum for making decisions on institutional issues. • Approving major new mission support initiatives, plans, and requirements. • Providing leadership, guidance, and approval of mission support plans. • Overseeing and approving institutional risk plans and mitigation strategies. • Establishing institutional metrics to measure performance against mission support objectives. • Reviewing progress on institutional initiatives, plans, and programs. • Establishing institutional priorities and approving guidance for the formulation of corporate and institutional budgets. • Overseeing Agency internal control, identifying deficiencies, reviewing corrective action plans, and evaluating progress against the plans.	**Membership**	• **Deputy Administrator—Chair** • Chief of Staff—Alternate Chair • Associate Administrator • Associate Deputy Administrator • Assistant Associate Administrator • Chief, Safety and Mission Assurance • Associate Administrator, PA&E • Chief Engineer • Associate Administrators, Mission Directorates • Center Directors • Chief Financial Officer • Chief Information Officer • General Counsel • Chief Health and Medical Officer • Associate Administrator, Institutions and Management • Chief, Strategic Communications *Adjunct Members* • Executive Officer to the Deputy Administrator • Program Specialist, Office of the Deputy Administrator • Comptroller • Director, Program and Institutional Integration • Director, Innovative Partnerships Program • Director, PA&E Strategic Investment Division • Assistant Administrator, Human Capital Management • Assistant Administrator, Procurement • Assistant Administrator, External Relations • Assistant Administrator for Diversity and Equal Opportunity • Executive Director, Headquarters Operations

TABLE 3.1-1—NASA Management Councils, Roles, and Membership (Continued)

The **Operations Management Council (OMC)**, continued.			
Purpose (Con.)	• Providing prior review and concurrence on selected institutional issues with strategic implications before going forward to the Strategic Management Council to be briefed or for approval. • Identifying and reviewing the status of Agency material weaknesses.	**Membership (Con.)**	• Assistant Administrator, Infrastructure and Administration • Executive Director, NASA Shared Services Center
The **Program Management Council (PMC)** serves as the Agency's senior decision-making body to baseline and assess program/project performance and ensure successful achievement of NASA strategic goals. *Meets As Needed.*			
Purpose	• Ensuring that NASA is meeting the commitments specified in the relevant management documents for program/project performance and mission assurance. • Ensuring implementation and compliance with NASA program and project management processes and requirements. • Approving programs/projects entry into subsequent life-cycle phases. • Reviewing programs routinely, including institutional ability to support program/project commitments. • Approving Program Commitment Agreements. • Reviewing special and out-of-cycle assessments. • Approving the Mission Directorate strategic portfolio and its associated risk.	**Membership**	• **Associate Administrator—Chair** • Chief Engineer—Alternate Chair • Deputy Administrator • Chief of Staff • Associate Deputy Administrator • Assistant Associate Administrator • Chief, Safety and Mission Assurance • Associate Administrator, PA&E • Director, Program and Institutional Integration • Associate Administrators, Mission Directorates • Center Directors • Chief Financial Officer • Chief Information Officer • General Counsel • Chief Health and Medical Officer • Associate Administrator, Institutions and Management *Other Invited Attendees* • Administrator • Assistant Administrator, Infrastructure and Administration • Assistant Administrator, Procurement • Assistant Administrator, Human Capital Management • Comptroller • Director, PA&E Strategic Investments Division • Director, PA&E Independent Program Assessment Division • Chief, Strategic Communications
The Office of Program Analysis and Evaluation provides functional support for all three councils.			
Notes	1. The decision-making authority for each council rests with its chair. The chairperson uses dialogue with the council members to inform his/her decision. 2. Any additional Agency-level boards and councils will be chartered by exception and have a limited lifetime. 3. This document does not impact regulatory, statutory, or advisory councils. 4. Adjunct members for the OMC are invited to all meetings, but their attendance is optional, determined by the relevance of the agenda topics to their areas of responsibility.		

3.2 Clear Roles, Responsibility, and Decision Making

While governing through councils, NASA's mission-driven organization relies on the line organization for implementation. Implementation takes place primarily at the program or project level, where requirements, budget, and schedule are managed.

Managers make and implement decisions within their area of responsibility and within the context of the larger organization. Accordingly, they have authority over their budgets, schedules, and human and capital assets. However, managers also work across organizational lines to achieve program and project integration and to ensure appropriate synergy and effective resource utilization.

In general, management decisions are not subject to higher-level governance review, unless a Dissenting Opinion is raised (see Section 3.4.2.2.3).

At the request of the Office of the Administrator, elements in the formal organization, such as the Office of Program and Institutional Integration (OPII), or special ad hoc teams, address integration issues that cross organizational responsibilities of Mission Directorates, Mission Support Offices (MSOs), and Centers.

The roles and responsibilities of NASA senior management are established in NPD 1000.3, The NASA Organization. As reference for discussion, they are summarized in Table 3.2-1. Organizational checks and balances are further discussed in Section 3.4.

TABLE 3.2-1—Roles and Responsibilities of NASA Senior Management

Role	Responsibility
Administrator and Deputy Administrator	The Administrator and Deputy Administrator are responsible for all aspects of the Agency's business, from Mission, Vision, and strategic priorities, to the Agency's day-to-day operations. They also control external interfaces with entities such as the Congress, Office of Management and Budget, and heads of other Federal or foreign agencies.
Associate Administrator	The Associate Administrator is responsible for technical and programmatic integration at the Agency level. As such, the Associate Administrator is the primary interface to the Mission Directorates, NASA Centers, and Technical Authority Chiefs.
Chief of Staff	The Chief of Staff directs the Administrator's support staff, is responsible for overseeing the implementation of NASA's Mission and functional support programs, and is responsible for supporting all aspects of the Administrator's daily business.
Associate Administrator, Program Analysis and Evaluation (PA&E)	The Associate Administrator for PA&E is responsible for leading an independent assessment organization that provides objective, transparent, and multidisciplinary analysis of programs to inform strategic decision making. Responsibilities include integrating NASA's Mission, Strategic Plan, and performance plan, leading the NASA strategic planning process, conducting independent assessments of program performance, making programmatic and institutional recommendations, performing cost analysis, conducting strategic planning activities, and providing other information as required to assist the Administrator in making well-informed, timely decisions. PA&E has no budget authority or line responsibility for any Agency programs.
Chief Engineer	The Chief Engineer provides policy direction, oversight, and independent assessment for NASA engineering and program/project management. Serves as the principal advisor to the Administrator and other senior officials on matters pertaining to technical readiness in execution of NASA programs and projects. Also responsible for Agency-level standards and policies as applied to engineering and program management. Serves as the lead Technical Authority for engineering.

TABLE 3.2-1—Roles and Responsibilities of NASA Senior Management (Continued)

Role	Responsibility
Chief, Safety and Mission Assurance	The Chief, Safety and Mission Assurance provides policy direction, oversight, and independent assessment for all Agency safety, reliability, maintainability, and quality engineering and assurance activities. Serves as the principal advisor to the Administrator and other senior officials on matters pertaining to safety and mission assurance. Serves as the lead Technical Authority for safety and mission assurance.
Chief Health and Medical Officer	The Chief Health and Medical Officer serves as the focal point for policy formulation, oversight, coordination, and management of all NASA health and medical matters in all environments, and medical emergency preparedness and contingency operations and response. Serves as the principal advisor to the Administrator and other senior officials on matters pertaining to human health in all Agency programs and projects, and serves as the lead health and medical Technical Authority.
Chief Information Officer	The Chief Information Officer provides leadership, planning, policy direction, and oversight for the management of NASA information and all NASA information technology. Serves as the principal advisor to the Administrator and other senior officials on matters pertaining to information technology, the NASA Enterprise Architecture, and information technology security.
Chief Financial Officer	The Chief Financial Officer provides leadership for the planning, analysis, justification, control, and reporting of all Agency fiscal resources. Oversees all financial management activities relating to the programs and operations of the Agency. Leads the budgeting and execution phases of the planning, programming, budgeting, and execution process. Monitors and reports the financial execution of the Agency budget.
Associate Administrators, Mission Directorates	The Mission Directorate Associate Administrators are responsible for managing program portfolios at the theme level and setting priorities and strategies for achieving mission-area objectives. As such, they are responsible for budgets, schedules, and top-level requirements for the Agency's programs. Programs and projects are delegated to the Centers to execute.
Associate and Assistant Administrators, Mission Support Offices	The Mission Support Offices are responsible for maintaining the institutional capabilities necessary for implementing NASA's programs and projects and, as appropriate, assuring NASA's compliance with external regulations.
Center Directors	Center Directors are responsible for developing and managing the Center's institutional capabilities (such as processes, competency development and leadership, human capital, facilities, and independent review) required for the execution of programs, projects, and missions assigned to the Center. Programs and projects are executed at the NASA Centers under the direction of Mission Directorate Associate Administrators. The Center Director has specifically delegated Technical Authority responsibilities related to projects.
Chief of Strategic Communications	The Chief of Strategic Communications is responsible for developing a strategic communications approach for guiding the activities of the Offices of Communications Planning, Education, Legislative and Intergovernmental Affairs, and Public Affairs, including strategies and tactics that support NASA's Mission. Advises the Administrator, Deputy Administrator, Associate Administrator, Chief of Staff, and Mission Directorate Associate Administrators (AAs) on long-range and day-to-day communications activities.
General Counsel	The General Counsel is responsible for establishing Agency-wide legal policy, providing Agency-wide functional guidance, and providing legal services at Headquarters and the Centers, while ensuring the appropriateness of all legal actions and activities Agency-wide, and providing binding formal legal opinions on Agency matters.

3.3 Strategic Acquisition

Acquisition is the process for obtaining the systems research, services, construction, and supplies that NASA needs to fulfill its Mission. Through its strategic acquisition process, NASA determines how program and project work is acquired by the Agency. When a requirement for a capability is first identified, the Agency must examine and consider acquisition alternatives from several perspectives, such as: continued competency of the Agency (through renewal and rebalancing of assets—human resources, facilities, etc.), maturity of technologies affecting the technical approach, priorities from the Administration and Congress, or commercialization goals (national policy objectives to develop commercial capabilities and/or support international competitive posture).

As an example, to continue fulfilling its Mission as defined by the Space Act and subsequent authorizations, NASA must plan for the renewal of human and physical assets. Because NASA most often builds one-of-a-kind systems rather than high-production units, it is essential to maintain strong in-house capabilities for the development phases of programs and projects. Therefore, it is essential that NASA keep high competency levels in program and project management, systems engineering, and other science and engineering competencies within the civil service workforce. An acquisition strategy is developed only after NASA assesses its in-house capabilities.

The strategic acquisition process enables NASA management to consider the full spectrum of acquisition approaches from commercial off-the-shelf buys to total in-house design and build efforts, where NASA has a unique capability and capacity or the need to maintain such capability and capacity. The Agency will go through this "make or buy" decision on whether to acquire the capability in-house, acquire it from outside the Agency, or some other combination, early in the strategic acquisition process, preceding the definition of any specific procurement. Strategic acquisition is used to promote the best approaches, encourage innovation and efficiency, and take advantage of state-of-the-art solutions available within NASA, industry, academia, other Federal agencies, and international partners.

As an example, a decision to go in-house will lead to further decisions on how the work will be allocated to one or more NASA Centers. NASA will commonly assign in-house roles and responsibilities to ensure it has those capabilities rather than having Centers

At Cape Canaveral Air Force Station in Florida, technicians check the list of activities completed on the mating of the nine solid boosters to the Delta II rocket for the launch of NASA's Gamma-ray Large Area Space Telescope (GLAST). NASA acquires vehicles like the Delta II from commercial providers to launch robotic space exploration missions. (Photo: T. Cryder/NASA)

compete with each other. Intercenter competition may be used as a tool to encourage innovation and efficiency. However, the Agency must maintain a balanced approach to intercenter competition that benefits NASA and complies with Administration and Congressional priorities without undercutting the essential competency of the organization or creating excessive transaction costs.

In another example, a decision to go outside the Agency could encompass several alternatives such as contracts with industry and universities, grants to universities or non-profit entities, interagency partnerships, or international cooperation (as permitted by Federal regulations). If NASA determines not to select in-house performance and decides to procure from the private sector, then full and open contract competition will be the default approach for competition. Contract competition is required by law and may be set aside only on an exception basis.

NASA generally expects to engage prime contractors in the development of major systems such as launchers, upper stages, crew vehicles, and habitats where NASA establishes the overall architecture and manages the interfaces between such major systems. In addition to the traditional prime contractor arrangements, NASA pursues commercial partnerships and grants or prize competitions where there is an appropriate ratio of risk to reward. For example, the Agency encourages industry to provide commercial cargo delivery services to low Earth orbit. A healthy commercial space industry benefits NASA and the Nation. As the commercial space industry grows, it can be expected to be able to provide increasingly sophisticated capabilities that can complement or even supplant those provided by government agencies.

Strategic acquisition planning and authorization ensures the earliest possible informed decisions to serve both the Agency and its programs and projects. NASA must also periodically reassess its portfolio risk as a guide for future portfolio decisions. A cyclical process occurs at three levels in the Agency where decisions flow from Agency-wide portfolio development (acquisition strategy planning), to strategies to best meet mission objectives (acquisition strategy), and finally to implementation (procurement strategy). This process necessarily takes a longer-term perspective of Agency goals and needs than any single procurement decision and is intended to shape how and when competitions, direct assignments, and partnerships are used (see Section 4.1.5).

3.4 Checks and Balances

NASA's primary focus is mission success for the full breadth of operational, developmental, and planned programs and projects. Institutional facilities and capabilities are maintained only because they are necessary to achieve mission success for this range of programs and projects. Similarly, Agency and Center policies, requirements, standards, procedures, and practices exist only to facilitate mission success for the spectrum of programs and projects. At the same time, there is a necessary and constructive tension between organizational practices which promote mission success in the near term and those which enable mission success in the future.

NASA's success is dependent upon a proper balance between those authorities vested in program and project managers intended to promote programmatic efficiency, and those authorities vested in institutional managers intended to assure resource availability, compliance with external requirements, compliance with applicable standards of professional practice, and efficiency across NASA's total program portfolio. The purpose of NASA's governance structure is to promote mission success by fostering an integrated working relationship between programmatic and institutional managers as they fulfill their separate responsibilities.

The Office of the Administrator, Mission Directorate Associate Administrators, Mission Support Associate and Assistant Administrators, Center Directors, and program and institutional managers each have key roles and assigned authority in executing successful missions. However, in view of their differing constraints, time frames of interest, and organizational points of view, their roles and responsibilities vary greatly as they pursue the common goal of mission safety and success. The NASA governance structure is designed to provide a system of checks and balances among these entities and their respective Authorities.

3.4.1 Organizational Balance

NASA's mission focus is reflected in its structure. Figure 3.4.1-1 is a notional representation of the NASA organization that will serve as the reference for the discussion of organizational balance.

The Office of the Administrator is accountable for all Agency activities, both programmatic and institutional, and has responsibility for policy, strategic planning, budgetary resources, and oversight of NASA's overall mission.

Mission Directorate AAs are responsible for managing the directorate's program portfolio and are accountable for mission safety and success for the programs and projects assigned to them. Mission Directorate AAs define, fund, evaluate, and oversee the implementation of NASA programs and projects to ensure their outcomes meet schedule and cost constraints. They establish and maintain the directorate's strategy to meet Agency goals, mission architecture, top-level requirements, schedules, and budgets. Mission Directorate AAs and program and project managers have ultimate responsibility for mission success in accordance with governing requirements.

Mission Support Offices provide Agency policy and oversight and assure compliance with external and internal Agency requirements. They contribute to the decisions on strategic balance between current and future program and project needs, while ensuring the needed institutional and asset base for programs over time. The

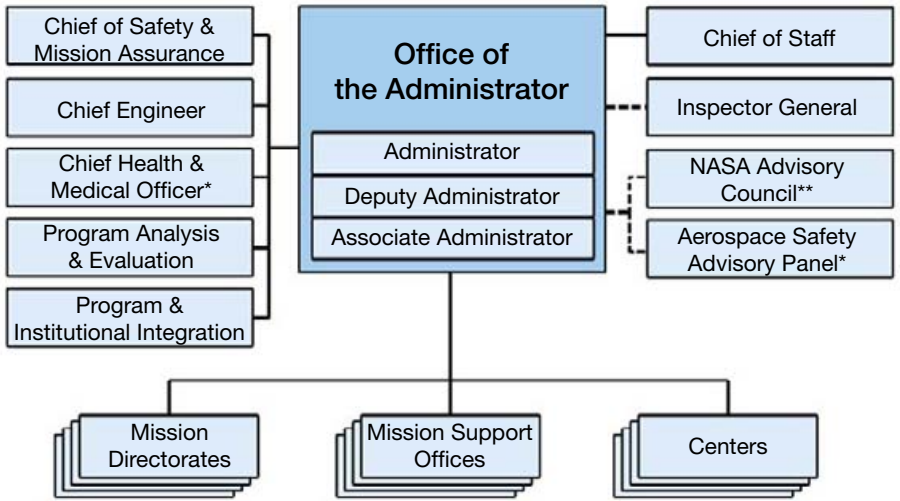


Figure 3.4.1-1 NASA structure.

The Office of the Chief Health and Medical Officer is a Mission Support Office, included here to facilitate the discussion. The Advisory Committee Management Division provides liaison and compliance functions.*

Chief Financial Officer, for example, provides policy and oversight for the planning, analysis, justification, control, and reporting of all Agency fiscal resources and financial results.

Agency programs and projects are commonly hosted at NASA Centers and are executed at the direction of the appropriate Mission Directorate AA. To achieve their objectives, Mission Directorate AAs depend on the Center Directors to apply human and facility resources to execute programs. A key institutional role of Center Directors is that of service across Mission Directorate needs, determining how best to support the various programs and projects hosted at a given Center, in accordance with Agency priorities, and to communicate any issues to Mission Directorate AAs and higher.

Center Directors provide resources, oversee the assignment of workforce and facilities, and manage Center operations to facilitate program and project execution. Center Directors also serve as an important link in the Technical Authority line. By means of the Institutional (Technical and Mission Support) Authority vested in them, Center Directors are responsible for assuring that activities at their Centers are implemented in accordance with accepted standards of professional practice and applicable NASA requirements (see Figure 3.4.2-1). They facilitate the activities of the program and project Technical Authorities as well as Mission Support Authorities. Finally, Center Directors are responsible for the care of institutional assets, for establishing and maintaining the staff and their competencies, and for the facilities required by current and future programs and projects.

Mission Directorate AAs and Center Directors must balance the specific needs of individual programs and projects alongside thoughtful compliance with applicable priorities, policies, procedures, and practices. To achieve this balance, Center Directors and Mission Directorate AAs report organizationally to the NASA Associate Administrator. Mission Directorate AAs do not have institutional oversight of Centers. Center Directors do not provide programmatic direction to programs or projects.

Mission Directorate AAs and Center Directors all have a strong and vested interest in the Mission of the Agency. They continually exchange information to ensure the appropriate balance and to ensure that issues and concerns are properly elevated to the AA for resolution when appropriate.

3.4.2 Programmatic and Institutional Checks and Balances

An important element supporting the achievement of mission success is a management system that incorporates a robust system of checks and balances. Such a system maintains balance between organizations, promotes open communication, incorporates processes to ensure decisions benefit from different points of view, and achieves a proper balance between flexibility and formality.

The existence of a comprehensive system of checks and balances is not an expression of a lack of confidence in any organization or individual. It is recognition that NASA fulfills its overall Mission through implementation of important, complex, and high-risk programs and projects for which there typically does not exist a prescribed solution or in many cases a single solution. The proper resolution of challenges to safety and mission success, and the reduction of risk to its minimum, depends on the work of teams strengthened by diverse experience and existence of open communications. Figure 3.4.2-1 illustrates the separation of the Programmatic and Institutional Authorities, which is a cornerstone of NASA's system of checks and balances.

3.4.2.1 Roles and Separation of Authorities

NASA's separation of the roles for Programmatic and Institutional Authorities provides an organizational structure that

emphasizes the Authorities' shared goal of mission success while taking advantage of the different perspectives each brings to issues.

The Office of the Administrator assigns specific responsibility and authority to the Programmatic and Institutional Authorities who report either to the Deputy Administrator or Associate Administrator. These Authorities, who are the "official voices" for their respective areas, set, oversee, and assure conformance to applicable institutional and programmatic requirements.

The Programmatic Authority resides with the Mission Directorates and their respective programs and projects. The Institutional Authority includes respective Headquarters and Center organizations. This Authority includes the Technical Authorities (individuals with specifically delegated authority in Engineering, Safety and Mission Assurance, and Health and Medical), the Mission Support Authorities consisting of remaining Headquarters Mission Support Offices, the Center organizations that are aligned with these offices (for example, the Center Chief Financial Officers), and the Center Directors (see Section 3.4.1).

3.4.2.1.1 Programmatic Authority

The Mission Directorates and their program and project managers are the Programmatic Authorities.

The Mission Directorate:

- Creates the high-level implementation strategies for program formulation based upon the NASA Strategic Plan.
- Defines the corresponding programmatic requirements and objectives.
- Evaluates program/project performance, provides guidance to the strategic acquisition process, and oversees implementation of decisions from the strategic acquisition process.

Program and project managers are responsible and accountable for the safe conduct and successful outcome of their program or project in conformance with governing Programmatic and Institutional Authority requirements.

3.4.2.1.2 Institutional—Technical Authority

In the separation of Programmatic and Institutional Authority roles (see Figure 3.4.2-1); the Institutional Authority encompasses all those Headquarters and Center organizations not in the Programmatic Authority. The Engineering, Safety and Mission Assurance, and Health and Medical organizations are unique. They support programs and projects in two ways. They provide, support and

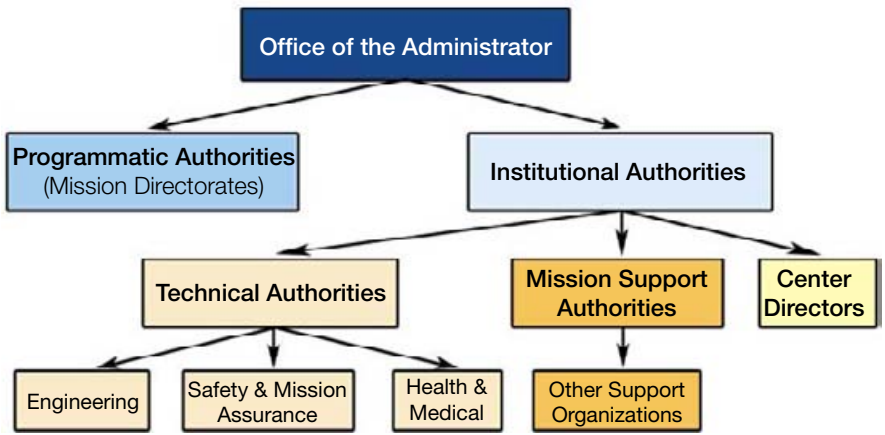


Figure 3.4.2-1 Separation of Programmatic and Institutional Authority.

oversee the technical work of matrix personnel with necessary technical expertise. In addition, these organizations provide individuals who have a formally-delegated Technical Authority role traceable to the Administrator and are funded independent of Programmatic Authority. The Technical Authorities are a key part of NASA's overall system of checks and balances and provide independent oversight of programs and projects in support of safety and mission success. The individuals fulfilling Technical Authority roles are funded independent of the program or project.

The responsibilities of a program or project manager have not been diminished by the implementation of Technical Authority. The program or project manager is still ultimately responsible for the safe conduct and successful outcome of the program or project in accordance with governing requirements.

3.4.2.1.3 Institutional—Mission Support Authority

Mission Support Authorities are the designated "official voices" of their institutional areas and the associated requirements established by NASA policy, law, or other external mandate.

These authorities are asserted horizontally (across Headquarters) and vertically (Headquarters to Centers, and within Centers) through leadership where there is not a direct line relationship. The delegated responsibilities of Mission Support Authorities vary depending on their functional areas, such as finance, procurement, information technology, legal, facilities engineering, and environmental. Common responsibilities of Mission Support Authorities are to:

- Represent the institutional function and convey respective institutional requirements established by law, Agency policy, or other external or internal authority, to program and project managers.
- Collaborate with programmatic managers on how best to implement prescribed institutional requirements and achieve program/project goals in accordance with all statutory, regulatory, and fiduciary responsibilities.
- Ensure conformance to institutional requirements either directly or by agreement with other NASA organizations.
- Disposition all requests for changes to prescribed institutional requirements in their respective area of responsibility.

3.4.2.1.4 Authority Roles Regarding Risk

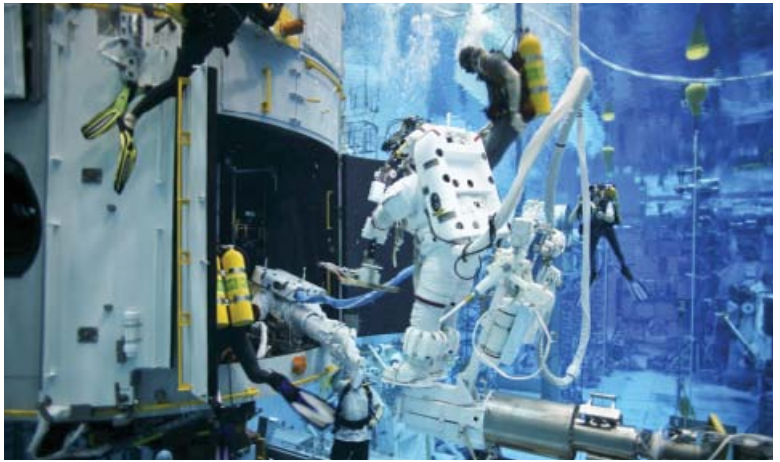
Decisions related to technical and operational matters involving safety and mission success risk require formal concurrence by the cognizant Technical Authorities (Engineering, Safety and Mission Assurance, and Health and Medical). This concurrence is based on the technical merits of the case and includes agreement that the risk is acceptable. For matters involving human safety risk, the actual risk taker(s) (or official spokesperson[s] and his/her/their supervisory chain) must formally consent to taking the risk; and the responsible program, project, or operations manager must formally accept the risk.

3.4.2.2 Process-Related Checks and Balances

There are many process-related checks and balances built into NASA's way of doing business. They range from peer reviews conducted at the lowest level to oversight reviews conducted by the Agency's Program Management Council. Three checks and balances of particular importance at the program or project level are: the independent life-cycle review process, the process for tailoring a specific prescribed requirement, and the Dissenting Opinion process.

3.4.2.2.1 Independent Life-Cycle Review Process

The independent life-cycle review process provides a comprehensive review of programs and projects at each life-cycle milestone by competent individuals who are not dependent on or affiliated



Servicing Mission 4 astronauts practice on a Hubble Space Telescope model underwater at the Neutral Buoyancy Lab (NBL) in Houston under the watchful eyes of NASA engineers and safety divers. To make the most of each spacewalk and ensure astronaut safety, repair tasks are meticulously planned, choreographed, and rehearsed in the NBL so that there will be few or no surprises when the astronauts work on orbit with the real telescope. (Photo: NASA)

with the program or project. The purpose of these reviews is to provide:

- The program/project with a credible, objective assessment.
- NASA senior management with an independent view of program/project performance according to plan, and whether externally-imposed impediments to the program/project's success are being removed.
- A credible basis for a decision to proceed into the next phase.

The independent review also provides vital assurance to external stakeholders that NASA's basis for proceeding is sound.

3.4.2.2.2 Requirement Tailoring

Good requirements that are properly managed are essential to any successful undertaking. Part of establishing the proper set of requirements is the adjustment of prescribed requirements to the specific task (e.g., a program or project). All authorizations are approved and concurred by the appropriate Programmatic and Institutional Authorities.

Principles that govern processes of tailoring requirements are:

1. The organization at the level that established the requirement must approve the request for tailoring of that requirement unless this authority has been formally delegated elsewhere. The organization approving the tailoring disposition consults with the other organizations that were involved in the establishment of the specific requirement and obtains the concurrence of those organizations having a material interest.
2. The involved management at the next higher level is to be informed in a timely manner of the request for tailoring of the prescribed requirement.

3.4.2.2.3 Dissenting Opinion Process

NASA supports the full and open airing of issues of any nature (e.g., programmatic, institutional) including alternative and divergent views. Diverse views are to be fostered and respected in an environment of integrity and trust with no suppression or retribution. In the team environment in which NASA operates, team members often have to determine where they stand on a decision. In assessing a decision or action, a member has three choices: agree, disagree but be willing to fully support the decision, or disagree and raise a Dissenting Opinion. For disagreements that rise to the level of importance that

warrant a specific review and decision by a higher level of management, NASA has formalized the Dissenting Opinion process.

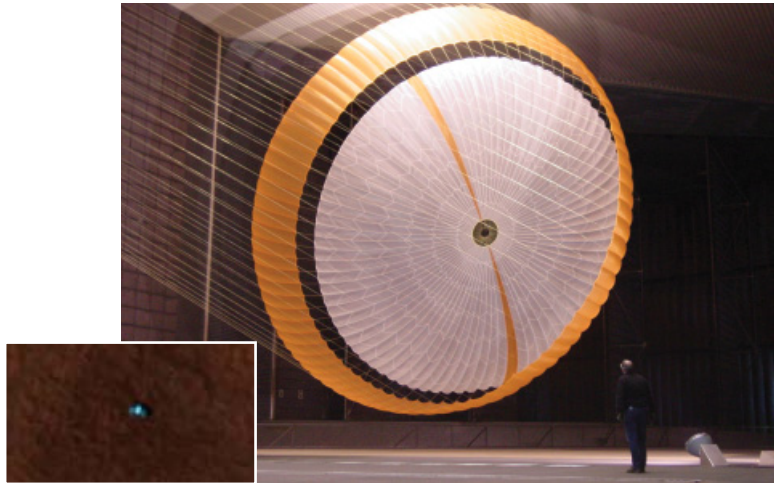
A "Dissenting Opinion" is a substantive disagreement with a decision or action that an individual judges is not in the best interest of NASA and is of sufficient importance that it warrants a timely review and decision by higher level management. A Dissenting Opinion must be supportable and based on a sound rationale (not on unyielding opposition). The individual must specifically request that the dissent be recorded and resolved by the Dissenting Opinion process.

Key steps of the Dissenting Opinion resolution process are:

1. Disagreeing parties must jointly establish the facts agreed upon and their respective positions, rationale, and recommendations;
2. The parties jointly present to the next higher level of the involved Authorities (e.g., the Programmatic and Technical Authority); and
3. If the dissenter is not satisfied with the process or outcome, the dissenter may appeal to the next higher level of management. The dissenter has the right to take the issue upward through the organization, even to the NASA Administrator, if necessary.

3.4.3 Authority and Accountability

Authority and accountability for any work within the Agency must be in alignment. Where there are overlaps or competing interests between a program or project and the institution, special attention is required. If authority and accountability are not directly aligned, consideration should be given to reassigning affected Agency components to the appropriate authority. Missions, programs, and projects are discouraged from creating duplicative institutional capabilities.



A team tests the parachute for NASA's Mars Science Laboratory (MSL) in a windtunnel at Ames Research Center in October 2007. The parachute will help slow MSL as it plunges through the Martian atmosphere in 2010. The inset photo shows the Phoenix lander, seen as a small, blue dot by the Mars Reconnaissance Orbiter (MRO), descending by parachute towards the surface of Mars on May 25, 2008. This was the first successful parachute/powered landing on Mars since the Viking missions in the 1970s. With lessons learned from the Phoenix landing and further laboratory testing of the parachute design, NASA anticipates that MSL will meet similar success. (Photos: NASA/JPL/Pioneer Aerospace; Inset: NASA/JPL-Caltech/U. of Arizona)

CHAPTER 4. STRATEGIC MANAGEMENT SYSTEM

NASA's stakeholders expect the Agency to make strategic investments in both workforce and infrastructure to accomplish its missions, develop performance metrics to measure progress towards its goals, and to deliver on its performance commitments.

The governance system discussed in the first part of this document defines the core values and principles that guide NASA's organizational structure and decision making, and the responsibilities and accountability of its leaders, including the important aspect of organizational checks and balances. The governance system is coupled with a set of processes that defines how NASA leadership establishes its missions and goals, and ensures high levels of performance to meet internal and external stakeholder expectations.

The comprehensive set of processes that NASA follows is collectively called the strategic management system. These processes incorporate the external requirements that come to Federal agencies in the form of public laws and presidential directives, as well as internally generated requirements. The processes ensure that all components of NASA are aligned with its strategic goals and direction; all programs and supporting functions are executable; and progress toward plans is measurable. Internally, the three NASA documents that are the foundation for the strategic management system are this document, the NASA Strategic Plan (NPD 1001.0), and the NASA Organization (NPD 1000.3). Additional policies, requirements, processes, and procedures are codified in supporting documents that fall below these three.

The processes in the strategic management system are for the purposes of forming Agency-level strategies and plans, moving strategies and plans into implementation, and measuring and

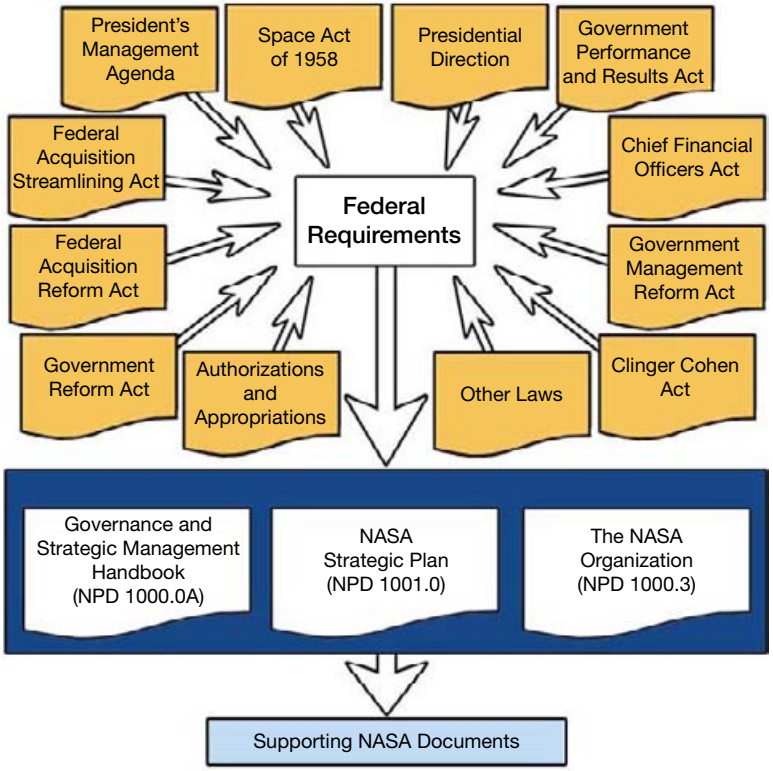


Figure 4.0-1 System Requirements. A number of external and internal requirements have shaped the way NASA conducts its missions and operations. Three primary NASA documents embody the Agency's strategic management system and are in turn used to guide all other supporting documents developed to manage the Agency.

reporting on performance. These processes are discussed in terms of planning, programming, budgeting, and execution. Although these processes occur sequentially as part of a cyclic system, planning and execution activities are, by their nature, ongoing. The different levels of data and information fidelity, organizational perspectives, and spans of time treated in planning, determine the timing and type of input provided to programming and budgeting. Similarly, the evaluation and reporting that take place during execution are used as input to the planning, programming, and budgeting processes.

The following sections discuss planning, programming, budgeting and execution—the four processes that form NASA's strategic management system.

4.1 Planning

At the heart of the strategic management system, are processes for strategic as well as near-term planning. The planning processes take into account differing time spans, the complex interactions of external and internal requirements, internal and external assessments, and the specific needs of a multi-faceted organization. Planning provides the overarching framework and the baselines against which NASA can gauge and report progress. The strategic aspects of planning, such as special studies, mission architecture development, and the NASA Strategic Plan itself, are focused on timeframes of ten years or beyond.

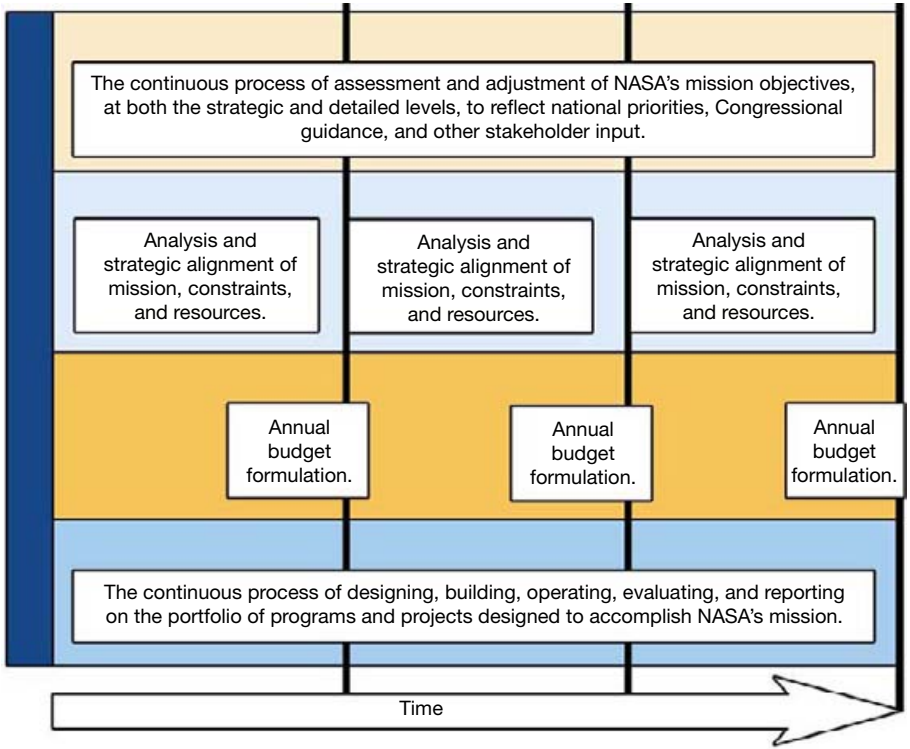


Figure 4.0-2 NASA Strategic Management Processes. These processes are guided by external and internal controls. The relationship of actions and activities between the processes creates a disciplined management approach, placing an emphasis on planning, performance, and results.

A coronal loop bursts from the solar surface, as seen by the Transition Region and Coronal Explorer (TRACE) spacecraft. TRACE is one of a portfolio of missions that helps NASA achieve the goal to understand the Sun and its affects on Earth and the solar system. Through legislation, Presidential directives, advice from external advisors, and internal analysis, NASA determines which projects might best serve the Agency's Mission and strategic goals. (Photo: NASA)

4.1.1 External Guidance

The external guidance to the Agency comes in the form of national policies, legislation, and Presidential directives. NASA uses national policies reflecting priorities in space, aeronautics, and science, and establishing legislation (the National Aeronautics and Space Act of 1958) to define the Agency's Mission and strategic goals. Other legislation and Presidential directives affecting all Federal agencies have set requirements for demonstrating programmatic and management performance, accountability, and transparency.[1]

4.1.2 Internal Analyses and Assessments

To help inform the Agency's strategic decisions, the NASA Administrator commissions a series of strategic architecture and portfolio trade studies that explore strengths, weaknesses, opportunities, and threats to achieving the strategic goals. The studies address a wide range of issues and questions, can be commissioned at any time, and are most frequently conducted by PA&E, the Mission Directorates, and the Mission Support Offices. The program and Mission Support Offices at the Centers contribute to many studies with assessments of internal capabilities against the specified program and project goals and desired outcomes. The study results are used in developing both strategic and near-term priorities to shape NASA's annual budget request.

4.1.3 Mission Architectures

The Mission Directorates establish a subset of frameworks known as mission architectures which are long term plans consistent with Agency strategy and strategic goals. The architectures take into account trade study analysis of alternative paths, dependencies, critical sequencing, and required timeframes. The Mission Directorates, using the technical personnel and capabilities of the Centers and augmented by external specialists, identify key decision points, key deliverables and outcomes, as well as institutional needs and cost estimates. Factors within a mission architecture or interactions among the architectures may in turn modify or influence Agency strategy.

[1]The President and Congress have levied requirements for accountability and performance-based management on all Federal agencies in the areas of: strategic planning, implementation planning, performance measurement, and reporting. GPRA, the President's Management Agenda (PMA), and OMB Circular A-11, are the primary sources for understanding the details of these requirements.

4.1.4 Strategic Plan Development

NASA's strategic planning process establishes the approach the Agency will take to meet the expectations of the President and Congress and provides the overarching framework within which the various NASA organizations accomplish the Agency's Vision and Mission. The NASA Strategic Plan is updated triennially, as mandated by the Government Performance and Results Act of 1993 (GPRA). This plan defines NASA's Vision, Mission, and Strategic Goals, that support and drive NASA's research and development activities.

PA&E leads the Strategic Plan development process and its subsequent review, and engages representatives from within the Agency and from government, industry, and academia. This assures that NASA draws from a broad base of experience and expertise in setting the Agency's course for the future. NASA keeps the President and Congress informed of the strategic planning process and its results. Internally, an integrated planning team, representing all NASA organizations, develops and recommends long-term strategic goals and key management strategies that support the goals, which the Administrator must approve. NASA revisits strategy on an annual basis as progress is assessed and the annual budget request is developed. If significant changes occur between the required three-year updates, NASA conducts a formal process to create a new Strategic Plan.

Engineers at Marshall Space Flight Center prepare one of the two ISS Water Recovery System racks for transport to Kennedy Space Center for final flight preparations. The racks, part of the Regenerative Environmental Control and Life Support System, are key to accommodating a crew of six aboard the ISS, and meeting one of NASA's outcomes for the ISS program. (Photo: D. Higginbotham/NASA)

NASA's Strategic Plan is the foundation for all other plans in NASA. Through the strategic planning process, Agency-level strategies are derived from its strategic goals and top-level mission architectures and implementing strategies. Multiyear outcomes identify discrete, measurable, and/or observable performance targets the organization intends to accomplish within a specified timeframe. Outcomes, which are the desired results of the strategic goals, are the reference point for all other planning. Connected to the strategic goals and their outcomes are "themes," which represent groupings of programs and projects whose results will contribute toward the strategic goals. To implement the Strategic Plan, supporting programmatic and institutional strategies and plans in areas such as human capital planning and physical infrastructure management are developed and carried out by the Mission Directorates, the Office of Institutions and Management, other Mission Support Offices, and the Centers.

4.1.5 Strategic Resource Planning (Including Strategic Acquisition)

The portfolio of NASA programs to address its missions in science, aeronautics, and exploration are long term in nature with ordered processes, but the environments in which they are conducted are very dynamic. External shifts in policy, economic conditions, the needs of external communities, partnerships, and industry, as well as changes in internal capabilities, constraints, and challenges, are key factors in NASA's ability to deliver on its organizational commitment to performance and achieving mission outcomes. The discussion of strategic acquisition (see Section 3.3) as a governance principle has established a process to make the complex deliberations and trades for strategic resource planning.

Three types of acquisition strategy meetings form the process to guide portfolio decisions. Key to the process are requirement exchanges between Mission Directorate Associate Administrators and Center Directors, which form an integrated approach to resource challenges to help align Center resources and mission architectures over a multiyear timeframe. While the perspective of this process is still long term, NASA must factor decisions regarding workforce and institutional facilities and services at the Centers into guidance for the next budgeting cycle to ensure reasonable transitions for anticipated changes. The three process meetings are described briefly in the following paragraphs.

4.1.5.1 Acquisition Strategy Planning Meeting

The Acquisition Strategy Planning (ASP) meeting provides an early view of potential major acquisitions so that senior leaders can consider issues such as: the appropriate application of new Agency and Administration initiatives, current portfolio risk and implications to the future portfolio, high-level make-buy strategy, and the placement of development or operations work in-house versus out-of-house. It also provides the strategic framework for addressing challenges associated with fully utilizing NASA Centers' capabilities, including workforce and infrastructure, and shaping the Agency over time. Meeting outcomes include determining or validating roles and responsibilities of Mission Directorate(s), Centers, contracts, major partnerships, and associated infrastructure. The ASP meeting is chaired by the Administrator and attended by senior leaders, with additional invited attendance, based on the agenda. The ASP meeting is held semiannually; its deliberations are factored into various planning, programming, budgeting, and execution (PPBE) products based on the timing of decisions (see Section 4.2). Both the Office of Program and Institutional Integration and the Office of Program Analysis and Evaluation provide analysis as needed.

4.1.5.2 Acquisition Strategy Meeting

The Acquisition Strategy Meeting (ASM) is a forum where senior Agency management reviews major acquisitions in programs and projects before authorizing budget expenditures. The ASM is held at the Mission Directorate level, implementing the decisions that flow out of the ASP meeting and recommending implementation plans for approval.

4.1.5.3 Procurement Strategy Meeting

The Procurement Strategy Meeting (PSM) enables approval of the approach for major procurements. The PSM is held at the program/project level and implements the decisions that flow from the ASM. Detailed PSM requirements and processes, formulated by the Office of the Chief Financial Officer (OCFO), ensure the alignment of portfolio, mission acquisition, and subsequent procurement decisions.

4.1.6 Implementation Planning

The Mission Directorates and Centers carry out implementation planning processes for programs and projects, and the Mission

Support Offices carry out planning for the more than 20 Agency-wide functional areas. The performance measurements and measurement strategies set during strategic planning activities are defined in further detail, to determine how progress toward those plans will be monitored and reported. NASA reports externally on the performance measures as described in the next paragraph. Other measures and metrics developed in the planning processes are for internal use in performance assessment and management. Each Mission Directorate and Mission Support Office develops or updates the organization's multiyear outcomes and plans for implementation during the Agency's annual budget process.

The detailed planning to measure and demonstrate annual progress toward each multi-year outcome and long-term strategic goal produces the Agency's Annual Performance Goals (APGs). To reinforce the budget and performance link, Agency teams representing the Mission Directorates, PA&E, OCFO, and other NASA stakeholder organizations, collaborate to develop the APGs and negotiate APG content with the Office of Management and Budget (OMB) as part of the annual budget development process.

4.1.6.1 Program and Project Planning

The Mission Directorates conduct multiyear mission implementation planning activities within each theme managed by their Directorate to support the achievement of NASA's strategic goals. They develop subsequent program and project plans through the Centers to articulate the commitments of each appropriate NASA organization to ensure that the specified resources can be used to meet the identified priorities and plans. Performance commitments are key deliverables tied to the baseline budget and schedule presented in the plans. To complete the chain of accountability, NASA supervisors and managers link individual employee performance plans and measures to the Agency's performance measures through NASA's Employee Performance Communication System.

NASA managers, from Mission Directorates through Center programs and projects, assist in developing program and project plans appropriate to their organizations. Based on the level of risk, Agency priority, and cost, a level of control and Agency oversight is assigned. Appropriate measures include life-cycle schedule variance, life-cycle cost estimate variance, risks to mission, and technical scope. Details of program and project requirements, standards, and procedures are called out in the documents that govern program and project management within NASA. These policies and processes, governed by the PMC, guide program and project planning.

4.1.6.2 Mission Support Planning

The Mission Support Offices, Mission Directorates, and Centers work to identify institutional risks to the missions and establish investment and funding priorities as input to planning. The Mission Support Offices, with support from the Centers, are also responsible for the planning that addresses the President's Management Agenda (PMA), an initiative introduced in 2001, that commits agencies within the executive branch to improve management in several key areas.

The goal of PMA is to produce more effective and efficient management in the areas of human capital, real property asset management, acquisitions (competitive sourcing), financial performance, E-Government (information technology), and performance improvement.

While improvement in each area is critical, of particular importance to NASA is the effective management of internal competencies and capital assets to ensure it continues to have the scientific and technical expertise and facilities necessary to preserve the Nation's role as a leader in aeronautics, Earth and space science, and

technology. NASA's strategic planning is the basis for developing near and long-term alignment of its human capital policy and a corporate approach to managing its unique or highly-specialized facilities. NASA must also maintain a core complement of civil service professionals to address its financial, acquisition, and business challenges.

To ensure Agency-wide integration and consistent implementation of the PMA areas and other fields of special interest to the Office of Management and Budget and the Office of Personnel Management (OPM), NASA's functional area managers for PMA within the Mission Support Offices work with OMB and OPM to negotiate appropriate performance goals and agreements on what NASA needs to accomplish. These managers are then accountable for implementing, monitoring, and reporting on Agency actions and progress toward its goals.

4.2 Programming: Alignment of Resources to Plans

The next major set of processes in the strategic management system are concerned with converting the outcome measures and implementation plans developed to meet NASA's strategic goals into executable programs and projects with supporting resources over the next five-year period. Mission Support Offices and Centers are keys to ensuring executable programs and projects through their analyses of proposed plans against resources. The process involves detailed analyses from different Agency perspectives and meetings for issue resolution and decision making. The resulting resource and workforce allocations across the Agency are then used in developing NASA's Congressional Budget Justification.

The annual process to align resources with strategic, programmatic, and institutional decisions is the programming phase of an annual PPBE process. This same terminology describes the overarching strategic management system, but the annual PPBE process is focused on producing the NASA Congressional Budget Justification, the Agency's annual budget request to Congress.

The major activities in programming occur over several months, beginning in January with the internal release of the Strategic

NASA's DC-8 airborne science laboratory is shadowed by a NASA F/A-18 chase plane during a flyover of the Dryden Aircraft Operations Facility. Beginning in FY 2007, the Integrated Enterprise Management Program completed Phase I implementation of the Aircraft Management Module, a tool to help NASA manage its fleet of mission-support, research, and mission-management aircraft by tracking aircraft inspections, mission configurations, and aircrew qualifications. (Photo: T. Landis/NASA)

Planning Guidance (SPG) document. The SPG pulls together all of the information developed in the preceding planning phase. It takes direction from the Strategic Plan and incorporates information from planning activities such as acquisition strategy meetings, studies, and assessments, e.g., Inspector General reports, Government Accountability Office (GAO) reports, and OMB decisions affecting the upcoming budget. It identifies or references the specific strategic performance measures that Control Account Managers (CAMs) should address in their analyses. The CAMs issue, roughly concurrently, a program and resources audience document, that translates the SPG into guidance more relevant to the program and project managers for effective programming at the Centers.

Programming is an iterative analysis process to provide a high level of data fidelity on workforce and institutional capabilities and availability and resource constraints as applied to planning priorities and other internal or external factors. Integration of the analyses by the Centers, Mission Directorates, Mission Support Offices and program and project managers, is needed to identify issues that are beyond any one entity to resolve within their allocated resources. This phase concludes in late July when decisions on issues have been finalized, and the resulting resource and workforce allocations enable the Agency to begin constructing the budget for the *following* fiscal year.

4.3 Budgeting

As an Executive Branch Agency, NASA's Chief Financial Officer follows the Federal budget process governed by Title 31 of the United States Code. The budget requested, on an annual basis, is for two years in advance of the period of performance. The intent of a "performance budget" is to communicate to OMB and Congress the performance commitments NASA is making for the requested funds. This process occurs in two phases.

The first phase of budgeting is developing the performance budget for submittal to OMB in September once the programming decisions have been made in late summer. The OCFO releases updated budget control numbers and guidance for the Mission Support Offices and Mission Directorates to construct the detailed assignment of resources for the Agency's activities. Technical as well as institutional programs must identify and explain any impacts due to changes in program content, milestones, or events that affect budget.

The second phase occurs between November and February to address OMB questions and issues and develop, for final review and approval, a budget that OMB will release as part of the President's

Rex Walheim, mission specialist for STS-122, installs handrails on the outside of the European Space Agency's Columbus laboratory, which was installed on the ISS in February 2008. NASA uses careful program planning and budgeting to keep ISS construction, including launch of International Partner elements, on schedule for completion by the Shuttle fleet's retirement in 2010. (Photo: NASA)

Budget. Once NASA and OMB approve the performance commitments in the budget toward each multiyear outcome, each Mission Directorate and Mission Support Office is responsible for monitoring and reporting performance progress on these commitments.

4.3.1 Performance Budget Formulation

The Budgeting process results in a Congressional Budget Justification and includes NASA's annual President's Budget Request and Performance Plan. The budget document is formally submitted as NASA's fiscal year "Budget Estimates," but it is also known as the Integrated Budget and Performance Document (IBPD). Programmatic content for each mission area is discussed in terms of mission relevance, past and planned performance, quality of performance, an analysis of strategies the Agency uses to influence its outcomes and how they could be improved, as well as other factors, to justify to OMB and Congress the merit of the request. Programmatic content also includes commitments of schedule and key deliverables for the requested budget. The IBPD also includes budget allocations for the institutional and operational support of the Agency to provide insight on the full cost of conducting the Agency's programs.

For justification of the performance budget, OMB also requires information that indicates the relative roles and effectiveness of programs. Summaries from the Major Program Annual Reports (MPAR, see Section 4.4.2.2.2), Program Assessment Rating Tool (PART, see Section 4.4.2.2.3), and President's Management Agenda (PMA, see Section 4.4.2.2.4), are part of the budget justification discussions. An Annual Performance Report presenting information on how well the Agency achieved the target levels for its goals in the past year is also used as an indicator of effectiveness.

A framework for assessing mission performance and effectiveness is defined by the Performance Plan, which is part of the Congressional Budget Justification. The Performance Plan provides the multiyear outcomes and APGs that NASA will report externally, as required by GPRA. The APGs represent the intended annual progress toward NASA's strategic goals. NASA has additional metrics used to measure progress at lower levels within projects; however, these are tracked and reported for internal use only.

4.4 Execution

The processes within execution ensure financial resources are distributed to the Agency's programs and organizations and managed to achieve the purposes and objectives for which the budget was approved. Once the annual appropriation for NASA's budget is approved, differences between the planned and approved budget request are reflected in the Agency's operating plan and other documents to adjust the performance commitments to the funding received. NASA leadership requires near-real-time access to planning, budgeting, and programmatic data and the accompanying evaluations to enable timely decision making, corrective actions, and the ability to respond to the President, OMB, Congress, and mission requirements. The strategic management system entails rigorous ongoing monitoring and reporting processes during execution to measure actual results against budgeted, anticipated results, along with causes of variances and, if necessary, planned corrective actions.

4.4.1 Controls

NASA managers and employees at all levels are responsible for establishing and maintaining programmatic, institutional, and financial controls to maximize the effectiveness and efficiency of its programs and operations and to ensure compliance with applicable laws and regulations. The OMC establishes and oversees Agency-level internal control policies, tracks control deficiencies and associated corrective actions, and provides integration of control issues, as appropriate.

NASA identifies issues of concern through a combination of internal and external review activities. In addition to ongoing program and institutional reviews, NASA uses information gained from annual internal control reviews, internal and external management system and financial audits, NASA's governance councils, the National Academies, the Office of the Inspector General, and the Government Accountability Office.

4.4.2 Monitoring, Evaluating, and Reporting on Performance Progress

NASA holds its leadership at all levels, from project managers to Center Directors and Mission Directorate AAs, accountable for meeting the performance standards and metrics established during planning. Internal reviews by program authorities, the SMC, PMC, and OMC are held on a regular basis to monitor and evaluate performance and use the results to support internal management processes. External reviews by OMB, OIG, and independent panels, as required or requested, assess NASA's program and project performance, as well as the quality and relevance of its work to the Nation. OMB and Congress use the external reviews of all Federal agencies in their annual budget decisions. GPRA, OMB Circular A-11, and PMA specify the reporting required to OMB and Congress on mission performance and management.

The metrics for strategic goals, outcomes, APGs, and the Agency's financial report are provided in an annual Performance and Accountability Report (PAR). MSOs report on PMA progress to OMB and other external metrics are reported as required by law, regulation, or Executive Order.

4.4.2.1 Internal Evaluations and Reporting

NASA conducts regular internal reviews to ensure safety, health, mission success, institutional effectiveness, and the Agency's continued ability to honor commitments. Within each Mission Directorate, NASA managers report performance information by strategic goal, theme, program, and/or project. NASA programs and projects practice earned value management. At a minimum, internal reports reflect Agency progress on achieving strategic, programmatic, and institutional measures, the status of management control deficiencies, and the nature of Agency-level risks to its mission. Key program and project reviews are governed by policies set through the PMC and allow for program shifts, additions, and/or deletions to address external and internal changes and demands to meet mission requirements through a coordinated process.

An independent assessment, presented monthly, is developed by the Office of the Chief Engineer, PA&E, the Office of Safety and Mission Assurance, and the Office of Program and Institutional Integration. The assessment informs senior leadership on performance toward the Agency's program and project plans and of crosscutting institutional concerns that impact mission performance against an approved baseline. The monthly meeting encompasses a review of crosscutting mission-support issues and all NASA mission areas, with a single mission area reviewed in depth. This schedule ensures that each mission area receives an in-depth review on a quarterly basis. PA&E, the Center Systems Management Offices, and the Office of Institutions and Management lead or support additional independent reviews and report findings and recommendations to the appropriate NASA governance council. The NASA Inspector General also performs frequent evaluations of programs, functions, and processes.

4.4.2.2 External Evaluations and Reporting

NASA encourages and accepts for consideration assessments, evaluations, and reports on the Agency's performance submitted by a number of external advisory groups, including the NASA

Advisory Council, the National Academies, the Office of Personnel Management, the Aerospace Safety Advisory Panel, the Government Accountability Office, the National Academy of Public Administration, third-party assessment contractors, and independent auditors, as required for financial audits. Mission Directorates commission additional independent reviews to evaluate programs or research in terms of relevance and quality.

4.4.2.2.1 Annual Performance and Accountability Reports

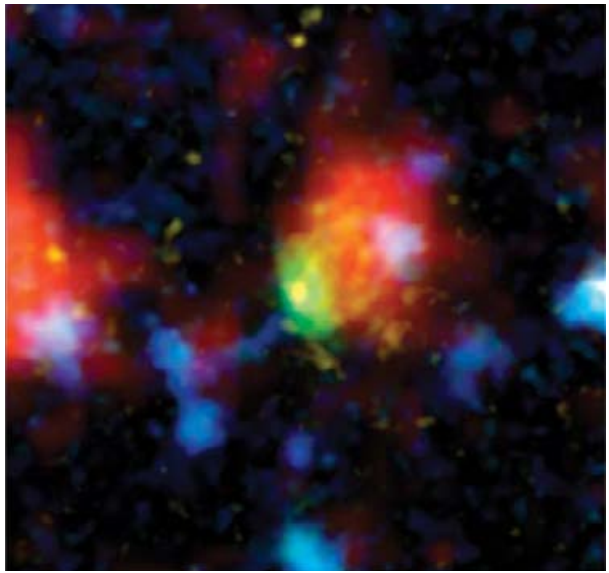
NASA issues annual reports to Congress and OMB depicting the Agency's progress and challenges in achieving NASA's strategic goals. OMB publishes guidance on the form and content of those reports for Federal agencies. Those reports also include financial statements and the results of the independent financial audit, NASA management's assurance on internal controls and identification of material weaknesses, and other reporting required by OMB and Congress.

4.4.2.2.2 Major Program Annual Reports

Annually, NASA programs and projects authorized to proceed into implementation report to Congress on their baselines and changes to baselines for life-cycle costs, development costs, key life-cycle milestones, risks, and technical parameters, as required.

4.4.2.2.3 Program Assessment Rating Tool Reviews

The Program Assessment Rating Tool (PART) is an interactive program evaluation tool developed by OMB to assess and improve the effectiveness of Federal programs. As required by PART, NASA submits one-third of the Agency's theme portfolios to OMB for review each year, resulting in a complete assessment of all NASA programs over a three-year period. NASA negotiates with OMB to ensure that PART performance measures are consistent with, if not identical to, the strategic, programmatic, and institutional measures documented in the Agency's annual Performance Plan and annual PAR. Because PART includes a consistent series of analytical questions, it allows programs to show improvements over time and allows comparisons between similar programs.



Astronomers have uncovered a galaxy in the very remote universe pumping out stars at a surprising rate of up to 4,000 per year. (In comparison, the Milky Way galaxy turns out an average of 10 stars per year.) The discovery, made possible by several telescopes including NASA's Spitzer Space Telescope, goes against the most common theory of galaxy formation, which asserts that galaxies slowly bulk up their stars over time by absorbing tiny pieces of galaxies and not in one big burst, as observed here. External experts and internal management determine how this and similar scientific findings help NASA achieve its annual performance targets. (Image: NASA/JPL-Caltech/Subaru)

4.4.2.2.4 President's Management Agenda

PMA requires annual progress reports on human capital management, real property asset management, acquisitions (competitive sourcing), financial performance, E-Government (information technology), and budget-performance integration. The annual performance rating, progress made toward PMA goals, and plans for increasing performance for the next year are submitted with the Congressional Budget Justification.

4.5 Feedback to Planning and Programming

The strategic management system is composed of a set of continuous processes that, as a whole, allow NASA to assess the allocation of its resources in achieving its planned performance goals. The system's emphasis on program performance and results uses the findings from internal and external reviews and evaluations as input to successive planning and programming processes. To the extent that a program or mission support area fails to meet its performance goals, decisions may be made by the governing councils to adjust directions and resources, as appropriate.

4.6 Process Communication

The strategic management system (as described above, including the processes of planning, programming, budgeting, and execution) produces several defined outputs. Table 4.6-1 shows the relationship between each process and the associated products that communicate process results to NASA employees, so that they may carry out their responsibilities. Products with an external requirement source must be readily accessible, typically through the Internet, for external audiences such as OMB, Congress, and the public. The organizational responsibility for the product, the line of authority for review or approval, and schedule are provided as an indication of the interactions within the processes and governance relationships. The NPDs in Table 4.6-1 may be found in the NASA Online Directives Information System (NODIS).

TABLE 4.6-1 Processes and Associated Products

	Products	Requirement Source	Responsibility for Product	For Approval or Review By	Schedule
Planning	NASA Governance and Strategic Management Handbook (NPD 1000.0A)	Internal	Office of the Associate Administrator	Administrator	As required
	NASA Strategic Plan (NPD 1001.0)	External	Program Analysis and Evaluation (PA&E)	Administrator	Triennial
	The NASA Organization (NPD 1000.3)	Internal	Office of the Associate Administrator	Administrator and Deputy Administrator	As required
	Mission Architectures	Internal	Mission Directorates (MDs)	MD Associate Administrators	As required
Programming	Strategic Planning Guidance	Internal	PA&E	Administrator	Annually (February)
	Cross-Cutting Strategies for Mission Support	Internal	Office of the Deputy Administrator	Deputy Administrator	As required
	Program and Project Plans	Internal	Program and Project Managers	MD Associate Administrators	At Authority to Proceed
Budgeting	NASA Fiscal Year Budget Estimates (also referred to as the Integrated Budget and Performance Document, or IBPD)	External	PA&E; Office of the Chief Financial Officer (OCFO)	Administrator	Annually (first Monday in February)
	Annual Performance Plan (submitted with IBPD)	External	PA&E; MDs	MD Associate Administrators	Annually (February)
Execution	Program and Project Reviews	Internal	MDs	Appropriate Council Decision Authority	Quarterly or as required
	Agency Program Baseline Assessments	Internal	Office of the Chief Engineer; PA&E; Office of Safety and Mission Assurance; Office of Program and Institutional Integration	Program Management Council	Monthly
	Operating Plan	External	OCFO	Administrator	As required
	Annual Performance and Accountability Report	External	PA&E; OCFO	Administrator	Annually (November 15)
	Program Assessment Rating Tool (PART) Assessments	External	PA&E; MDs	Performance Improvement Initiative Lead	Spring and Fall
	Major Program Annual Reports	External	PA&E	Administrator	Annually (February)
	President's Management Agenda	External	Office of Institutions and Management	Deputy Administrator	Quarterly

APPENDIX A: GLOSSARY

Acquisition—The process for obtaining the systems, research, services, construction, and supplies that NASA needs to fulfill its missions.

Adjunct—Something joined or added to another thing but not essentially a part of it, added or joined in a subordinate or temporary capacity to a staff.

Approval—Authorization by a required management official to proceed with a proposed course of action. Approvals must be documented.

Assessment—The evaluation of a program, project, or institutional initiative with respect to its accomplishments and performance in meeting requirements.

Audit—(1) An examination of records or financial accounts to check their accuracy, or (2) a systematic check or assessment, especially of the efficiency or effectiveness of an organization.

Authoritative Data Source—The approved and configuration-controlled source that the Agency uses to measure and monitor programs and projects. This allows organizational consolidation, reporting, and analysis for rapid decision making.

Authorize—To give power, permission, or authorization; to invest with authority.

Competition—An acquisition strategy whereby more than one Center or contractor is sought to bid on a service or function; the winner is selected on the basis of criteria established by the activity for which the work is to be performed. The law and NASA policy require maximum competition throughout the acquisition life-cycle.

Concurrence—A documented agreement by a management official that a proposed course of action is acceptable.

GPRA—The Government Performance and Results Act of 1993 was established to provide a measurement for Strategic Planning and performance throughout the Federal Government.

Initiative—A "project-like" activity that is managed by the Mission Support Offices.

Institutional Authority—Includes the Headquarters and Center organizations, including the Technical Authorities (Engineering, Safety and Mission Assurance, and Health and Medical), and the Mission Support Authorities (made up of all of the remaining Mission Support Offices, including the Chief Financial Officer and associated Center Chief Financial Officers).

Integration—A process for examining synergy, redundancies, and the effectiveness of resource utilization. Primarily done during implementation plan development, but also includes development of the annual budget, audits, and assessments.

ITAR—International Traffic in Arms Regulations.

Line Organization—An organization that provides personnel to staff the programs/projects located at the Centers. It also includes the engineering, safety, industrial, and overhead functions required to run the Center. NASA relies on the line organization for implementation and integration. Implementation takes place primarily at the project level, where requirements, budget, and schedule are managed.

Metric—A measurement taken over a period of time that communicates vital information about a process or activity.

Mission—The core functions and jobs of the Agency.

Mission success—The fulfillment of NASA's charter to pioneer the future in space exploration, scientific discovery, and aeronautics research, in accordance with prescribed requirements (both internal and external) and NASA's core values of safety, excellence, teamwork, and integrity. (Where

appropriate, individual NASA organizations should establish and document a more specific mission success definition that focuses on their particular area of responsibility.)

Mission Support Authority—A component of the Institutional Authority that is made up of all Mission Support Offices with the exception of those making up the Technical Authority; Engineering, Safety and Mission Success, and Health and Medical.

OMB Circular A-11—A policy from the Office of Management and Budget that offers annual guidance on the requirements Federal agencies must meet for budget submission and strategic planning.

Outcome—Outcomes are multiyear performance measures of NASA's progress toward achieving longer-term strategic objectives and strategic goals. Performance on an outcome is determined by weighing the performance of associated annual performance goals against management's timeline for achieving the outcome.

Output—The level of activity or effort that will be produced or provided over a period of time or by a specified date, including a description of the characteristics (e.g., timeliness) established as standards for the activity.

Oversight—To monitor actively the implementation of assigned actions, policy, and procedures. Headquarters officials with an oversight role have the responsibility to establish and track performance parameters to ensure assignees are properly implementing their actions, policies, and procedures.

Performance Budget—A budget that clearly links performance goals with costs for achieving a target level of performance. In general, a performance budget links strategic goals with related long-term and annual performance goals (outcomes) with the costs of specific activities to influence these outcomes about which budget decisions are made.

Performance Goal—A target level of performance at a specified time or period expressed as a tangible, measurable outcome, against which actual achievement can be compared, including a goal expressed as a quantitative standard, value, or rate. A performance goal is comprised of a performance measure with targets and time frames. The distinction between "long-term" and "annual" refers to the relative timeframes for achievement of the goals.

Performance Measures—Indicators, statistics, or metrics used to gauge program performance.

Program—A strategic investment by a Mission Directorate or Mission Support Office that has a defined architecture and/or technical approach, requirements, funding level, and a management structure that initiates and directs one or more projects.

Program Assessment—A determination, through objective measurement and systematic analysis, of the manner and extent to which programs achieve intended objectives.

Programmatic Authority—Consists of the Mission Directorates and their respective program and project managers.

Project—A specific investment having defined goals, objectives, requirements, lifecycle cost, a beginning, and an end. A project yields new or revised products or services that directly address NASA's strategic needs. They may be performed wholly in-house by government, industry, academic partnerships, or through contracts with private industry.

Stakeholder—An individual or organization that is materially affected by the outcome of a decision or deliverable but is outside the organization doing the work or making the decision.

Strategic Goal or Strategic Objective—A statement of aim or purpose included in a Strategic Plan (required under GPRA) that defines how an Agency will carry out a major segment of its mission over a period of time.

Strategic Management—A series of integrated activities that enable the Agency to establish and execute strategy, make decisions, allocate

resources, formulate and implement programs and projects, and measure their performance.

SWOT Analysis—A strategic planning tool used to evaluate an organization's strengths, weaknesses, opportunities, and threats. Strengths and weaknesses are internal, while opportunities and threats typically originate from outside the organization. A SWOT analysis, usually performed early in the strategic planning process, facilitates understanding of those internal and external factors.

Tailoring—The process used to adjust or seek relief from a prescribed requirement to accommodate the needs of a specific task or activity (e.g., program or project).

Technical Authorities—The *individuals* within the technical authority process who are funded independent of a program or project and who have formally delegated Technical Authority traceable to the Administrator. The three organizations who have Technical Authorities are Engineering, Safety and Mission Assurance, and Health and Medical.

"technical authority"—Refers to the *process* by which Engineering, Safety and Mission Assurance, and Health and Medical provide independent oversight of programs and projects through specific individuals who have formally delegated authority at specific organizational levels.

Target—A quantity, or otherwise measurable characteristic, that conveys how well and by when a program must accomplish a performance measure.

Vision—A concise description of a point in the near or far future where the leadership desires the Agency to go.

APPENDIX B: INDEX

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APPENDIX C: ACRONYMS

AA Associate Administrator

APG Annual Performance Goal

ASM Acquisition Strategy Meeting

ASP Acquisition Strategy Planning

CAM Control Account Manager

GAO Government Accountability Office

GPRA Government Performance and Results Act of 1993

IBPD Integrated Budget and Performance Document

MD Mission Directorates

MPAR Major Program Annual Report

MSO Mission Support Office

NPD NASA Policy Directive

NODIS NASA Online Directives Information System

OMC Operations Management Council

OCFO Office of the Chief Financial Officer

OMB Office of Management and Budget

OPII Office of Program and Institutional Integration

PA&E Office of Program Analysis and Evaluation

PAR Performance and Accountability Report

PART Program Assessment Rating Tool

PMA President's Management Agenda

PMC Program Management Council

PPBE Planning, Programming, Budgeting, and Execution

PSM Procurement Strategy Meeting

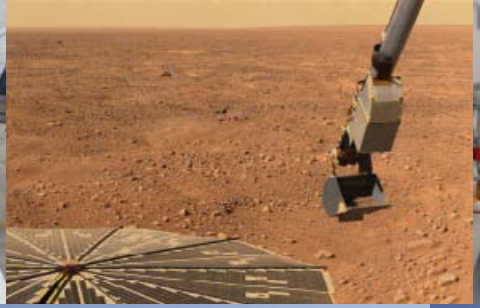
SMC Strategic Management Council

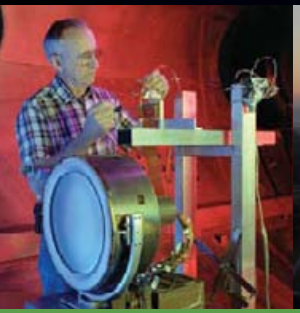
SPG Strategic Planning Guidance

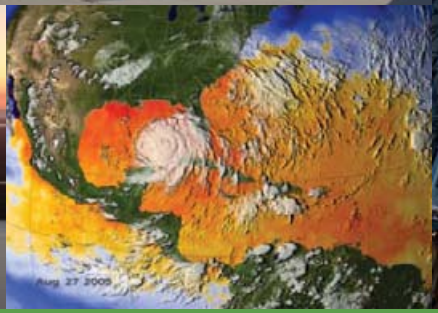
APPENDIX D: GUIDE TO FURTHER INFORMATION

Section	NPD 1000.0 Topic	For Further Information	Reference Content or Key Point Description
3.1	Lean Governance	NPD 1000.3C	Terms, standards, and requirements for NASA's organizational structure and responsibilities: NPD 1000.3C: The NASA Organization w/Change 26, multiple references.
3.2	Roles and Responsibilities	NPD 1000.3C	Specific duties are described in official position descriptions of 1000.3C (multiple references).
3.3	Strategic Acquisition	NPR 7120.5D	NPR 7120 5D: NASA Space Flight Program and Project Management Requirements, Chapter 2.
3.4	Checks and Balances	NPR 7120.5D	Chapter 3.
3.4.2.1.1	Programmatic Authority	NPR 7120.5D, NPR 7120.7*	NPR 7120.5D, Chapter 3 and Appendices D and E. NPR 7120.7*: NASA Information Technology and Institutional Infrastructure Program and Project Requirements.
3.4.2.1.2	Institutional—Technical Authority	NPR 7120.5D, Chapter 3; NPR 7120.7*; NPR 7120.8	NPR 7120.5D, Chapter 3. NPR 7120.7*. NPR 7120.8: NASA Research and Technology Program and Project Management Requirements, multiple references. See POLARIS for available NPR 7120.5D training materials (https://polaris.nasa.gov/).
3.4.2.1.4	Authority Roles Regarding Risk	NPD 1000.3C	NPD 1000.3C, Section 4.6.2.3, describes specific roles of Safety and Mission Assurance and the authority to halt work.
3.4.2.2.1	Independent Life Cycle Review Process	7120.5D	Chapter 3.
3.4.2.2.3	Dissenting Opinion Process	NPR 7120.5D; Columbia Accident Investigation Board (CAIB) Report: Volume I	Specific process steps to record and resolve divergent views by a higher level of NASA management: NPR 7120.5D, Chapter 3. CAIB Report, Chapter 8, Section 8.5.
4	Strategic Management System (overview)	OMB Circular A-11; Government Performance and Results Act of 1993 (GPRA); NPD 1001.0	Planning/performance requirements: Circular A-11, Part 6; GPRA, Sections 3 and 4; NPD 1001.0: NASA Strategic Plan, available through NODIS or at http://www.nasa.gov/budget/.
4.1.1	External Guidance	National Aeronautics and Space Act of 1958; U.S. National Space Policy (NSPD 49)	Space Act (http://history.nasa.gov/spaceact.html). Space Policy (http://www.fas.org/irp/offdocs/nspd/space.html).
4.1.4	Strategic Plan	OMB Circular A-11	Part 6, Section 210.

Section	NPD 1000.0 Topic	For Further Information	Reference Content or Key Point Description
4.1.5.3	Use of the Procurement Strategy Meeting to Implement Strategic Acquisition Decisions	NASA FAR Supplement Subpart 1807.170; NPR 7120.5D	FAR Supplement, Subpart 1807.170, describes Procurement Strategy Meeting (PSM) requirements in greater detail. NPR 7120.5D, Chapters 2 and 3 and Appendices E and F.
4.1.6.2	President's Management Agenda Initiatives	OMB President's Management Agenda Web site	http://www.whitehouse.gov/omb/budintegration/pma_index.html.
4.2	Programming: Alignment of Resources to Plans (processes in annual budget formulation)	NASA Financial Management Requirements (FMR); Annual Strategic Planning Guidance document release	FMR, Volume 4, consolidates legal, regulatory, and administrative policies into procedures applicable to NASA. The SPG, developed through a strategic decision making process, provides initial programmatic guidance for budget development.
4.3.1	Performance Budget	OMB Circular A-11	Part 6, Section 220.
4.4.1	(Execution) Controls	NPD 1200.1D	NPD 1200.1D: NASA Internal Control and Accountability.
4.4.2	Monitoring, Evaluation, and Reporting	NPR 7120.5C; NPR 7120.5D; NPR 7120.8	NPR 7120.5C: NASA Program and Project Management Processes and Requirements (applies to non-spaceflight programs), Chapters 2, 3, and 7 and Appendix H. NPR 7120.5D, multiple references. NPR 7120.8, multiple references.
4.4.2.1	Internal Evaluations	See references for 4.4.2	For Earned Value Management, see http://evm.nasa.gov/.
4.4.2.2	External Evaluations and Reporting	NASA Advisory Council (NAC); NASA Aerospace Advisory Panel (ASAP);	The NAC Web site provides information on council activities. The ASAP Web site provides information on panel activities.
4.4.2.2.1	Performance and Accountability Reports	OMB Circulars A-11 and A-136	Circular A-11, Section 200.4, and OMB Circular A-136, Section II, provide the requirements for the PAR. NASA's annual PARs are available at http://www.nasa.gov/budget/.
4.4.2.2.2	Major Program Annual Reports (cost and schedule reports)	NASA Authorization Act of 2005; NSPD 49	The NASA Authorization Act of 2005, Section 103, provides the reporting requirements for MPAR. NSPD 49. NASA provides MPAR information in the annual Budget Estimates (see individual projects and the MPAR subsection under Management and Performance), available at http://www.nasa.gov/budget/.
4.4.2.2.3	PART Evaluations	OMB Assessing Program Performance Web site; ExpectMore.gov	Guidances and reference materials for OMB's Program Assessment Rating Tool (PART). Online PART ratings, related performance links, and assessments of NASA programs..
4.4.2.2.4	President's Management Agenda Scores	See reference in 4.1.6.2	See Results.gov, President's Management Agenda for scorecard information. NASA's PMA scorecard information is available at http://www.nasa.gov/budget/.
4.6	Process Communication	NODIS (Directives Online)	http://nodis/main_lib.html.
*7120.7: NASA Information Technology and Institutional Infrastructure Program and Project Requirements is expected for publication in 2008.			







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