

GODDARD SPACE FLIGHT CENTER

Last Update, October 1, 2004

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.

301 SYSTEMS REVIEW OFFICE

Functions as the review arm of the Systems Management effort. Performs assessments on GSFC Programs, Projects and other PAPAC efforts to verify compliance with Center systems safety, mission assurance and systems management requirements. These reviews are performed at critical junctions in the lifecycle of these efforts and are appropriately documented and reported to the GPMC. As a final readiness document, the Systems Review Office produces and publishes the Red Book that documents the level of accomplishment and subjectively quantifies the residual risk remaining in each GSFC project. The Red Book is provided to the Center Director prior to the GPMC Mission Readiness Review.

302 SYSTEMS SAFETY AND RELIABILITY OFFICE

The Systems Safety and Reliability Office is responsible for six technical functions.

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.

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Performs 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, mission success criteria, and numerous other statistical analyses that support the missions design engineering and decision making functions.

Maintains the GSFC General Environmental Verification Specification (GEVS) that includes the GSFC historical and technical rationale/policy for environmental testing for mission hardware and software.

Operates GSFC data systems that are used for tracking and resolving non-conformances in processes, hardware, software, and in-orbiting space flight missions. The systems assist the GSFC management and engineering organizations in tracking problems and in implementing effective corrective and preventive actions on existing and future missions.

Serves as the GSFC focal point for the Government Industry Data Exchange Program (GIDEP). This program disseminates information to the GSFC missions and to other industry participants relating to technical and safety problems encountered in products that are used in the development and fabrication of the mission hardware. The data are also provided to all Center employees on safety information related to product recalls that could affect the employee both at work and at home.

Operates the NASA Safety Reporting System (NSRS) at GSFC. The NSRS program 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.

303**ASSURANCE MANAGEMENT OFFICE**

Establishes, coordinates, and manages the project implementation of the assurance programs for GSFC programs, projects and other PAPAC efforts. Provides the primary interface between the Office of Systems Safety and Mission Assurance (OSSMA) and these organizations by assigning System Assurance Managers (SAMs) and Quality Assurance Engineers. Negotiates resources for and acquires and manages support from the Applied Engineering and Technology Directorate organizations responsible for parts, materials and processes and other OSSMA organizations responsible for safety and reliability assessments, software assurance, quality assurance, environmental test verification, and systems

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management. Ensures that the requirements of the NASA and GSFC project management documents pertaining to the systems safety, mission assurance and systems management functions become an integral and effective part of each project plan and each project procurement activity.

Prepares the assurance supplement of the Letter of Delegation to the Government Inspection Agency (GIA) for assigned assurance in-plant representatives detailing specific functions to be performed by them. Approves contractor and GIA assurance plans, provides overall management and direction for performance of these plans, and resolves disagreements between contractors and the GIA personnel.

Assesses the hardware and/or software quality status and reports to project and OSSMA management on status and problems and the effectiveness of the systems safety, mission assurance and systems management efforts as implemented on the Program, Project or other PAPAC effort.

Maintains the GSFC Mission Assurance Guidelines and other relevant documents.

304**SOFTWARE ASSURANCE TECHNOLOGY OFFICE**

Formulates software assurance requirements and provides support for monitoring software implementation. Provides software assurance expertise for consultation with GSFC Programs, Projects and other PAPAC efforts and the SAMs. Serves as the GSFC point of contact with NASA Headquarters on software assurance methodologies and research.

Is responsible for the Agency's software assurance technology development efforts as delegated from the Agency's West Virginia IV&V Facility. Maintains the Center liaison function with this Facility.

Provides resources for projects' software metrics implementation and for software reliability. Is responsible for OSSMA IT resources, including security, web sites, and databases.

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

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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.