

MPR 1280.4
REVISION N

EFFECTIVE DATE: November 5, 2019
EXPIRATION DATE: November 5, 2024

MARSHALL PROCEDURAL REQUIREMENTS

QD01

MSFC CORRECTIVE ACTION SYSTEM

COMPLIANCE IS MANDATORY
DIRECTIVE IS UNCONTROLLED WHEN PRINTED
Verify current version before use at <https://dml.msfc.nasa.gov/directives>

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 2 of 36

DOCUMENT HISTORY LOG

Status (Baseline/ Revision/ Change/ Revalidation/ Canceled)	Document Revision/ Change	Effective Date	Description
Baseline		5/14/99	Document converted from MSFC-P14.1 to a Directive. Previous history retained in system as part of canceled or superseded ISO Document files.
Revision	A	8/16/99	Changes made to incorporate new organizational terminology. Paragraph 1.4, "MWI 8730.9" changed to "MWI 1280.2" and paragraph 1.5, "MWI 8730.11" changed to "MWI 1280.4."
Revision	B	3/26/01	Replaced reference to deleted document MPG 1700.1 with MWI 8621.1; Added S&MA inform management of trends and management respond appropriately; Included Office as well as Project and Directorate; Added POC appearing at MMS Implementation Team meeting to status delinquent response.
Revision	C	1/24/03	Change footer URL; Replace "Quality Comment" with "Customer Feedback"; Change QS10-R-012" to QS-R-012"; Replace URL "http:msfcsma1/dbwebs/cas" with "https://msfcsma1.msfc.nasa.gov"
Revision	D	10/15/2004	Change from MPG to MPR, removing or clearly segregating optional suggestions from mandatory requirements; Changed URL link to CAS application; Expanded Customer Feedback screening criteria; Identify specific S&MA positions doing the work
Revision	E	10/21/2005	To address NCR 696, a mandatory Objective Evidence of Corrective Action data verification has been added for RCAR closure by corrective action to add OPR consultation while screening QSDNs for RCARs, and to specifically inform the POC of their options in ways to disposition the RCAR.
Revision	F	8/22/2007	Revised title of MWI 1280.2 from "MSFC Customer Feedback System" to "MSFC Customer Feedback Processing through the Corrective Action System." Revised title of MPD 1280.1 from "Marshall Management Manual" to "Marshall Quality Management System Manual." Implemented numerous formatting and grammatical corrections. Changed Imp Team to Committee. Added ISO 14001 and MPD reference in Figure 3. Added initiator notification in QSDN-Related RCAR closure processing. Revised mandatory face-to-face POC participation in MMS Committee for delinquent RCARs to only providing information in support of that meeting. Revised flow diagram to match revised paragraph numbers. Exempted only DR and QSDN-related issues from CF screening in Figure 2. Added CAS Reports and CAB to distinguish between 4.4 and 4.2 entries. Deleted reference in 4.3 to NRRS Schedule 2.
Revision	G	10/1/2008	Revised 2. Applicability statement to address the applicability of this directive to the Michoud Assembly Facility. Also revised for minor editorial changes. Added wording on proceeding with Corrective Action, if authorized, or waiting for CAB approval otherwise. Added wording for other dispositions than CLOSURE by CAB. Eliminated or separated redundant "shall" clauses. Added reference to Constellation PRACA.
Revision	H	6/01/2009	Add "evaluation of effectiveness of corrective action" follow-up by adding new items: 2.1.7 and subs, 3.1.7 and subs, 3.2.7 and subs, 3.3.7 and subs, and corresponding new blocks to 5. Flow Diagram. Deleted 3.1.5.3, 3.2.5.2, and 3.3.5.3 to remove POC responsibility to MMS Committee. Reformatted 5-level deep numbering.
Revision	I	11/22/2010	In Sections 2.2.5, 2.2.9, 3.1.2.5c, 3.2.2.5c, 3.3.2.5c, and 5 require evaluation of extent/scope of the issue as a part of initial analysis and resolution of all known potentially affected components/processes as a part of issue disposition. Minor formatting and typographical changes.

DIRECTIVE IS UNCONTROLLED WHEN PRINTED
Verify current version before use at <https://dml.msfc.nasa.gov/directives>

Marshall Procedural Requirements		
QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 3 of 36

			Revised P.2 Applicability statements based on current template format and separating out statement regarding relationship to PRACAs. Added reference document MC-33 QMS Steering Committee charter in P.4 . Added regular reporting activities (already being performed by S&MA CAS) to the QMS SC and the IMSB in 2.1.4.2 and 2.1.4.4. Changed format requirement for graphic supporting data in 2.2.8. Sought to clarify screening criteria for DRs in 3.1.1.3 Figure 1. Revised “implement” to “implement or ensure implementation of” in 2.2.9 and 3.1.3.1.a; and revised 3.1.3.1, 3.2.3.1, and 3.3.3.1 to “implement corrective actions subject to authorization and funding approval”.
Revision	J	7/3/2012	Re-formatted to comply with new required template per MPR 1410.2J & as instructed in MWI 1410.1F. Updated title of MPD 1280.1 in P.1 and P.3. Added MPR 1280.10 in P.4 as an Applicable Document. Deleted reference to Corrective/Preventive Notification in P.4 and 2.1.6.3. Deleted reference to historic predecessor document MPG 1280.4 in P.2. Deleted reference to specific program PRACA systems in P.2.c. Specified CAS schedules in P.5. Deleted maintain POC list from S&MA responsibilities in 1.1. Deleted POC review of monthly status report and added responsibility of POC to keep QMS Org Rep and management informed of CAS status. Added POC responsibility to provide needed data to CAB. Added POC’s Org Rep and management responsibilities to review monthly status reports and assist POCs with prioritization and resource allocation in new 1.4. Added Containment Assurance as POC responsibility in 1.2 and to Processing Steps in 2 and Appendix F Flow Diagram to resolve NCR 1500. Added words to Figures 1, 2, and 3 and sections 2.1.2.2, 2.1.2.3, 2.1.2.4, 2.1.2.6 and comparable 2.2 and 2.3 sections to clarify Close as Non-RCAR, Close by Explanation, and Close by Action processes. Corrected reference to ISO Management Rep in 2.2.5.1 and 2.3.5.1, and delinquent notification statements. Added definitions of Containment, Recurrence Control and Remedial Action. Changed “shall” statements to “should” statements in 2.1.6.2.a, 2.2.6.2.a, and 2.3.6.2.a (regarding the CAB members reviewing proposed disposition materials in advance of CAB meeting.). Revised Discrepancy Record definition. Separated CAB Membership as separate definition from CAB in Appendix A. Eliminated redundancy in Appendix D Records statement. Relocated non-cited documents from P.4 Applicable Documents to Appendix E References. Corrected name of Figure 1 to Discrepancy Report Screening. Incorporated minor grammar and format changes.
Change	I	1/17/2014	On 1/17/14, at the request of the OPRD, an administrative change was made in Figure 3 QSDN Screening Criteria to remove the sentence “Generic or systemic problem identified by Internal Audits.”
Revision	K	8/17/2015	Added response extension processes, for DR RCARs in 2.1.2.1 and 2.1.2.2 subsections, for CF RCARs in 2.2.2.1 and 2.2.2.2 subsections, and for QSDN RCARs in 2.3.2.1 and 2.3.2.2 subsections. Also, changed document designator in P.4a from NPR to NRRS; changed reference to NRRS in Appendix D; and changed word in title of P.4b from System to Systems. Made other minor non-technical changes in formatting, grammar, and wording. Added applicable documents AS9100, ISO 9001, and ISO 14001. Changed Safety and Mission Assurance abbreviation from S&MA to SMA throughout. Removed titles from referenced documents in text throughout. Changed CAS URL to new SharePoint site in three different locations. In 2.1.2.2 e, deleted addition of more Directorate Leadership to repeated DR extension requests. Deleted 2.2.2.2 e and 2.3.2.2 e since QMS Lead already in CF and QSDN RCAR CABs. Added AS, MC, and SC to Appendix B, Acronyms.
Change	2	11/20/15	On 11/20/15, the Center Directives Manager corrected the expiration date on the cover of the directive from August 17, 2015 to August 17, 2020.

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 4 of 36

Revision	L	1/16/2016	As partial response to NCR 1805, updated Figure 1 title from “DR Screening Criteria” to “DR Screening Factors,” changed top headers to eliminate 2 nd column taking precedence over 1 st column by stating that elevation to an RCAR are decided by the Chief Safety Officer, Chief Engineer, and Project Manager or organization manager; also, updated 3 rd bullet on right column to state that nonconformance trending of a standard repair is to be considered for elevation to an RCAR, and added a 5 th bullet stating that no RCAR is needed if the issue is already being dealt with in an equivalent corrective action system. Also, revised 2.1.1.2 to state that approval of elevation to an RCAR by the CSO, CE, and Project Manager or organization manager is necessary for all RCARs. Incorporated minor grammar and format changes. Added reference to OI QD-R-012 (specifically Section 5.7) in P.4 Applicable Documents and Form and in mentions of trending in Figure 1.
Revision	M	7/7/2017	In flow diagram in Appendix F: Removed section and subsection reference numbers; Revised bottom decision block text from “POC says RCAR Required?” to “Project/Organization, Chief Engineer, & SMA Agree?” Removed DRs from Appendix D Records (since DRs are addressed in MPR 8730.3. In 1.2.9, added update of design documents when needed as a responsibility of the Organizational Assigned RCAR POC. Made various non-technical format changes throughout.
Change	1	8/8/2017	On 8/8/17, at the request of the OPRD, administrative changes were made at Appendix D to correct NRRS reference and corresponding years before records are to be destroyed, and to eliminate paper records. At 1.1.3.4, removed monthly data provision of data for use in the IMSC SmartBook.
Revision	N	11/5/2019	Adds NPD 8730.5, MC-24, and MPR 1410.2 to P.4 Applicable Documents and Forms and to text in new Section 2.1.1.4 and Figure 1. Revises/adds Sections 2.1.1.2 through 2.1.1.4 and Appendix F flow diagram to define new process for handling possible delays in obtaining concurrence and resolving differences in elevation of recommended DRs to RCARs. Revises Figure 1 to change “equivalent” Corrective Action System to “compliant” with NPD 8730.5. Adds “SMAC” (mentioned in new 2.1.1.4) to Appendix B Acronyms. Changed MMS to QMS throughout. Deleted “CAS Organization” throughout, leaving just “SMA Directorate”. Added clarifications to CAS Membership in Appendix A. Eliminates references to MF 4306 MSFC Customer Feedback.

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 5 of 36

TABLE OF CONTENTS

PREFACE

- P.1 Purpose
- P.2 Applicability
- P.3 Authority
- P.4 Applicable Documents and Forms
- P.5 Measurement/Verification
- P.6 Cancellation

CHAPTER 1. RESPONSIBILITIES

- 1.1 Safety and Mission Assurance (SMA) Directorate
- 1.2 Organizational Assigned RCAR Point of Contact (POC)
- 1.3 CAB Members
- 1.4 RCAR POC's Center, Project/Program, Directorate or Office Management, and/or QMS Representative

CHAPTER 2. PROCEDURAL REQUIREMENTS

- 2.1 DR RCAR Processing Initiated by MPR 8730.3
- 2.2 CF RCAR Processing Initiated by MWI 1280.2
- 2.3 QSDN RCAR Processing Initiated by MWI 1280.4

APPENDICES

- Appendix A: Definitions
- Appendix B: Acronyms
- Appendix C: Verification Matrix
- Appendix D: Records
- Appendix E: References
- Appendix F: Flow Diagram

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 6 of 36

PREFACE

P.1 PURPOSE

This MPR establishes the MSFC responsibilities and requirements for Corrective Action System (CAS) activities as specified in MPD 1280.1.

NOTE: The need for a CAS is also stated in MPR 1280.10.

P.2 APPLICABILITY

a. This MPR applies to Center personnel, programs, projects, and activities, including contractors and resident agencies to the extent specified in their respective contracts or agreements. (“Contractors,” for purposes of this paragraph, include contractors, grantees, Cooperative Agreement recipients, Space Act Agreement partners, or other agreement parties.)

b. This MPR applies to the MAF.

c. This MPR applies the following: all mandatory actions (i.e., requirements) are denoted by statements containing the term “shall.” The terms: “may” or “can” denote discretionary privilege or permission; “should” denotes a good practice and is recommended, but not required; “will” denotes expected outcome; and “are/is” denotes descriptive material.

d. This MPR applies the following: all document citations are assumed to be the latest version unless otherwise noted.

e. This MPR does not apply to, nor preclude, those corrective action systems imposed by NASA Program direction or by contract.

NOTE: Corrective actions taken during MSFC Internal Quality Audits are addressed in MPR 1280.6. Corrective actions required to correct supplier/subcontractor discrepancies are addressed in MPR 5000.1 and related instructions. Corrective actions for mishaps are addressed in MWI 8621.1.

P.3 AUTHORITY

MPD 1280.1, MSFC Quality Management System Policy

P.4 APPLICABLE DOCUMENTS AND FORMS

a. NPD 8730.5, NASA Quality Assurance Program Policy

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 7 of 36

- b. NRRS 1441.1, NASA Records Retention Schedules
- c. MPR 1280.6, Management Systems Internal Audits
- d. MPR 1280.10, Marshall Quality Management System
- e. MPR 1410.2, Marshall Directives System
- f. MPR 5000.1, Purchasing
- g. MPR 8730.3, Control of Nonconforming Product
- h. MWI 1280.2, MSFC Customer Feedback (CF) Processing Through the Corrective Action System (CAS)
- i. MWI 1280.4, MSFC Quality System Deficiency Notice System
- j. MWI 8621.1, Mishap and Close Call Reporting and Investigation Program
- k. MC-24, MSFC Safety and Mission Assurance Council (SMAC)
- l. MSFC Form 460, Discrepancy Record
- m. MSFC Form 4335, Quality System Deficiency Report
- n. ISO 9001, American National Standard, Quality Management Systems – Requirements
- o. ISO 14001, Environmental Management Systems – Requirements with Guidance for Use
- p. AS9100, Quality Management Systems – Requirements for Aviation, Space and Defense Organizations
- q. OI QD-R-012, SMA (QD) Operation of the MSFC Corrective Action System (CAS)

P.5 MEASUREMENT/VERIFICATION

CAS schedule performance is monitored and reported at least monthly. Recurring anomalies are considered as a part of the Recurrence Control Action Request (RCAR) screening process. Verification of effectiveness of correction and corrective action is performed on all RCARs closed by Action (as opposed to Closed as Non-Problems or Closed by Explanation) prior to final closure.

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 8 of 36

P.6 CANCELLATION

MPR 1280.4M-1, MSFC Corrective Action System, dated August 8, 2017

Electronically approved by

Jody Singer
Director

Marshall Procedural Requirements		
QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 9 of 36

CHAPTER 1. RESPONSIBILITIES

1.1 Safety and Mission Assurance (SMA) Directorate:

1.1.1 Ensures overall implementation of this system.

1.1.2 Evaluates all hardware/software Discrepancy Reports (DRs) (MSFC Form 460), Quality System Deficiency Notices (QSDNs), and Customer Feedbacks (CFs) as determined by MWI 1280.2 to determine the need for recurrence control action. To accomplish this, the SMA Directorate:

1.1.2.1 Performs trend analyses on DRs to determine the need for corrective action.

1.1.2.2 Initiates RCARs as required.

1.1.3 Provides periodic and ad hoc reports, as necessary:

1.1.3.1 To appropriate Center Management, Project/Element Manager Chief Engineer, responsible directorates or offices and Project/Element SMA Chief Safety Officer (CSO) in the project office for each project, denoting the open/delinquent status of unresolved hardware/software RCARs.

1.1.3.2 To Quality Management System (QMS) Steering Committee (SC) of:

a. Open/delinquent status of unresolved CF, DR, and QSDN RCARs for the QMS SC members (see charter MC-33) to take actions as appropriate.

b. RCAR management review metrics for them to apprise/inform their organization.

1.1.3.3 To appropriate management for response to adverse trends of open or newly-opened CF, DR, and QSDN RCARs.

1.1.3.4 To the Integrated Management System Council (IMSC), as:

a. Status of RCAR and CAS metrics and activities, annually or as required.

b. Provide other management review data, as required, to assist in their assessment of health of the QMS.

1.1.4 Evaluates the completeness of the data provided to support the closure of the RCAR.

1.1.5 Provides administrative support for CAS operations, including Corrective Action Board (CAB) and real-time tracking and statusing for all RCARs.

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 10 of 36

1.1.6 Verifies effectiveness of correction and corrective action as specified in 2.1.7, 2.2.7 and 2.3.7 and respective subparagraphs.

1.2 **Organizational Assigned RCAR Point of Contact (POC):**

1.2.1 Implements or ensures implementation of needed containment activities.

1.2.2 Establishes appropriate milestones for flight readiness assessment of open recurrence control actions.

1.2.3 Keeps their management and QMS Representative informed of RCAR processing issues and status.

1.2.4 In consultation with their organization's management, establishes analysis and recurrence control action priorities in cases where schedule and resource conflicts exist.

1.2.5 Determines the need for and performs or coordinates the performance of all necessary investigations to determine extent and the root cause of the nonconformance.

1.2.6 Determines appropriate recurrence control actions.

1.2.7 Documents appropriate rationale for closure as an explained problem into the MSFC CAS database when cause and/or recurrence control action cannot be determined or is not needed.

1.2.8 Records the required recurrence control action in the MSFC CAS database or returns it to SMA CAS Lead for data entry, to include all reports and all images/photos (preferably in Adobe Acrobat portable document format [i.e., .pdf]).

1.2.9 Implements or ensures implementation of the required design documentation updates (such as for Hazards, risk evaluations, Failure Mode Analyses, and reliability calculation) and recurrence control action for all potentially-involved products and/or processes through established channels.

1.2.10 Performs additional investigation where close-out rationale is judged to be inadequate or insufficient.

1.2.11 Provides needed support to CABs.

1.2.12 Resolves any problems concerning the completeness of data provided to support closure of the RCAR.

1.3 **CAB Members:**

1.3.1 Review RCAR packages.

1.3.2 Provide management direction and support for RCAR resolution.

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 11 of 36

1.3.3 Resolve conflicts in approaches to corrective actions.

1.3.4 Assign CAB action items.

1.3.5 Close RCARs upon verification that corrective action has been taken and that it is effective.

1.4 RCAR POC's Center, Project/Program, Directorate or Office Management, and/or QMS Representative:

1.4.1 Take steps in rectifying issues regarding identified adverse trends in problem areas or lack of adequate responsiveness to RCAR processing within their organization.

1.4.2 Review the monthly status report, taking actions when needed to assist processing.

1.4.3 Assist RCAR POC to establish analysis and recurrence control action priorities in cases where schedule and resource conflicts exist.

Marshall Procedural Requirements		
QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 12 of 36

CHAPTER 2. PROCEDURAL REQUIREMENTS

Needed containment activities should be taken as soon as possible in the discrepancy reporting/analysis/resolution process to make certain that the condition and its effects are not spread or exacerbated by delay in response. When accomplished, any containment activity shall be documented along with the corrective action/recurrence control applied, as described below.

NOTE: The three sources for initiation of corrective action/recurrence control are hardware/software nonconformances, customer feedbacks, and procedure issues (i.e., DRs, CFs, and QSDNs, respectively). Each process is described separately in the following sections and a process flow diagram is included as Appendix F.

2.1 DR RCAR Processing Initiated by MPR 8730.3

2.1.1 DR Screening Process. The SMA CAS Lead:

2.1.1.1 Shall screen the DR according to Figure 1 upon its receipt (hard copy or electronically via the MSFC Nonconformance Database) to determine if it requires the initiation of an RCAR.

a. Remedial action/immediate correction of the hardware/software nonconformance are described in MPR 8730.3.

2.1.1.2 Shall, if screening determines that the issue should be elevated to an RCAR, submit rationale for elevation to the CAB authorities (Project/Element Chief Safety Officer, Project/Element Chief Engineer, and Project Manager or organization manager) within 5 working days of entry of the hardware/software nonconformance in the database record. If that time frame is not met, then the SMA CAS Lead:

a. Shall poll the CAB authorities for a decision on the elevation rationale within 10 working days of submission, and every 10 working days thereafter until the matter is resolved.

b. Shall report status to the QMS Steering Committee each month until the RCAR elevation decision is finalized.

2.1.1.3 Shall, if the CAB authorities do not concur with the elevation rationale and sufficient justification does not exist for a dissenting opinion, close the DR screening as “No Recurrence Control Needed”.

2.1.1.4 Shall, if the CAB authorities do not concur with the elevation rationale and sufficient justification does exist for a dissenting opinion, take the issue to the Safety and Mission Assurance Council (SMAC) for a decision, per MC-24

a. If the SMAC rejects the elevation rationale, then the CAS Lead shall withdraw the elevation request, closing the issue as Not an RCAR

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 13 of 36

- b. If the SMAC accepts the elevation rationale, then SMA shall take the issue to the Quality Management System (QMS) Management Representative for final resolution, per MPR 1280.10.

2.1.1.5 Shall, if the recommendation is approved to elevate the DR to an RCAR, then the CAS Lead shall:

- a. Initiate an RCAR using the MSFC CAS database within 2 working days of approval of the RCAR elevation rationale.
- b. Provide notification of the RCAR to the assigned Directorate, Project, or Element POC, Project/Element Manager, Project/Element Chief Engineer, and Project/Element CSO within 5 working days of the initiation of the hardware/software nonconformance, identifying the possible ways to deal with the RCAR:
 - (1) Closure as a Non-RCAR, explaining that it was inaccurate to have generated the RCAR and that initiation of an RCAR only resulted from the CAS misapplying the screening rules.
 - (2) Closure by Explanation, without action but with justification as to why no action is needed, possible, or desirable.
 - (3) Closure by Action, by making changes to remedy the situation.

2.1.2 DR RCAR Investigation. The Directorate and/or Office POC receiving the RCAR shall:

Flight Hardware, Flight Software, and Ground Support Equipment (GSE) which Directly Interfaces with Flight Hardware. If the DR in question satisfies factors in both columns, then the CAS Lead shall obtain concurrence of the Project as described in Section 2.1.1.2 above on the decision of whether Corrective Action (i.e., elevation to an RCAR) is needed.	
Factors That Indicate Corrective Action Is Needed	Factors That Indicate Corrective Action Is Not Needed

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 14 of 36

<ul style="list-style-type: none"> • Failure of certified production hardware to perform its certified function(s) within its required limits and conditions for its specified duration • Severity 1 and 2 Software problems • An event which could lead to a nonconformance such as contamination or corrosion • An event which could lead to a nonconformance such as structural cracks or handling damage • Unexplained anomaly • Overstress or potential overstress of hardware • Any nonconformance which has shown by SMA CAS trend analysis (as described in OI QD-R-012, Section 5.7) to need corrective action • Any problem which requires corrective action per Project Manager's direction 	<ul style="list-style-type: none"> • One-time use or one-of-a-kind unit that is unrelated to other flight hardware/software/GSE • A benign condition which does not have a potential effect of increasing risk or of affecting form, fit, or function • Clearly-defined and agreed-to standard repair to bring the item into specification or performance parameters already exist, unless nonconformance trending (as described in OI QD-R-012, Section 5.7) indicates an issue that would necessitate corrective action • No effect on flight safety, mission performance, reuse, or refurbishment • The issue is already being addressed in a corrective action system that is compliant with the applicable quality system requirements of NPD 8730.5
--	--

Figure 1. DR Screening Factors

2.1.2.1 Respond to SMA CAS Lead with the proposed approach within 10 working days of assignment. (RCAR responses that are not provided in 10 working days from time of notification are considered delinquent unless the SMA CAS Lead is notified that an extension is required.)

a. If the POC does not have an initial response ready within 10 work-days of RCAR declaration, then the POC shall request an initial response extension of 10 days from the CAS requesting:

- (1) Containment activities that have been/are being implemented,
- (2) Actions being taken to develop an initial response, and
- (3) Rationale as to why additional time is needed.

b. The CAS shall review this input.

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 15 of 36

(1) If sufficient justification is present, the CAS shall extend the initial response date by 10 additional work days.

(2) If not sufficient, the CAS shall inform the RCAR POC of any additional information or actions that need to be taken to make the extension request acceptable.

2.1.2.2 Enter scheduling, analysis, and/or disposition data either directly into the online CAS database at <https://sharepoint.msfc.nasa.gov/sites/cas/SitePages/Home.aspx> or to the CAS Lead for their entry.

a. If the POC needs an extension beyond 20 work-days from RCAR declaration, the POC shall submit to the CAS for CAB review an extension request consisting of the following:

(1) Containment activities that have been/are being implemented and cover the entire period from current time through the requested extension date;

(2) A plan of action with logical dates and steps to take for full RCAR issue resolution (i.e., implementation of remedial and recurrence control actions) or at least that progress toward full resolution (e.g., problem isolation, root cause analysis, and/or development of recurrence control);

(3) Rationale as to why additional time is needed.

b. Once the POC provides the extension request to the CAS, the CAS shall:

(1) Review the submittal and

(2) Either return the extension request for needed correction, clarification or additional information or prepare the materials for CAB review within 10 work days.

c. Once the CAS determines that the extension materials are acceptable or the POC directs that the extension request be provided “as is” to the CAB, the CAS shall provide the request along with supporting data, if any, to the CAB for review and disposition.

(1) The CAB shall either accept, reject, modify, or direct modification of the extension request.

(2) Whatever the disposition, the CAS shall communicate those results to the POC, adjusting the due date accordingly.

d. During the extension period the CAS and the POC shall coordinate regularly (at least once a month) to track progress toward RCAR resolution and to evaluate any perturbations that may significantly affect the CAB-approved schedule.

Marshall Procedural Requirements		
QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 16 of 36

(1) The CAS, POC, and/or POC organization representative shall provide that status at the monthly QMS Steering Committee (SC) meeting.

e. If the POC requires one or more additional extension(s), the POC, CAS, and CAB shall repeat performance of these same processes, except that the CAB will be expanded to include the QMS Management Representative for all extension beyond the first.

2.1.2.3 Determine if the problem should not have been elevated to an RCAR by using the screening criteria in Figure 1.

2.1.2.4 If the problem should not have been elevated to an RCAR:

- a. Document to the SMA CAS Lead how the screening rules were misapplied.
- b. Request closure as a Non-RCAR.
- c. Proceed to processing step 2.1.4.

2.1.2.5 If corrective action is required:

- a. Investigate and determine the root cause.
- b. Identify proposed corrective action(s).
- c. Record the investigation results (reports, images, and analyses), extent/scope analysis, root cause, and proposed corrective action or explanation into the MSFC CAS database.

2.1.2.6 If the problem is understood to the point that corrective action is not needed, desirable, or possible:

a. Document the rationale as to why it is acceptable to proceed without corrective action (i.e., Close by Explanation), including all of the following data elements:

- (1) Problem Clarification
- (2) Problem History
- (3) Planned Use
- (4) Analysis Results, Root Cause
- (5) Last Test Able to Detect Anomaly
- (6) Methods of Detecting In-Flight

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 17 of 36

(7) Mission Effect

(8) Explanation Rationale

(9) Corrective Action for Subsequent Vehicles/Hardware/Software (recurrence control)

b. Enter a brief statement of why it is not applicable if any of the above mentioned elements do not apply.

c. Proceed to processing step 2.1.4.

2.1.2.7 Identify whether the issue is believed to be generic/systemic and provide supporting rationale.

2.1.3 DR RCAR Corrective Action Implementation. The Directorate or Office RCAR POC shall:

2.1.3.1 Begin implementation of their corrective actions subject to authorization and funding approval.

a. For all other corrective actions, the RCAR POC shall implement or ensure implementation of the proposed actions only after approval of the CAB is obtained.

2.1.3.2 Record the corrective action implementation data and objective evidence (i.e., engineering orders, revised procedures/documents, revised training records/documents, completed facility modification paper, and/or completed transportation/shipping changes) in the CAS database.

2.1.3.3 Reference the RCAR in the document's change history as a reason for the change when changes in procedures or instructions result from corrective actions.

2.1.4 DR RCAR Review for Completeness. The SMA CAS Lead shall:

2.1.4.1 Assess the completeness of the data provided within 10 working days of receipt of the completed RCAR package to support the disposition of the RCAR, including the corrective action plan or evidence of corrective action implementation.

2.1.4.2 Annotate the RCAR package with the SMA CAS rationale for returning the RCAR to the responsible directorate or office POC if the SMA CAS Lead does not concur that the RCAR package is complete.

2.1.5 Delinquent DR RCAR Responses.

2.1.5.1 The SMA CAS Lead shall forward monthly a list of delinquent RCARs to the appropriate directorate or office with a copy to the Director, SMA, indicating the original date of the DR and RCAR submission and the projected closure date.

Marshall Procedural Requirements		
QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 18 of 36

2.1.5.2 Directorate or Office management responsible for organizations having delinquent responses shall resolve difficulties regarding timely RCAR response by contacting the POC(s) involved.

2.1.6 DR RCAR Management Review Process.

2.1.6.1 The SMA CAS Assessment Engineer shall:

- a. Facilitate the CAB. (CAB membership is defined in Appendix A.)
- b. Consolidate RCAR disposition materials.
- c. Notify CAB members.

2.1.6.2 The CAB Members:

- a. Should review RCAR disposition material prior to formal action.
- b. Shall review and evaluate corrective action or corrective action plan, ensuring that the root cause is identified and addressed to preclude recurrence.
- c. Shall determine if the issue is generic and/or systemic.

2.1.6.3 The SMA CAS Lead shall inform other Center organizations of the issue if the CAB determined it was generic and/or systemic.

2.1.6.4 The CAB Members shall:

- a. Assign follow-up actions when necessary to ensure that planned corrective actions are taken and are effective.
- b. Record, track, and status action items assigned.

2.1.6.5 The SMA CAS Lead shall:

- a. Record any assigned actions in the CAS database.
- b. Enter RCARs as closed into the MSFC CAS database once approved by the CAB.

2.1.7 Effectiveness of DR RCAR Corrective Action. If a corrective action was implemented for RCAR closure, the SMA CAS Lead shall:

2.1.7.1 Document attempted verification of effectiveness within three months of RCAR closure.

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 19 of 36

2.1.7.2 If no action similar to that resulting in the RCAR was performed, repeat documentation of attempted verification within the subsequent three months, repeating the process each three months as needed until a similar action occurs.

2.1.7.3 If a similar action occurs and verification determines that the corrective action was effective in preventing a similar problem, then document final closure of the RCAR.

2.1.7.4 If a similar action occurs and verification determines that the corrective action was not effective in preventing a similar problem, then:

- a. Document the specific issue(s).
- b. Open a new RCAR (referencing the original RCAR) to address the remaining/continuing issue(s).

2.2 Customer Feedback (CF) RCAR Processing Initiated by MWI 1280.2

2.2.1 CF Screening Process. The SMA CAS Lead shall:

2.2.1.1 Screen the CF according to Figure 2 to determine if it requires the initiation of an RCAR.

CFs which require Corrective Action [i.e., should be elevated to an RCAR]	CFs which do not require Corrective Action [i.e., should NOT be elevated to an RCAR]
Not Hardware/Software DR-Related and Not QSDN-Related Complaints: <ul style="list-style-type: none"> • Considered Significant • Potentially Impacting Quality of the Product or Service • Initiated by external customers • Require multiple MSFC organizations to resolve 	Compliments Internal complaints of a non-critical nature that can be resolved within a single organization

Figure 2. CF Screening Criteria

a. Processing of hardware/software nonconformances is described in MPR 8730.3 and section 2.1 of this procedure.

b. Quality system nonconformances processing is described in section 2.3 of this procedure.

2.2.1.2 Initiate an RCAR using the CAS database if the CF has been determined to require recurrence control.

2.2.1.3 Provide notification of the RCAR within 5 working days of the receipt of the CF to the responsible organization(s), explaining the possible ways to deal with the RCAR:

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 20 of 36

- a. Closure as a Non-RCAR, explaining that it was inaccurate to have generated the RCAR and initiation of the RCAR only resulted from the CAS misapplying the screening rules.
- b. Closure by Explanation, without action but with justification as to why no action is needed, possible, or desirable.
- c. Closure by Action, by making changes to remedy the situation.

2.2.2 CF RCAR Investigation. The assigned Organizational RCAR POC shall:

2.2.2.1 Respond to the SMA CAS Lead with the proposed approach within 10 working days of assignment.

- a. RCAR responses that are not provided in 10 working days from time of notification are considered delinquent unless the SMA CAS is notified that an extension is required.
- b. If the POC does not have an initial response ready within 10 work-days of RCAR declaration, then the POC shall request an initial response extension of 10 days from the CAS, describing:

- (1) Containment activities that have been/are being implemented,
- (2) Actions being taken to develop an initial response, and
- (3) Rationale as to why additional time is needed.

c. The CAS shall review this input.

- (1) If sufficient justification is present, the CAS shall extend the initial response date by 10 additional work days.
- (2) If not sufficient, the CAS shall inform the RCAR POC of any additional information or actions that need to be taken to make the extension request acceptable.

2.2.2.2 Enter scheduling, analysis, and/or disposition data either directly into the online CAS database at <https://sharepoint.msfc.nasa.gov/sites/cas/SitePages/Home.aspx> or to the CAS Lead for their entry.

a. If the POC needs an extension beyond 20 work-days from RCAR declaration, the POC shall submit to the CAS for CAB review an extension request consisting of the following:

- (1) Containment activities that have been/are being implemented and cover the entire period from current time through the requested extension date;

Marshall Procedural Requirements		
QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 21 of 36

(2) A plan of action with logical dates and steps to take for full RCAR issue resolution (i.e., implementation of remedial and recurrence control actions) or at least that progress toward full resolution (e.g., problem isolation, root cause analysis, and/or development of recurrence control);

(3) Rationale as to why additional time is needed.

b. Once the POC provides the extension request to the CAS, the CAS shall:

(1) Review the submittal and

(2) Either return the extension request for needed correction, clarification or additional information or prepare the materials for CAB review within 10 work days.

c. Once the CAS determines that the extension materials are acceptable or the POC directs that the extension request be provided “as is” to the CAB, the CAS shall provide the request along with supporting data, if any, to the CAB for review and disposition.

(1) The CAB shall either accept, reject, modify, or direct modification of the extension request.

(2) Whatever the disposition, the CAS shall communicate those results to the POC, adjusting the due date accordingly.

d. During the extension period the CAS and the POC shall coordinate regularly (at least once a month) to track progress toward RCAR resolution and to evaluate any perturbations that may significantly affect the CAB-approved schedule.

(1) The CAS, POC, and/or POC organization representative shall provide that status at the monthly QMS SC meeting.

2.2.2.3 Determine if the problem should not have been elevated to an RCAR by using the screening criteria in Figure 2.

2.2.2.4 If the problem should not have been elevated to an RCAR:

a. Document to the SMA CAS Lead how the screening rules were misapplied.

b. Request closure as a Non-RCAR.

c. Proceed to process flow step 2.2.4.

2.2.2.5 If corrective action is required:

a. Investigate to determine the root cause.

b. Identify proposed corrective action(s).

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 22 of 36

c. Record the investigation results (reports, images, and analyses), extent/scope analysis, root cause, and proposed corrective action or explanation into the CAS database.

2.2.2.6 If the problem is understood to the point that corrective action is not needed, desirable, or possible:

a. Resolve the problem by documenting the rationale as to why it is acceptable to proceed without corrective action.

b. Enter all of the following data elements to close this problem without corrective action or as an unexplained anomaly (i.e., Closed by Explanation).

(1) Problem Clarification

(2) Problem History

(3) Planned Use

(4) Analysis Results

(5) Root Cause

(6) Explanation Rationale

c. Proceed to process flow step 2.2.4.

2.2.2.7 Identify with supporting rationale whether or not the issue is believed to be generic/systemic.

2.2.3 CF RCAR Corrective Action Implementation. The assigned Organizational RCAR POC shall:

2.2.3.1 Begin implementation of their corrective actions subject to authorization and funding approval.

2.2.3.2 For all other corrective actions than those covered by 2.2.3.1, delay implementing the proposed actions until after approval of the CAB is obtained.

2.2.3.3 Record the corrective action implementation data and objective evidence (i.e., engineering orders, revised procedures/documents, revised training records/documents, completed facility modification paper, and/or completed transportation/shipping changes) in the CAS database.

2.2.3.4 If changes in procedures or instructions result from corrective actions, reference the RCAR in the document change history as a reason for the change.

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 23 of 36

2.2.4 CF RCAR Review for Completeness. The SMA CAS Lead shall:

2.2.4.1 Assess the completeness of the data provided within 10 working days of receipt of the completed RCAR package to support the disposition of the RCAR, including the corrective action plan or evidence of corrective action implementation.

2.2.4.2 Annotate the RCAR package with rejection rationale if not in concurrence that the RCAR package is complete and return the RCAR to the assigned Organizational RCAR POC.

2.2.5 Delinquent CF RCAR Responses.

2.2.5.1 The SMA CAS Lead shall monthly forward a list of delinquent RCARs to the management of the involved Directorate and/or Office, with copies to the QMS Management Representative and the Director, SMA, indicating the original date of the CF and RCAR submission and the projected closure date.

2.2.5.2 The Directorate or Office management responsible for organizations having delinquent POC response(s) within their organization shall contact the involved POC(s) and resolve difficulties regarding timely RCAR response.

2.2.6 CF RCAR Management Review Process.

2.2.6.1 The SMA CAS Lead shall:

- a. Facilitate the CAB. (CAB membership is defined in Appendix A.)
- b. Coordinate RCAR disposition.
- c. Notify CAB members.

2.2.6.2 The CAB Members:

- a. Should review RCAR disposition materials prior to formal action.
- b. Shall review for concurrence with corrective action or corrective action plan, ensuring that the root cause is identified and addressed to preclude recurrence.
- c. Shall assign follow-up actions when necessary to ensure that planned corrective actions are taken and are effective.
- d. Shall record, track, and status action items assigned.

2.2.6.3 The SMA CAS Lead shall:

- a. Record any CAB-assigned actions in the CAS database.

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 24 of 36

b. Enter RCARs approved for closure as closed into the CAS database.

c. Inform the CF initiator of final RCAR disposition.

2.2.7 Effectiveness of CF RCAR Corrective Action. If a corrective action was implemented for RCAR closure, the SMA CAS Lead shall:

2.2.7.1 Document attempted verification of effectiveness within three months of RCAR closure.

2.2.7.2 If no action similar to that resulting in the RCAR was performed, repeat documentation of attempted verification within the subsequent three months, repeating the process each three months as needed until a similar action occurs.

2.2.7.3 If a similar action occurs and verification determines that the corrective action was effective in preventing a similar problem, then document final closure of the RCAR.

2.2.7.4 If a similar action occurs and verification determines that the corrective action was not effective in preventing a similar problem, then:

a. Document the specific issue(s).

b. Open a new RCAR (referencing the original RCAR) to address the remaining/continuing issue(s).

2.3 QSDN RCAR Processing Initiated by MWI 1280.4

2.3.1 QSDN Screening Process. The SMA CAS Lead shall:

2.3.1.1 Screen the quality system deficiencies based on the criteria shown in Figure 3 upon receipt (hard copy or electronically) of QSDNs in consultation with the Office of Primary Responsibility (OPR) of the primary documentation involved to determine if they require the initiation of an RCAR.

2.3.1.2 Initiate an RCAR using the MSFC CAS database if the quality system deficiency has been determined to require recurrence control action.

2.3.1.3 Notify the Assigned RCAR POC within 5 working days of the initiation of the QSDN, explaining the possible ways to deal with the RCAR:

a. Closure as a Non-RCAR, explaining that it was inaccurate to have generated the RCAR and initiation of the RCAR only resulted from the CAS misapplying the screening rules.

b. Closure by Explanation, without action but with justification as to why no action is needed, possible, or desirable.

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 25 of 36

c. Closure by Action, by making changes to remedy the situation.

2.3.2 QSDN RCAR Investigation. The Assigned RCAR POC shall:

2.3.2.1 Respond to SMA with the proposed approach within 10 working days of assignment.

a. RCAR responses that are not provided in 10 working days from time of notification are considered delinquent unless the SMA CAS is notified that an extension is required.

Quality System Deficiencies which require Corrective Action [i.e., should be elevated to an RCAR]	Quality System Deficiencies which do not require Corrective Action [i.e., should NOT be elevated to an RCAR]
<p>Nonconformances against QMS, MPDs, MPRs, MWIs, and other documentation applicable to the Levels 1-3 QMS documents for which the following apply:</p> <ul style="list-style-type: none"> • Document violates the ISO 9001, ISO 14001, or AS9100 Standards • Document contains overlapping or inconsistent requirements with other documents • Policy, procedure, instruction, or applicable document is not or cannot be performed as specified • Statutory or regulatory requirements need to be considered or implemented into the document <p>Nonconformances against OIs that are potentially generic in nature.</p>	<p>Minor problems with Quality System Procedures:</p> <ul style="list-style-type: none"> • Spelling • Wording <p>Nonconformances against Organizational Issuances (OIs) that are unique to an instruction and do not have generic applicability.</p>

Figure 3. QSDN Screening Criteria

b. If the POC does not have an initial response ready within 10 work-days of RCAR declaration, then the POC shall request an initial response extension of 10 days from the CAS describing:

- (1) containment activities that have been/are being implemented,
- (2) actions being taken to develop an initial response, and
- (3) rationale as to why additional time is needed.

Marshall Procedural Requirements		
QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 26 of 36

c. The CAS shall review this input.

(1) If sufficient justification is present, the CAS shall extend the initial response date by 10 additional work days.

(2) If not sufficient, the CAS shall inform the RCAR POC of any additional information or actions that need to be taken to make the extension request acceptable.

2.3.2.2 Enter scheduling, analysis, and/or disposition data either directly into the on-line CAS database at <https://sharepoint.msfc.nasa.gov/sites/cas/SitePages/Home.aspx> or to the CAS Lead for their entry.

a. If the POC needs an extension beyond 20 work-days from RCAR declaration, the POC shall submit to the CAS for CAB review an extension request consisting of the following:

(1) containment activities that have been/are being implemented and cover the entire period from current time through the requested extension date;

(2) a plan of action with logical dates and steps to take for full RCAR issue resolution (i.e., implementation of remedial and recurrence control actions) or at least that progress toward full resolution (e.g., problem isolation, root cause analysis, and/or development of recurrence control);

(3) rationale as to why additional time is needed.

b. Once the POC provides the extension request to the CAS, the CAS shall:

(1) review the submittal and

(2) either return the extension request for needed correction, clarification, or additional information or prepare the materials for CAB review within 10 work days.

c. Once the CAS determines that the extension materials are acceptable or the POC directs that the extension request be provided “as is” to the CAB, the CAS shall provide the request along with supporting data, if any, to the CAB for review and disposition.

(1) The CAB shall either accept, reject, modify, or direct modification of the extension request.

(2) Whatever the disposition, the CAS shall communicate those results to the POC, adjusting the due date accordingly.

d. During the extension period the CAS and the POC shall coordinate regularly (at least once a month) to track progress toward RCAR resolution and to evaluate any perturbations that may significantly affect the CAB-approved schedule.

Marshall Procedural Requirements		
QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 27 of 36

(1) The CAS, POC, and/or POC organization representative shall provide that status at the monthly QMS SC meeting.

2.3.2.3 Determine if the problem should not have been elevated to an RCAR by using the screening criteria in Figure 3.

2.3.2.4 If the problem should not have been elevated to an RCAR,

- a. Document to the SMA CAS Lead how the screening rules were misapplied.
- b. Request closure as a Non-RCAR to the SMA CAS Lead.
- c. Proceed to processing flow step 2.3.4.

2.3.2.5 If corrective action is required,

- a. Investigate to determine the root cause.
- b. Identify proposed corrective action(s).
- c. Record the investigation results (reports, images, and analyses), extent/scope analysis, root cause, and proposed corrective action or explanation into the CAS database.

2.3.2.6 If there is rationale as to why corrective action is not needed, desirable, or possible,

a. Document the rationale as to why it is acceptable to proceed without corrective action (i.e., Close by Explanation), including all of the following data elements:

- (1) Problem Clarification
- (2) Problem History
- (3) Analysis Results, Root Cause
- (4) Explanation Rationale

b. Proceed to process flow step 2.3.4.

2.3.2.7 Identify with supporting rationale whether or not the issue is believed to be generic/systemic.

2.3.3 QSDN RCAR Corrective Action Implementation. The Assigned RCAR POC shall:

2.3.3.1 Begin implementation of their corrective actions subject to authorization and funding approval.

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 28 of 36

2.3.3.2 For all other corrective actions than those covered in 2.3.3.1, delay implementing the proposed actions until after approval of the CAB is obtained.

2.3.3.3 Record the corrective action implementation data with objective evidence (i.e., engineering orders, revised procedures/documents, revised training records/documents, completed facility modification paper, and/or completed transportation/shipping changes) in the CAS database.

2.3.3.4 If changes in policy, procedures, instructions, or any documents applicable to QMS documentation result from corrective actions, reference the RCAR in the document history log or equivalent as a reason for the change.

2.3.4 QSDN RCAR Review for Completeness. The SMA CAS Lead shall:

2.3.4.1 Assess within 10 working days of receipt of the completed RCAR package the completeness of the data provided to support the disposition of the RCAR, including the corrective action plan or evidence of corrective action implementation.

2.3.4.2 Annotate the RCAR package with the SMA CAS rationale for returning the RCAR to the assigned RCAR POC document OPR/process owner if not in concurrence that the RCAR package is complete.

2.3.5 Delinquent QSDN RCAR Responses.

2.3.5.1 The SMA CAS Lead shall monthly forward a list of delinquent RCARs to the management of the involved Directorate and/or Office, with copies to the QMS Management Representative and the Director, SMA, indicating the original date of the QSDN and RCAR submission and the projected closure date.

2.3.5.2 The QMS Management Representative may contact the organization of the POC(s) involved to resolve difficulties regarding timely RCAR response.

2.3.6 QSDN RCAR Management Review Process.

2.3.6.1 The SMA CAS Lead shall:

- a. Facilitate the CAB. (CAB membership is defined in Appendix A.)
- b. Coordinate RCAR disposition.
- c. Notify CAB members.

2.3.6.2 The CAB Members:

- a. Should review RCAR disposition materials prior to formal action.

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 29 of 36

b. Shall review for concurrence with corrective action or corrective action plan, ensuring that the root cause is identified and addressed to preclude recurrence.

c. Shall assign follow-up actions when necessary to ensure that planned corrective actions are taken and are effective.

d. Shall record, track, and status action items assigned.

2.3.6.3 The SMA CAS Lead shall:

a. Record any CAB-assigned actions in the CAS database.

b. Enter RCARs approved for closure as closed into the CAS database.

c. Inform the QSDN initiator of final RCAR disposition.

2.3.7 Effectiveness of QSDN RCAR Corrective Action. If a corrective action was implemented for RCAR closure, the SMA CAS Lead shall:

2.3.7.1 Document attempted verification of effectiveness within three months of RCAR closure.

2.3.7.2 If no action similar to that resulting in the RCAR was performed, repeat documentation of attempted verification within the subsequent three months, repeating the process each three months as needed until a similar action occurs.

2.3.7.3 If a similar action occurs and verification determines that the corrective action was effective in preventing a similar problem, then document final closure of the RCAR.

2.3.7.4 If a similar action occurs and verification determines that the corrective action was not effective in preventing a similar problem, then:

a. Document the specific issue(s).

b. Open a new RCAR (referencing the original RCAR) to address the remaining/continuing issue(s).

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 30 of 36

APPENDIX A:

DEFINITIONS

Containment. Action taken immediately upon recognition of an adverse happening or condition to prevent its spread or continuation (often before a permanent resolution of the issue is put in place).

Corrective Action. Action taken to correct nonconformances and to eliminate the cause of nonconformances to prevent recurrence. It includes containment, remedial action, and recurrence control.

Corrective Action Board (CAB). Board charged to evaluate, direct, authorize, and/or disposition proposed actions, response extensions, and closure rationale related to resolution of a specific Recurrence Control Action Request.

CAB Membership. The Recurrence Control Action Request Point of Contact's supervisor, an MSFC SMA representative (viz., the responsible Project/Element CSO if the RCAR originated as a DR), a representative of the Office of Chief Engineers (viz., the responsible Chief Engineer if the RCAR originated as a DR), and, tailored by the type of RCAR involved, the Project Manager (if the RCAR originated as a Discrepancy Report), the Directorate/Office lead (if the RCAR originated as a QSDN or a CF), and the Center QMS Management Representative (if the RCAR originated as a QSDN or a CF).

Customer Feedback (CF). The documented result of an MSFC customer communication (e.g., complaint, observation, or compliment) regarding delivered MSFC products and services as specified by MWI 1280.2.

Discrepancy Report (DR). The record of a hardware/software nonconformance. Dispositions to accomplish required remedial actions are recorded on Copy 1 of MSFC Form 460.

Generic. Relating to or descriptive of an entire group or class; general; Generic means that the same issues can be applied to any organization, large or small, whatever its product – including whether its 'product' is actually a service – in any sector of activity, and whether it is a business enterprise, a public administration, or a government department.

Ground Support Equipment (GSE). Non-flight systems, equipment, or devices (with a physical or functional interface with flight hardware) necessary to routinely support the operations of transporting, receiving, handling, assembly, inspection, test, checkout, servicing and launch of space vehicles and payloads at launch, landing, or retrieval sites.

Nonconformance. A condition of any article, material, software, service, or activity in which one or more characteristics do not conform to requirements. This includes failures, discrepancies, defects, malfunctions, and noncompliances.

Marshall Procedural Requirements		
QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 31 of 36

Quality System Deficiency Notice (QSDN). Quality System nonconformances which are documented as specified by MWI 1280.4, either directly into the database or using MSFC Form 4335.

Recurrence Control. Action taken, beyond remedial action, to preclude or minimize the recurrence of a problem. Examples of problem recurrence control include: Changing designs, procedures, or processes in hardware and software; Revising procedures and standards; Updating policy; Training; Tooling; Scheduling maintenance.

Recurrence Control Action Request (RCAR). A request initiated by SMA to responsible organizations to investigate a nonconformance for the purpose of identifying the root cause and actions necessary to prevent recurrence. An RCAR is used to record the results of the investigation, justification for not taking corrective action (explanation), or actions taken to implement the corrective action to include the effectiveness. The RCAR is available for viewing at <https://sharepoint.msfc.nasa.gov/sites/cas/SitePages/Home.aspx>.

Root Cause. The underlying reason for or cause of one or more nonconformances or deficiencies identified through investigations and studies which, when corrected, prevent occurrence or prevent or reduce recurrence.

Remedial Action. The correction, replacement, repair, or authorized disposition of noncompliant item(s)/condition(s) where they occurred.

Severity 1 Software Problem. Software problem which causes or could cause loss of control, explosion, or other hazardous effect.

Severity 2 Software Problem. Software problem which causes or could cause inability to achieve mission objectives such as launch, mission duration, and payload deployment.

Systemic. All encompassing; Occurring repeatedly throughout the entire system.

Marshall Procedural Requirements		
QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 32 of 36

APPENDIX B:

ACRONYMS

AS	Aerospace Standard
CAB	Corrective Action Board
CAS	Corrective Action System
CF	Customer Feedback
CSO	Chief Safety Officer
DR	Discrepancy Report
GSE	Ground Support Equipment
IMSC	Integrated Management System Council
ISO	International Standards Organization
MC	Marshall Charter
NRRS	NASA Records Retention Schedules
OI	Organizational Issuance
OPR	Organization of Primary Responsibility
PDF	Portable Document Format
POC	Point of Contact
QD	Safety and Mission Assurance Directorate
QMS	Quality Management System
QSDN	Quality System Deficiency Notice
RCAR	Recurrence Control Action Request
SMAC	Safety and Mission Assurance Council
SMA	Safety and Mission Assurance
SC	Steering Committee

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 33 of 36

APPENDIX C:

VERIFICATION MATRIX

None.

Marshall Procedural Requirements QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 34 of 36

APPENDIX D:

RECORDS

D.1 Electronic CAS reports (e.g., RCARs, CFs, and QSDNs) and CAB records (e.g., decisions, directives, and/or action items) are maintained by the CAS Lead for 5 years and then destroyed in accordance with NRRS 1441.1 1/26.5/B [1280].

D.1.1 Electronic database records are maintained in the CAS database on the provided server.

D.1.2 Supporting electronic data and image files are maintained as attachments in the CAS data system.

Marshall Procedural Requirements		
QD01		
MSFC Corrective Action System	MPR 1280.4	Revision: N
	Date: November 5, 2019	Page 35 of 36

APPENDIX E:

REFERENCES

E.1 QD-R-012, SMA (QD) Operation of the MSFC Corrective Action System

E.2 MC-33, Quality Management System (QMS) Steering Committee

APPENDIX F: FLOW DIAGRAM

