

MPG 1280.9

REVISION A

EFFECTIVE DATE: April 30, 2003

EXPIRATION DATE: April 30, 2008

MARSHALL PROCEDURES AND GUIDELINES

DA01

CONTINUAL IMPROVEMENT

CHECK THE MASTER LIST at
<https://repository.msfc.nasa.gov/directives/directives.htm>
VERIFY THAT THIS IS THE CORRECT VERSION BEFORE USE

Marshall Procedures and Guidelines		
DA01		
Continual Improvement	MPG 1280.9	Revision: A
	Date: April 30, 2003	Page 2 of 16

DOCUMENT HISTORY LOG

Status (Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
Baseline		8/15/01	New document to address continual improvement in accordance with ISO 9001:2000.
Revision	A	4/30/03	Revised to include references to Freedom to Manage, the Formal Suggestion Program, Lessons Learned, and Safety Concerns and Reporting System (SCRS).

Marshall Procedures and Guidelines DA01		
Continual Improvement	MPG 1280.9	Revision: A
	Date: April 30, 2003	Page 3 of 16

TABLE OF CONTENTS

Preface

- P.1 Purpose
- P.2 Applicability
- P.3 Authority
- P.4 Applicable Documents
- P.5 References
- P.6 Cancellation

Document Content

- 1. Definitions
- 2. Responsibilities
- 3. Procedure
- 4. Records
- 5. Flow Diagram

Appendix A Standard MSFC Processes Used For Continual Improvement

Appendix B General Continual Improvement Process Flow

Marshall Procedures and Guidelines		
DA01		
Continual Improvement	MPG 1280.9	Revision: A
	Date: April 30, 2003	Page 4 of 16

PREFACE

P.1 PURPOSE

This Marshall Procedures and Guidelines (MPG) defines the processes and responsibilities for continual improvement at Marshall Space Flight Center (MSFC).

P.2 APPLICABILITY

This MPG is applicable to all MSFC processes related to providing products and services to customers.

P.3 AUTHORITY

MPD 1280.1, "Marshall Management Manual"

P.4 APPLICABLE DOCUMENTS

- a. MSFC Implementation Plan
- b. Directorate/Office Strategic Plans/Implementation Plans
- c. MSFC Form 426, "Here's My Idea"
- d. NPG 7120.5, "Program and Project Management Processes and Requirements"

P.5 REFERENCES

- a. MPD 1150.1, Charter MC-05, "Program Management Council for Microgravity Research"
- b. MPD 1150.1, Charter MC-08, "MSFC Project Management Council"
- c. MPD 1150.1, Charter MC-09, "Program Management Council for Space Transportation"
- d. MPG 1000.1, "Center Strategic Planning Process"
- e. MPG 1130.1, "MSFC Implementation Planning Process"
- f. MPG 1130.2, "MSFC Annual Report Process"
- g. MPD 1280.1, "Marshall Management Manual"
- h. MPG 1280.1, "Management Review"

Marshall Procedures and Guidelines DA01		
Continual Improvement	MPG 1280.9	Revision: A
	Date: April 30, 2003	Page 5 of 16

- i. MWI 1280.2, "MSFC Customer Feedback System"
- j. MWI 1280.3, "Corrective/Preventive Action Notification System"
- k. MPG 1280.4, "MSFC Corrective Action System"
- l. MWI 1280.5, "MSFC ALERT Processing"
- m. MPG 1280.6, "Internal Quality Audits"
- n. MPG 1280.8, "Customer Satisfaction"
- o. MPG 1410.2, "Marshall Management Directives System"
- p. MSFC-HDBK-1912, "System Engineering Handbook, 2nd Edition"
- q. MSFC-HDBK-3173, "MSFC Project Management and Systems Engineering Handbook"
- r. MPG 5000.1, "Purchasing"
- s. MWI 5100.1, "Procurement Initiators Guide"
- t. MWI 5116.1, "Evaluation of Contractor Performance under Contracts with Award Fee Provisions"
- u. MWI 5330.1, "Evaluation of Contractors, Suppliers, and Vendors"
- v. MWI 5330.2, "NASA Engineering and Quality Audit (NEQA)"
- w. MPG 7120.1, "Program/Project Planning"
- x. MWI 8040.6, "Functional and Physical Configuration Audits, MSFC Programs/Projects"
- y. MWI 8050.1, "Verification of Hardware, Software, and Ground Support Equipment for MSFC Projects"
- z. MWI 8715.13, "Safety Concerns Reporting System (SCRS)"
- aa. MPG 8730.3, "Control of Nonconforming Product"
- bb. MPG 8730.4, "Statistical Techniques"

Marshall Procedures and Guidelines DA01		
Continual Improvement	MPG 1280.9	Revision: A
	Date: April 30, 2003	Page 6 of 16

P.6 CANCELLATION

MPG 1280.9 Baseline dated August 15, 2001

Original signed by
Axel Roth for

A. G. Stephenson
Director

Marshall Procedures and Guidelines		
DA01		
Continual Improvement	MPG 1280.9	Revision: A
	Date: April 30, 2003	Page 7 of 16

1. DEFINITIONS

1.1 Continual Improvement. Recurring activity consistent with Center values to increase the ability to fulfill requirements, increase the effectiveness of the management system and its processes, improve safety, and make other improvements that enhance quality, productivity, and the Center's quality of life.

1.2 Metric. A standard of measurement.

1.3 Objective. An aim or goal toward which effort is directed. A strategic position to be attained or a purpose to be achieved by an organization.

1.4 Quality Objective. Something sought, or aimed for, related to quality. Quality objectives are generally based on the MSFC quality policy and should be measurable.

2. RESPONSIBILITIES

2.1 MSFC Senior Management

2.1.1 The MSFC Senior Management shall review and approve objectives and metrics at the Center level as defined in the MSFC Implementation Plan. (Reference MPG 1130.1, "MSFC Implementation Planning Process.")

2.1.2 The MSFC Senior Management shall review performance against the MSFC Implementation Plan, assess opportunities for improvement, and assign action items as required. (Reference MPG 1130.2, "MSFC Annual Report Process.")

2.2 MSFC Directorates/Offices

2.2.1 MSFC Directorates/Offices shall establish objectives, including quality objectives, and metrics for their organization. (Reference MPG 1000.1, "Center Strategic Planning Process," and MPG 1130.1, "MSFC Implementation Planning Process.")

2.2.2 MSFC Directorates/Offices shall review performance of the organization, assess opportunities for improvement, and assign action items as required.

2.2.3 MSFC Directorates/Offices shall initiate continual improvement activities based on Center and Directorate/Office-level objectives or in response to other Marshall Management System (MMS) procedures or Innovative Dynamic Employee's Active Solutions (IDEAS).

Marshall Procedures and Guidelines		
DA01		
Continual Improvement	MPG 1280.9	Revision: A
	Date: April 30, 2003	Page 8 of 16

2.2.4 MSFC Directorates/Offices shall record continual improvement summary information in accordance with this procedure.

2.3 Customer and Employee Relations Directorate (CaER).

2.3.1 CaER is responsible for the development, coordination, and publication of the Center Implementation Plan.

2.3.2 CaER is responsible for the development, coordination, and publication of the Center Annual Report.

2.3.3 CaER shall assist organizations in the development of quality objectives and associated metrics, which are captured in the strategic planning documents mentioned above.

2.3.4 CaER is responsible for the Center Strategic Planning Process.

2.3.5 CaER is responsible for the administration of the IDEAS Web site.

2.4 Safety and Mission Assurance Office (S&MA).

2.4.1 S&MA administers the employee Safety Concerns and Reporting System (SCRS) in accordance with MWI 8715.13.

2.5 MSFC Personnel.

2.5.1 MSFC personnel shall participate in continual improvement activities as required by the Marshall Management Manual (MPD 1280.1). (See P.4 and P.5 for applicable and referenced directives.)

2.5.2 MSFC personnel may also initiate other continual improvement activities to improve product quality and/or process effectiveness/efficiency.

2.5.3 MSFC personnel shall submit continual improvement summary information to the directorate/office level.

3. PROCEDURE

One of the quality objectives of MSFC is to continually improve its processes in order to enhance the Center's performance and to increase the quality of its products and services. (Reference MPD 1280.1, "Marshall Management Manual.")

Marshall Procedures and Guidelines		
DA01		
Continual Improvement	MPG 1280.9	Revision: A
	Date: April 30, 2003	Page 9 of 16

3.1 Standard MSFC Processes for Improvement.

Improvements are made on a routine basis through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions, and management review. (Reference Appendix A for a brief summary of these standard MSFC processes for improvement.)

3.2 Other Continual Improvement Activities.

Other continual improvement efforts may take place through breakthrough projects or small-step ongoing improvement activities. Cross-functional teams are usually formed outside of routine operations to work on breakthrough improvement projects, while people or teams within an organization are the best source of ideas for small-step or ongoing process improvement.

3.2.1 Any MSFC employee may submit recommendations for improvements through any of the activities listed below. Actions will be assigned to appropriate organizations to evaluate suggestions and either implement improvements or provide an explanation if no changes are necessary.

3.2.1.1 Freedom to Manage (F2M) -- an Agency and Centerwide program for suggestions that would remove statutory, policy, or procedural impediments leading to improved accountability and performance.

- Access: <http://f2m.msfc.nasa.gov/submit/html>
- Database: <http://f2m.msfc.nasa.gov/progress.html>

3.2.1.2 Formal Suggestion Program -- a Centerwide, formal process for suggestions that would benefit MSFC, NASA, and other Government agencies in achieving measurable improvements in organization efficiency, service, and cost reduction.

- Access:
<http://www.msfc.nasa.gov/INSIDE/howto/suggestion.html>
- Database: Maintained by CD20

3.2.1.3 Innovative Dynamic Employee's Active Solutions (IDEAS) -- suggestions that would improve the safety or quality of life at Marshall, Centerwide or within a particular organization.

- Access: <http://Inside.msfc.nasa.gov/IDEAS/>
- Database: <http://Inside.msfc.nasa.gov/IDEAS/>

3.2.1.4 Safety Concerns and Reporting System (SCRS) -- Ideas for improving MSFC's safety, health, and environmental programs.

- Access: <https://msfcsml.msfc.nasa.gov/dbwebs/apps/scrs/>

Marshall Procedures and Guidelines		
DA01		
Continual Improvement	MPG 1280.9	Revision: A
	Date: April 30, 2003	Page 10 of 16

- Database: <https://msfcsmal.msfc.nasa.gov/dbwebs/apps/scrs/searchscrs.taf>

3.2.1.5 Lessons Learned/Best Practices/Application Notes Standards Integration System -- A web-based tool for accumulating and sharing data related to lessons learned working with technical standards.

- Access: <http://standards.nasa.gov/>
- Database: http://standards.nasa.gov/LLBP/LLBP_links.taf

3.2.2 Directorates/Offices may initiate improvement activities within the organization that are in addition to those being tracked against strategic plans or the Center Implementation Plan.

3.3 Continual Improvement Summary Information.

Continual improvement summary information shall include the following:

- a. Organization Code
- b. Point of Contact
- c. Linkage to MSFC/Directorate/Office/Marshall Management System (MMS) Quality Objectives (if any)
- d. Summary of continual improvement effort
 - Topic/Problem/Area/Opportunity Addressed
 - Improvement Objective
 - Metrics/Data Analysis
 - Root Cause of Any Problems
 - Improvement Implemented
 - Improvement Results

3.3.1 Directorates/offices shall maintain continual improvement summary information for those improvement efforts not documented under one of the procedures in Appendix A and formally conducted in accordance with the steps in Appendix B. Organizations may submit continual improvement summary information for these other efforts to the MSFC Continual Improvement Web site in lieu of maintaining their own records. The MSFC Continual Improvement Web site can be accessed at <http://contimp.msfc.nasa.gov/>.

Marshall Procedures and Guidelines		
DA01		
Continual Improvement	MPG 1280.9	Revision: A
	Date: April 30, 2003	Page 11 of 16

4. RECORDS

Continual Improvement summary information is maintained on the Continual Improvement Web site or by the responsible Directorate/Office for 3 years, after which the records may be destroyed or kept for historical purposes.

See procedures referenced in Appendix A for records of those continual improvement activities.

5. FLOW DIAGRAM

See Appendix B for a general continual improvement process flow.

Marshall Procedures and Guidelines		
DA01		
Continual Improvement	MPG 1280.9	Revision: A
	Date: April 30, 2003	Page 12 of 16

APPENDIX A
STANDARD MSFC PROCESSES USED FOR CONTINUAL IMPROVEMENT

A.1 MSFC Quality Policy and Objectives

MSFC policy is to provide quality products and services to our customers. MSFC establishes quality objectives at the Center and Directorate/Office levels to support this policy. Functional and quality objectives are established in the annual MSFC Implementation Plan and measured and reported on in the MSFC Annual Report. (Reference MPG 1130.1, "MSFC Implementation Planning Process," and MPG 1130.2, "MSFC Annual Report Process.") Information concerning the metrics status and the initial submission of the metric will be documented on the Balanced Score Card Web site. Directorate/Office-level objectives, including quality objectives, are also established during strategic planning. (Reference MPG 1000.1, "Center Strategic Planning Process.")

Objectives, including quality objectives, for programs/projects are established and tracked by the Program/Project. (Reference MPG 7120.1, "Program/Project Planning.")

Program/project plans and/or quality plans establish objectives, including quality objectives, for products. Results are reviewed during project reviews by the Program/Project Management Council (PMC) or appropriate approval board. (Reference MPG 7120.1, "Program/Project Planning;" Charter MC-05, "Program Management Council for Microgravity Research;" Charter MC-08, "MSFC Project Management Council;" and Charter MC-09, "Program Management Council for Space Transportation.")

A.2 Audit Results

Internal audits are used to evaluate compliance of processes with the MMS and other specific program/project or customer requirements. Results of audits are documented in audit reports, with corrective/preventive actions initiated and tracked using nonconformance reports. (Reference MPG 1280.6, "Internal Quality Audits.")

In addition to the internal audit program, MSFC is periodically audited by external entities, such as the NASA Inspector General (IG), the General Accounting Office (GAO), and an ISO 9000 Registrar. Corrective/preventive actions are taken, as necessary, in response to these external audits.

Marshall Procedures and Guidelines		
DA01		
Continual Improvement	MPG 1280.9	Revision: A
	Date: April 30, 2003	Page 13 of 16

A.3 Analysis of Data

Continual improvements are also achieved through analysis of data collected as part of the following ongoing processes:

A.3.1 Data on customer satisfaction is provided through MPG 1280.8, "Customer Satisfaction," and MWI 1280.2, "MSFC Customer Feedback System." Corrective/preventive action in relation to significant external customer complaints or any failure to provide quality products and services to an external customer will be initiated and tracked through the MSFC Corrective Action System. Less significant issues or issues from internal customers may be resolved by the affected directorate/office outside the formal MSFC Corrective Action System. (Reference MPG 1280.4, "MSFC Corrective Action System.")

A.3.2 The process for nonconforming product is MPG 8730.3, "Control of Nonconforming Product." Data relating to nonconforming product is analyzed and corrective/preventive action is initiated when necessary in accordance with MPG 1280.4, "MSFC Corrective Action System."

A.3.3 Data on conformance of product to design requirements is reviewed by each project prior to shipment of product from MSFC. Any rework, repair, and redesign is documented and reverified prior to completion of the certification/verification activity. [Reference Acceptance Reviews and Integrated Readiness Reviews (IRRs) in MSFC-HDBK-1912, "System Engineering Handbook, 2nd Edition;" MSFC-HDBK-3173, "MSFC Project Management and Systems Engineering Handbook;" MWI 8040.6, "Functional and Physical Configuration Audits, MSFC Programs/Projects;" and MWI 8050.1, "Verification of Hardware, Software, and Ground Support Equipment for MSFC Projects."]

A.3.4 Each MSFC Directorate/Office defines, plans, and implements the measurement and monitoring activities needed to determine, collect, and analyze appropriate data to demonstrate the suitability of its processes and to be able to evaluate where continual improvement of the processes can be made. (Reference MPG 8730.4, "Statistical Techniques.")

A.3.5 MSFC Directorates/Offices review and evaluate directives and organizational instructions for continuing adequacy and accuracy on an annual basis, at a minimum. Revisions include corrections and improvements. (Reference MPG 1410.2, "Marshall Management Directives System.")

A.3.6 Supplier performance is monitored by the Contracting Officer (CO), Contract Specialist, Contracting Officer's

Marshall Procedures and Guidelines		
DA01		
Continual Improvement	MPG 1280.9	Revision: A
	Date: April 30, 2003	Page 14 of 16

Technical Representative (COTR), Award Fee Coordinators, Monitors, and Safety and Mission Assurance (S&MA). Corrective action is taken as appropriate. (Reference MPG 5000.1, "Purchasing;" MWI 5100.1, "Procurement Initiators Guide;" MWI 5116.1, "Evaluation of Contractor Performance under Contracts with Award Fee Provisions;" MWI 5330.1, "Evaluation of Contractors, Suppliers, and Vendors;" and MWI 5330.2, "NASA Engineering and Quality Audit (NEQA).")

Supplier continual improvement is also encouraged through the George M. Low Award process and the MSFC Contractor Excellence Award. The NASA George M. Low Award is NASA's premier quality and productivity award for the aerospace industry. This annual award program recognizes NASA large and small businesses who demonstrate an exceptional level of quality and technical performance in NASA-related contracts or subcontracts. The MSFC Contractor Excellence Award is based on the same criteria, but awards are given at the Center level. These winners go forward to compete for the George M. Low Award.

A.4 Corrective and Preventive Actions

Corrective and preventive actions, by their nature, provide for improvements to the MMS and to our end products/services. (Refer to MPG 1280.4, "MSFC Corrective Action System;" MWI 1280.5, "MSFC ALERT Processing;" and MWI 1280.3, "Corrective/Preventive Action Notification System.")

A.5 Management Review

The management review process is also used to effect continual improvement. The Marshall Quality Council (MQC) reviews the MMS for its continuing suitability, adequacy and effectiveness, and assesses opportunities for improvement. Action items are assigned as necessary and statused at subsequent meetings. (Reference MPG 1280.1, "Management Review.")

Marshall Procedures and Guidelines		
DA01		
Continual Improvement	MPG 1280.9	Revision: A
	Date: April 30, 2003	Page 15 of 16

APPENDIX B
GENERAL CONTINUAL IMPROVEMENT PROCESS

B.1 Continual improvement efforts generally involve the following steps:

B.1.1 Identify an area for improvement (such as an opportunity, innovation, or a process problem). The quality policy, MSFC Implementation Plan, Directorate/Office Strategic Plans, other objectives, available resources, and potential benefit from the improvement should be taken into consideration in determining appropriate areas to work.

B.1.2 Evaluate/analyze the existing process. Collect data to evaluate the efficiency and effectiveness of the process and to identify any recurring/significant problems. This data may be gathered from process monitoring or the corrective action system.

B.1.3 Select a specific area for improvement and set an objective for improvement.

B.1.4 Identify the underlying need for improvement or root cause of the problem, if any.

B.1.5 Explore alternative implementation strategies, solutions for the problem (if any), or plan the improvement to the process. Make recommendations to the appropriate approval authority/process owner.

B.1.6 Implement the approved improvements.

B.1.7 Evaluate the effects of the improvement. The selected problems, if any, should have been eliminated or its effects decreased. Objectives for improvement should have been met.

B.1.8 Modify the improvement as required.

B.1.9 Document any lessons learned as a result of continual improvement activities in the NASA Lessons Learned Data base, as appropriate. (Reference NPG 7120.5, "Program and Project Management Processes and Requirements.")

B.2 General Continual Improvement Process Flow. (See next page.)

General Continual Improvement Process Flow

