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300 DIRECTOR OF SYSTEMS SAFETY & MISSION ASSURANCE

Responsible for the overall management and implementation of Center policy in the areas of systems safety, mission assurance and systems management. Provides leadership, guidance and general authority to review the systems safety, mission assurance and systems management aspects of GSFC programs, projects, and other Provide Aerospace Products and Capabilities (PAPAC) efforts in order to assure that these systems meet the Agency's goals for mission success.
Provides support to GSFC projects in their implementation of systems safety, mission assurance and systems management.

300.1 DIRECTORATE RESOURCES OFFICE

The Directorate Resources Office develops and executes the Directorate resources policies, plans and procedures as directed by the Center Chief Financial Officer and internal Directorate leaders. It develops and coordinates resources budgeting requirements as identified by the Systems Assurance Managers (SAMs), other senior line managers within the Directorate, and the project staff in the Flight Programs and Projects Directorate. The Office monitors, tracks and reports the resources health of the directorate as a key component of the office functions and provides feedback and analysis to SAMs and other contract task monitors to assists in the management of their budgets. It manages the allocation and review of resources, including budget, manpower, and space. It directs the business management activities carried out in the areas of financial analysis, pricing, scheduling, procurement, and general business. The Office is responsible for coordinating with the appropriate functional managers to ensure compliance with policies and application of new techniques for effective utilization of resources.

301 SYSTEMS REVIEW OFFICE

The Systems Review Office (SRO) supports Directorate, Center and Agency leadership for the independent review and assessment of projects per NASA/GSFC directives and standards. These technical and programmatic reviews are performed at critical milestones in the lifecycle of these efforts and provide project teams with expert advice and confirmation of approach. Independent assessments may be chartered at the discretion of Directorate management. Review and assessment reports advise decision makers at key decision points in the mission life cycle. The SRO supports the planning and implementation of independent reviews of mission systems, spacecraft, instruments, ground systems and

launch vehicles. The SRO manages the selection and acquisition of expert, independent review and assessment team members, and may be called upon to provide executive secretaries and chairpersons of independent review and assessment teams.

302 **MANAGEMENT SYSTEM OFFICE**

The Management System Office (MSO) is the Center focal point for Goddard Management System planning and implementation. The MSO continually improves the Management System and maintains compliance with the AS9100 and ISO9001 international quality management system standards. The MSO manages a fully integrated and extensive preventative and corrective action program including directives, technical standards, compliance audits, trending, lessons learned, etc. This includes leading supply chain and supplier assessment activities with supplier audits and performance analysis. The MSO is the Center lead for NASA supplier assessment and audit. The MSO provides technical oversight and assistance to projects, assuring that GIDEP alerts are reviewed and dispositioned, and that corrective action plans are fully implemented. The Office leads the internal audit program to assure compliance with the NASA/Goddard Management System and is the focal point for coordination of third-party registration audits and NASA Headquarters directed compliance audits. The MSO owns the risk management process and controls the policies, processes and tools for the identification, analysis, communication, trending, mitigation and acceptance of risks throughout the project life cycle. This includes Center-wide processes and systems for mishap, non-conformance, problem/failure, anomaly, review action reporting, tracking, characterization and trending.

305 RESOURCE ANALYSIS OFFICE

The Resource Analysis Office (RAO) provides authoritative, independent cost and manpower analyses in support of the Center Director, the New Business Committee and the GPMC. This office maintains records of Center performance in cost and manpower utilization. In that capacity, the office establishes and maintains appropriate databases. This includes the collection, analyses and normalization of technical, programmatic, cost and manpower data for all GSFC flight projects. Using its databases, the RAO develops automated cost and manpower models that reflect the history of GSFC. Research is conducted to assure that its cost and manpower models are state of the art and reflect current trends at GSFC as well as the aerospace industry. Independent cost analyses are performed for all new start projects and others in the formulation and implementation phases. The independent analyses are presented to the Center Director,

the New Business Committee, and the GPMC as authoritative predictions of cost, manpower, and resources necessary to ensure mission success.

320 MISSION SUPPORT DIVISION

The Mission Support Division (MSD) is the Center focus for all safety, reliability, and mission assurance activities for space flight projects. The Chief of the MSD directs all matrix support to projects and selects Safety and Mission Assurance (SMA) Managers, in consultation with project managers and Directorate leadership. The MSD maintains the GSFC Mission Assurance Guidelines and the MSD Chief approves all project Mission Assurance Requirements (MAR) and implementation plans. The Chief of the MSD is responsible for maintenance of safety, reliability, and quality engineering competency and the comprehensive professional development required for SMA Managers and their teams. The Chief of the MSD is a key role in the SMA technical authority, and certifies from an SMA perspective to the Director, the readiness of space flight project to proceed to the next phase of the life cycle with a particular emphasis on the final Certification of Flight Readiness (CoFR).

321 SYSTEMS SAFETY BRANCH

The Systems Safety Branch (SSB) assists GSFC missions in implementing an effective mission systems safety program which may include all or some of the following: negotiating requirements with the applicable launch range, interpreting the range requirements, performing hazard analysis, performing fault tree analysis, documenting the design and analyses, developing or reviewing the operating procedures, monitoring all hazardous operations, providing support during the development and test of the mission hardware and software, and providing on-site safety coverage for operations at the launch range. The SSB Operates the NASA Safety Reporting System (NSRS) that provides all GSFC and contractor employees a means to report safety problems anonymously, as a means of last resort, when the employee believes that a problem has been overlooked or ignored by NASA management. All problems reported are investigated and appropriate corrective action taken to eliminate the problem. The SSB is a resource for technical experts for independent reviews and assessments.

322 RELIABILITY ANALYSIS BRANCH

The Reliability Analysis Branch (RAB) performs, or independently reviews, a wide range of reliability engineering analyses for the missions that may include some or all of the following: Probabilistic Risk Assessment, Fault Tree Assessments, Failure Mode and Effects Analyses,

block diagrams, worst case assessments, parts stress derating, critical items list, and other statistical analyses that support the missions design engineering and decision making functions. The RAB is a resource for technical experts for independent reviews and assessments.

323 MISSION ASSURANCE BRANCH

The Mission Assurance Branch (MAB) provides quality assurance expertise to establish, manage and review mission assurance programs for GSFC out-of-house projects. The MAB provides SMA Managers and Quality Assurance Engineers for these projects. The MAB acquires and manages additional mission assurance support from outside the Directorate as required. The MAB ensures that project teams and contractors comply with NASA and GSFC directives, standards and other requirements pertaining to systems safety and mission assurance. MAB employees continually assesses the hardware/software quality status of all mission elements, and reports to project managers and Directorate management on the project progress, problems, anomalies and risks from the SMA perspective. The MAB is a resource for technical experts for independent reviews and assessments.

324 INSTITUTIONAL ASSURANCE BRANCH

The Institutional Assurance Branch (IAB) provides quality assurance expertise to establish, manage and review mission assurance programs for GSFC in-house projects. The IAB provides SMA Managers and Quality Assurance Engineers for these projects. The IAB acquires and manages additional mission assurance support from outside the Directorate as required. The IAB ensures that project teams and contractors comply with NASA and GSFC directives, standards and other requirements pertaining to systems safety and mission assurance. IAB employees continually assesses the hardware/software quality status of all mission elements, and reports to project managers and Directorate management on the project progress, problems, anomalies and risks from the SMA perspective. The IAB is a resource for technical experts for independent reviews and assessments.