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Process Owner

Supplier Quality Assurance

1. Purpose

This procedure establishes and documents the requirements associated with obtaining supplier corrective action. The Vendor Corrective Action process deployed in TIPQA shall be used to obtain corrective action in support of the following conditions:

- Product Nonconformance
- Audit Findings
- Supplier Performance Improvement Plan (SPIP)
- Process failures
- Notification of escapes

2. Scope

All Programs and all Suppliers

3. References, Definitions and Acronyms

3.1. References

QA-POL-67.00.0000	Corrective Action Policy
SC-PRO-00.05.0001	Approved Supplier List Management

3.2. Definitions

8D: 8D stands for the 8 disciplines of problem solving. They represent 8 steps to take to solve difficult, recurring, or critical problems (often customer failures or major cost drivers). The structured approach provides transparency, drives a team approach, and increases the chance of solving the problem.

Consequence: A result or effect of an action or condition.

Containment: Action to control and mitigate the impact of a problem and protect the organization and/or customer (i.e., stop the problem from getting worse), includes correction, immediate corrective action, immediate communication, and verification that problem does not further degrade.

Contributing Causes: Causes that by themselves would not cause the problem but can increase the risk of the issue to occur.

Controlled Unclassified Information: Information that the U.S. Government creates or possesses or that an entity creates or possesses for or on behalf of the Government, which requires safeguarding or dissemination controls pursuant to applicable laws, regulations and Government-wide policies

Corrective Action (CA): Actions planned and implemented to eliminate or reduce the causes of a nonconforming product, process, or service in order to prevent recurrence.

Corrective Action: - Actions planned and implemented to eliminate or reduce the causes of a nonconforming product, process, or service in order to prevent recurrence.

Corrective Action Owner: The person formally designated to be accountable for the CA process.

Corrective Action Plan (CAP): Planned actions to eliminate the cause of a nonconformity and to prevent recurrence. Action implemented to address the root cause(s) and contributing cause(s) of the undesirable condition, situation, nonconformity, or failure; action taken to prevent recurrence.

Customer Escape: Product that is delivered to a customer by Qarbon Aerospace that does not meet the customer purchase order requirements.

Direct Cause: Specific action causing the nonconformity (e.g., Cutter Broke)

Discrepancy: A departure from the requirements specified in the process, contract, specification, drawing or other approved product/QMS description.

Effectiveness: Extent to which planned activities are realized and planned results achieved. The actions implemented to mitigate the root cause are successful in preventing further nonconformities in all areas where the process is performed.

Failure Cause: The underlying event(s) responsible for the failure.

First Occurrence: The first time that a specific nonconformance occurs on a specific part number.

Follow Up / Verification: Confirmation, through the provision of objective evidence that specified requirements have been fulfilled (effective, sustainable).

Human Factor: Characteristic of a person having an impact on an object under consideration (can be physical, cognitive, or social).

Immediate Action (IA): Actions taken to eliminate the cause(s) of a detected nonconformity or other undesirable condition and prevents its reoccurrence. See Table 1

Immediate Correction (IC): Action taken to eliminate, prevent, or reduce the probability of any additional nonconformances related to the apparent cause from happening again in the short term (contain, correct, and communicate the problem). See Table 1

Isolated Incident: The determination that a nonconformity is an Isolated incident is made when the selected sample does not exhibit the finding in more than one of the items selected. This does not indicate that there could not be more than one nonconforming incident in the process. It simply indicates that the selected sample size only yielded a single sample with the identified nonconformity.

Level 1 CAR (C1): Internal / External issued finding equivalent to "Minor" finding of third-party auditors. See Table 1

Level 2 CAR (C2): Internal / External issued finding equivalent to "Minor" finding of third-party auditors. See Table 1

Level 3 CAR (C3): Internal / External issued finding equivalent to "Minor" finding of third-party auditors. See Table 1

Major Product Nonconformity: Any nonconformance that could:

a. Adversely impact safety as related to products, persons, or property.

b. Impact the usability of a product, performance of a service or the integrity of the quality system.

c. Significantly increase product cost.

d. Result from failure to implement a corrective action from a previous nonconformance.

e. Potentially affect the ability to meet the customer's requirements.

Minor Product Nonconformity: Any non-systemic, isolated nonconformance that does NOT:

a. Adversely impact the usability of product, performance of a service or the integrity of the quality system.

b. Impact any product or process output.

NOTE: A number of minor nonconformities against one requirement can represent a total breakdown of the system and may be considered as a Major Nonconformity.

Nonconformity (NC): Nonfulfillment of a requirement and/or deficiencies determined to violate requirements (i.e., contractual, engineering, procedural, regulatory, etc.)

Nonconformity Notification (NN): No formal corrective action response is requested from customer; however, site is required to perform and maintain internal corrective action and make available for review upon Customer request. See Table 1

Objective Evidence (OE): Qualitative and quantitative information, records or statement of facts pertaining to the quality of an item or services or to the existence and implementation of a quality system element which is based on the observation measurement, or test and which can be verified. The evidence must not be circumstantial but must be obtained through observation, measurement, test, or other mean.

Observation (OB): Internal / External recommendation for improvement; not a formal finding. See Table 3

Preventative Actions: Those actions taken by Process Owners, Process Teams, and Product Teams to identify and correct potential problems before the problem occurs.

Read Across: A correlation analysis of the identified nonconformance to determine its presence/and or effect in other processes.

Record: Document stating result achieved or providing evidence of activities performed.

Recurrence: A recurrence is a repeat nonconformance that meets all of the following conditions:

Recurrence: A recurrence is a repeat nonconformance that meets all of the following conditions:

a. A nonconformance that is the same as a nonconformance already documented having a “closed” CA displaying successfully verified corrective action.

b. Must be attributable to the same root cause as that of the related nonconformance whose “close” CA documents the successfully verified corrective action.

c. Must occur within the 12-month period following the successful verification of the CA documented on the “closed” corrective action of the related nonconformance, as determined from the date of the successful verification.

Repetitive Nonconformance: The same discrepancy is present on the same failed part number three (3) or more times within a limited time frame, typically twelve (12) months or two consecutive work orders.

Risk: Effect of uncertainty. Within the aviation, space, and defense industry, risk is generally expressed in terms of the likelihood of occurrence and the severity of the consequences.

Root Cause (RC): A factor that caused a nonconformance and should be permanently eliminated through process improvement. The core issue—the highest-level cause—that sets in motion the entire cause-and-effect reaction that ultimately leads to the problem(s).

Root Cause Analysis (RCA): A collective term that describes a wide range of approaches, tools, and techniques used to uncover causes of problems.

Root Cause Corrective Action (RCCA): The process by which a nonconformance or related issue is investigated and corrected. May consist of various elements, per customer and industry requirements. Examples include Root Cause analysis, corrective action plan development, corrective action plan implementation, verification of implementation and identification of Measure of Effectiveness. See Table 1

Special Cause/Assignable Cause: New, unanticipated, emergent, or previously neglected phenomena within the system. Variation inherently unpredictable, outside the historical experience base; and evidence of some inherent change in the system or our knowledge of it (special-cause variation always arrives as a surprise. It is the signal within a system). Something that normally does not occur has happened. It can be best understood as human factors or force majeure (unforeseeable circumstances). Given their determination special causes are assignable for mitigation and or correction. (i.e., a large washer falls from the ceiling onto the product, cutter break, etc.).

3.3. Acronyms

8D	8 Disciplines
ERP	IT Tool
CA	Corrective Action
CAP	Corrective Action Plan
CUI	Controlled Unclassified Information

EAR	Export Administration Regulations
FCI	Federal Contract Information
IC	Immediate Correction
IP	Intellectual Property
ITAR	International Traffic in Arms Regulations
N/A	Not Applicable
NC	Non-Conformance
NOE	Notice of Escape
PFMEA	Process Failure Mode Evaluation and Analysis
RCA	Root Cause Analysis
RCCA	Root Cause Corrective Action
SQE	Supplier Quality Engineer
VC	Vendor Corrective Action

4. Controlled Unclassified Information (CUI)

4.1. CUI Statement:

All personnel are required to safeguard Controlled Unclassified Information (CUI), Federal Contract Information (FCI), Intellectual Property (IP),and any data subject to International Traffic in Arms Regulations (ITAR) and Export Administration Regulations (EAR) in accordance with NIST 800-171. Access to this information is limited to authorized individuals on a need-to-know basis, and data must be protected through approved encryption methods both in transit and at rest. Any unauthorized access, dissemination, or breach must be reported immediately, and the handling, marking, storage, and destruction of sensitive data must follow company policy and regulatory requirements.

Failure to comply with these security requirements will result in disciplinary actions and may incur legal consequences as mandated by applicable federal laws and company policies.

4.2. CUI Specific Requirements

4.2.1. Root Cause Analysis and Corrective Action

4.2.1.1. Corrective actions must address risks across the system. CAs should also be assessed for their effectiveness in mitigating potential system wide vulnerabilities. This should include formal post-implementation assessments (e.g, follow-up reviews, verification processes, etc.).

4.2.2. Monitoring and Effectiveness Verification

4.2.2.1. Monitoring effectiveness must ensure continuous and structed follow-up with clear, documented evidence of effectiveness after CAs are implemented. This may include automated tracking systems to measure ongoing compliance and prevent recurrence.

4.2.3. Timeliness and Escalation

4.2.3.1. CAs must be completed in a timely manner (typically 10 business days). Reference Table 6 for escalation timeline. Repeat and failed corrective actions must be elevated to the QMR and raised on a “Major” finding which would require completion of an 8D process.

4.2.4. Preventive Actions

4.2.4.1. All CAs require preventive actions documented within the RCCA. This may include proactive risk assessments, root cause analysis and systemic improvements that anticipate future vulnerabilities rather than just responding to existing nonconformities.

4.2.5. Documentation and Record Keeping

4.2.5.1. All CAs must be recorded in the ERP system and be in compliant with NIST 800-171. Records should be easily accessible for audits.

5. General Information

5.1. Responsibilities

Qarbon Aerospace site Supplier Quality shall initiate requests for supplier corrective actions in accordance with this procedure.

5.2. Toolbox Methods

5.2.1. Various Toolbox methods are available for performing root cause analysis are but not limited to:

- 8-Ds
- Affinity Diagram (Fishbone Chart)
- Brainstorming
- Cause / Effect Diagram
- Correlation Studies – Analysis of Variance (ANOVA)
- Histograms
- Multiple Why's
- PFMEA
- Process Mapping
- SIPOCs

5.3. Appropriate Actions:

- Procedural Revision
- Revise Process(s)
- Revise Requirements
- Revise Build Package
- Administer Training
- Administer Discipline

5.4. Monitoring Effectiveness

5.4.1. Possible tools for monitoring effectiveness are but not limited to:

- Collective Analysis Review
- Special Checks
- Data Query

5.4.2. Venues to monitor effectiveness are but not limited to:

- Corrective Action Board Reviews
- Quality Management System Reviews
- Program Reviews
- Management Reviews

- Automated Tracking system

6. Procedure

6.1. Create appropriate Corrective Action request within ERP.

6.1.1. Corrective Action Requests include but not limited to:

6.1.1.1. Product Nonconformance is typically associated with an internal nonconformance detected during receiving or in-process inspection. This could also be driven from a customer notification of defective product.

6.1.1.2. Survey – Product Impact, is associated with an on-site Qarbon Aerospace audit resulting in system findings where product impact has been determined.

6.1.1.3. Survey – Non-Product Impact, is associated with an on-site Qarbon Aerospace audit resulting in system findings with no initial effect on product.

6.1.1.4. Supplier Performance is associated with negative trends reflected in the supplier's quality scorecard.

6.1.1.5. Process – Product Impact, is associated with a process failure where product impact has been determined.

6.1.1.6. Process – Non-Product Impact, is associated with a process failure with no initial effect on product.

6.1.1.7. Reference Table 1 for CA Category Codes.

Table 1 – CA Category Codes

CATEGORY CODE	DESCRIPTION	FINDING TYPE	CA REQUIREMENTS
C1	Level 1 CAR	Minor	Based on specific nonconformance
C2	Level 2 CAR	Minor	Based on specific nonconformance
C3	Level 3 CAR	Major	8D

IA	Immediate Action	Minor	Based on specific nonconformance
IC	Immediate Correction	Minor	Based on specific nonconformance
MA	Major Finding	Major	8D
MI	Minor Finding	Minor	Based on specific nonconformance
NN	Nonconformity Notification	Minor	Based on specific nonconformance
OB	Observation	CA recommended but not required	Based on specific recommendation
RCCA	Root Cause Corrective Action	Designated by Customer	Designated by Customer
SER	Supplier Evaluation Report	Designated by Customer	Designated by Customer

6.1.1.8. CA Status Codes (Table 2).

Table 2 – CA Status Codes

STATUS	DESCRIPTION
NEW	"NEW" – Must be assigned to an investigator and a correction action started based on category code – see Table 3
WCA	"Waiting Correction Action" – perform root cause analysis and document CA actions. Ensure Human Factors are documented at this stage.
WA	"Waiting Approval" – approval of CA is documented by appropriate authority.
WFL	"Waiting Follow Up" – document follow up/ verification actions
WCL	"Waiting Closure" – After acceptable follow up / verification of CA, close the CA. If follow up / verification of CA fails, the investigator creates a new CA and references the failed CA number in the new CA text. The new CA is placed in

	NEW status and will be categorized as a "Major" CA request. The failed CA is coded as "failed "and closed.
CLS	"Closed"

6.1.1.9. Minimum CA Requirements by Category Code (Table 3)

Table 3 – Minimum CA Requirements by Category Code

Finding Type	Containment with OE	Root Cause Analysis w/OE	Corrective Action Plan w/OE	Approval	Follow Up / Verification w/ OE	Closure
Level 1 CAR	Required	Optional	Optional	Required	Optional	Required
Level 2 CAR	Required	Required	Required	Required	Required	Required
Level 3 CAR	Required	Required	Required	Required	Required	Required
Immediate Action	Required	Optional	Optional	Required	Optional	Required
Immediate Correction	Required	Optional	Optional	Required	Optional	Required
Major Finding	Required	Required	Required	Required	Required	Required
Minor Finding	Required	Required	Required	Required	Required	Required
Nonconformity Notification	Required	Optional	Optional	Required	Optional	Required
Root Cause Corrective Action	Required	Required	Required	Required	Required	Required
NOTE: Customer, 3rd Party, or other external requirements will override these requirements, if applicable.						

6.1.2. Once the corrective action request has been initiated, suppliers are to follow the timelines mentioned below in Table 4:

Table 4 – CA Response Timelines

Stage	Timeline (Business Days)
Immediate Correction(IC)	Day 5
Root Cause	Day 15
Root Cause Corrective Action Plan	Day 20
Verification of Corrective Action Plan	Day 25
Follow up	Depending upon completion of verification plan

6.1.3. In the event additional time is needed an extension request can be submitted to the supplier quality representative.

6.1.4. The Vendor Corrective Action (VC) process has been designed to allow for attachments as part of supporting documentation and objective evidence of corrective actions. As such the completed VC should provide for a stand-alone record of all activity pertinent to the respective corrective action request.

Supplier non-responsiveness will result in placement of the supplier in a probation status in accordance with SC-PRO-00.05.0001.

6.2. Guidelines:

6.2.1. Immediate Correction

- All nonconforming product has been located, contained and submitted for material review (details provided) and/or system element changes.
- The Direct Cause has been determined and a direct cause corrective plan has been developed and communicated to affected parties that includes a plan to verify effectiveness (what, when, who, where and how) (details provided).
- **Containment** must include the supplier action(s) taken to determine the magnitude of a detected nonconformity, minimize the impact and prevent growth.
- **Containment** actions should include, but are not limited to line or stock checks, requests for reinspection, quality hold, read across, etc. In addition, reference should be made to any sub-tier suppliers or customers with nonconforming units.

- The respnse includes the “Effectivity” (Date or Line Number) of the next shipment when the same part or product will be shipped to Qarbon without the noted defect.
- As part of the Immediate Correction Plan, it must include the supplier action(s) taken to determine the magnitude of a detected nonconformity, minimize the impact and prevent growth. **Containment actions should include, but are not limited to line or stock checks, requests for reinspection, quality hold, read across, etc. In addition, reference should be made to any sub-tier suppliers or customers with nonconforming units.**
- If your investigation has determined that the nonconformity is an isolated incident, then only immediate correction and where applicable identification of Direct Cause and Direct Cause Corrective Action is required. Objective evidence of the investigation must support the decision and must be provided with your response. Root Cause Corrective Action (RCCA) verification and RCCA foillow-up are not applicable (N/A).

6.2.2. Immediate Corrective Action Response Review Instructions

- If the supplier has not provided the information necessary to complete the evaluation of this element, the response must be rejected. In order to determine the root cause, you must start with a well thought out direct cause and have a temporary fix in place to prevent the release of additional defects (containment) prior to moving onto root cause analysis.

6.2.2.1. RCCA Plan Response Review Instructions

- Review the root cause corrective action plan using that portion of the check list. The response must address the stated root cause. Carefully review both the stated root cause and the action plan to be sure that they address each other completely. Ensure that the root cause corrective action plan does not repeat the direct cause corrective action plan. The root cause must be a brief statement, but the action plan could be very involved. If the root cause corrective action plan does not address the stated root cause the response must be rejected.

6.2.3. Root Cause Statement

- The Root Cause has been determined and communicated (details provided).

- Statement is an expression of fact that neither attempts to explain the situation away or rationalize the condition.
- The Root Cause statement addresses a single fundamental issue without any obvious "why" questions.
- The Root Cause statement refrains from simply repeating the finding.

6.2.3.1. Root Cause Statement Review Instructions

- The Root Cause Statement should be a factual, concise statement. The root cause statement should not try to explain why the problem happened but should simply state the cause. The root cause statement must focus on a single issue. If more than one cause is identified, for instance training and inadequate work instructions, then two Corrective Action plans must be submitted. There should be no obvious "why" questions remaining. If a "why" question can reasonably be asked about the root cause statement, this indicates that the analysis did not go far enough. The root cause statement is derived from using the direct cause as the starting point for the analysis process.
- If the root cause statement repeats the verbiage or intent of the finding, this is not acceptable. Operator error is not an acceptable root cause statement. Operator error statements implicate people instead of processes. For example: "Engineering entered the incorrect color code…." Purchasing did not enter the correct information on the PO…" It is important to ask, "Why did engineering or purchasing (personnel) make the error?" Usually, the answer can be found in lack of or ineffective processes, procedures, work instructions, and/or training.

6.2.3.2. Root Cause Corrective Action (CA) Plan

The Root Cause CA plan has been developed and communicated (details provided).

- Root Cause CA plan addresses the root cause statement.
  Note: If the performed "read across" has determined there is risk on other product and/or processes, then your Root Cause CA plan shall encompass appropriate action to mitigate those identified risk(s).

- The Root Cause response includes the ship/line number or date (Effectivity) as appropriate, when the root cause corrective action will be complete.
- The Root Cause CA plan establshes an implementation plan, assigns responsibility and includes completion dates.
- The Root Cause CA plan provides reference by number to any revised policies, procedures or work instruction and affected supporting documents

6.2.3.3. RCCA Plan Response Review Instructions

- Review the root cause corrective action plan using that portion of the check list. The response must address the stated root cause. Carefully review both the stated root cause and the action plan to be sure that they address each other completely. Ensure that the root cause corrective action plan does not repeat the direct cause corrective action plan. The root cause must be a brief statement, but the action plan could be very involved. If the root cause corrective action plan does not address the stated root cause the response must be rejected

6.2.4. Verification of Corrective Action Plan

- The supplier has determined and identified a plan to verify that the RCCA has been implemented as planned (details provided) (procedures updated, training completed, notices sent to sub-tier suppliers, etc.)

6.2.4.1. RCCA Verification Plan Response Review Instructions

- This activity must verify the implementation of the root cause corrective action plan. The action should ensure that the root cause corrective action activity will be or has been carried out. For example, the specific document numbers and the revision date or revision number is recorded in the response.

6.2.5. Follow-Up audit

6.2.5.1. The supplier has determined and communicated a plan for follow-up to verify that the Root Cause CA plan remains effective at precluding reoccurrence of the nonconformance (details provided).

6.2.5.2. RCCA Follow-Plan Response Review Instructions

- The follow up activity must be distinctly separate from the verification step. The reviewer needs to be sure that the supplier does not intermingle the verification and follow up activities. Follow up activities would include a specific audit of the item corrected after a period of time to be sure that the process has not reverted to its previous state and that the changes still have the intended effect.

6.2.6. Program Specific Requirements

6.2.6.1. Boeing Product Corrective Action Responses Tool

- See Appendix A (All responses must be formatted as specified and contain all the required elements defined in the guidelines)

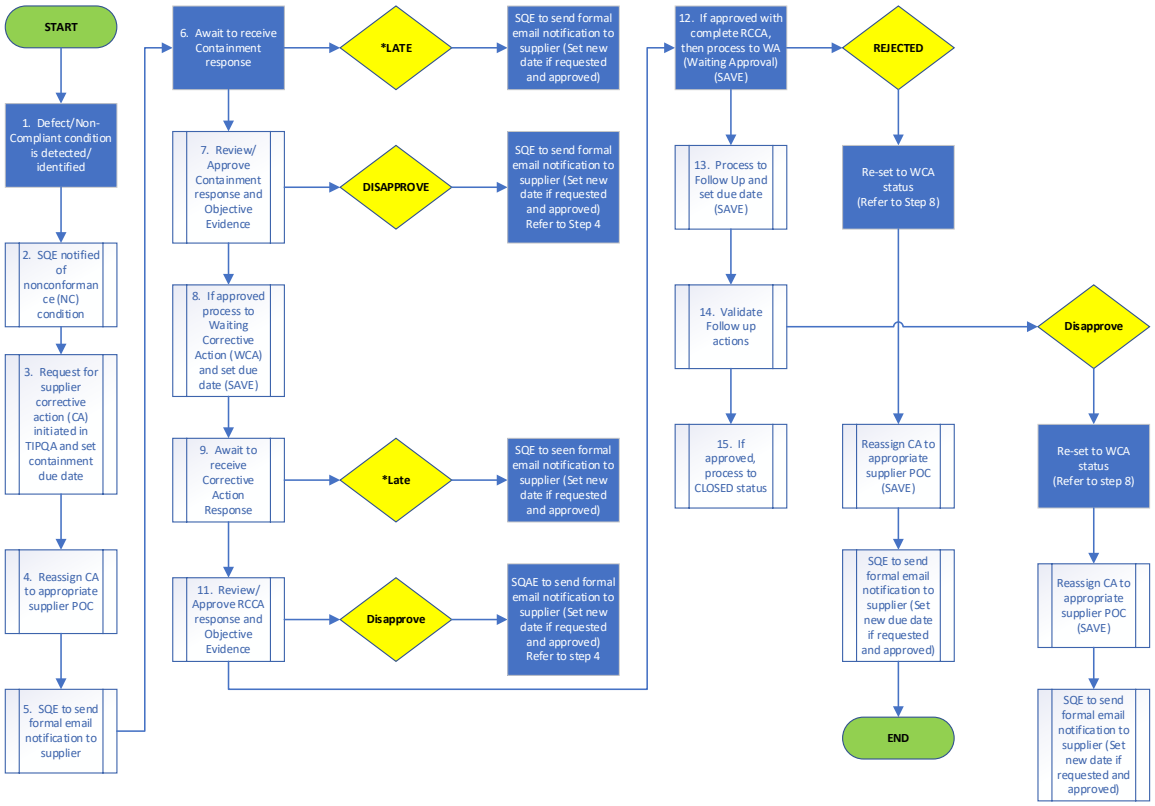
7. Appendices

7.1. Appendix A – Boeing Supplier Corrective Action Response Tool

7.2. Flow Chart – Corrective Action Process

7.3. Appendix B – Control Mapping

Internal Control Ref	Policy Section	Description
CA 3.12.1 (L2)	4.3	Root Cause Analysis and Post-Implementation Assessments: Describes periodic assessments to identify and address root causes of nonconformities related to CUI.
CA 3.12.2 (L2)	4.3.2	Corrective Action Plan (CAP): Outlines the development of corrective action plans to address root causes and prevent recurrence of CUI nonconformities.
CA 3.12.3 (L2)	4.3.4	Monitoring Effectiveness: Details the process for verifying the effectiveness of corrective actions to ensure CUI nonconformities do not recur.
CA 3.12.4 (L2)	4.4	Security Plan Updates: Specifies that corrective actions for CUI nonconformities must be incorporated into security plans and controls.



7.4. Forms

None

8. Records

None

9. Training Materials

None

10. Revision History

Rev.	Date	Summary of change	Authorized by
Original	09/23/2022	Initial Issue	Manager – Supplier Quality
A	05/07/2024	1. Added definitions and acronyms. 2. Added Table 1 – CA Category Codes. 3. Added Table 2 – CA Status Codes, 4. Added Table 3 – Minimum CA Requirements by Category Code, 5. Added Table 4 – CA Response Timelines. 6. Added paragraph 5.2 (Toolbox Methods), Added paragraph 5.3 (Appropriate Actions 7. Added paragraph 5.4 (Monitoring Effectiveness). Added paragraph 6.2.5 – Program Specific Requirements. 8. Added Appendix A for Boeing only.	Manager – Supplier Quality
B	06/11/2024	1. Changed functional to Quality Assurance in document number. Corrected minor formatting issues.	Manager – Supplier Quality
C	06/19/2024	1. Added Corrective Action Process Flow Chart	Manager – Supplier Quality
D	07/11/2024	1. Removed all references to ESCAR. 2. Added references to Vendor Corrective Actions (VC),	Manager – Supplier Quality
E	10/02/2024	Add additional requirements to paragraph 6.2.1 and 6.2.3.2	Manager – Supplier Quality
F	04/30/2025	Incorporated CUI statement and acronyms. Incorporated CUI only requirements for CAs	Manager, Supplier Quality

Appendix A

Boeing Supplier Corrective Action Response Tool

Supplier Corrective Action Response Tool

Tool Instructions

There are two sections within this file to assist suppliers in formulating acceptable CA responses.

CA Response Guidelines - Provides a copy of the CA Response Requirements as mandated by the Supplier Quality Information System and Boeing internal procedures. This tool also provides examples and additional guidance

Entry Tool - Provides a mechanism to formulate a response in a format matching the SQIS CA response screen and guidance on what elements are required and expected in each field.

The purpose of this tool is to formulate the response and then copy and paste into the Supplier Quality Information System.

Note: The amount of tasks necessary in each section will be dependent on what is warranted

SQIS CA Response Requirements - Fields and Definitions	SQIS CA Response Guidance	
Restatement of the Nonconformity: A verbatim restatement from the Nonconformity Description section as documented in the CA.	(Not required when the supplier responds via the portal response screen). Note: If you are not an SQIS user, request assistance from the CA initiator	
Immediate Correction (IC): **IC Plan** - Actions (tasks) taken by the supplier in the short term to achieve Correction and Containment. Each task must identify the following: who, what, when, how, and provide verifiable objective evidence for actions taken. (Note: IC Plan should indicate how all affected and impacted parties have been notified.) **Correction** - As part of the Immediate Correction Plan, it must include information that ensures that the detected nonconformity has been corrected. Reference must be made to the unit, lot number, batch number or date when action(s) are or will be completed and correction will occur. **Containment** – As part of the Immediate Correction Plan, it must include the supplier action(s) taken to determine the magnitude of a detected nonconformity, minimize the impact and prevent growth. Containment actions must include, but are not limited to: line or stock checks, requests for re-inspection, quality hold, etc. In addition, reference must be made to any sub-tier suppliers or customers with nonconforming units. **Communication –** Addressing how all stakeholders have been notified of suspect condition and or products both internally and externally to ensure "like" items and "like" conditions do not impact other Programs Operational areas or previously delivered product. Communicate the nature of the problems to all stakeholders internal and external as required. **IC Plan Implementation Date** - The date when all action(s) in the Immediate Correction Plan are or will be implemented.	**IC Plan Includes:** Task for Correction: - Actions(s) taken to ensure the detected nonconformity has been corrected. - Reference to the unit, lot number, batch number or date when action(s) are or will be completed and correction will occur. Task for Containment: - Action(s) taken to determine the magnitude of the detected nonconformity to minimize the impact and prevent growth. - Information regarding line or stock checks, requests for re-inspection, testing, quality hold, etc. - References made to any sub-tier suppliers or customers with nonconforming units Information regarding notification of the nonconformity to all affected stakeholders. Date when all action(s) in the IC Plan are or will be implemented (IC Plan Implementation Date) **Containment Guidance:** - How many parts, material or property are in stock? (Qty good/bad?) - What will prevent bad parts or property from coming to Boeing? - If additional nonconforming parts (same or similar) were delivered to Boeing, you MUST document the scope of the issue and notify Boeing per contractual requirements. - List investigation activities. (Ie. What did you do when you received this notice?) - What stakeholders were notified of the nonconformance? (e.g., Quality, Inspections, Mfg., Planning, sub-tier Supplier, etc.) For System CA responses, at a minimum the correction and containment should address the Objective Evidence as referenced in the CA Request NOTE: When requesting an extension to a Product or System C/A (IA or RCCA level), you must complete the "Immediate Correction" task plan section that addresses all elements of the IC requirements.	

Immediate Action (IA): **Direct Cause** - Event(s), action(s) or condition(s) that directly resulted in a detected nonconformity or other undesirable situation that, if eliminated or mitigated, would have prevented occurrence. (Note: The Direct Cause must not be a restatement of the nonconformance.) **Immediate Action Plan** – Actions (tasks) taken by the supplier to eliminate and/or mitigate the direct cause. Each task must identify the following: who, what, when, how and provide verifiable objective evidence for actions taken. **IA Plan Implementation Date** - The date when all action(s) in the Immediate Action Plan are or will be implemented. **Verification of Implementation Date** - The date the Immediate Action Plan has been or will be verified by the supplier as implemented.	**Direct Cause Statement** includes the identification of the Direct Cause of the Nonconformity **Immediate Action Plan includes:** - Identification of the Direct Cause of the nonconformity - Actions (tasks) taken to eliminate and/or mitigate the Direct Cause - Date when all action(s) in the Immediate Action Plan are or will be implemented (IA Plan Implementation Date). - Date the Immediate Action Plan has been or will be verified as implemented (Verification of Implementation Date). **IA Action Plan Guidance:** - Each task must address the identified Direct Cause	
Root Cause Corrective Action (RCCA) Plan: (as defined below)		
Root Cause Analysis (RCA) Team Members - List of Team Members and their respective function that collaborated in the RCA.	Identify each stakeholder who participated in the Root Cause Analysis (RCA) process Team members should span different functions (e.g., Quality, Manufacturing, Planning, Contracts, etc.)	
Root Cause Analysis (RCA) Methodology - This section must identify the Root Cause Analysis (RCA) methodology or tools used to perform RCA. Examples include but are not limited to 5 Why Chart, Fishbone Chart, Process Mapping, Advanced Cause and Effect Analysis.	Identify the Root Cause Analysis (RCA) methodology or tools used to perform RCA Evidence of the tool must be available upon request	
Root Cause Statement: The root cause statement must be a statement of fact (or facts if multiple root causes) and must address basic systemic issue(s) without any obvious embedded "why" questions.	The Root Cause must be a statement of fact and must address a basic systemic issue(s) without any obvious "why" questions embedded in it. The root cause(s) will focus on a single issue. The Root Cause Statement must not be a restatement of the Direct Cause Statement **Root Cause Guidance:** - What failed in the manufacturing process, Quality Management System, training, requirements, or design, not necessarily the inspection process. - What failed in the inspection process? (i.e., AS9102 First Article Inspection)	

	NOTE: Missing, incomplete, or improper systems are found to be a MAJOR cause about 85% of the time (not operator error)	

RCCA Plan - A detailed plan that addresses the root cause(s) of a detected nonconformity, including actions for implementation. The plan must reference any changes to policies, procedures, or work instructions, as well as affected supporting documents. Root cause correction involves long-term prevention and process improvement rather than an immediate fix. Each task must identify objective evidence that supports task completion and must identify the following: who, what, when, and how. Define in the RCCA Plan criteria that will be used to verify the corrective action tasks have been implemented. Include reference to objective evidence to support. **RCCA Plan Implementation Date** - The date when all action(s) in the RCCA plan are or will be implemented. **Verification of Implementation Date** - The date the RCCA plan has been or will be verified by the supplier as implemented.	**RCCA Plan includes:** - Detailed tasks that address the root cause(s) of the detected nonconformity, including actions for implementation. - Reference to any changes to policies, procedures, or work instructions, as well as affected supporting documents. - Objective evidence that supports each task completion - Criteria that will be used to verify tasks have been implemented - Date when all action(s) in the RCCA plan are or will be implemented (RCCA Plan Implementation Date). - Date the RCCA plan has been or will be verified by the supplier as implemented (Verification of Implementation Date). **RCCA Plan Guidance:** - Each task MUST relate back to and assist in the correction of the root cause statement(s) - Tasks must not repeat or address items in the Immediate Action Plan. - Added inspection is not an acceptable RCCA plan unless it addresses the root cause, such as performing a full or partial First Article Inspection (FAI) to ensure the RCCA has re-established conformance with engineering requirements. - Provide reference to objective evidence to support the criteria that will be used to verify implementation - Verification of Implementation indicates the plan includes criteria/steps denoting previous steps have been implemented. **For example:** When there is a task to modify planning, there must be a subsequent task to verify the planning was modified correctly. A full or partial FAI should be conducted to ensure the process changes implemented do not negatively affect product fit, form and function, verifying conformity to engineering requirements as part of the RCCA plan. Root Cause Correction MUST be focused on long-term corrective action, not a "quick fix"	

Verification of Effectiveness Plan: Identify Measures of Effectiveness (MoE) to confirm whether implemented actions produced the intended results. Each MoE must identify the following: who, what, when, how and objective evidence. (Measures of Effectiveness (MoE): The criteria and method(s) used to conduct verification of effectiveness.)	**Verification of Effectiveness Plan includes:** - Identification of the Measures of Effectiveness (MoE) used to confirm whether implemented actions produced the intended results. - Note: There must be a minimum of one MoE but does not need to match the number of RCCA plan tasks. Examples: - "Zero nonconformities out of XX sample size..." - "95% compliance to goal..." - "100% product conformance to engineering requirements." The Effectiveness Plan should include, if applicable, performing a full or partial FAI to verify effectiveness of the RCCA plan when the nonconformance affected product quality. **Verification of Effectiveness Plan Guidance:** - This plan must verify (using the measures identified) your RCCA Plan continues to be effective in the long term (think 6 months - 1 year out) - If appropriate, consider adding a query to your annual audit questionnaire	
Verification of Effectiveness Date: The date the corrective action plan will be verified by the supplier as complete and effective.	The date the corrective action plan will be verified by the supplier as complete and effective.	
Compliance Categories: **QMS Standard** (Product C/A Only) - The QMS Standard under which the nonconforming product was manufactured **QMS Element and Sub-Elements** (Product C/A Only) - The appropriate Quality System Clause (Element and Sub-Element) which allowed the failure at the root cause **Core Manufacturing Primary and Sub-Processes** (Product C/A Only) - The Core Manufacturing Process and Sub- Processes that caused the nonconformity **Cause Code** - Identify the Cause Code that relates to the cause of the nonconformity **Corrective Action Category** - Identify the Corrective Action Category related to the elimination of the nonconformity	- Identify the QMS Standard under which the nonconforming product was produced (Product C/A Only) - Identify the QMS clauses which allowed the failure to occur (Product C/A Only) - Identify the Core Manufacturing Processes that caused the nonconformity to occur (Product C/A Only) - Identify the Cause Code that relates to the root cause of the nonconformity - Identify the Corrective Action Category related to the elimination of the root cause of the nonconformity	
General Guidance	**Guidance for tasks or action plans (Including IC Plan, IA Plan, RCCA Plan, MOE):** - Simplify each task/MoE by keeping the content simple and clear so a 3rd party can understand. Example: - Who (e.g)..."Quality Manager..." - What (e.g)..."will ensure..." - When (e.g)..."by Oct. 31, 2015..." - How (e.g).... "By procedure ref." " is revised..." - Objective Evidence (e.g) ..... "revised procedural documentation."	

CA Number:	
Supplier Name:	
BEST Code:	

Immediate Correction (IC)

Immediate Correction Plan			
Task	**Task Description**		
	WHAT? HOW?	**verifiable objective evidence**	**WHO? WHEN?**
1			
2			
3			
4			
5			
6			

IC Plan Implementation Date/Unit	
Date:	

Immediate Action (IA)

Direct Cause Statement

CA Number:	
Supplier Name:	
BEST Code:	

Immediate Action Plan			
Task	Task Description		
	WHAT? HOW?	verifiable objective evidence	WHO? WHEN?
1			
2			
3			
4			
5			

IA Implementation Date / Unit	
Date:	

Verification of IA Implementation Date	
Date:	

Root Cause Corrective Action (RCCA) – Root Cause Analysis

RCCA Team Members		
Name		Function

RCCA Methodology (Select all that apply)							
			Brainstorming				Fault Tree Analysis
			Timeline				Process Analysis
			5-Why				Other

			Cause Effect Analysis (Fishbone)			

CA Number:	
Supplier Name:	
BEST Code:	

Root Cause Statement *

RCCA Plan

Task	Task Description		
	WHAT? HOW?	WHO? WHEN?	Objective Evidence
1			
2			
3			
4			
5			
6			

RCCA Plan Implementation Date/Unit	
Date:	

Verification of RCCA Implementation Date	
Date:	

Verification of Effectiveness

Task	Verification of Effectiveness Plan / Measure of Effectiveness		
	WHAT? HOW?	WHO? WHEN?	Objective Evidence
1			
2			
3			

Verification of Effectiveness Date

Date:	

CA Number:	
Supplier Name:	
BEST Code:	

Compliance Categories

Was the product with the nonconformity produced by your facility or by your sub-tier supplier? (Prime/Sub-tier)

*****

Did the root cause of the nonconformity originate at your sub-tier supplier? (Yes/No)

*****

Product C/A Response Only

Identify the QMS Standard under which the nonconforming product was manufactured.
Note: If no QMS standard applies, please select NA - Seller's Requirements

*****

Identify the appropriate Quality System Clause (Element & Sub-Element) which allwed the failure at the root cause. (Reference the QMS Elements appropriate for the Standard chosen, above)

QMS Element		QMS Sub-Element

Identify the Core Manufacturing Process & Sub-Process that caused the nonconformity (See appendix for allowable selections)

Core Mfg Primary Process		Core Mfg Sub-Process

Identify the Cause Code that relates to the cause of the nonconformity. (Select One)

*****

Identify the Corrective Action Category related to the elimination of the nonconformity. (Select One)

*****

Manufacturing Process Sub-Process Codes

Core Manufacturing Process	Core Manufacturing Sub-Process	Core Manufacturing Process	Core Manufacturing Sub-Process
Avionics/Electrical	Battery Cell Fabrication	Manufacturing/Assembly	Honing/Lapping
Avionics/Electrical	Battery Cell Stacking	Manufacturing/Assembly	Machining Titanium
Avionics/Electrical	Cleaning of Circuit Assemblies	Manufacturing/Assembly	Metal Bonding
Avionics/Electrical	Component Prep/Mounting	Manufacturing/Assembly	Metal Drilling/Hole Preparation
Avionics/Electrical	Conformal Coating	Manufacturing/Assembly	Metal Grinding
Avionics/Electrical	Connector Assembly	Manufacturing/Assembly	Metallic Raw Materials
Avionics/Electrical	Connector Mounting	Manufacturing/Assembly	O-Ring Installation
Avionics/Electrical	Electrical Cable Manufacturing	Manufacturing/Assembly	Part Marking
Avionics/Electrical	Electrostatic Discharge (ESD) Control	Manufacturing/Assembly	Plug and Check Valve Installation
Avionics/Electrical	Hybrid Manufacturing	Manufacturing/Assembly	Rosan Adapters Installation
Avionics/Electrical	Lighting & Displays	Manufacturing/Assembly	Safetying Practices (Lockwire, Cotter Pins, etc.)
Avionics/Electrical	Protective Coverings	Manufacturing/Assembly	Shot Peening
Avionics/Electrical	PWB Fabrication	Manufacturing/Assembly	Surface Cleaning
Avionics/Electrical	Solder Rework	Manufacturing/Assembly	Surface Treatment Bonding
Avionics/Electrical	Soldering	Manufacturing/Assembly	Swage Joining
Avionics/Electrical	Swaged Cable Fabrication	Manufacturing/Assembly	Threaded Inserts (Helical Coil) Installation
Avionics/Electrical	Wire Extrusion	Manufacturing/Assembly	Torque Applications
Avionics/Electrical	Wire Harness Installation	Manufacturing/Assembly	Trimming/Routing
Avionics/Electrical	Wire Preparation & Termination	Non-Metallic Processes	Adhesive Bonding
Avionics/Electrical	Wire Routing	Non-Metallic Processes	Adhesives
Avionics/Electrical	Wire Tape Wrap	Non-Metallic Processes	Composite Core
Finishes and Coatings	Anodize and Color	Non-Metallic Processes	Composite Drill/Trim
Finishes and Coatings	Black Oxide Conversion Coating	Non-Metallic Processes	Composite Lay-up
Finishes and Coatings	Cadmium Plating	Non-Metallic Processes	Critical Material Coating

Finishes and Coatings	Chemical Conversion		Non-Metallic Processes	Epoxy Preimprenated Fabric
Finishes and Coatings	Chromic Acid Anodize		Non-Metallic Processes	Glass Epoxy Laminates
Finishes and Coatings	Chromium Plating		Non-Metallic Processes	High Temperature Epoxy Structures
Finishes and Coatings	Dry Film		Non-Metallic Processes	Injection Molding
Finishes and Coatings	Gold/Silver Plating		Non-Metallic Processes	Laminate Fabrication
Finishes and Coatings	Nickel/Tin Plating		Non-Metallic Processes	Paint Application
Finishes and Coatings	Plasma Spray		Non-Metallic Processes	Sandwich Panels
Inspection and Test	Acceptance Testing - Avionics		Non-Metallic Processes	Sealants
Inspection and Test	Acceptance Testing - EHM		Non-Metallic Processes	Sealing Methods
Inspection and Test	Acceptance Testing - Flight Controls		Non-Metallic Processes	Thermal Blanket Manufacturing
Inspection and Test	Acceptance Testing - OATP		Non-Metallic Processes	Thermoforming
Inspection and Test	Acceptance Testing - Propulsion		Non-Metallic Processes	Vulcanization (Tires)
Inspection and Test	Acceptance Testing - Pyrotechnic		Non-Metallic Processes	Windshield Coatings
Inspection and Test	Acceptance Testing - Raw Material		Not Applicable	Not Applicable
Inspection and Test	Advanced Measurement Equipment		Thermal Processes	Carburizing
Inspection and Test	Eddy Current		Thermal Processes	Heat Treat - Aluminum
Inspection and Test	Leak Testing		Thermal Processes	Heat Treat - Copper
Inspection and Test	Magnetic Particle		Thermal Processes	Heat Treat - Corrosion Resistant Steel
Inspection and Test	Mechanical and Metallurgical Testing		Thermal Processes	Heat Treat - Magnesium
Inspection and Test	Penetrant Inspection		Thermal Processes	Heat Treat - Nickel
Inspection and Test	Qualification Testing		Thermal Processes	Heat Treat - Other
Inspection and Test	Radiographic Inspection		Thermal Processes	Heat Treat - Steels
Inspection and Test	Test Report Validation - Adhesive/Sealer		Thermal Processes	Heat Treat - Titanium
Inspection and Test	Test Report Validation - Fasteners		Thermal Processes	Nitriding
Inspection and Test	Test Report Validation - General		Thermal Processes	Surface Hardening
Inspection and Test	Test Report Validation - Paint/Primer		Tooling	Tooling
Inspection and Test	Test Report Validation - Titanium Tubing		Welding and Brazing	Brazing Other
Inspection and Test	Ultrasonic Inspection		Welding and Brazing	Copper Brazing Steel
MBD/DPD	Model Based Definition/Digital Product		Welding and Brazing	Flame Spray

	Definition			
Manufacturing/Assembly	Abrasive Waterjet Cutting		Welding and Brazing	Flash Welding Other
Manufacturing/Assembly	Bonding		Welding and Brazing	Flash Welding Steel
Manufacturing/Assembly	Bushing/Bearing Installation		Welding and Brazing	Fusion Welding Aluminum
Manufacturing/Assembly	Castings		Welding and Brazing	Fusion Welding Other
Manufacturing/Assembly	Chemical Milling		Welding and Brazing	Fusion Welding Steels
Manufacturing/Assembly	CNC Machining		Welding and Brazing	Pressure Gas Welding of Low Alloy Steels
Manufacturing/Assembly	Conventional Machining		Welding and Brazing	Resistance Welding Aluminum
Manufacturing/Assembly	Corrosion & Protection		Welding and Brazing	Resistance Welding Other
Manufacturing/Assembly	Electrical Discharge Machining		Welding and Brazing	Resistance Welding Steel
Manufacturing/Assembly	Fastener Installation		Welding and Brazing	Soot Removal and Plug Welding
Manufacturing/Assembly	Fasteners			
Manufacturing/Assembly	Fluid Tube Install - Routing			
Manufacturing/Assembly	Foreign Object Debris (FOD)			
Manufacturing/Assembly	Forging			
Manufacturing/Assembly	Forming			