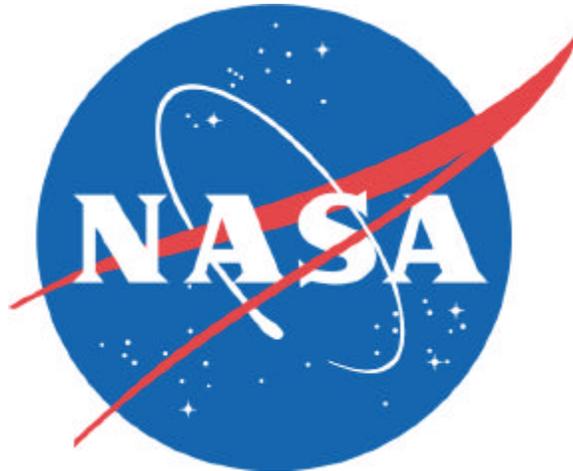


Responsible Office: J/Office of Management Systems
Subject: **Corrective and Preventive Action**



HEADQUARTERS COMMON PROCESS

CORRECTIVE AND PREVENTIVE ACTION

Approved by

April 4, 2000

Dr. Daniel R. Mulville
Associate Deputy Administrator

Date

Responsible Office: J/Office of Management Systems
 Subject: Corrective and Preventive Action

DOCUMENT HISTORY LOG

Status	Document Revision	Effective Date	Description
Baseline		January 15, 1999	
Revision	A	April 28, 1999	Revisions resulted from DNV Pre-registration Audit nonconformances and ISO Project Office comments to improve the clarity, readability, and instructions of the document. The changes do not materially impact the intent or usage of this HCP. For details, please see "HCP1280-2, Corrective and Preventive Action Comment Disposition Marcie Swilley – 4/19/99".
Revision	B	April 4, 2000	Revisions resulted from Surveillance Audit nonconformances and ISO Project Office comments to improve the clarity, readability, and instructions of the document, principally as it relates to customer complaints. For details, please see "HCP1280-2, Corrective and Preventive Action Comment Disposition Marcie Swilley – 3/30/2000".
Administrative Change	B	August 21, 2000	Administrative changes resulted from clarifications in HCP1400-1 regarding appendices and forms. Appendices B & C were modified to be a checklist and reporting format, respectively, rather than improperly labeled "forms." Additional changes were made throughout the document as it relates to the changes in these appendices. The name and organizational code of the responsible office were updated in the header information of this document to reflect the current environment. Finally, the external web address for access to the NASA ISO 9001 documents was added to the footer information of this document.
Administrative Change	B	October 29, 2000	Administrative Change to update the name and organizational code of the responsible office in the header of this document to reflect the current organization.

1 Purpose

1.1 This HQ Common Process (HCP) describes the Corrective and Preventive Action System (CPAS) processes, procedures, and actions taken to correct and prevent actual and potential nonconformances which may affect the quality of the products, service, and processes at NASA Headquarters (HQ). The purpose of corrective and preventive actions is to continually improve the quality of NASA HQ products and services and the processes that produce them.

1.2 Corrective actions are actions taken to eliminate the cause(s) of quality system nonconformances. It is important to note that merely correcting a problem is not corrective action. The cause of the problem must be identified and eliminated such that there is no recurrence of the problem. This is analogous to treating the disease and not just treating the symptoms of the disease.

1.3 External customers, NASA Center personnel, NASA HQ personnel, and both internal and external auditors are sources which may identify issues requiring corrective action. An HQ organization's closed-loop, corrective action process can be used to correct problems involving products, services, or processes. A closed-loop process is one in which:

- a problem is identified,
- the root cause of the problem is determined,
- a corrective action plan is identified to eliminate the cause,
- the corrective action is implemented, and
- the effectiveness of the corrective action is verified.

1.4 If there is no HQ organizational closed-loop process to address an issue or if there is lack of resolution using such a process, then the processes described in this document shall be used.

1.5 External customer and NASA Center personnel problems shall be handled by the external customer complaints/internally identified problems process. NASA HQ personnel problems shall be handled by the same process or through the Quality System Deficiency Notice (QSDN) process. Both internal and external auditor identified nonconformances shall be handled by the Nonconformance Report (NCR) process.

2 Scope and Applicability

2.1 This HCP identifies the responsibilities and procedures for corrective and preventive actions, which are performed as a part of the HQ Quality System, that

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are necessary to comply with the *Headquarters Quality System Manual* (HQSM1200-1).

2.2 This HCP applies only to the Quality System at NASA HQ.

2.3 This HCP does not supplant complaints or nonconformances that are addressed in established processes; i.e. those issues handled in existing interface, review, and concurrence activities.

2.4 For the purpose of customer complaints, this HCP only applies to processes that directly provide HQ key products or services to external customers. All other complaints may be handled as internally identified problems. (see Definitions)

3 Definitions

3.1 Complaint. The expression of dissatisfaction with an HQ product or service.

3.2 Corrective Action (CA). Action taken to eliminate the causes of an existing nonconformance or other undesirable situation in order to prevent recurrence.

3.3 Corrective Action Record (CAR). An electronic record generated in the CAS when a QSDN is accepted as requiring CA.

3.4 Corrective Action System (CAS). An electronic data base for tracking CA's generated from the QSDN.

3.5 Effectivity Due Date. The date by which the CA is planned to become effective.

3.6 Executive Management Representative (EMR). The HQ official who ensures that the Quality System is implemented and maintained in accordance with the ISO 9001 quality standard, reports on the performance of the Quality System, and recommends improvements to the Associate Deputy Administrator.

3.7 External Audit. Quality system audit conducted by a third-party registrar to ensure that the HQ Quality System is compliant with the ISO 9001 quality standard.

3.8 External Customer. An organization external to NASA that directly levies work requirement on or is a direct recipient of HQ-provided products or services. These organizations are identified in the NASA Strategic Plan and include the Administration, Congress, science and education communities, aerospace and

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nonaerospace industries, Federal agencies, and any of these organization's authorized representatives, e.g., Office of Management & Budget (OMB), General Accounting Office (GAO). All other customers are considered internal customers.

3.9 External Customer Complaint. Complaints received from External Customers by a NASA HQ organization.

3.10 Implementation Due Date. The date when implementation of the CA must be completed.

3.11 Internal Audit. Quality system audit conducted by HQ personnel to determine the Quality System's compliance with the ISO 9001 quality standard.

3.12 Internal Customer. Any NASA organization or individual, including any at NASA HQ or a NASA Center.

3.13 Internally Identified Problems. Complaints or problems received from Internal Customers or self-identified by a NASA HQ organization.

3.14 Key Products and Services. The primary results of NASA HQ activities in the fulfillment of its mission. They are significant decisions, advocacy, education, public outreach, and collaboration, as described in the *Headquarters Quality System Manual*.

3.15 Nonconformance. Not fulfilling a specified Quality System requirement.

3.16 Nonconformance Report (NCR). The mechanism by which a nonconformance is reported, following both internal and external Quality System audits.

3.17 Office of Primary Responsibility (OPR). The HQ organization responsible for determining the cause of a nonconformance, as well as identifying and implementing CA's for the nonconformance. Examples of such organizations include an audited HQ office and the HQ ISO 9001 Program Office.

3.18 Preventive Action. Action taken to eliminate the causes of a potential nonconformance or other undesirable situation in order to prevent occurrence.

3.19 Quality System Deficiency Notice (QSDN). The electronic mechanism by which HQ personnel report issues that request management involvement.

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3.20 Reply Due Date. The date by which the “Root Cause” and “Corrective Action Plan” portion of the CA checklist information must be completed.

3.21 Acronyms.

AA	Associate Administrator
ADA	Associate Deputy Administrator
AM	Audit Manager
CA	Corrective Action
CAR	Corrective Action Record
CAS	Corrective Action System
CCA	Correspondence Control Assistant
CIC	Capital Investment Council
CPAS	Corrective and Preventive Action System
DM	Document Manager
EMR	Executive Management Representative
EPA	Environmental Protection Agency
FRC	Federal Record Centers
GAO	General Accounting Office
HATS	Headquarters Action Tracking System
HCP	Headquarters Common Process
NCR	Nonconformance Report
OMB	Office of Management and Budget
OPR	Office of Primary Responsibility
PMC	Program Management Council
PO	ISO 9001 Project Office
QSDN	Quality System Deficiency Notice
QSM	Quality System Manual
SMC	Senior Management Council

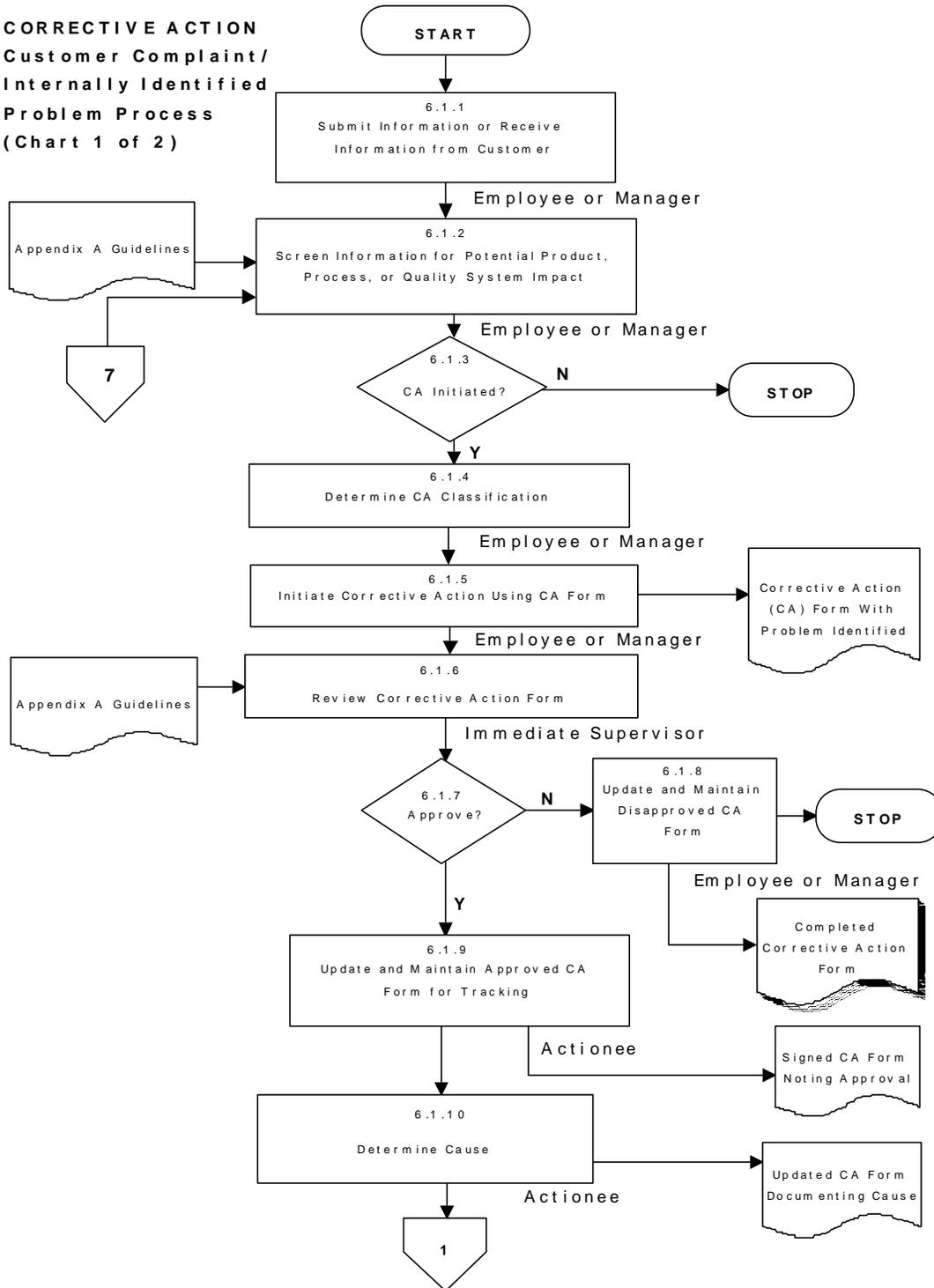
References

- 4.1 HCP1280-3, Internal Quality Audits
- 4.2 HQPC 1150.1, Headquarters Quality Council
- 4.3 HQSM1200-1, Headquarters Quality System Manual
- 4.4 NPG 1441.1, Records Retention Schedules

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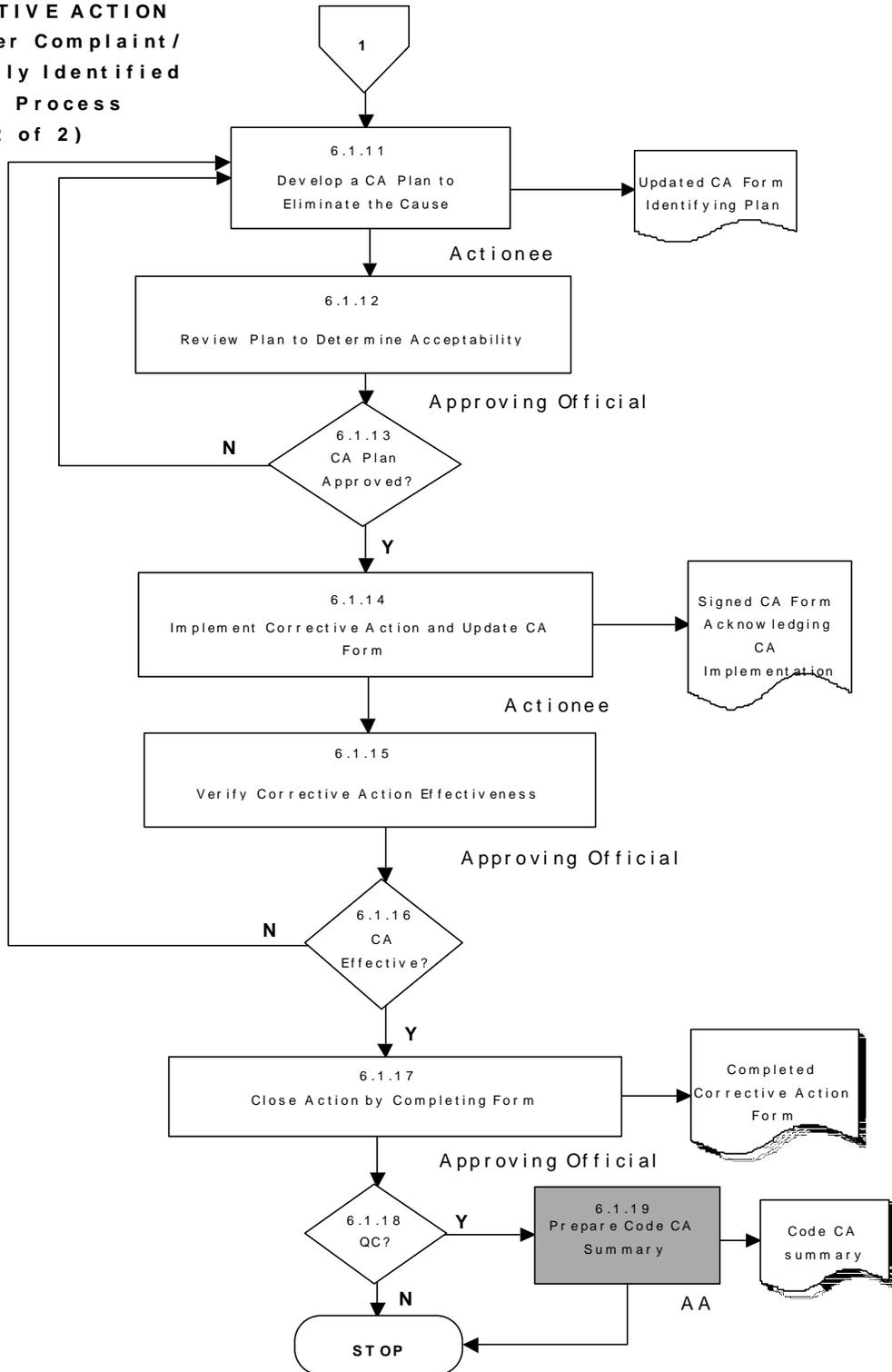
5 Flowchart

**CORRECTIVE ACTION
 Customer Complaint/
 Internally Identified
 Problem Process
 (Chart 1 of 2)**



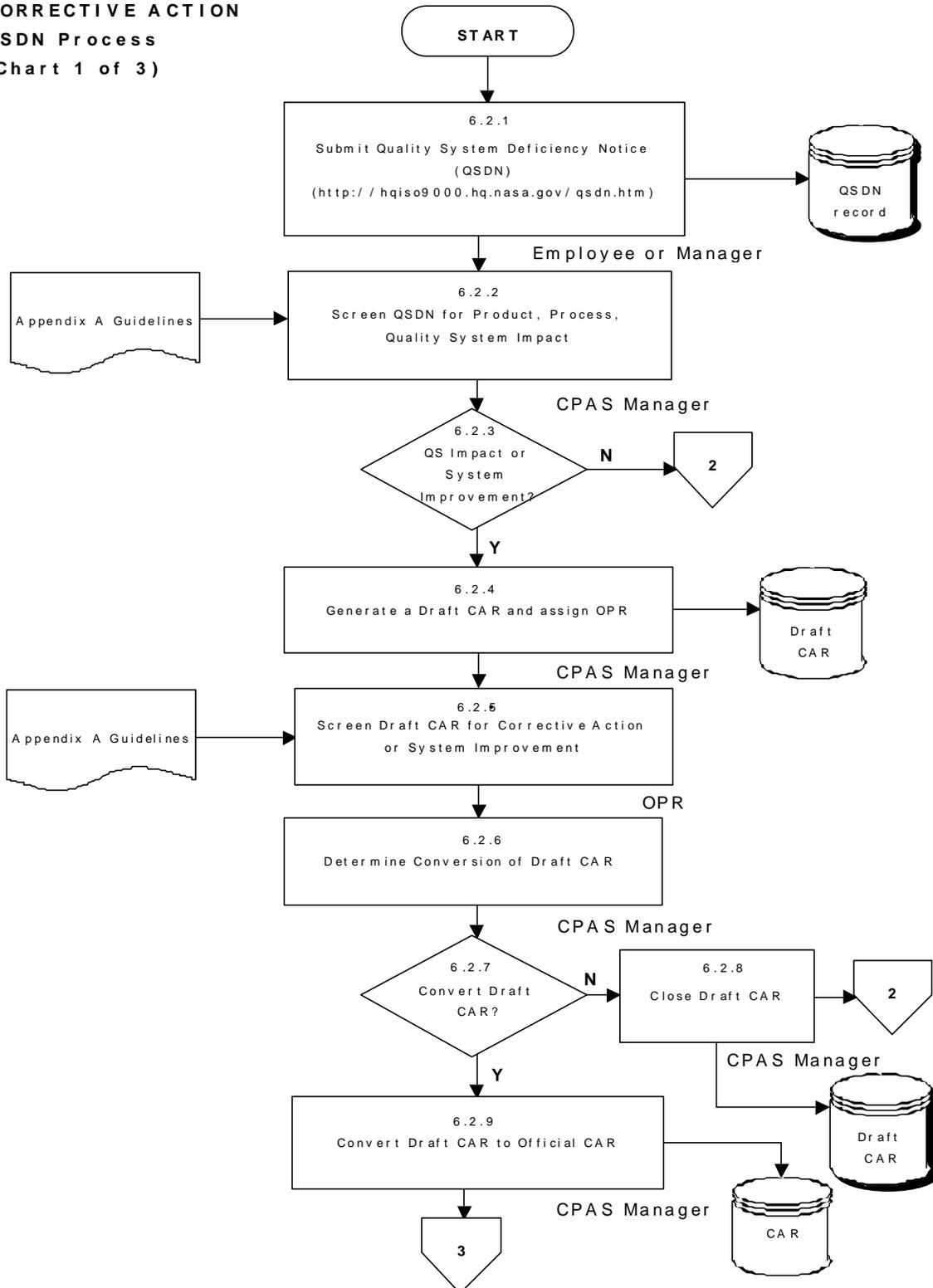
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**CORRECTIVE ACTION
 Customer Complaint/
 Internally Identified
 Problem Process
 (Chart 2 of 2)**



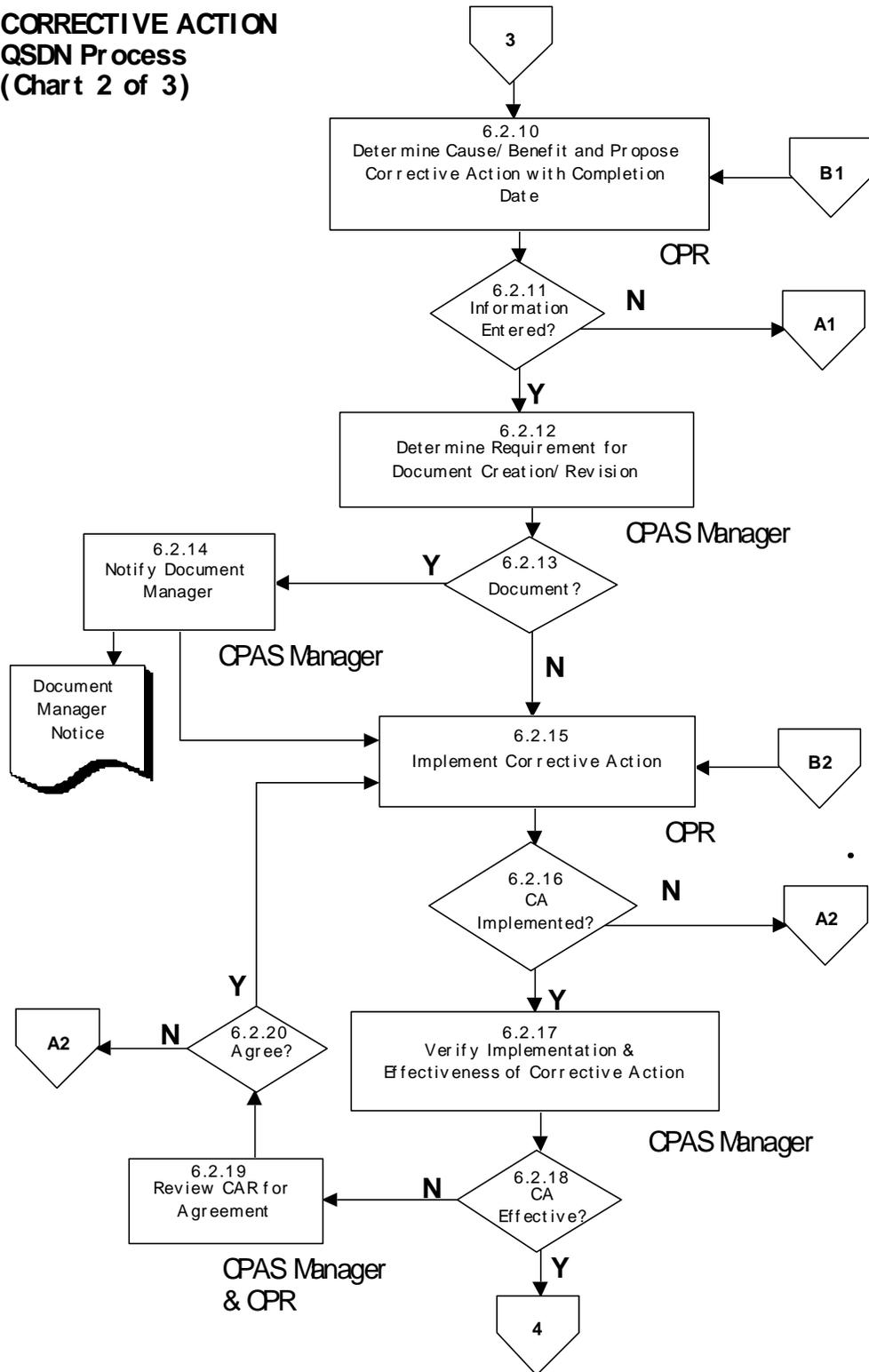
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**CORRECTIVE ACTION
 QSDN Process
 (Chart 1 of 3)**



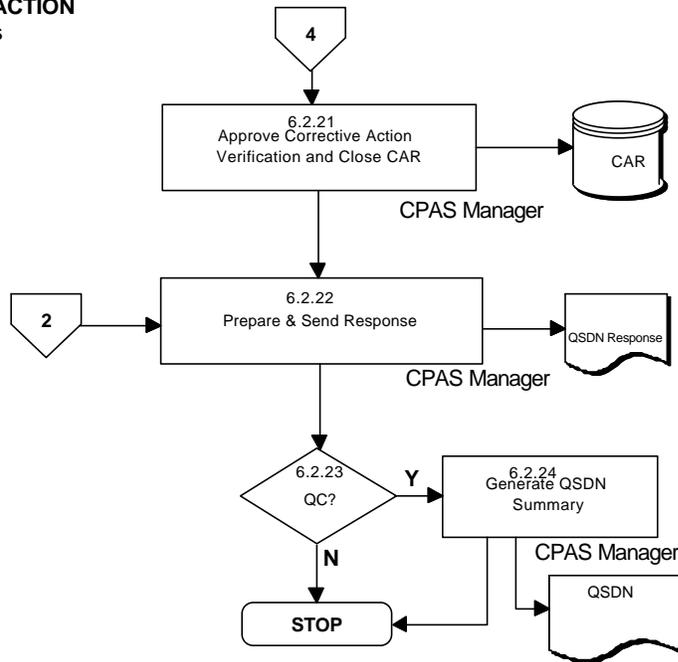
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**CORRECTIVE ACTION
 QSDN Process
 (Chart 2 of 3)**

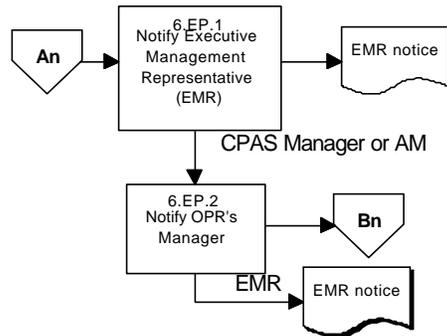


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**CORRECTIVE ACTION
QSDN Process
(Chart 3 of 3)**

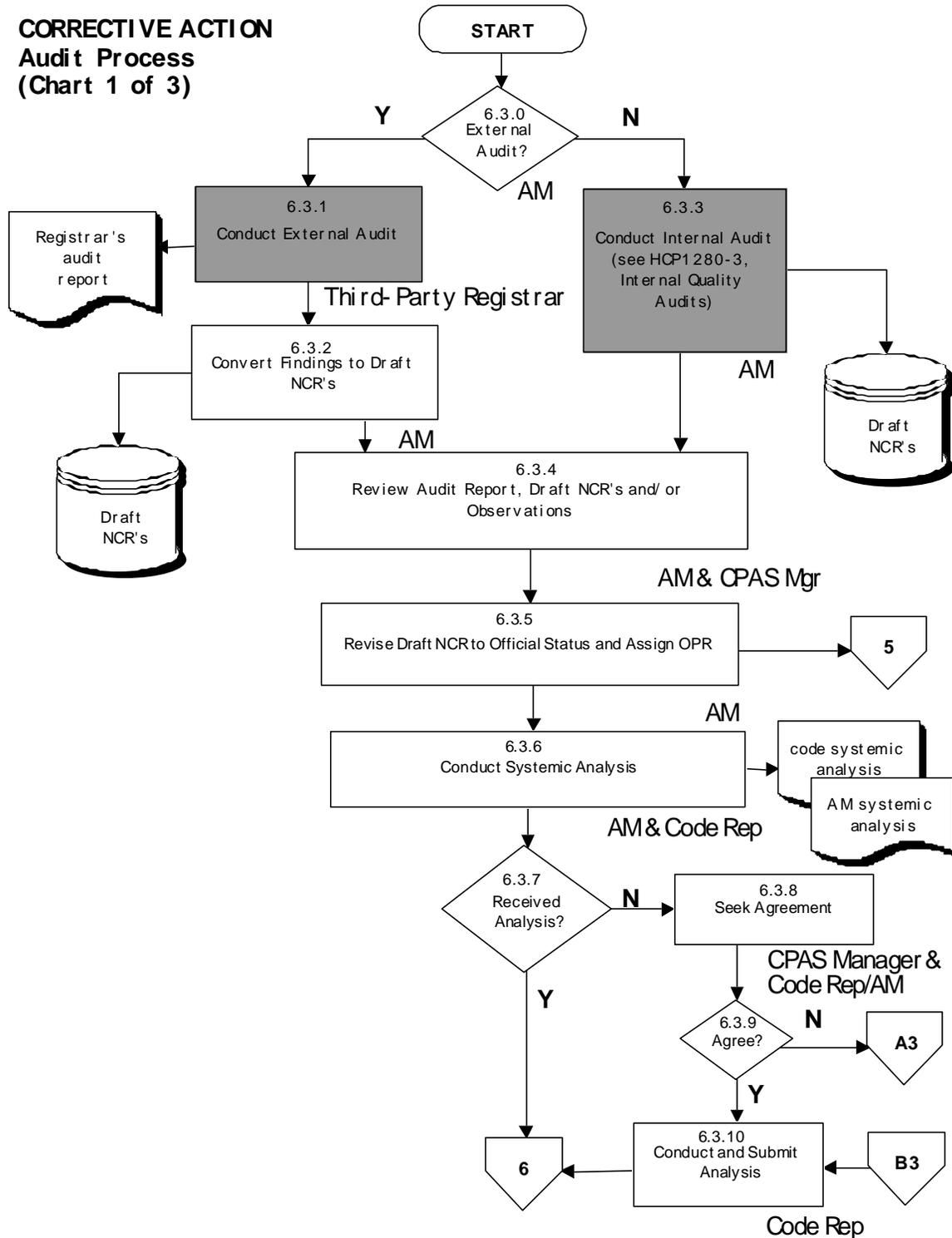


Escalation Process



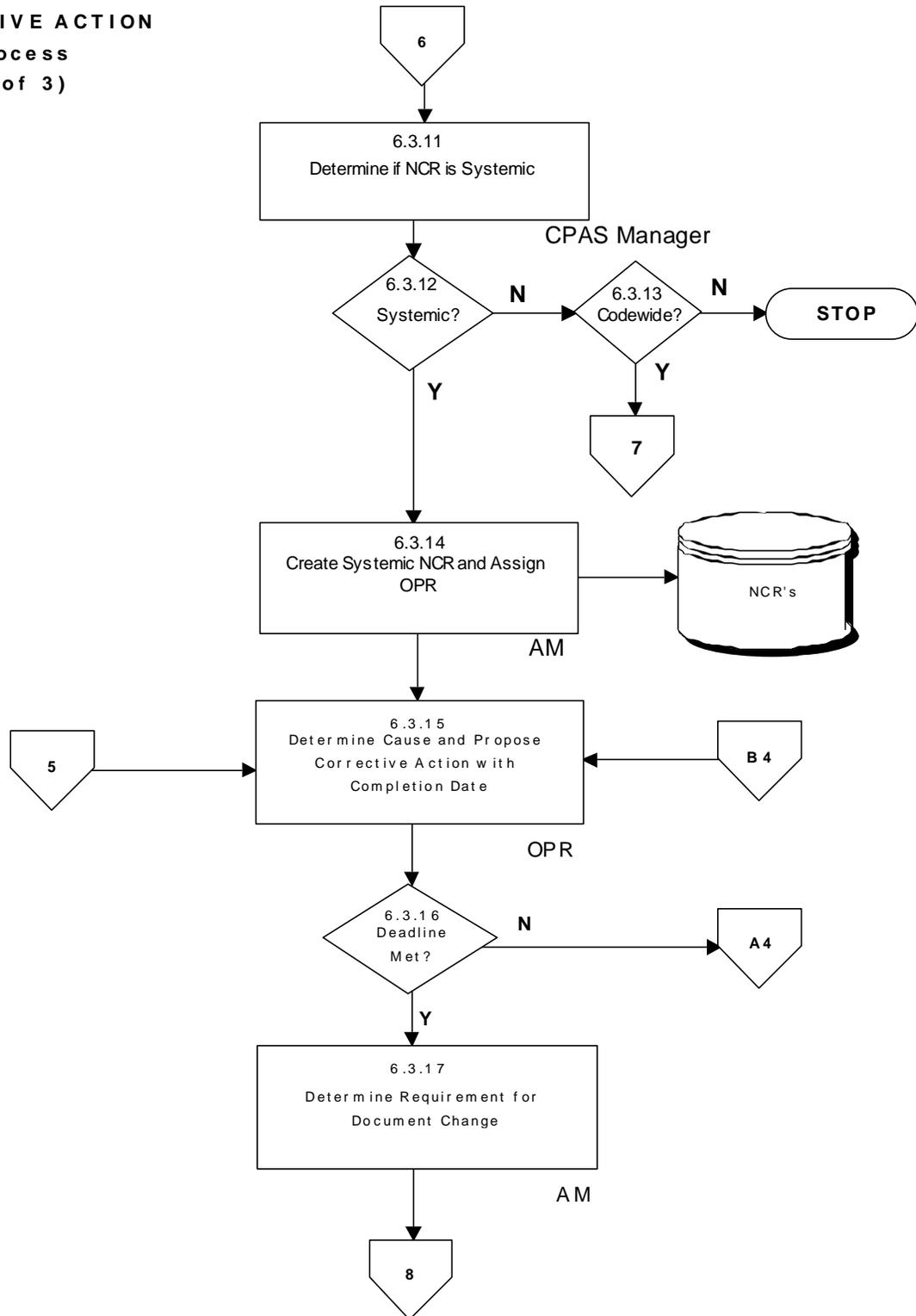
Responsible Office: J/Office of Management Systems
 Subject: Corrective and Preventive Action

**CORRECTIVE ACTION
 Audit Process
 (Chart 1 of 3)**



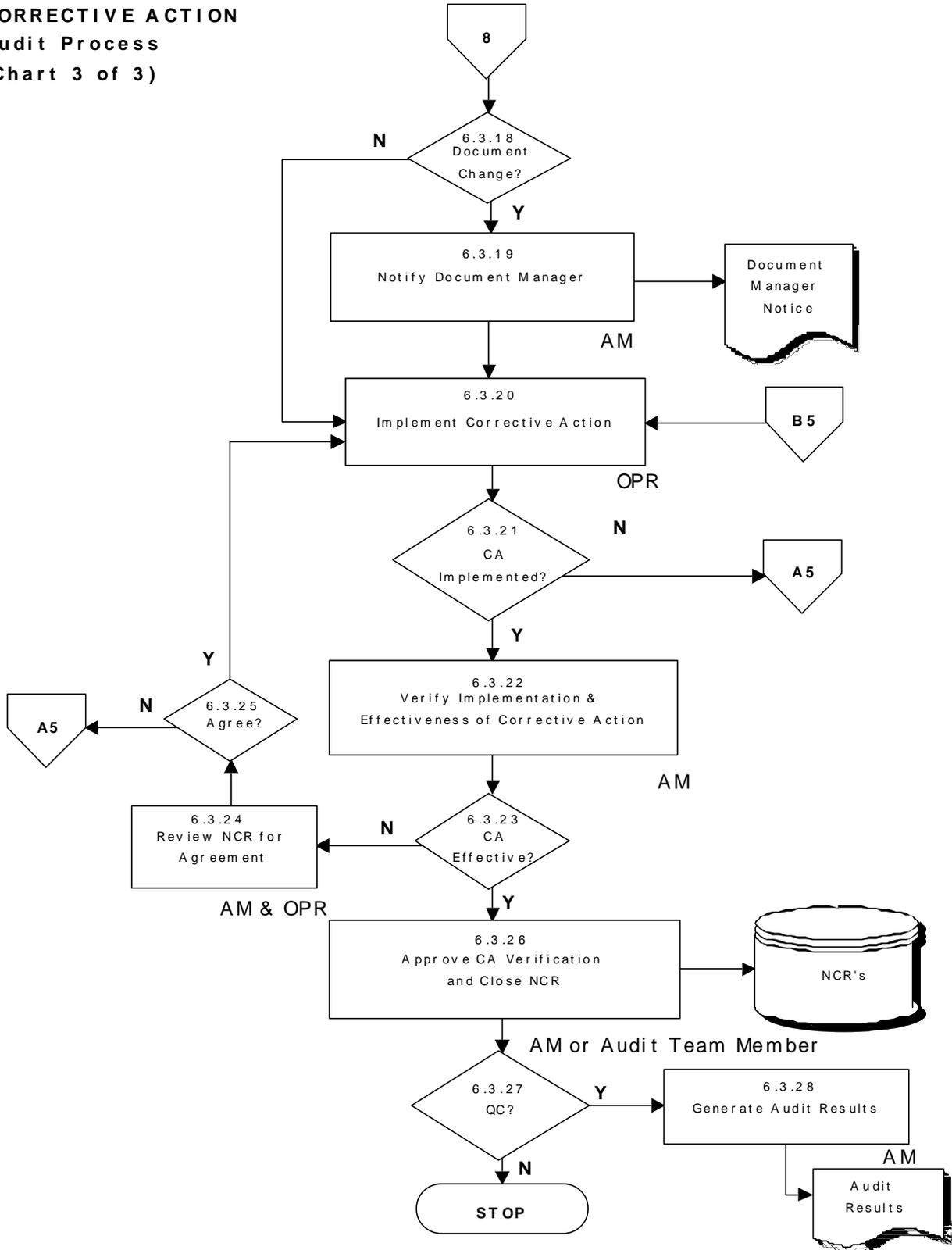
Responsible Office: J/Office of Management Systems
Subject: Corrective and Preventive Action

CORRECTIVE ACTION
Audit Process
(Chart 2 of 3)



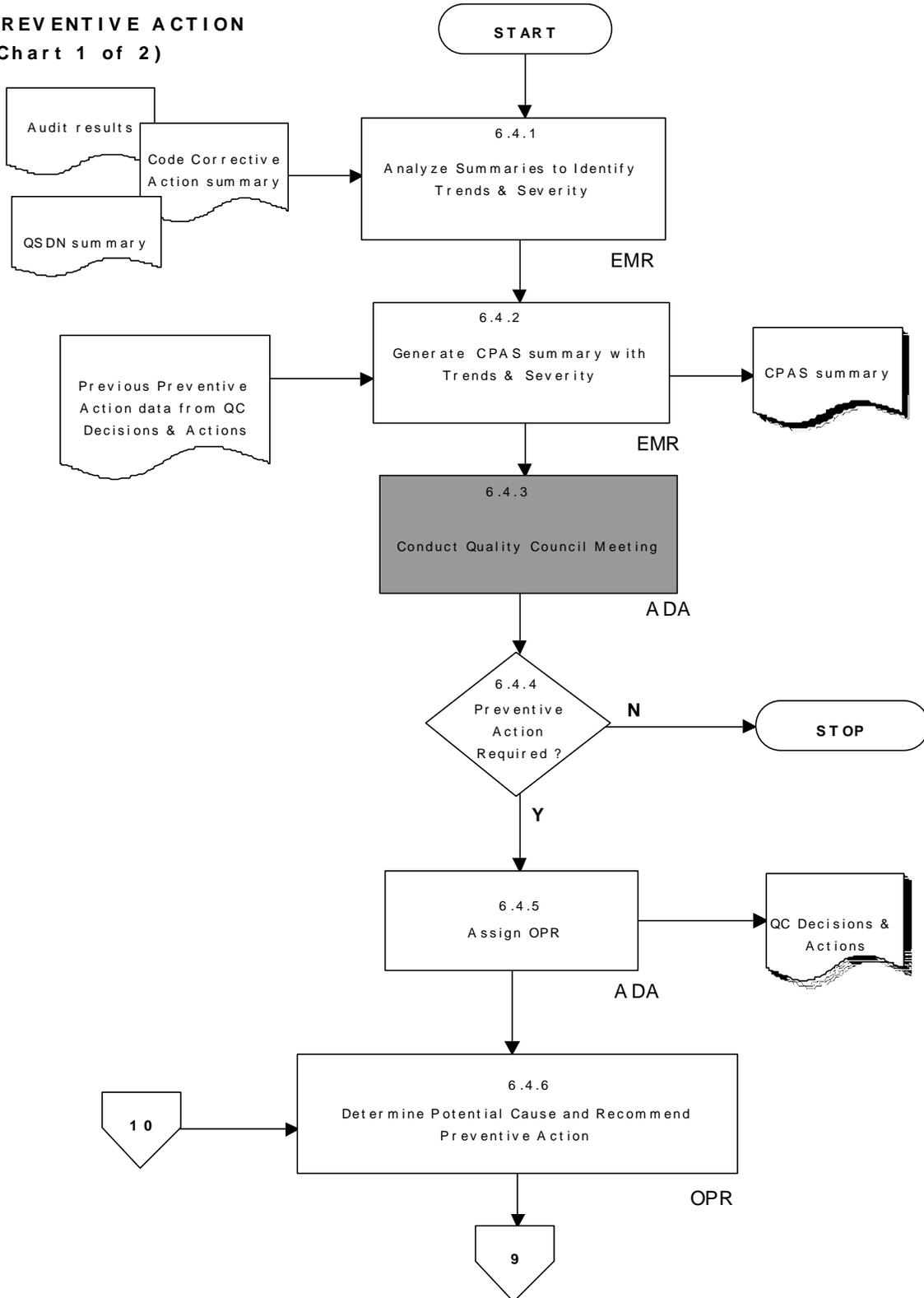
Responsible Office: J/Office of Management Systems
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**CORRECTIVE ACTION
 Audit Process
 (Chart 3 of 3)**



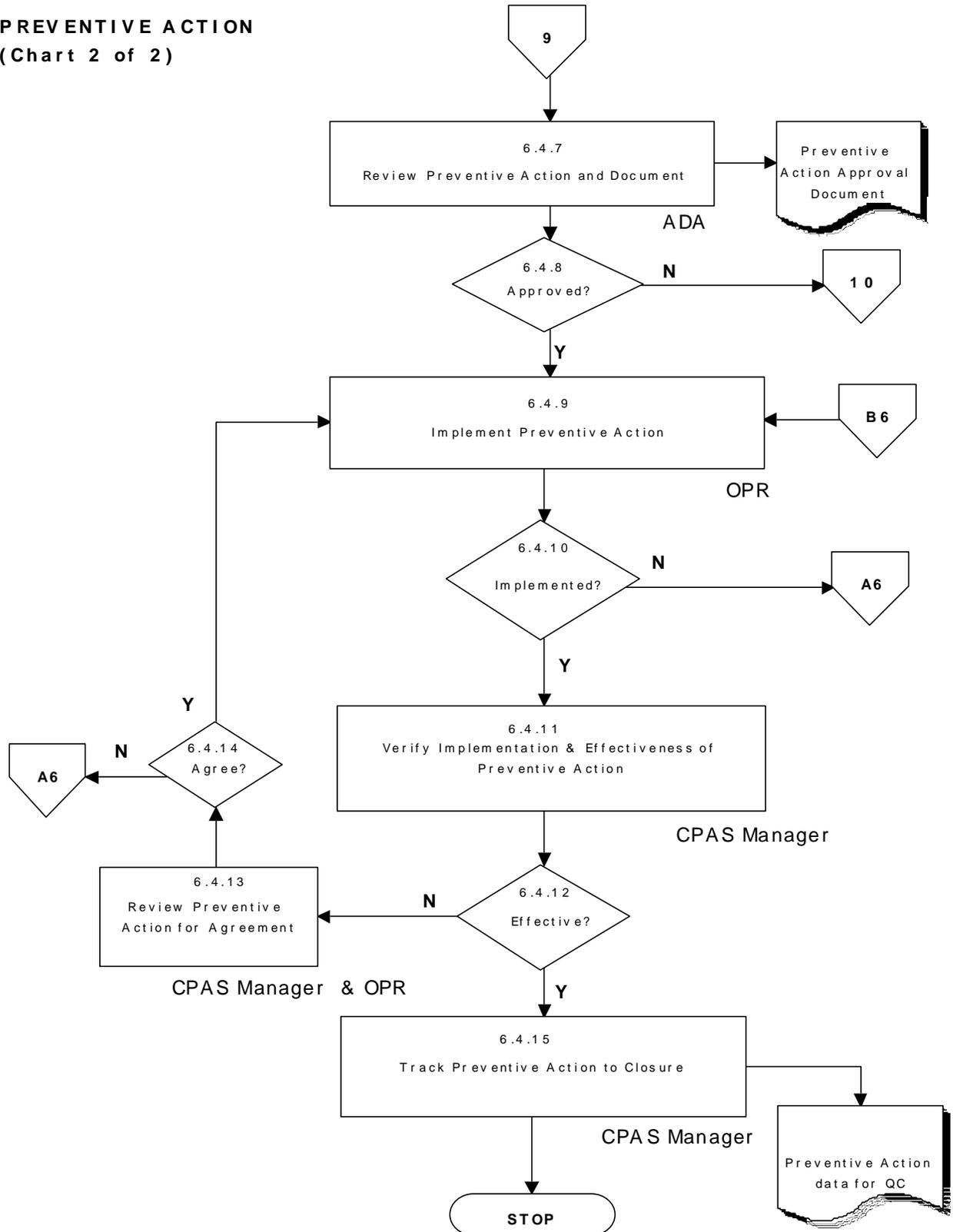
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PREVENTIVE ACTION
(Chart 1 of 2)



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PREVENTIVE ACTION
(Chart 2 of 2)



6 Procedure

Corrective Action (CA).

The corrective action procedure has five paths: external customer complaints, internally identified problems, Quality System Deficiency Notices (QSDN), external audits, and internal audits. Each path has an associated process flow that is depicted in section 5. The remainder of this section describes the procedures and responsible parties for taking CA.

6.1 External Customer Complaints and Internally Identified Problems

Process

External Customer Complaints. External customer complaints are received internally to an HQ organization from a NASA external customer organization regarding processes that directly provide HQ key products or services. These products and services are identified in the QSM as significant decisions, advocacy, education, public outreach, and collaboration. If an external customer complaint is received, it must be tracked and screened for CA.

NASA HQ is identified in the NASA Strategic Plan as the Center of Excellence for Agency Management. As such, HQ serves as the principal interface with the Administration and Congress and is the focal point for liaison with external entities. Although it is recognized that HQ has both external and internal customers, as identified in the NASA Strategic Plan, for purposes of the CPAS, only external customers' dissatisfactions will be considered customer complaints.

For example, a representative of the Federal Aviation Administration (FAA) doing collaborative work with the Office of Aero-Space Technology (OAST) on aviation safety expresses displeasure that NASA is not complying with its part of the agreement, as documented in a Memorandum of Understanding (MOU) between NASA and FAA. Or the Environmental Protection Agency (EPA) may complain to NASA's Office of Management Systems that the annual Agency compliance report does not fully address some critical requirements. In both the FAA and EPA examples, because the NASA HQ organization is dealing with an external customer and that customer is dissatisfied with an HQ key product or service, they are both customer complaints that must be tracked and screened for CA. If there is an existing process which handles these complaints, then that process is followed. If not, then the process described in this HCP must be used.

All customer complaints are not required to follow the procedures of this HCP if it can be substantiated that the complaint is handled by another process. However, even if another method for handling customer complaints is used, it is required that

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all customer complaints received be handled in a closed-loop process which ensures response of the complaint. But, if there is no existing process, then the external customer complaint process described in this document must be used to address the complaint. Regardless, if screening of the complaints yields taking CA, the cause of the complaint must be identified and eliminated, such that there is no recurrence. Additionally, it is noted that all customer complaints, regardless of which process is used to address it, must be tracked and reported to the Quality Council (see 6.4, Preventive Actions).

Internally Identified Problems. Internal customers, consisting of NASA organizations at HQ or Centers may complain about any HQ product, service, or process. These may be handled in two ways: through the QSDN process or as an internally identified problem. The QSDN process is initiated when any HQ employee enters dissatisfaction with a HQ product, service, or process into the electronic QSDN system (<http://hqiso9000.hq.nasa.gov/qsdn.htm>). The QSDN process is described in paragraph 6.2.

Internally identified problems are those which an employee or manager detects themselves or receives verbally, through electronic mail (e-mail), or by informal correspondence from an internal customer. The problem must be with a HQ provided product, service, or the processes which deliver them.

An example of an internally identified problem is if someone from the Kennedy Space Center (KSC) complains to the Office of Human Resources and Education (OHRE) how the implementation of Agency policy on education is adversely impacting their ability to provide opportunities to certain sectors of Florida's population. Although the product in question is delivered to a customer, since the complaint is received from an internal customer (a NASA Center), the issue would not be handled as a customer complaint. OHRE would work this complaint as an internally identified problem, screening it to determine whether CA is warranted.

Similarly, if an employee within an HQ organization identified a problem and the affected process is the sole responsibility of that organization, then the issue would be handled as an internally identified problem that must be screened for CA. However, if one HQ organization had a complaint regarding another HQ organizations, the QSDN system would ideally be used to address the complaint.

Screening for Corrective Actions. Employees and managers must screen all information received to determine whether there is an impact to a product, process, or the Quality System, and if CA is warranted. Appendix A is provided to give employees and managers general guidelines for making that determination. By screening all information received, both internal and external customer

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dissatisfactions are addressed. Employees and managers shall use their best judgment, based on their knowledge of and experience in the subject area to determine whether CA is warranted. If it is determined that CA is required and there is no existing process that addresses the issue in a closed-loop manner, then the issue must be dispositioned using the CA procedures described in this document. Appendix A also provides possible actions in the event a CA is not warranted.

The CA procedures for customer complaints and internally identified problems, described in this document, are the same. The responsible party for actions taken is based on the nature of the complaint or problem and the personnel with the corresponding responsibility for the subject area.

<u>Step</u>	<u>Responsible Party</u>	<u>Activity</u>
6.1.1	Employee or Manager	Information from a customer is received internally to an HQ organization. Employees or managers may receive information through various communications channels, such as formal or informal correspondence with a customer, verbally, or via e-mail. Note: Verbal information may be documented at the discretion of the employee or manager receiving the information.
6.1.2	Employee or Manager	The information is screened to determine if there is an impact to a product, process, or the Quality System. General guidelines in appendix A are provided to determine whether a CA will be initiated. Employees and managers shall use their best judgment in determining whether a CA is warranted.
6.1.3		If a CA is initiated, then continue. Otherwise, the process ends. (This procedure does not circumvent any existing correspondence control process.) See appendix A for other possible actions that may be taken.
6.1.4	Employee or Manager	Determine whether the CA is classified as an external customer complaint or internally identified problem. (See Paragraph 6.1, External Customer Complaints and Internally Identified Problems, above.)
6.1.5	Employee or Manager	Initiate a CA using the CA checklist information provided in appendix B to request approval to continue. Identify the requirement that is not met and a description of the problem encountered. The requirement may be, but is not limited to, an element of the ISO 9001 quality system standard. Identify whether this action is initiated due to an external customer complaint or an internally identified problem.

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| 6.1.6 | Immediate Supervisor (or appropriate manager) | <p>The immediate supervisor of the person submitting the CA checklist information shall review the request for CA. Appendix A is provided as a general guide to determine whether a CA is required. The supervisor shall use her/his best judgment in determining whether the CA request is approved. The CA checklist information must be signed, indicating whether or not to proceed. If it is approved, then a CA Actionee must be assigned and documented on the CA checklist information. The Actionee may be, but is not necessarily, the person who originally submitted the CA checklist information.</p> <p>Note: It is recognized that the immediate supervisor may not always be the appropriate manager for certain proposed CA's. It is the responsibility of the person submitting the request to inform the appropriate manager. If the person submitting the request cannot make a determination as to who the appropriate manager is for a CA, then she/he should present the request to her/his immediate supervisor.</p> |
| 6.1.7 | | <p>If the CA is approved, proceed to step 6.1.9. Otherwise, proceed to step 6.1.8.</p> |
| 6.1.8 | Employee or Manager | <p>If the CA is disapproved, the CA checklist information is signed and maintained for record keeping. (See appendix D for alternative CCA instructions.)</p> |
| 6.1.9 | Actionee | <p>If the CA is approved, the CA checklist information is maintained for record keeping and tracking. (See appendix D for alternative CCA instructions.)</p> |
| 6.1.10 | Actionee | <p>Determine the cause of the problem. A root cause analysis to isolate the cause(s) of the problem may be warranted. The Actionee must use his/her best judgement to decide "how deep" to investigate the problem. This subjective decision must be reached, based on the magnitude and severity of the problem. The findings must then be documented per the CA checklist information.</p> <p>Note: It is important when determining the root cause of the problem that "treatment is given for the disease and not just the symptoms of the disease."</p> |
| 6.1.11 | Actionee | <p>A CA plan must be developed identifying steps and actions to eliminate the cause of the problem. This plan must be documented per the CA checklist information. As part of the plan, propose the implementation date, qualitative and/or quantitative effectiveness criteria for the prescribed action, and the effectivity date.</p> <ul style="list-style-type: none"> ➤ The implementation due date is the date when |

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		<p>implementation of the CA is completed.</p> <p>➤ The effectivity due date is the date that the CA is considered effective.</p>
6.1.12	Approving Official	<p>Review the CA plan to determine if proceeding with the implementation is acceptable.</p> <p>Note: The approving official for--</p> <ul style="list-style-type: none"> + Code-wide problem - approval to proceed is the responsibility of the AA or Deputy AA + Internal organizational elements (e.g., Divisions, Offices) problem - approval to proceed is internal to that element
6.1.13		<p>If the plan is approved proceed to step 6.1.14.</p> <p>If the plan is not approved, provide rationale for the disapproval to the Actionee and any suggested actions needed to gain approval. Return to step 6.1.11 to rework the issues necessary to gain approval.</p>
6.1.14	Actionee	<p>Implement the CA according to the plan. When implementation is complete, provide a dated signature.</p>
6.1.15	Approving Official or appropriate body	<p>Verify that the CA taken was effective for eliminating the cause of the problem. Refer to the effectiveness criteria documented on the CA checklist information.</p>
6.1.16		<p>When the effectiveness of the CA has been verified, proceed; otherwise, inform the Actionee of the reasons the CA was determined to not be effective and suggest actions to ensure that the CA is effective. Return to step 6.1.11 to revise/rework the CA plan (including new implementation and effectivity dates).</p>
6.1.17	Approving Official or appropriate body	<p>Provide a dated signature for closure and maintain for record keeping.</p>
6.1.18		<p>Determine if a Code CA Summary is needed to support a Quality Council meeting (see HQPC 1150.1). If yes, then continue, otherwise, the process ends.</p>
6.1.19	AA or designee	<p>Generate Code CA Summary, using the reporting elements provided in appendix C and provide to the EMR for use at the Quality Council as one input to identify possible candidates for preventive action.</p>

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6.2 Quality System Deficiency Notice (QSDN) Process

QSDN's are notices submitted electronically by NASA HQ employees on issues that request management involvement. These issues are typically outside of that employee's HQ organization's authoritative control. However, an employee may submit a QSDN regarding issues in her/his own HQ organization. The QSDN system is at <http://hqiso9000.hq.nasa.gov/qsdn.htm>. It is the responsibility of the CPAS manager who operates within the PO to investigate the QSDN and determine which NASA HQ organization is the OPR for the product, service, or process identified. The CPAS Manager performs screening of QSDN's in collaboration with the appropriate OPR for the issue identified. The screening is based on general guidelines provided in appendix A to determine whether an impact to a product, service, process, or the Quality System exists and CA is required. If it is so determined that an impact exists requiring CA, then a draft CAR is initiated in the automated CAS at <http://hqiso9000.hq.nasa.gov/cas.htm>. The CPAS Manager assigns and notifies an OPR for each draft CAR initiated based on the nature of the issue. The OPR is responsible for recommending conversion of a draft CAR to official, determining the cause of the issue submitted, proposing a CA, and implementing the approved CA. These CAR's must be dispositioned, using the CA described below.

A QSDN submittal may also result in a system improvement. A system improvement is identified when screening of the QSDN yields that there is no current requirement for the issue submitted, but an improvement to a product, service, process, or the Quality System can be realized. A system improvement will be identified as such in a draft CAR in the CAS

<u>Step</u>	<u>Responsible Party</u>	<u>Activity</u>
6.2.1	Employee or manager	A QSDN record is generated when an issue is submitted using the automated QSDN system located at http://hqiso9000.hq.nasa.gov/qsdn.htm .
6.2.2	CPAS Manager	The QSDN is screened in collaboration with the cognizant OPR, to determine if there is a need for CA or system improvement. General guidelines provided in appendix A are used in determining whether CA's or system improvements are required. System improvements are handled in the same manner as CA items.
6.2.3		If a CA or system improvement is warranted, then proceed to step 6.2.4; otherwise, proceed to step 6.2.22.
6.2.4	CPAS Manager	The QSDN is used to initiate a draft CAR in the automated CAS located at http://hqiso9000.hq.nasa.gov/cas.htm . An OPR is assigned and notified to screen the CAR.

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6.2.5	OPR	The QSDN is screened to determine if there is a need for CA or system improvement. General guidelines provided in appendix A are used in determining whether CA's or system improvements are required.
6.2.6	CPAS Manager	Based on the OPR's screening results, determine whether to convert the draft CAR to an official CAR.
6.2.7		If the draft CAR is converted, proceed to step 6.2.9, otherwise go to step 6.2.8.
6.2.8	CPAS Manager	Close the draft CAR in the automated system.
6.2.9	CPAS Manager	Convert the draft CAR to an official CAR for tracking of actions to address the initial QSDN submittal.
6.2.10	OPR	Determine and enter the QSDN cause and its proposed CA with a CA completion date into the applicable automated CAR form. If this is a system improvement, determine and enter the benefit of implementing the proposed CA rather than the QSDN cause. Also include the proposed CA with a completion date into the applicable automated CAR form. A root cause analysis to isolate the cause(s) of the problem may be warranted. The OPR must use its best judgement to decide "how deep" to investigate the problem. This subjective decision must be reached based on the magnitude and severity of the problem. As part of the CA, qualitative and/or quantitative effectiveness criteria for the prescribed action may be identified. Note: It is important when determining the root cause of the problem that "treatment is given for the disease and not just the symptoms of the disease."
6.2.11		Determine whether the cause/benefit and proposed CA have been entered. If yes, proceed to step 6.2.12, otherwise proceed to the Escalation Process.
6.2.12	CPAS Manager	Review the proposed CA and determine whether it requires the creation of or revision to a document.
6.2.13		If a documentation revision /creation is required, proceed to step 6.2.14, otherwise go to step 6.2.15.
6.2.14	CPAS Manager	Notify the DM that there will be a new document or a revision to a document resulting from the CA. This alerts the DM to watch for this document as a result of the CA. The CPAS

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		Manager reviews the created/revised document for its effectiveness as part of the CA.
6.2.15	OPR	Implement the proposed CA as stipulated. If implementation requires the creation of or revision to a document, then implementation includes the document review process and posting to the appropriate master list.
6.2.16		If implementation is completed in the requisite time, continue; otherwise proceed to the Escalation Process.
6.2.17	CPAS Manager	Verify implementation of the CA as stated by OPR and that the action is effective.
6.2.18		If the CA is effective, proceed to step 6.2.21. Otherwise, continue.
6.2.19	CPAS Manager and OPR	If the CPAS manager determines that the CA has not been effective in addressing the QSDN, then the CPAS Manager meets with the OPR to reexamine the QSDN and agree on an appropriate course of action and schedule. The OPR maintains the right to disagree with the CPAS Manager, believing that the CA has been effective in addressing the QSDN. Every effort should be made by the two parties to come to an agreement on a revised proposed CA.
6.2.20		If an agreement is reached, return to step 6.2.15. Otherwise, proceed to the Escalation Process.
6.2.21	CPAS Manager	Following verification of the CA, approve and close the CAR.
6.2.22	CPAS Manager	Prepare a response, indicating the actions taken and any applicable results, and send it to the QSDN initiator.
6.2.23		Determine if a QSDN Summary is needed to support a Quality Council meeting. If yes, then continue; otherwise, the process ends.
6.2.24	CPAS Manager	Prepare a QSDN Summary from the data in the QSDN and CAS data bases and provide it to the EMR for use at the Quality Council (see HQPC 1150.1) as an input to identify possible candidates for preventive action.

Escalation Process. An escalation process exists to inform the Executive Management Representative (EMR) when established procedures have not been adhered to in the QSDN and Audit CA processes and the Preventive Action processes. Either the CPAS Manager or the Audit Manager (AM) has the responsibility of notifying the EMR when an OPR has not performed one of the following assigned activities: 1) determine the cause and proposed CA with

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completion date, 2) implement the CA by the required date, and 3) when a CA is ineffective, agree with the CPAS or AM on a revised proposed CA. The CPAS Manager handles issues involving the QSDN process, and the Audit Manager handles issues for both the external and internal audits process.

The EMR then notifies the OPR's manager of the situation in order to reach a resolution. The OPR's manager is the Associate Administrator, Deputy Associate Administrator or Official-in-Charge for the OPR's organization. Depending on the activity in question, the process returns to a point such that the activity is accomplished following the resolution.

For purposes of flowcharting, the entry point (A) and exit point (B) of the escalation processes are identified by An and Bn, in which n is the corresponding identifier for the pair. For example, if the flowchart indicates proceeding to point A1 of the escalation process, then reentry into the main flowchart is at point B1.

<u>Step</u>	<u>Responsible Party</u>	<u>Activity</u>
6.EP.1	CPAS Manager or AM	Notify the EMR that an action is delinquent, if the assigned OPR does not perform the assigned activity as prescribed.
6.EP.2	EMR	Notify the OPR's manager that an OPR has not performed an assigned activity as prescribed and is delinquent. Reach agreement with the OPR's manager to address the issue. The CPAS Manager or AM will update the EMR notice to document the agreement reached.
		Return to appropriate step in the initiating process.

6.3 External and Internal Audits Process

The external and internal audits require similar courses of actions in order to correct identified system nonconformances. Audits are independent assessments conducted to ensure that the HQ Quality System is compliant with the ISO 9001 quality standard. External audits are conducted by a third-party registrar, and internal audits are conducted by HQ personnel (see HCP1280-3, Internal Quality Audits). Nonconformance reports (NCR) are generated in the automated NCR System, located at <http://hqiso9000.hq.nasa.gov/ncr.htm>, as a result of both external and internal audits. The NCR identifies the observed nonconformance and the related ISO 9001 quality standard element violated. A CA must be taken for each NCR generated as a result of an audit. These NCR's must be dispositioned, using the CA procedures described in this document.

Audits

<u>Step</u>	<u>Responsible Party</u>	<u>Activity</u>
6.3.0	AM	Determine the audit type to be conducted. If it is an external audit, proceed to step 6.3.1. If it is an internal audit, proceed to step 6.3.3.
6.3.1	Third-Party Registrar	An audit of the HQ Quality System is performed to determine its compliance with the ISO 9001 quality system standard. As a result of this audit, a Registrar's audit report is provided to the NASA HQ ISO 9001 PO.
6.3.2	AM and CPAS Manager	The Registrar's audit report is used to initiate a draft NCR(s) in the automated NCR System from the findings in the report. The AM has the discretion to enter observations as draft NCR's as well. Proceed to step 6.3.4.
6.3.3	AM	Conduct an internal audit according to HCP1280-3, Internal Quality Audits. Proceed to step 6.3.4.
6.3.4	AM and CPAS Manager	Conduct a review of the audit report, associated draft NCR's, and/or observations in preparation for the systemic analysis. The Registrar will provide an audit report at the conclusion of the External Audit.
6.3.5	AM	Convert draft NCR's to official NCR's and assign to the OPR. The NCR identifies the observed nonconformance and the related ISO 9001 quality standard element violated. The automated NCR system is located at http://HQISO9000.hq.nasa.gov/ncr.htm .

Two parallel actions branch from this point. In the first, proceed to step 6.3.15 to begin the CA for the NCR. In the

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of the nonconformance and its proposed CA with a completion date into the applicable section of the automated NCR form.

A root cause analysis to isolate the cause(s) of the problem may be warranted. The OPR must use his/her best judgment to decide "how deep" to investigate the problem. This subjective decision must be reached, based on the magnitude and severity of the problem. As part of the CA, qualitative and/or quantitative effectiveness criteria for the prescribed action may be identified.

Note: It is important when determining the root cause of the problem that "treatment is given for the disease and not just the symptoms of the disease."

- 6.3.16 If the cause of the nonconformance and its proposed CA with completion date is completed and entered into the NCR System in the requisite time, continue; otherwise, proceed to the Escalation Process.
- 6.3.17 AM Review the proposed CA and determine whether implementation of the CA requires the creation of or revision to a document.
- 6.3.18 If a creation/revision to a document is required, continue to step 6.3.19. Otherwise, go to step 6.3.20.
- 6.3.19 AM Notify the DM that there will be a new document or a revision to a document resulting from the CA. This alerts the DM to watch for this document as a result of the CA and to review the created/revised document when it is received for its effectiveness as part of the CA.
- 6.3.20 OPR Implement the CA as stipulated in the proposed CA. If implementation requires the creation of or revision to a document, then implementation includes the document review process and posting to the appropriate master list.
- 6.3.21 If implementation is completed in the requisite time, continue; otherwise, proceed to the Escalation Process.
- 6.3.22 AM Verify implementation of the CA as stated by OPR and that the action is effective.
- 6.3.23 If the CA is effective, continue to step 6.3.26; otherwise proceed to step 6.3.24.
- 6.3.24 AM and OPR If the AM determines that the CA has not been effective in addressing the NCR, then the AM meets with the OPR to

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		reexamine the NCR and agree on an appropriate course of action and schedule. The OPR maintains the right to disagree with the AM, if it is believed that the CA has been effective in addressing the NCR. Every effort should be made to come to an agreement.
6.3.25		If an agreement is reached, return to step 6.3.20. Otherwise, go to the Escalation Process.
6.3.27	AM or Audit Team Member	Review and approve CA verification and close the NCR. For external audits, the AM shall perform this activity. For internal audits, the AM or a member of the applicable internal audit team shall perform this activity.
6.3.28		Determine if audit results are needed to support a Quality Council meeting. If yes, then continue; otherwise, the process ends.
6.3.29	AM	Generate audit results and provide to the EMR for use at the Quality Council (see HQPC 1150.1) as an input to identify possible candidates for preventive action. Indicate whether the results are for an external or internal audit.

6.4 Preventive Action

The preventive action process in the HQ Quality System is initiated by actions from the Quality Council (see HQPC 1150.1). Preventive actions are those which are designed to prevent causes of quality system nonconformances and negative trends. The EMR reviews reports from customer complaints, internally identified problems, the QSDN, registrar (external) audits, and internal quality audits to identify any information that will characterize the status of the Quality System. All HQ codes provide the EMR a summary of customer complaints received and CA's implemented in their organization. The codes' summary reports are not intended to duplicate information presented in existing management forums whose roles and responsibilities are established in the NPG 1000.2, *NASA Strategic Management Handbook* (i.e., PMC, SMC, CIC). The various summary reports are the results of activities that have taken place within each area since the previous Quality Council meeting. Trend data are examined to develop recommendations for preventive actions that may be initiated. The Quality Council makes final determination for all preventive actions for the HQ Quality System.

<u>Step</u>	<u>Responsible Party</u>	<u>Activity</u>
6.4.1	EMR	Analyze information from the audit results, code CA summaries, and the QSDN summary to identify any developing or continuing trends, the severity of the nonconformances, or problems that exist.

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|--------|----------------------|--|
| 6.4.2 | EMR | With the assistance of the PO, prepare a CPAS summary from the inputs in the previous step and previous preventive actions as appropriate. |
| 6.4.3 | ADA | Conduct a Quality Council meeting in accordance with HQPC 1150.1, HQ Quality Council and determine if any preventive action is required. |
| 6.4.4 | | If any are required, continue; otherwise, the process ends. |
| 6.4.5 | ADA | If a preventive action is required, then assign an OPR. |
| 6.4.6 | OPR | Determine the potential cause(s) of the nonconformance or an undesirable situation and provide a recommended preventive action to eliminate the potential causes.

Note: It is important when determining the root cause of the potential nonconformance that "treatment is given for the disease and not just the symptoms of the disease." |
| 6.4.7 | ADA | The recommendation containing the potential cause and preventive action is reviewed and approved for implementation. |
| 6.4.8 | | If the action is approved for implementation, continue. Otherwise return to step 6.4.6. |
| 6.4.9 | OPR | Implement the action as approved. If implementation requires the creation of or revision to a document, then implementation includes the document review process and posting to the appropriate master list. |
| 6.4.10 | | If implementation is completed in the requisite time, continue; otherwise, proceed to the Escalation Process. |
| 6.4.11 | CPAS Manager | Verify implementation and effectiveness of the preventive action as stated by the OPR. |
| 6.4.12 | | If the action is effective, continue; otherwise proceed to step 6.4.13. |
| 6.4.13 | CPAS Manager and OPR | If the preventive action has not been effective in addressing the requirement, then the CPAS Manager meets with the OPR to reexamine the preventive action and agree on an appropriate course of action and schedule. The OPR maintains the right to disagree with the CPAS Manager, believing that the preventive action has been effective. Every effort should be made to come to an agreement. |
| 6.4.14 | | If an agreement is reached, return to step 6.4.9. Otherwise |

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proceed to the Escalation Process.

6.4.15 CPAS Manager

Track the action to closure. Preventive action data is included in subsequent CPAS summaries, as appropriate.

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7 Quality Records

Corrective and preventive action quality records are listed in Table 7.1. These records are indexed, filed, maintained, and dispositioned in accordance with NPG1441.1, as identified below.

RECORD IDENTIFICATION	OWNER	LOCATION	MEDIA: ELECTRONIC or HARD COPY	SCHEDULE AND ITEM NUMBER	RETENTION /DISPOSITION
Completed Corrective Action Forms	Individ. Codes	Individual Codes	Hard copy	Schedule 1 Item 26	Destroy when 2 years old
Code Corrective Action summary	"	"	"	"	"
QSDN record	CPAS Mgr.	QSDN System	Electronic	"	"
Draft CAR's	"	CAR System	"	"	"
CAR's	"	"	"	"	"
Document Manager Notice	"	"	Hard copy	"	"
QSDN response	CPAS Mgr.	CPAS Manager	Electronic	"	"
QSDN summary	"	"	Hard copy	"	"
EMR notices	Audit or CPAS Mgr.	Audit or CPAS Manager	Electronic	"	"
Registrar's audit report	Audit Mgr.	Audit Manager	Hard copy	Schedule 5 Item 30, B	Close file at end of survey/audit at end of fiscal year. Destroy when 9 years old
NCR's	Audit Mgr.	NCR System	Electronic	"	"
Audit Results	"	"	Hard copy	"	"
Audit Manager systemic analysis	"	"	"	"	"
Code systemic analysis	CPAS Manager	CPAS Manager	"	Schedule 1 Item 26	Destroy when 2 years old
CPAS summary	"	"	"	"	"
Quality Council Decisions and Actions	PO	ISO 9001 Project Office	"	Schedule 1 Item 22A, Perm.	Return to FRC at 5 years old
Preventive Action approval document	OPR	OPR	"	Schedule 1 Item 26	Destroy when 2 years old
Preventive Action data for QC	CPAS Mgr.	CPAS Manager	"	"	"

Table 7.1

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APPENDIX A - General Guidelines for Screening QSDN, Complaint, Problems

- Existing processes do not address issues.
For example, reviews, assessments, and approvals built into a process which allow for corrections as **part of** the process.
- A recurring problem exists.
- Risk of not taking CA has extreme consequences.
- Evidence exists that a process is broken or could be measurably improved.
- Issues cannot be resolved by normal dialogue.
- Process indicators suggest that a trend is developing and CA is needed.
- Need for CA is appropriate to the magnitude of the problem or proportionate with the risks encountered.

Note: This is not a “lockstep” formula for taking CA.

If no CA is deemed necessary, the following action may be taken as appropriate:

- For customer complaints received through official correspondence, the action is closed via the HQ Action Tracking System (HATS).
- For internally identified problems, a response may be provided to the individual or organization that originally identified the problem.
- For QSDN's, the submission may be forwarded to an appropriate organization for action. Example, if a QSDN was related to the lighting in the building, the notice could be forwarded to the Office of HQ Operations.

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APPENDIX B – Corrective Action Checklist

- Title/Subject
- Initiator's Name, Mail Code, and Phone Number
- Classify as Customer Complaint or NASA Identified Problem
- Provide documentation, including:
 - Requirement not being or that should be met
 - Description of the problem
- Approving Official's direction, including:
 - Authority to proceed with developing a reply or not
 - Reply due date
 - Assign Corrective Action actionee
 - Dated signature of Approving Official
- Action Control number (if tracking corrective action in the HATS, see Appendix D)
- Develop reply, including:
 - Determine root cause, such that when the cause is eliminated the nonconformance will not recur
 - Develop a corrective action plan with the implementation due date and effectiveness criteria
 - Dated signature of actionee
- Approving Official's direction, including:
 - Authority to proceed with implementation or not
 - Implementation due date
 - Effectivity due date
 - Dated signature of Approving Official
- Verify effectiveness with dated signature of Approving Official

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APPENDIX C – Code Corrective Action Summary Reporting Elements

- Organization Code
- Date of submission
- Reporting Period
- Total # of Customer Complaints received during reporting period
- Information for each corrective action in work, including:
 - Title/Subject
 - Requirement to be met
 - ISO 9001 element (if known)
 - Problem description
 - Customer Complaint or NASA Identified Problem
 - Status

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APPENDIX D - Correspondence Control Assistant (CCA) Instructions

Step 1

- When initially receiving a Corrective Action (CA) checklist information, check for an **Approving Official** signature. This signature is the indicator that the CA can be officially entered into the HATS.

If the Proceed indicator is Yes,

Step 2

- Check for a **Reply Due Date** and a **CA Actionee**.

Step 3

- Enter the HATS and enter the "Outgoing Correspondence Action" option.

Step 4

- Enter a new item using the **Title/Subject** input from the CA checklist information, followed by "Corrective Action"

Example: If the CA checklist information title is "Test Case", then the HATS title will be "Test Case – Corrective Action." This will enable a search of all records with the keyword "Corrective Action" to produce CA reports, exclusive of other correspondence in HATS.

Step 5

- Enter "Recipient" in HATS as the **Approving Official** from the CA checklist information.

Step 6

- Enter "Organization" in HATS as the Mail Code of the official in Step 5.

Step 7

- Enter "Originator" in HATS as **Initiator Name** with **Mail Code** from the CA checklist information.

Step 8

- Enter "Origination Date" in HATS as the date the CA checklist information is received.

Step 9

- Enter "Action Office" in HATS as **CA Actionee** from the CA checklist information.

Step 10

- Enter "Current Due Date" and "Original Due Date" in HATS as the **Reply Due Date** from the CA checklist information. This is the date used to track the Reply from the Actionee.

Step 11

- Enter "Status" in HATS as Open.

Step 12

- Enter "Signature Office" in HATS as **Signature of Approving Official** (along with her/his corresponding Mail Code) from the CA checklist information.

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Step 13

- Enter "Abstract" in HATS from the **PROBLEM DESCRIPTION** from the CA checklist information.

Step 14

- Enter "Keywords" in HATS as Corrective Action and any other relevant terms.

Step 15

- Enter the **ACTION CONTROL NUMBER** on the CA checklist information from the action control number generated in HATS. This allows the cross-referencing of the HATS record to the CA checklist information.

Step 16

- When the CA checklist information is submitted with the Reply, check for a signature in the second **Approving Official** section. The Reply consists of the Root Cause and the Corrective Action Plan. There may be additional sheets accompanying the CA checklist information when the Reply is submitted.

Step 17

- Enter the "Current Due Date" in HATS from the **Implementation Due Date** from the CA checklist information. This is the date used to track the Implementation by the Actionee. File the CA checklist information, any accompanying Reply documentation, and the HATS cover sheet in the Outgoing Correspondence Corrective Action folder similar to other HATS correspondence.

Step 18

- When the CA checklist information is submitted by the Actionee, following implementation of the CA, check the form for the Actionee Signature and date. Enter the "Date Submitted" in HATS as the date the CA checklist information is received from the Actionee. Enter the "Current Due Date" in HATS as the **Effectivity Due Date** from the CA checklist information. This is the date used to track the verification of effectiveness of the CA.

Step 19

- When the CA checklist information is submitted for the final time, check for a signature, mail code and date in the **Verified By** section. Enter this date in the "Date Signed" and "Date Closed" in HATS and change the "Status" to Closed.

Step 20

- File the CA checklist information and accompanying documentation in the Outgoing Correspondence Corrective Action folder similar to other HATS correspondence.

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(continued on next page for Proceed indicator of **No**)

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Correspondence Control Assistant (CCA) Instructions (Continued)

If the Proceed indicator is No

Step 2

- Enter into the HATS and enter the “Correspondence Information Only” option.

Step 3

- Enter a new item using the **Title** input from the CA checklist information followed by “Corrective Action”

Example: If the CA checklist information Title is “Test Case”, then the HATS title will be “Test Case – Corrective Action.” This will enable a search of all records with the keyword “Corrective Action” to produce CA reports exclusive of other correspondence in HATS.

Step 4

- Enter “Ext Author/ Recip” in HATS as **Initiator Name** from the CA checklist information.

Step 5

- Enter “Organization” in HATS as **Mail Code** from the CA checklist information.

Step 6

- Enter “Date Written” in HATS as the date the CA checklist information is received.

Step 7

- Enter “Status” in HATS as Closed.

Step 8

- Enter “Abstract” in HATS from the **PROBLEM DESCRIPTION** from the CA checklist information.

Step 9

- Enter “Keywords” in HATS as CA and any other relevant terms.

Step 10

- Enter the **ACTION CONTROL NUMBER** on the CA checklist information from the action control number generated in HATS. This allows the cross-referencing of the HATS record to the CA checklist information.

Step 11

- File the CA checklist information in the Information Only Corrective Action folder similar to other HATS correspondence.

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