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|  | **Science Directorate (Code S)**Ames Quality Management System |  | Date04.19.2019 |
| Title: **Organizational Plan Profile** |  |

1. **ARC Code: S**
2. **Title: Science Directorate**
3. **Organization Purpose & Description**

The ARC Science Directorate (Code S, hereafter “The Directorate”) conducts basic and applied research, and technology development aligned with the tri-annual NASA Strategic Plan, and with the derived NASA Science Plan. The Directorate’s activities are in support of the Agency’s astrobiology, astrophysics, planetary sciences, biological sciences and Earth science programs. The Directorate seeks to discover new insights and to better understand the mechanisms, phenomena and interactions that exist within and among living and non-living things in the universe. The Directorate provides scientific leadership for NASA flight projects/programs, provides management of Earth science airborne campaigns, and builds and delivers dozens of flight payloads to the International Space Station. The Directorate also hosts the NASA Mars Climate Modeling Center and the NASA Earth Exchange.

The Directorate is home to more than 150 civil servants, the majority of whom are research scientists or engineers. The government staff is augmented by approximately 300 contractor scientists and engineers, support staff, postdoctoral fellows, and students. The Directorate is organized into three Divisions: Space Biology (Code SC), Earth Science (Code SG), and Space Science and Astrobiology (Code SS).

1. **Organization Chart**



1. **Roles and Responsibilities**

These are the roles and responsibilities of Key Staff in the Directorate. The first three positions are considered to be permanent; the fourth was established in CY2018 and will exist for as long as the Director for Science regards it as necessary.

DIRECTOR FOR SCIENCE (permanent)

1. Provides executive and strategic leadership of the Directorate.
2. Defines overall strategic initiatives, and broadly defines the scientific and technical portfolio of the Directorate.
3. Periodically assesses the scientific and technical portfolio of the Directorate against metrics and programmatic considerations, and adjusts strategy and tactical plans accordingly.
4. Establishes and communicates Directorate policies.
5. Defines the Directorate’s Governance Model and oversees its implementation.
6. Establishes and maintains advocacy and relations with sponsoring stakeholders within the Agency – and beyond.
7. Establishes and maintains advocacy and relations with partner organizations at other NASA Centers, at functionally equivalent organizations, and with industry partners.
8. Establishes and maintains advocacy and relations with partner implementing Organizations within the Center.
9. Elevates executive-level issues to Center Director, HQ Mission Directors, and NASA Program Offices as appropriate.
10. Participates in the Center Executive Council, the Ames Center Management Council, the Executive Safety Committee, and the Ames Quality Management System Executive Steering Committee.
11. Serves as the Directorate’s primary representative to the Center’s Leadership Development Resource Planning committee.
12. Supervises Project Scientists for major NASA science flight projects, per guidance from the Science Mission Directorate at NASA Headquarters.

DEPUTY DIRECTOR FOR SCIENCE (permanent)

1. Serves as the Directorate’s Chief Operating Officer, responsible for the overall day-to-day management of the Directorate.
2. Assists the Director for Science in implementing #3-#10 above.
3. Serves as the Directorate’s primary representative to the Center’s Executive Safety Council, the Facilities Utilization Resources Board and the Diversity and Equal Opportunity Board.
4. Supervises Division and Office Chiefs and key project management personnel within the Directorate.

ASSOCIATE DIRECTOR FOR MANAGEMENT OPERATIONS (permanent)

1. Serves as the Directorate’s primary executor of day-to-day management operations in the areas of safety, the Ames Quality Management System, and computer/IT security.
2. Chairs the Directorate’s Safety Committee and works with Directorate researchers and engineers to provide a safe working environment in the workplace.
3. Serves as the Directorate Leader for the Ames Quality Management System (AQMS), ensuring that documents are updated and reviewed, as needed.
4. Leads the implementation of Agency requirements for computer security throughout the Directorate.
5. Provides NASA oversight for the contractor-administered NASA Postdoctoral Program (NPP).
6. Serve as the task manager for Directorate support contractors, as needed.
7. Manages the Directorate’s awards program, morale/welfare/recreation funds, conference tracking, training, property management, facilities and ACES seats.

ASSOCIATE DIRECTOR FOR LIFE IN SPACE (non-permanent)

1. Advises the Director for Science on strategies for securing a sustainable, multi-year program of space biology experiments for deep space (i.e., beyond Low-Earth Orbit).
2. Assists the Director and Deputy Director for Science in advocating to sponsoring stakeholders on behalf of “Life Beyond LEO.”

The roles and responsibilities of the three Divisions comprising the Science Directorate are presented below.

SPACE BIOSCIENCES DIVISION

The Space Biosciences Division (Code SC) studies the role and influence of the space environment on living systems, from cells in culture to physiological studies in animals and humans, in order to extend the duration and boundaries of human space flight to create new opportunities for exploration and discovery. The Division is comprised of three Branches: Bioengineering, Flight Systems Implementation, and Space Biosciences Research. These Branches focus on conducting research including both ground-based and flight experiment development and operations, research and technology development supporting the Exploration Life Support Project, and on providing engineering support for flight hardware development and ground-based acceleration facility research, as well as inflight operational support. For the Flight Systems Implementation Branch, development of payloads for the *International Space Station (ISS)* is performed in compliance with the Ames Quality Management System (AQMS), as well as AS9100 standards and requirements. For complex projects, compliance is derived from the Ames Quality Management System, as well as ISO 9001 standards and requirements.

EARTH SCIENCE DIVISION

The Earth Science Division (Code SG) supports NASA's goals in Earth Science through a robust program of research and technology development in atmospheric and biospheric sciences. The Division has a long heritage of excellence in defining and managing airborne science mission campaigns for NASA, often with the participation of other federal agencies and academia. Individual researchers and engineers design and develop payloads that often fly on these campaigns, and are responsible for the successful science operations and data analysis of those instruments. The airborne data advances scientific understanding through the merging of airborne with satellite-based observations, numerical modeling, laboratory studies, instrumentation and information systems development to further the knowledge of our home planet. The Earth Science Division has the Agency lead, through the Earth Science Project Office (ESPO), of managing NASA's major Earth science field campaigns, which span the globe, are multi-center, multi-agency and often conducted with international partners. The Division applies the knowledge gained from Earth science research to applications for societal benefit, and maintains a program of education outreach. Key components of the Division’s research programs include the study of the physical and chemical processes of biogeochemical cycling; the dynamics of terrestrial ecosystems; the chemical and transport processes that determine atmospheric composition, dynamics, and climate; and the physical processes that determine the behavior of the atmosphere on the earth and other solar system bodies.

SPACE SCIENCE AND ASTROBIOLOGY DIVISION

The Space Science & Astrobiology Division (Code SS) performs basic and applied research aligned with the NASA Strategic Plan in planetary sciences, astrobiology and astrophysics. The research and mission-related activities are structured around the study of the origins and evolution of stars, planetary systems, and life that address some of the most fundamental questions pursued by science. These questions examine the origin of life and our place in the universe, and lie at the heart of the discipline of astrobiology. The research programs in the Division are international in scope, ranging from active participation in international scientific meetings and societies, to collaborative ground-based research projects, to scientific investigations on international flight missions and projects. The Division's scientific expertise represents a unique Agency resource to be utilized to pioneer future space exploration and to enhance scientific discoveries for the Agency's current and future manned and unmanned space exploration programs. The Division also hosts the NASA Mars Climate Modeling Center (MCMC), a research-focused Agency capability designed to address hypothesis-driven science, while developing capabilities needed for future landings of robotic and crewed vehicles to the surface of Mars.

1. **Products and Services**

The primary product of the Directorate is the intangible advancement of discovery and knowledge in the service of NASA science and human exploration objectives. Directorate researchers are committed to satisfying one of the original Agency functions codified in the founding National Aeronautics and Space Act of 1958, Section 203(a)(3) to “provide for the widest practicable and appropriate dissemination of information concerning [NASA’s] activities and the results thereof.” Directorate research scientists and engineers are expected to publish their findings in peer-reviewed science journals and/or technical reports, and present their findings at national and international science conferences.

Various metrics are used to periodically assess the value and impact of the Directorate’s technical work. These include assessing the number of peer-reviewed publications and their associated citations, the degree to which new science knowledge forms the basis of future NASA mission concepts, and the extent to which technology developed in the Directorate is integrated into future programs and projects. In some cases, the Directorate is directly responsible for designing and developing flight payloads for launch on robotic science missions, or for delivery to ISS. In either case, the management precepts are guided by the appropriate NASA procedural requirements, by the expectations of sponsoring stakeholders, and by the capabilities residing in partnering organizations within the Center.

Among the most valuable of services provided by the Directorate is science leadership for present and future NASA projects and programs. This leadership manifests itself in a variety of ways. It may include the science definition and advocacy for a new flight mission in one of the Agency’s competitive Principal Investigator-led mission categories. It may be science definition and leadership for a payload on a NASA mission that is either competitively selected or directed. It may be science operations and/or data analysis for a flight project scientifically led by the Center or by an external partner and/or for a flight project managed by the Center or by an external partner. Many such combinations are possible. In all cases, the optimal combination will result from matching the expertise and capabilities of the Science Directorate and other Center Directorates with the acquisition strategies of the managing organization – whether it be located at ARC, or another institution.

1. **Delegated Authority**

In the absence of the Director, authority is delegated according to the following flow-down:

1. Deputy Director for Science
2. Associate Director for Management Operations
3. Associate Director for Life in Space
4. Division Chief, selected according to appropriateness and/or availability
5. Branch Chief, selected according to appropriateness and/or availability.
6. **Policies Owned by the Organization**

Not applicable.

1. **Organization Charters and Boards**

The Director for Science serves as the primary steward of the Center’s Core Competencies in: (a) Astrobiology/Life Sciences, and (b) Space and Earth Sciences. This stewardship is implemented in consultation with other Center Organizational Directors, as appropriate.

The Extreme Environments Research Board (EERB) provides independent oversight of science campaigns in remote and potentially dangerous locations. It is traditionally chaired by a non-participating science researcher in the Directorate, and includes representatives from the Safety and Mission Assurance Directorate and from other relevant organizations across the Center.

1. **Organization-Managed Processes & Work Instructions**

The Directorate has identified appropriate oversight and evaluation processes for managing flight projects that satisfy two conditions: (i) not subject to NPR 7120.5, and (ii) life-cycle costs less than ten million dollars. [Larger programs are traditionally managed at the Center through the Program and Projects Directorate (Code P).]

**Role Process/Work Instruction**

Earth Science Projects Office Management of Agency airborne and sea-based Earth Science campaigns

ISS Projects Design, development and project management for *International Space Station* experiments and payloads

Space Biology Project Management and advocacy for Agency fundamental space biology projects/programs

**10.1 Earth Science Campaigns**

The Directorate manages NASA airborne and sea-borne Earth Science campaigns through the Earth Science Projects Office (ESPO), acting as an agent for HQ/SMD/Earth Science Division.

**10.1.1 Work Practices**

When a project is assigned to ESPO, the ESPO Director assigns a Project Manager (PM), deputy Project Manager and support team. The project team is responsive to requirements and adheres to the constraints in NPR 7120.8. The ESPO team has a “Project Management Guide” that has the steps needed to successfully implement a field project and sample documents (site visit reports, project plans, presentations etc.). Lessons learned are added to the guide after each project. The ESPO team has a folder, for internal use, on the NASA Google drive to maintain and share documents, including the Project Management Guide. Project teams meet on a regular basis to work issues, communicate information, and maintain a project website with project-specific information. The ESPO team meets weekly to go over issues, concerns and lessons learned across projects.

**10.1.2 Oversight**

Earth Venture - Suborbital (EV-S) projects follow a formal review process (Investigation Concept Review, Midterm reviews, KDP-F etc.) overseen by the Earth Systems Science Pathfinder Program office at NASA’s Langley Research Center. The multi-aircraft projects conduct a Mission Readiness Review prior to deployment for the Airborne Science Program Director and the appropriate Program Manager(s) at HQ/SMD.

**10.1.3 Stakeholder Feedback**

The ESPO Director meets with each PM on a regular basis to maintain oversight and provide guidance. The PM works with the HQ/SMD Program Manager for the project and the Director receives informal feedback from the scientists, aircraft and Program Manager during and after the mission. The project participants can provide feedback through the Customer Feedback form on the airborne science website.

**10.2 ISS Payloads**

The Directorate manages NASA payloads for the *International Space Station (ISS)* through the Space Biology Division of the Science Directorate. These payloads, with typical design, development and testing cycles of 12- to 18-months, may be scientifically led by a resident Principal Investigator, or by an external researcher. These payloads are negotiated annually with stakeholders at HQ/HEOMD and at NASA’s Johnson Space Center (JSC), who organize and manage comprehensive quarterly reviews of the payloads during the development phase.

**10.2.1 Work Practices**

Each payload project approved and funded by NASA is assigned a Project Manager and a Systems Engineer. These assignments are made by appropriate supervisory managers in the Space Biology Division. These personnel may be organizationally affiliated with the Science Directorate, or may be matrixed from other Directorates at the Center. The Project Manager develops a Project Plan tailored off of NPR 7150.2 and the Systems Engineer develops a Systems Engineering Management Plan (SEMP) based off of NPR 7123.1. Project Plans are reviewed and approved by Center management, and the SEMP is approved by the Center’s Chief Engineer. These two plans define the overall processes used to manage the payload project, as well as the technical work needed to successfully deliver the payload for flight to ISS aboard a commercial launch vehicle. For the more detailed work, processes, reviews and validations are defined by the primary implementing organization, the Flight Systems Implementation Branch (Code SCF) within the Space Biology Division.

These processes cover configuration management, procurement, parts management, build instructions, drawings, test procedures and document preparation and release. All the process templates, forms, and training as well as released formal documents are stored and managed in the Code SCF Engineering Release Center database. For all flight work, representatives are matrixed to the payloads from the Safety and Mission Assurance (SMA) Directorate. They monitor work processes and oversee closure of any corrective actions. All end-Item work packages are reviewed and signed off by the SMA Directorate.

**10.2.2 Oversight**

Each ISS payload development project is subject to monthly internal management reviews organized by the Directorate, or delegated proxy. In these reviews, each

project presents its schedule, critical path, issues/risks and budget status to management. From these reviews, actions may be given to address issues. These actions are documented and tracked in a database maintained by Code SCF. Before starting development of any payload, Code SCF organizes an internal (Center) design review comprised of Subject Matter Experts (SMEs) from across the Center. The SMEs review relevant designs and plans for payloads, whether they be incremental revision of previously flown experiments, or newly designed payloads. For the latter, the Center’s Chief Engineer will serve as the Chair for Systems Requirements Reviews, Preliminary Design Reviews, and Critical Design Reviews.

**10.2.3. Stakeholder Feedback**

The Directorate also participates in monthly external reviews with funding sponsors within the ISS Program Office at NASA’s Johnson Space Center. In these reviews, much of the content and reporting for internal reviews is presented, along with assessments of progress and projects risks. The stakeholders may identify actions that must be dis-positioned. These external reviews provide key customer feedback on progress and issues.

**10.3 Space Biology Project**

The Directorate manages a variety of non-ISS Space Biology Projects and/or capabilities funded by the Space Life and Physical Sciences Research and Applications (SLPSRA) Division at NASA Headquarters. These span data acquisition and archival projects (GeneLab) to ground-based facilities (centrifuges) to management of the ISS biospecimen sharing program, to the administration of NASA grants. It is anticipated that future “deep space” non-ISS payloads will be managed within the Space Biology Project.

**10.3.1 Work Practices**

A Space Biology (SB) Project Plan, tailored from NPR 7120.5, is drafted and will be baselined this year. The approvers of the plan are the SB Project Manager (PM), Deputy PM (DPM), and Senior Project Scientist. The plan outlines the overall structure and processes and the detailed templates and work instructions are archived on the SB sharepoint site (<https://teams.share.nasa.gov/arc/sbp/default.aspx>). This site is the database for all reports and review documents except for ISS payloads that have an Experiment Requirements Document (ERD) drafted by the SB Mission Scientists; these are released in the SCF Engineering Release Center database.

**10.3.2 Oversight**

Space Biology project staff meet weekly and notes are distributed to the staff, Division management, Code SC Branch Chiefs, and ISS Project Managers/Technical Monitors (TMs). SB projects meet monthly at the Monthly Internal Review (MIR) to review accomplishments, upcoming milestones, project health and status (schedule, technical and cost), and concerns, issues, problems, and risks. These inputs are used for the external monthly/quarterly reviews with Space Life and Physical Sciences Research and Application (SLPSRA) and ISS management.

Scope changes are presented to the Ames Space Biology Control Board (ASBCB). Funding requests of over $100K and requirement changes to Level 0, 1, and 2 are brought to the Space Biology Program Manager and Program Scientist for concurrence or decisions.

**10.3.3 Stakeholder Feedback**

In addition to the monthly/quarterly management meetings, feedback is received when the PM and DPM meet with the SB Program Manager weekly, the Project Manager and Project Scientist attend the weekly HQ/SLPSRA staff meeting, and the PM, DPM and PS attend the weekly SB Program Scientist meeting. Other coordination/feedback meetings include bi-weekly meetings with the ISS Research Integration Managers/TMs, monthly meetings with the ISS Contracts office, and monthly meetings with ISS National Lab. Other stakeholder meetings include annual workshops/meetings with NASA’s Human Research Program and with the National Institutes of Health. Internally, the PM and DPM meet monthly with Center’s Office of the Chief Engineer, the Sr. PS meets with the Center’s Office of the Chief Scientist, and the Project Manager presents at the Center’s monthly Project Tag meeting.

1. **Organization Lateral Relationships**

The Science Directorate has lateral relationships with most Center organizations. The Directorate relies on every Mission Support Directorate to provide services in support of technical work. With respect to the other technical Organizations, the primary lateral relationships are with:

* Programs and Projects Directorate (Code P)
	+ Management of moderate- to large flight projects and payloads, as defined by Ames (Center) Procedural Requirements (APRs). In general, these projects and payloads have life-cycle costs exceeding ten million dollars.
	+ Assistance from New Opportunities Center for the preparation of mission concept proposals, independent reviews of mission concepts at various levels of maturity, graphics and technical support for large mission concept and science research proposals.
* Engineering Directorate (Code R)
	+ Assistance from the Mission Design Center in the formulation of mission/payload concepts.
	+ Systems and/or domain engineering support for early-concept flight missions and/or payloads definition.
	+ Systems and/or domain engineering in direct support of an approved flight mission or instrument payload.
* Exploration Technologies Directorate (Code T)
	+ Collaboration with the NASA Advanced Supercomputer on various research projects and on hosting the NASA Earth Exchange.
	+ Collaboration with the Intelligent Systems Division in the design and development of autonomous control systems and protocols for automated operations of NASA projects/programs, and for the design and development of software systems and technologies in support of science projects/programs.
	+ Collaboration with the Entry Systems and Technology Division on the design and development of atmospheric entry systems and/or sample return capsules tailored to the needs of the specific science mission.

**12. Reporting Relationships**

The Director for Science reports to the Deputy Center Director. The Deputy Director for Science reports to the Director for Science. The Associate Director(s) for Science and the three Division Chiefs report to the Deputy Director for Science. The supervisory reporting of Division Chiefs to the Deputy Director is at the discretion of the Director for Science.

Project Scientists for major NASA science flight missions report to the Director for Science, per guidance issued from the HQ/Science Mission Directorate, thereby enabling an independent line of authority on science management of flight projects/programs. Senior Technical/Level positions (ST, SL) report to the Director for Science.

The Directorate Office stakeholder interfaces are primarily in the Science Mission Directorate (SMD), and the Human Explorations and Operations Mission Directorate (HEOMD), both at NASA Headquarters. The former relationship covers activities in astrobiology, astrophysics and planetary sciences; the latter relationship covers activities in biological sciences. Moreover, the Directorate also reports to the to the *International Space Station* Program Office at NASA’s Johnson Space Center for all activities directly related to ISS.

**13. External Relationships**

The pursuit of scientific knowledge – by definition – is dependent on being an integral element of a larger national and international community. Personnel throughout the Science Directorate routinely work with personnel at other NASA Centers. Moreover, Directorate researchers are often members of NASA Science Teams for major flight projects managed by the Jet Propulsion Laboratory (JPL) and by NASA’s Goddard Space Flight Center (GSFC). More recently, the Directorate has pursued a strategic partnership with the Applied Physics Laboratory (APL) at Johns Hopkins University in pursuit of new space science flight opportunities. Countless relationship with academia provides the foundation upon which basic and applied research is conducted in the Directorate.

Other mutually beneficial relationships exit with the following:

* United States Geological Survey (USGS)
* National Oceanic and Atmospheric Administration (NOAA)
* US Department of Energy (DoE)
* Space-X
* State of California
* German Aerospace Center (DLR).

**14. Customer Satisfaction Feedback**

Because NASA is the primary customer for the products and services developed by the Science Directorate, any customer assessment must directly include feedback from Agency stakeholders: the Science Mission Directorate (SMD), the Human Exploration and Operations Mission Directorate (HEOMD), and the *International Space Station (ISS)* Program Office at NASA-JSC. The feedback is provided by a wide variety of methods.

Directorate managers, supervisors and research scientists routinely meets with SMD Division Directors, Program Executives and Program Scientists at NASA Headquarters in meetings that are scheduled around the SMD Monthly Status Review on the last Thursday of each month. These meetings are augmented by ad hoc visits by Directorate Division/Branch Chiefs to Headquarters sponsors to discuss issues and performance on specific projects/programs.

For ISS projects, the evaluation occurs at the quarterly comprehensive project reviews hosted by the HEOMD Space Life and Physical Sciences Research Applications (SLPSRA) organization. These three-day reviews are rotated among the NASA Centers participating in the SLPSRA portfolio.

Additional feedback is gained by NASA sponsors when Directorate personnel are asked to serve on Agency advisory committees, proposal reviews, and to perform temporary detail assignments at NASA Headquarters.

The Directorate provides monthly input into the Center’s contribution to the Agency’s Baseline Performance Reviews, and weekly input into the Center management on science program and project highlights.

The Directorate also pursues a wide variety of self-assessments of its performance, and uses the data – as necessary – to implement process improvements. These assessments can be grouped by cadence:

Continuous

* Assess ISS Project performance against budget, schedule and customer requirements

Weekly

* Directorate staff meetings, involving Directorate management and Division-level supervisors

Monthly

* Expanded Directorate staff meetings, involving Directorate management, and Division- and Branch-level supervisors
* Review of data from the Ames Safety and Accountability Program (ASAP)
* Safety and walk-around of Directorate office spaces
* Random walk-arounds of Directorate laboratory spaces

Quarterly

* Supervisors meeting, organized by the Deputy Director for Science

Annually

* Federal Government’s Employee Viewpoint Survey (EVS)
* Safety Culture Survey

For the EVS, the Directorate routinely identifies areas of concern, as appropriate, and schedules follow-up workshops with all supervisors to discuss the data, interpret the results, and identify mitigating measures designed to improve performance in future surveys.

**15. Management Objectives and Metrics**

The Directorate Management Objectives (DMO) define objectives that are aligned with the Center-Level Management Objectives (CLEMO). *[Note to Dave Korsmeyer: These DMOs will be re-organized and re-aligned with the Center-Level MOs, once you and senior management revise the CLeMOS.]*

**DMO 1:** **Research and Development**

Produce outstanding research and development results, as validated through peer-reviewed publications and/or papers presented at professional scientific conferences.

**DMO 1.1: Publications**

The Directorate will continue to produce world-class research published in leading scientific and technical journals worldwide.

**Target Metric:** Publish at least 200 research papers in the open literature, including at least 100 papers in peer-reviewed journals, as either lead author or as a co-author.

**Acceptable Metric:** Publish at least 100 research papers in the open literature, including at least 50 papers in peer-reviewed journals, as either lead author or as a co-author.

**DMO 1.2: Expert Advice**

The Directorate will continue to provide the Agency and the broader scientific community with expert advice based on research excellence.

**Target Metric:** Serve on at least six national or NASA advisory committees and/or professional societies and/or journal editorial review boards.

**Acceptable Metric:** Serve on at least three national or NASA advisory committees and/or professional societies and/or journal editorial review boards.

**DMO 2: Program and Project Management**

Delivery of high-quality aerospace products while meeting customer requirements.

**DMO 2.1: Technical/Schedule Milestones**

The Directorate will achieve technical and schedule milestones, within budgets negotiated with stakeholders.

**Target Metric:** 90% achievement of initially approved stakeholder milestone and performance metrics met and/or stakeholder approved resolution plan(s) accepted within 60 days of identification.

**Acceptable Metric:** 80% achievement of initially approved stakeholder milestone and performance metrics met and/or stakeholder approved resolution plan(s) accepted within 90 days of identification.

**DMO 2.2: Oversight Reviews**

The Directorate will review projects/programs for performance trends, lessons learned, and identify best practices.

**Metric:** Assess project/performance metrics on a monthly and annual basis. Records of action items are maintained and reviewed, as well as event and process trends. The goal is twofold: to continually identify lessons learned and to migrate those lessons forward (when relevant), and to identify best practices for use within the organization, and across the Center (if appropriate).

**DMO 3:** **Program and Project Support**

Delivery of high-quality support for aerospace programs and projects.

**DMO 3.1**

Provide science leadership in the design and development of space flight missions and instruments managed within the Directorate, elsewhere at the center, or by external organizations.

**Target Metric:** Provide science requirements, advocacy and leadership for at least two new flight projects annually.

**Acceptable Metric:** Provide science requirements, advocacy and leadership for one new flight project annually.

**DMO 3.2**

Serve on Science Teams for NASA flight projects in formulation, development, or operations. Such membership is normally achieved through peer-reviewed competition sponsored by NASA Headquarters.

**Target Metric:** Serve on at least four NASA Mission Science Teams.

**Acceptable Metric:** Serve on at least two NASA Mission Science Teams.

**DMO 3.3**

Develop new flight mission concepts that can be proposed to NASA through Announcements of Opportunity issued by Headquarters Mission Directorates.

**Target Metric:** Lead or support at least two new mission concepts annually.

**Acceptable Metric:** Lead or support one new mission concept annually.

**DMO 3.4**

Successfully manage Agency airborne and/or sea-based Earth Science research campaigns through the ARC Earth Science Projects Office. These campaigns result from any combination of peer-reviewed research or negotiated directly with Headquarters sponsors.

**Target Metric:** Manage at least two NASA airborne and/or sea-based Earth Science campaigns annually.

**Acceptable Metric:** Manage one NASA airborne and/or sea-based Earth Science campaign annually.

**DMO 3.5**

Successfully manage and deliver biological science payloads for operations on the *International Space Station (ISS)* and/or as rideshare payloads on free-flyer satellites in deep space. These payloads are normally negotiated with Headquarters sponsors and the ISS Program Office at NASA-JSC through an annual program budget formulation exercise.

**Target Metric:** Manage at least six ISS or rideshare payloads annually.

**Acceptable Metric:** Manage at least three ISS or rideshare payloads annually.

**DMO 4:** **Ames Quality Management System (AQMS)**

Assure supervisory and employee awareness of the importance and the content of the Ames Quality Management System (AQMS). Annually review the AQMS contents to ensure that the Organization Profile for the Directorate is maintained and periodically updated to remain accurate.

**DMO 4.1**

Ensure that Directorate staff are aware of the Center Quality Policy, and trained to comply with all applicable AQMS requirements.

**Metric:** Directorate, Division, and Branch QMS training content delivered and records of training.

**DMO 4.2**

Ensure that Directorate staff are aware of organization Management Objectives, measures and metrics, customer satisfaction methods and results.

**Metric:** Organization management objectives are created and reviewed annually, and communicated to staff through management and supervisory training.

**DMO 4.3**

Organization managers/supervisors will conduct annual Directorate quality self-assessments of performance and timely delivery of products and services.

**Metric:** Annual self-assessment, with documented results of the assessments, identified actions, and plans to follow-up with customers.

**DMO 4.4**

Update the AQMS Organization Profile annually to maintain accuracy and relevance.

**Metric:** Ensure that the AQMS Organization Profile for the Directorate is maintained and accurate.

**DMO 5: Safety Culture**

Promote and maintain an organizational culture in which safety is paramount.

**DMO 5.1**

The organization will conduct all operations in a safe manner to meet the metrics established by the Center-level Ames Safety and Accountability Program (ASAP). The metrics pertain to: (i) safety training for staff, (ii) hazard corrections, (iii) monthly safety meetings, (iv) monthly safety inspections, (v) ensuring that staff have necessary safety related health exams, where applicable, and (vi) timely reaction to any mishap findings. Employees will be vigorously encouraged to take the annual Center-wide Safety Survey.

**Metric:** 100% compliance with ASAP metrics.

**16. Continuous Improvement Action System**

The Directorate uses the Center’s Continual Improvement Action System (CIAS), as detailed in Ames Procedural Directive (APD) 1280.1 *“Ames Quality Management System (AQMS)”* and in Ames Procedural Requirement APR 1280.3 *“Continual Improvement and Corrective Action.”*

**17. Document Control System**

The Directorate will use the Ames Center-wide Directives Management System (CDMS) to post Center-wide policies and procedures. Records will be managed and controlled in accordance with APR 1440.1 “Records Management Program Requirements.” Directorate-managed projects will use the MINX-DOC system for the management and control of project documentation and project configuration documents.