



# Goddard Procedural Requirements (GPR)

**DIRECTIVE NO.** GPR 1280.1D                      **APPROVED BY Signature:** Original signed by  
**EFFECTIVE DATE:** March 6, 2009                      **NAME:** Robert Strain  
**EXPIRATION DATE:** March 6, 2014                      **TITLE:** Director

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## **COMPLIANCE IS MANDATORY**

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**Responsible Office:** 100 / Office of the Director

**Title:** The GSFC Quality Manual

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## **PREFACE**

### **P.1 PURPOSE**

The purpose of the GSFC Quality Manual is to define the Management System (MS) as implemented at the Goddard Space Flight Center (GSFC) at Greenbelt, Maryland, and at Wallops Flight Facility, Wallops Island, Virginia.

### **P.2 APPLICABILITY**

The Quality Manual applies to all organizational elements for the performance of work that is in-scope to the MS and the Center's certification to ISO 9001-2000.

### **P.3 AUTHORITY**

NPD 8730.5, NASA Quality Assurance Program Policy

### **P.4 REFERENCES**

- a. ISO 9001-2000, Quality Management Systems – Requirements
- b. ANSI/ISO/ASQ Q9000-2000, Quality Management Systems – Fundamentals and Vocabulary
- c. NPD 1000.3, The NASA Organization
- d. NPD 1001.0, NASA Strategic Plan
- e. GPR 1060.1, Management Responsibility
- f. GPR 1060.2, Management Review and Reporting for Programs and Projects
- g. GPR 1400.1, Waiver Processing
- h. GPR 1410.1, Directives Management
- i. GPR 1440.8, Records Management
- j. Form GSFC 4-52, GSFC Waiver Request

### **P.5 CANCELLATION**

GPR 1280.1C, The GSFC Quality Manual

### **P.6 SAFETY**

MS safety requirements are identified as appropriate in governing directives and procedures.

### **P.7 TRAINING**

Specific training requirements are identified as appropriate in governing directives and procedures.

### **P.8 RECORDS**

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<b>Record Title</b>	<b>Record Custodians</b>	<b>Retention</b>
Approved waivers and deviations of Center MS requirements (e.g., GPD, GPR, or GID requirements) on Form GSFC 4-52	(1) MS Management Representative (MSR); (2) Individual or Organization that requested the waiver or deviation. See Note below.	(1)* <u>NRRS 1/26.5A</u> - Destroy when 7 years old. (2) * <u>NRRS 1/26.5B</u> - Destroy when 3 years old or when no longer needed, whichever is sooner.
Approved waivers and deviations of Directorate or sub-Directorate MS requirements (e.g., PG or WI requirements)	(1) Organization that approved the waiver or deviation; (2) Individual or organization that requested the waiver. See Note below.	(1) * <u>NRRS 1/26.5A</u> (2) * <u>NRRS 1/26.5B</u>

\*NRRS – NASA Records Retention Schedules, NPR 1441.1.

Note: Record (1) is the original signed record. Record (2) is a copy.

Other MS records are identified as appropriate in governing directives and procedures.

## **P.9 METRICS**

MS metrics are identified as appropriate in governing directives and procedures.

## **P.10 DEFINITIONS**

Unless otherwise addressed herein, the definitions given in ANSI/ISO/ASQ Q9000-2000 apply to the implementation of the MS. The following additional definitions are provided to assist in the understanding and application of the MS:

- a. Customer - The recipient of a product or service provided by GSFC. For purposes of the MS, a customer is assumed to be external to NASA. NASA organizations with which GSFC transacts business are considered to be internal customers for purposes of the MS.
- b. Customer Agreement - Space Act Agreement, Program or Project Plan, Research Plan, or any similar commitment entered into by GSFC to deliver a product or service.
- c. Deviation - An allowance for a departure from a requirement or specification before the departure has occurred.
- d. Exclusion – An exception granted to the Product Realization provisions of ISO 9001-2000.
- e. Executive Council - Collectively, senior leadership, including the Heads of all of the Directorates and Functional Offices that report to the Center Director.
- f. Goddard Directives Management System (GDMS) - The electronic system that maintains the collection of directives and associated forms issued by GSFC along with the procedures for establishing and maintaining such collection.

CHECK THE GSFC DIRECTIVES MANAGEMENT SYSTEM AT

<http://gdms.gsfc.nasa.gov/gdmsnew/home.jsp> TO VERIFY THAT THIS IS THE CORRECT VERSION PRIOR TO USE.

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- g. Management System Council (MSC) - A group of representatives from each GSFC Directorate, chaired by the MS Representative (MSR), responsible for advising the MSR regarding MS administration, maintenance, and status reporting.
- h. Management System Representative (MSR) - A GSFC manager, designated by and reporting directly to the Center Director, who has responsibility and authority for the effective implementation of the MS.
- i. Performing Organization - The GSFC organization (directorate, functional staff office, project, etc.) that is assigned the responsibility of producing a product or otherwise satisfying a customer's requirement.
- j. Product – As used in this document, systems, hardware, software, data, documentation, services and/or processed material resulting from work activities at GSFC that have been defined to be in-scope to the MS.
- k. Supplier - An organization that provides a product or service to GSFC.
- l. Waiver – An allowance for a departure from a requirement or specification after the departure has occurred.

**P.11 ACRONYMS**

ANSI	American National Standards Institute
ASQ	American Society for Quality
GDMS	Goddard Directives Management System
GID	Goddard Interim Directive
GPD	Goddard Policy Directive
GPR	Goddard Procedural Requirements
GSFC	Goddard Space Flight Center
ISO	International Organization for Standardization
MS	Management System
MSC	Management System Council
MSR	Management System Representative
NPD	NASA Policy Directive
PG	Procedures and Guidelines
WI	Work Instruction

## PROCEDURES

In this document, a requirement is identified by “shall,” a good practice by “should,” permission by “may” or “can,” expectation by “will,” and descriptive material by “is.”

### 1. MANAGEMENT SYSTEM

#### 1.1 General

This manual and supporting MS directives and procedures identify the MS processes and their application throughout GSFC. The MS provides a framework whereby the sequence and interrelationships of processes are defined and accomplished. As a reference aid, the Safety and Mission Assurance Directorate maintains a listing of the directives established for the MS showing the correspondence among the ISO requirements and the NPRs and GPRs that describe the GSFC processes. This reference aid is accessible via the [GSFC MS web page](http://gsfcmanagementsystem.gsfc.nasa.gov/dsp_correspondence_matrix.cfm) at:

[http://gsfcmanagementsystem.gsfc.nasa.gov/dsp\\_correspondence\\_matrix.cfm](http://gsfcmanagementsystem.gsfc.nasa.gov/dsp_correspondence_matrix.cfm)

The interrelationships among the MS processes are depicted in Figure 1.

#### 1.2 Scope of the MS

The scope of the MS and the GSFC ISO 9001 certification includes all products resulting from the following GSFC core processes. The scope also includes the infrastructure needed to achieve conformity to product requirements, as established in the GDMS, or as otherwise documented in writing by the responsible Director of (e.g., Project Plans).

- a. Science Enabling - This includes the grants process; providing data to the science community; science support tools; the proposal support process; and the science research process.
- b. Technology Development - This includes the technology research and development management process; mission-specific products; technology transfer process; and technology commercialization.
- c. Systems Development - This includes space flight systems; sounding rocket, aircraft and balloon carrier systems; and ground-based mission operating and data acquisition systems. Sounding rocket and balloon experiment payload development is included where external commitments exist or where needed to meet the safety, interface control, or operational requirements of the carrier systems.
- d. Program/Project Management - This includes cost, schedule, and technical control; review and reporting; procurement; mission operations; and safety and mission assurance.
- e. Communicate Knowledge - This includes the research publication process and the maintenance of those databases accessible to the public whereby the results of GSFC research are shared.

There are no exclusions to the Product Realization requirements of ISO 9001-2000.

## **1.3 Management System Documentation**

### **1.3.1 General**

The MS documentation includes:

- a. This Quality Manual, which defines the Quality Policy and statements of objectives (see 2.3 and 2.4);
- b. Documented procedures required by the ISO 9001:2000 standard and by GSFC to ensure the effective planning, operation and control of processes; and
- c. Records (as identified in governing directives).

### **1.3.2 Control of Documents**

GSFC has established and documented procedures to control all Center-generated and external documentation and data. Goddard Policy Directives (GPDs), Goddard Procedural Requirements (GPRs), Goddard Interim Directives (GIDs), Procedures and Guidelines (PGs), and Work Instructions (WIs) are prepared and maintained within the GDMS. Documents or data that define requirements, plans, or design, build, interface, and production information are controlled documents subject to approval before issuance or alteration.

### **1.3.3 Control of Records**

GSFC has established and documented procedures for the identification, storage, protection, retrieval, retention and disposition of records, including pertinent records from GSFC customers and suppliers, in accordance with GPR 1440.8.

## **2. MANAGEMENT RESPONSIBILITY**

### **2.1 Management Commitment**

The Center Director and Executive Council are committed to the development, implementation and continual improvement of the effectiveness of the MS. A principal objective of the Quality Policy established in this Quality Manual is to enhance the GSFC ability to achieve program, institutional and Agency goals and objectives as stated in NPD 1001.0, NASA Strategic Plan.

The Center Director and Executive Council provide evidence of commitment by communicating to the organization the importance of meeting customer as well as statutory and regulatory requirements pertaining to GSFC product, conducting management reviews, and ensuring the availability of resources.

### **2.2 Customer Focus**

Through the conduct of management reviews and established lines of authority, executive management shall ensure that customer requirements are determined and are met with the aim of enhancing customer satisfaction.

### 2.3 Quality Policy

## GSFC QUALITY POLICY

With customer satisfaction as our primary goal:

- GSFC is committed to achieve excellence in all our efforts
- Exceed our customers' requirements
- Continually improve our processes

The GSFC Quality Policy is communicated to personnel via the [GSFC MS Web Page](#), employee training, MS reviews with executive management, and in our daily activities. The Center Director and Executive Council ensure that the Policy is appropriate for the purpose of GSFC, provides a framework for establishing and reviewing objectives, and is reviewed annually for continuing suitability.

Every GSFC manager and supervisor involved in work that is applicable to the MS shall ensure the Quality Policy is understood, implemented, and maintained at all levels of their organization.

### 2.4 Quality Objectives

GSFC plays a major role in performing and enabling research in Earth science and space science. In the past 50 years, GSFC has launched over 290 science, communications, and weather satellites. The Center develops technology and implements systems and programs that support this role. In addition, GSFC has other responsibilities in the areas of NASA Programs and Missions support, sounding rockets, scientific balloons, and observational science and scientific aircraft missions.

GSFC's Quality Objectives are traceable to the Agency's Strategic Goals and objectives established within NPD 1001.0, NASA Strategic Plan. Goddard establishes, measures, and achieves its quality objectives, while continually improving the effectiveness of the MS.

Directorates/Offices responsible for work that is within scope of the MS shall develop objectives and metrics appropriate at their level to support fulfillment of the Center/Agency strategic goals.

Directorates/Offices shall internally report on objectives measurements, perform appropriate data analysis, and initiate improvement actions as warranted.

### 2.5 Responsibility, Authority and Communication

#### 2.5.1 Responsibility and Authority

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The Center Director is given the authority by the Agency to manage all aspects of GSFC within Government and Agency laws and regulations. This includes authority to implement, maintain, and improve the MS. The Center Director delegates responsibility and authority over the MS to the MS Representative (MSR), which flows down to the Executive Council and to all managers and supervisors at the Center.

GSFC is organized into elements called Directorates and Functional Offices. The Directors of and the Functional Office Chiefs are members of the Executive Council that provides advice and support to the Center Director for the management of the Center and for the implementation of the MS.

The official GSFC organization chart is set forth in NPD 1000.3, and may be found in the [Goddard Organization Manual](#), on the Web site maintained by the Office of Human Capital Management.

Every GSFC manager and supervisor involved in work under the scope of the MS is responsible for maintaining and implementing the MS within their organizations, including establishing and documenting the necessary procedures, guidelines, and work instructions. This responsibility includes ensuring that their employees operate in compliance with the MS, take appropriate actions when processes do not produce the required quality, and continually seek to improve processes.

### **2.5.2 Management System Planning**

The Center Director has established a Management System Council (MSC) made up of representatives from each Directorate and Functional Office, and chaired by the MSR. The MSC is responsible for advising the MSR regarding MS administration, maintenance, and status reporting.

Responsibility for the planning of the MS resides with the MSR and the MSC. The MSC ensures that the integrity of the MS is maintained when MS changes are planned and implemented.

The MSC is responsible for the analysis of data, gathered through various tools and efforts, on the implementation and effectiveness of the MS. The purpose of these analyses is to discern trends and opportunities for preventive action or continual improvement initiatives from a Center perspective. The results of these analyses and recommended actions are reported to Center management as part of MS Management Reviews or in more immediate reporting opportunities.

### **2.5.3 Management System Representative**

The Center Director appoints the MSR who is responsible for ensuring that the MS is established, implemented and maintained across the Center. The MSR reports to senior management on the performance of the MS and opportunities for improvement. This reporting process also ensures promotion of awareness of customer requirements throughout the organization. The MSR is responsible for reviewing the GSFC Quality Manual and recommending revisions to ensure the Manual is maintained in a current status.

### **2.5.4 Internal Communication**

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Internal communication shall take place regularly in accordance with GPR 1060.1 and GPR 1060.2. MS management reviews and resulting actions shall be accessible to all employees throughout the organization.

## **2.6 Management Review**

The MSR shall report at prescribed intervals on the continuing suitability, adequacy and effectiveness of the MS to the Center Director and the Executive Council. MS metrics gathered during the reporting period are used to determine necessary improvements to the MS. The MS Management Review process and input shall be in accordance with GPR 1060.1. Review output consists of actions related to improvement of the MS and its processes, improvement of product related to customer requirements, and resource needs.

## **3. DEVIATIONS AND WAIVERS**

Unless the deviation/waiver process is addressed in the requirement document, the following process shall be employed to request approval of departures from the MS.

3.1 Deviation/waiver requests against a GPR or other Center-level MS requirement shall be documented and processed in accordance with GPR 1400.1, Waiver Processing, using GSFC Form 4-52, GSFC Waiver Request.

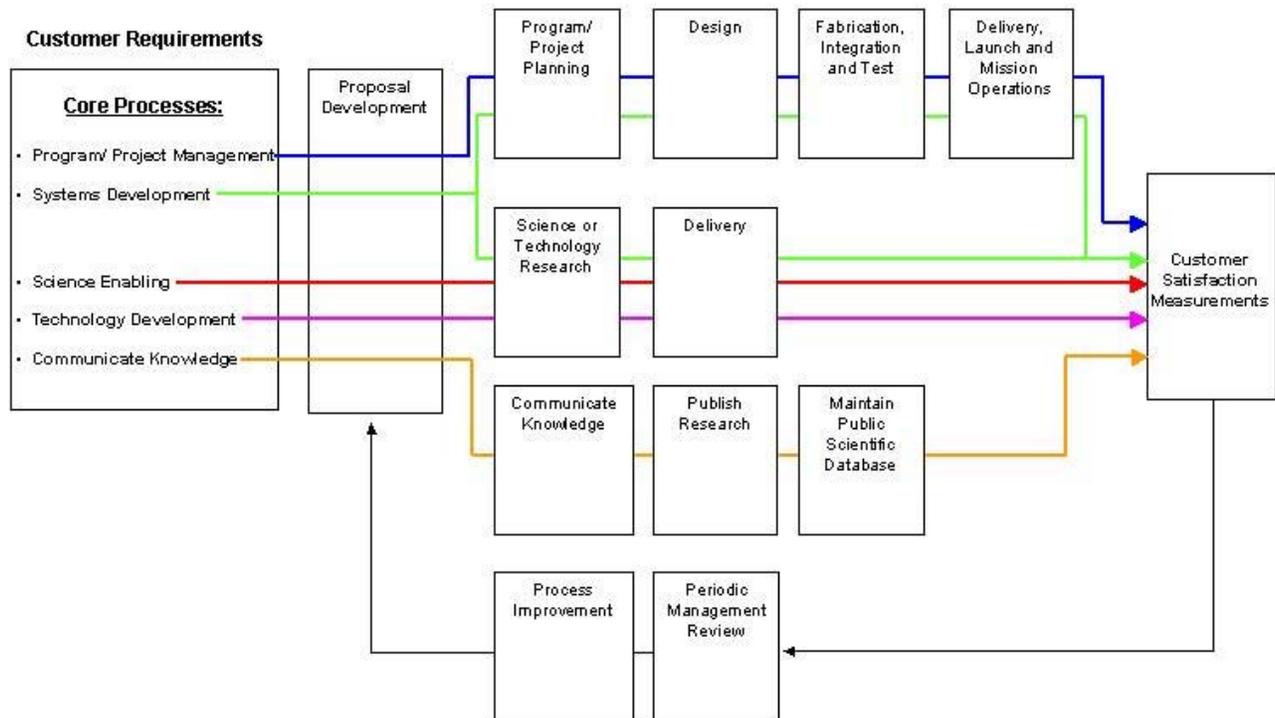
3.2 Deviation/waiver requests involving a PG, WI or other localized MS requirement shall be prepared by the requesting organization for the approval of the authority that established the requirement. Such deviation/waiver requests shall document, at a minimum:

- requirement(s) not being met,
- the reasons for requesting a deviation/waiver,
- alternate procedures or processes that will be used,
- potential effects on product quality.

Requests involving localized requirements that may or will result in non-compliance with a Center-level requirement require the use of GSFC Form 4-52.

3.3 Deviation/waiver requests against GSFC processes shall not involve relief from the requirements of ISO 9001-2000.

**Figure 1: Interrelationships Between MS Processes**



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## CHANGE HISTORY LOG

Revision	Effective Date	Description of Changes
Baseline	07/31/03	<p>Entire manual was rewritten in response to ISO 9001:2000 requirements. GPG number changed as a result of release of NPD 1280.1. This baseline version replaces GPG 8730.3D. Substantive changes from GPG 8730.3D are:</p> <ul style="list-style-type: none"> <li>▪ Quality policy signature page eliminated.</li> <li>▪ GSFC organization chart (figure 1) replaced by reference to on-line chart maintained by OHR.</li> <li>▪ 1.2.2: Language added to align QMS scope with GSFC Strategic Implementation Plan (SIP). First paragraph expanded to address infrastructure considerations.</li> <li>▪ 1.2.2c: Moved mission operations to this process.</li> <li>▪ 1.2.2e: Added to align with SIP.</li> <li>▪ Deleted specific identification of QMSR by position in favor of more flexible description in 2.5.3.</li> <li>▪ 2.2 added to address ISO 9001:2000 requirement.</li> <li>▪ 2.4 added to align with SIP and to address ISO requirements with respect to objectives, objectives metrics, and analysis.</li> <li>▪ 2.5.2 second paragraph added to address data analysis and continual improvement requirements of ISO 9001:2000.</li> <li>▪ 2.5.4 added to address ISO 9001:2000 requirement.</li> <li>▪ Section 3 re-written for clarity and visibility. Waivers previously addressed in Quality Planning (4.2.3) of GPG 8730.3D.</li> <li>▪ Figure 1 added to address, in conjunction with Table 1, ISO 9001:2000 requirement regarding process interaction description.</li> <li>▪ Table 1 expanded to address correspondence between ISO 9001:2000 requirements and implementing documents. Table correspondence used to eliminate redundant and ISO 9001:1994 related sections 4.2 through 4.20 of GPG 8730.3D.</li> </ul>
A	07/27/04	<ul style="list-style-type: none"> <li>▪ P.4(c) title change and hyperlink established. Date left off of Plan title to accommodate future Plan updates without requiring Quality Manual update.</li> <li>▪ P.8 – Record types separated. Custodians and record retention schedules re-defined.</li> <li>▪ 1.1 – Deleted sentence “These directives have been updated to conform to ISO 9001-2000”.</li> <li>▪ 2.4 – Rewritten to reflect current GSFC Strategic Implementation Plan mission goals.</li> <li>▪ Table 1 – Updated titles of GPG 3410.2, GPG 7120.1, and GPG 5340.3. Deleted references to canceled GPG 7120.2.</li> </ul>

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B	12/29/04	As directed during the FY04 Center Rules Review, the Responsible Office modified this document to remove requirements that were no longer needed and to clearly distinguish requirements from supporting information. Administrative changes were made throughout to correct responsible organization names and codes, and to retitle Goddard Procedures and Guidelines (GPG) to Goddard Procedural Requirements (GPR). All changes were reviewed and approved by the Goddard Quality Management System Council (QMSC).
C	02/14/06	<ul style="list-style-type: none"> <li>• All Quality Management System references changed to Management System.</li> <li>• Deleted all references to the GSFC FY Implementation Plan.</li> <li>• P.4c reference name changed to accommodate changing FY documents.</li> <li>• P.4d reference updated.</li> <li>• P.4e through h added.</li> <li>• P.10a – replaced “...as defined through...” with “...under...”.</li> <li>• P.10c – replaced “legal” with “similar”.</li> <li>• P.10d added.</li> <li>• P.10o modified.</li> <li>• 1.1 – Third and fourth sentences revised to remove Table 1 from the directive and authorize the Office of Mission Success to maintain a reference list of directives that can be more readily updated to reflect current directives.</li> <li>• 1.2.4 – GPR reference update from 1440.7 to 1440.8.</li> <li>• 2.4 – Section re-written to reflect establishment of NPR 1000.0 and ensuing NASA Strategic Plan in lieu of a Center Implementation Plan.</li> <li>• 2.5.2, second paragraph – Elimination of provision for QMSC advising the QMSR on requests for waivers.</li> <li>• 2.6 – Replaced “semi-annual” with “at prescribed intervals” and inserted “process and” in third sentence. Changes made to reflect detailed changes in GPR 1060.1.</li> <li>• 3 – Re-written to reflect use of GSFC Form 4-42.</li> <li>• Removed Table of QMS Directive Correspondence with ISO requirements to QMS web page to accommodate real-time update.</li> </ul>
D	03/06/09	<p>General update to add new template and acronym list, remove unused definitions, and correct all links. Changed references to ISO 9001 to comply with GSFC Registration. Reorganized section 2. Made the following changes:</p> <ul style="list-style-type: none"> <li>• Changed authority directive in P.3.</li> <li>• Added use of Goddard Interim Directives.</li> <li>• Retitled several sections for clarity.</li> <li>• Rewrote GSFC Quality Policy and added requirement for annual review.</li> </ul>

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		<ul style="list-style-type: none"><li>• Replaced all references to Code 170 with Code 300.</li><li>• Changed overall authority &amp; responsibility for MS from Executive Council to Management System Representative.</li><li>• Updated section 3 to add waiver process from new GPR 1400.1 and disallow any waiver to ISO 9001.</li></ul>