



AF 9100:2026

Aerospace Quality Management System

PROCEDURE

Nonconformity, Containment, Escape and Corrective Action

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Use and document-control boundary

This companion implements the supplied AF 9100 requirement basis without changing the original standard. Its process allocation, examples, checklists and record design are authored implementation material. Actual mission or product limits, specialist procedures, permissions and genuine observations must be completed before consequential use. Applicable source minima and independent decision conditions cannot be reduced by this companion.

The printed edition date identifies the companion series; it is not evidence that later preparation, review or operational decisions occurred on that date. New support codes in this set are proposed allocations for controlled registration. Established AF-IG-9100-001, AF-FAQ-9100-001 and AF-TR-9100-001 identities are retained; earlier files, the corporate master list and ASTRA codes are not overwritten.

Equivalent combined or digital records are permitted when all required fields, relationships, authority and history remain intact. A completed PDF field or typed name is not evidence of an authenticated approval. Blank records in this delivery contain no invented applicant, signature, event or result.

Contents and reading route

Publication identity and application	2
Contents and reading route	3
1 Scope, responsibility and source priority	4
2 Trigger, inputs and handover	4
3 Operating sequence	4
4 Decision, interruption and escalation	5
5 Required records and receiving checks	5
6 Worked case and adverse challenge	5
Appendix A — Controlling source and evidence	7
Source tables — complete field and decision payloads	10
Appendix B — Local implementation and release	12

Select actual scope → complete application criteria → use the applicable procedure and technical book → capture authentic evidence → evaluate every applicable condition → obtain the required independent decision. Document availability does not establish implementation or conformity.

1 Scope, responsibility and source priority

Applies to the responsible function and exact evaluated object selected from the source. Use only the duties triggered by actual activity and retained responsibility.

Boundary	Required implementation decision
Object and route	Identify ORG, PRD, SVC, PRC, PER, SUB or CAB separately. Combined records do not merge outcomes.
Activity	Apply source technical modules by performed or retained responsibility, including relevant outsourced work.
Authority	Technical release, employer task permission, independent attestation and statutory authorization remain distinct.
Source priority	AF 9100:2026 and all compatible binding obligations control. This companion does not import ASTRA programme rules or external normative schemes.

2 Trigger, inputs and handover

Trigger: Detected failure, suspect output, escaped defect or ineffective prior corrective action.

Accountable process owner: Quality manager and relevant technical authority. Actual named appointments and deputies are maintained locally.

Input to verify	Required output / receiving function
Exact request, object and source profile	Accepted scope and controlled work package, or a reasoned hold/refusal.
Current people, authority, data and equipment	Authorized assignment and evidence-access boundary.
Original execution, adverse evidence and source history	Attributable result, identified limitations and required action.
Relevant source clocks and actual event times	Genuine due/completion history and timely recipient communication.

3 Operating sequence

3.1 Record requirement and evidence

Identify exact clause or criterion, actual observation, configuration, scope and gap. Classify critical, major, minor or observation based on evidence; decide necessary technical protection separately.

3.2 Contain the real population

Trace related stock, work in progress, shipped items, services, software and shared sources from the last demonstrated valid state. Verify containment effectiveness and notify required recipients.

3.3 Control technical disposition

Record correction, rework, repair, concession, return or scrap with competent design/customer/authority approval when required. Prevent suspect material returning uncontrolled to the supply chain.

3.4 Test occurrence and escape causes

Examine design, workflow, equipment, software, people conditions, suppliers and management incentives. Record competing explanations and evidence; operator error or training alone is not a complete systemic cause.

3.5 Verify corrective effectiveness

Tie each action to a cause, owner, resources and prospective effectiveness criterion with actual sample or exposure. Check unintended effects and repeat the relevant original failing condition.

3.6 Close with truthful chronology

Apply source scheme clocks when an attestation is affected, keeping original notice dates. Independently verify closure where required, reopen recurrence, and correct unsupported historical results rather than backdating new evidence.

4 Decision, interruption and escalation

An open in-scope nonconformity blocks initial attestation, renewal and extension even if an action plan is accepted.

State or event	Action and limit
Evidence valid and criteria met	Record the bounded result and pass it to the authorized receiving function; do not enlarge scope.
Evidence missing, invalid or inconclusive	Keep the dependent conclusion not yet demonstrated / HOLD, preserve the reason and define competent next work.
Valid evidence demonstrates failure	Record nonconformity and protect the affected population; follow actual technical disposition and source status controls.
Trigger genuinely absent	Record the exclusion and its approved responsibility basis. Resource shortages do not justify N/A.
Interrupted or changed work	Preserve prior state and actual configuration; complete impact and revalidation before claiming completion.

5 Required records and receiving checks

Document	Record purpose
AF-FR-9100-006	Nonconformity, Containment and Corrective Action
AF-FR-9100-014	Risk, Hazard, Criticality and Residual Decision
AF-FR-9100-027	Metrics, Reliability and Customer Performance
AF-FR-9100-028	Internal Audit, Management Review and Improvement

At handover the receiver checks object, scope, current version, original evidence, open conditions, true event chronology and the action they may authorize. An email sent, field marked complete or invoice paid is not acceptance of that handover.

6 Worked case and adverse challenge

Synthetic scenario: A fixture offset potentially affects 240 items, 150 already shipped.

Required reasoning: Hold the 90 local items, trace and notify both receiving customers and reassess all 240 through valid methods. Recalibration alone neither proves all items defective nor resolves their disposition.

Challenge before local use	Expected behavior
Missing essential input	Dependent conclusion remains held; no favorable default.
Wrong configuration or performer	Detect the mismatch and reassess relevant evidence.

Challenge before local use	Expected behavior
Expired or conflicted authority	Block the prohibited assignment or decision; later renewal cannot validate earlier unauthorized work.
Failed mandatory condition with high total score	No compensation; preserve the failure and required action.
Correction without original history	Reject an apparent closure that erases relevant earlier evidence.

Appendix A — Controlling source and evidence

Source: AF 9100:2026, Aerospace Quality Management System, FIRST EDITION, 29 September 2026; supplied 131-page PDF. Source page references below locate the original publication. These excerpts are read with the complete applicable standard; local implementation sequences do not replace it.

8.7 Nonconforming outputs and escape control

SOURCE p. 25 | Normative when applicable

8.7(a) The organization shall identify and control nonconforming or suspect outputs to prevent unintended use or delivery. The response shall address severity, exposure, affected populations and consequences, including outputs already delivered or incorporated into higher assemblies.

8.7(b) Disposition authority shall be defined. Repair or use-as-is decisions affecting design requirements shall obtain design-authority approval and customer approval where the contract requires it. Reworked or repaired outputs shall undergo appropriate verification. Scrap shall be positively controlled until re-entry into the supply chain is prevented.

8.7(c) The organization shall notify relevant customers and other required recipients promptly within applicable deadlines, preserve evidence and initiate corrective action appropriate to the issue. The record shall describe the nonconformity, containment, affected population, disposition, concessions, approvals and verified outcome.

Required evidence: NCR; material review decisions; population trace; notifications; repair/rework verification; scrap control.

10.1 Response to nonconformity and containment

SOURCE p. 27 | Normative when applicable

10.1(a) When a nonconformity or credible concern is detected, the organization shall protect affected users and outputs, determine the immediate extent and assign a response owner. Initial containment shall cover related stock, work in progress, delivered configurations and digital artifacts as relevant.

10.1(b) Containment effectiveness shall be checked. A correction to the first detected item shall not close the investigation of the wider population. Evidence shall be preserved so that cause analysis remains possible, including raw data, software versions, material samples and process conditions.

Required evidence: Response record; containment scope; trace results; effectiveness checks; preserved evidence.

10.2 Cause analysis and corrective action

SOURCE p. 27 | Normative when applicable

10.2(a) The organization shall determine causes using evidence appropriate to the problem. Analysis shall consider requirement quality, design assumptions, process conditions, human factors, tooling, suppliers, management pressures, software and detection failures. Unsupported labels such as “carelessness” shall not be accepted as completed analysis.

10.2(b) Corrective action shall address both occurrence and escape causes where relevant. Actions shall be assigned, implemented and verified against a pre-defined effectiveness measure. The organization shall assess whether similar conditions exist in other products, sites, suppliers or processes and extend action where necessary.

10.2(c) Where an external provider is responsible, corrective requirements shall be flowed down and their effectiveness verified. Repeated or late ineffective action shall be escalated. Risk assessments, technical data, control plans and training shall be updated when the findings change their basis.

Required evidence: Evidence-based cause analysis; occurrence and escape controls; action plan; systemic extent; effectiveness results.

W.1 Required corrective-action sequence

SOURCE p. 96 | Normative when applicable

W.1(a) The organization shall record the detected issue, protect affected outputs, determine the extent, preserve evidence, establish causes, implement actions and verify effectiveness. The response shall address both the occurrence of the defect and the failure of controls to prevent escape.

W.1(b) Closure shall not be based solely on training attendance, a revised procedure or the action owner’s statement. The organization shall define evidence showing that causes were addressed and controls remain

effective under representative conditions.

W.2 Completed synthetic case — measurement offset

SOURCE p. 96 | Definition, explanation or informative example; no new universal limit

W.2(a) Case NCR-026 concerns a dimensional characteristic measured using an automated fixture. A periodic independent check identifies a 0.012 mm offset after fixture maintenance. The applicable procedure required a reference check after maintenance, but the work-order system did not trigger it. The issue is not closed by recalibrating the fixture.

W.2(b) Containment holds 240 items measured since maintenance; 90 remain on site and 150 are traceable to two customers. The responsible team preserves raw measurements, fixture settings and maintenance records and notifies recipients according to the assessed consequence and applicable obligations. No assumption is made that all 240 items are defective.

W.3 Recurrence and ineffective action

SOURCE p. 97 | Normative when applicable

W.3(a) Recurrence or failure of an effectiveness check shall reopen the analysis and trigger review of related assumptions, resource decisions and management controls. A new due date alone shall not be treated as corrective action.

W.3(b) The organization shall identify whether earlier closures relied on inadequate evidence, narrow population scope or untested human-factor assumptions. Lessons shall be incorporated into new-program and change reviews.

AD.7 Finding classification and immediate action

SOURCE p. 113 | Normative when applicable

AD.7(a) A finding shall identify the exact requirement, objective evidence, affected scope and gap. The evaluator shall classify the finding using Table AD-2 and separately decide whether an immediate technical hold or protective action is necessary. Administrative classification shall never delay protection.

AD.7(b) Related localized findings shall be reviewed together for evidence of systemic breakdown. An opportunity for improvement shall not replace a nonconformity where a requirement is unmet. A mere preference for a different method, where the actual requirement is fulfilled, shall not be raised as a nonconformity.

Required evidence: Requirement–evidence–gap statement; classification rationale; systemic extent; immediate technical action.

AD.8 Attestation decisions and open findings

SOURCE p. 114 | Normative when applicable

AD.8(a) Initial grant, renewal and extension shall require all nonconformities in the granted scope to be closed, adequate evidence for all mandatory criteria and independent review. A restricted scope may be granted only where its boundary is real, independently evaluated and unaffected by unresolved systemic deficiencies; it shall not conceal the failed scope.

AD.8(b) An existing attestation may be maintained with a localized minor finding only when immediate correction or containment is adequate, cause and extent are reviewed, a corrective plan is accepted within the Annex AG time limit, and no essential control or mandatory output criterion is compromised. The decision maker shall record why continued status is justified and verify closure within the required period.

AD.8(c) An existing major finding shall trigger an immediate assessment of continuing conformity. Where the underlying ability to meet requirements is not demonstrated, the affected status shall be suspended. Limited continuation is permitted only for a specifically evidenced unaffected scope, through a documented restriction decision. A planned future correction alone is not evidence of current conformity.

AD.8(d) A conditional lifecycle gate or conditional supplier-development approval may permit bounded non-dependent work. Neither is a conditional conformity certificate. Annex AG controls closure, suspension and restoration deadlines; an expired deadline shall not be reset by reissuing the same finding.

Required evidence: Independent grant or continuation decision; closed findings; real scope boundaries; verified corrections and corrective action.

Source calculation note: (AD-2) Grant = scope valid AND all applicable criteria fulfilled AND evidence adequate AND findings closed AND independent decision authorized This is a logical conjunction, not a weighted score. "Findings closed" refers to nonconformities in the scope being granted; observations do not create a mandatory failure.

AG.4 Finding closure and overdue action

SOURCE p. 121 | Normative when applicable

AG.4(a) The finding owner shall implement immediate correction or containment, determine extent and cause, implement corrective action and provide evidence of effectiveness. The operator shall verify closure by a method appropriate to the finding; a revised procedure alone is insufficient for an implementation failure.

AG.4(b) If a major or minor closure deadline is missed, the operator shall suspend or further restrict the affected ongoing scope unless it is already suspended or withdrawn. A new finding number or revised action plan shall not restart the original deadline. The deadline for a critical finding shall be set by the necessary protective action and relevant technical basis, not by the minor or major timetable.

AG.4(c) For initial grant, renewal and extension, no open nonconformity may remain within the requested scope at the decision. Corrective-action periods are time allowed to remedy deficiencies, not a permission to issue a certificate before those deficiencies are closed.

Required evidence: Correction and cause evidence; verified effectiveness; original due dates; overdue status decisions.

Source tables — complete field and decision payloads

Table W-1 — Complete NCR/CAPA record requirements

Source p. 96 | Required structure when applicable

Stage	Required record content
Identification	NCR ID, date, reporter, requirement, item/process, configuration, actual evidence and initial consequence.
Containment	Affected population, immediate controls, stock/delivery status, responsible person, notifications and effectiveness.
Extent	Related lots/serials/sites/suppliers/configurations; trace method; uncertainty and expanded search.
Disposition	Correction, rework, repair, return, concession or scrap; design/customer/authority approvals as applicable.
Cause	Evidence-supported occurrence and escape causes; tested hypotheses; human/system factors; rejected explanations.
Actions	Action tied to each cause, owner, due date, resources, affected documents/tools/suppliers and change approval.
Verification	Implementation evidence, pre-defined effectiveness criterion, sample/exposure, results and adverse side effects.
Systemic learning	Risk updates, similar processes, supplier flow-down, knowledge transfer and recurrence monitoring.
Closure	Independent review where necessary, residual limitations, final authority and reopened conditions.

Table W-2 — Filled corrective-action case

Source p. 96, 97 | Illustrative or explanatory source table

Step	Recorded result
Requirement and evidence	Post-maintenance reference check required by WI-MET-08 rev D; no check record for event M-114; independent comparison shows 0.012 mm offset.
Containment	Hold 90 on-site items; notify two recipients of 150 shipped items; identify exact serial range and related jobs.
Extent assessment	Trace confirms 240 potentially affected items. Independent remeasurement finds 8 outside the actual product limit; remaining results are assessed under the approved decision rule.
Occurrence cause	Fixture datum was reset incorrectly during maintenance; the setup allowed an undetected offset.
Escape cause	Maintenance event classification did not generate the mandatory metrology hold; production release checked only calendar calibration status.
Correction/disposition	Restore and verify fixture datum; disposition 8 nonconforming items through authorized technical review; record customer actions and remeasurement evidence.
Corrective action 1	Interlocked reference verification required after the relevant maintenance event before measurement results can support release.

Step	Recorded result
Corrective action 2	Maintenance classifications and release checks revised; challenge test confirms that a missing check blocks release.
Corrective action 3	Review similar fixtures and maintenance workflows; extend controls to two additional affected process families.
Effectiveness plan	Independently observe the next 10 relevant maintenance events and 100 post-maintenance measurements; verify hold behavior and measurement validity.
Example effectiveness outcome	All 10 events generated the required hold and valid reference check; 100 independent comparisons met the pre-approved method criterion; no bypass observed.
Closure and limitation	Technical and quality reviewers approve closure; continued trend monitoring remains active. The sample does not prove recurrence is impossible.

Table AD-2 — Finding categories and minimum consequences

Source p. 113, 114 | Required structure when applicable

Class	Decision definition	Required consequence
Critical	Evidence of an uncontrolled unacceptable safety/mission risk, deliberate material falsification, serious compromise of essential evidence, or another condition requiring immediate protection.	Stop or contain the affected activity immediately. Block grant/renewal. For an existing affected attestation, suspend or impose an effective evaluated restriction without delay; apply Annex AG notifications.
Major	Absence or breakdown of a required control, or a group of deficiencies, materially undermining the ability to fulfill requirements; not necessarily an immediate hazard.	Block initial grant/renewal/extension until verified closure. Assess existing scope promptly; suspend when continuing conformity cannot be demonstrated.
Minor	Localized failure to fulfill a requirement where evidence does not show a material system breakdown or loss of essential control.	Correct and address cause. No open minor at initial grant, renewal or extension. Existing status may continue only under the bounded AD.8 decision.
Observation / improvement	No demonstrated failure of an applicable requirement; a documented possibility to improve effectiveness.	May support improvement. Shall not be used to conceal nonconformity or require uncontracted consultancy.

Appendix B — Local implementation and release

Readiness condition	Evidence before consequential use
Authority and responsibility	Actual legal operator, owner, competent technical authority, independent reviewer and permitted result class are recorded.
Scope and criteria	Object, configuration, site, period, trigger, every technical value or observable attribute, units and prospective approval are complete.
Evidence and methods	Original accessible evidence, representative observations, valid methods, uncertainty, adverse cases and limitations support the intended conclusion.
People and independence	Competence is current for each task; genuine conflicts, relevant prior work and needed separation have been checked.
Records and tools	Field meanings, unique IDs, original history, access, retention, recovery and actual deployed workflows have passed local validation.
Decision and public use	All relevant blockers are resolved; required independent decision and written permissions precede the exact public claim.
Continuity and handover	Receiving custody, unresolved duties, corrections and historical decisions survive transfer, retirement or provider closure.

Record the completed local readiness and actual authorization in AF-FR-9100-032 or an equivalent controlled record. Preserve the unchanged source standard and each earlier decision basis. A blocked activity may continue only within a genuinely permitted development boundary, not as a provisional conformity certificate.