



ASTRA

AEROSPACE STANDARD

OPERATIONS MANUAL

Programme Operations Manual

AF-AST-HB-001

FIRST EDITION

30 September 2026 | English master text

Aviation / Space / Defense / Future systems

Publication identity and use

Control	Publication information
Code and title	AF-AST-HB-001 — Programme Operations Manual
Edition and publication date	FIRST EDITION 30 September 2026 English master text
Accountable function	Assurance Programme Manager
Controlling technical basis	AF-AST-STD-001 / AF ASTRA-100:2026; supplied 248-page FIRST EDITION, Clauses 0–80 and Annexes A–AR.
Source fingerprint	fe0f775b3f57e43c7ad6b3d4ab17ac0ff872d3ce8c88fcd9ae9a0116b23209b1
Portfolio	108 retained document codes; F01–F08; 68 retained technical subjects. All-space and verification domains are applicability tags, not additional families.
Publication and operation	Prepared publication. Actual technical approval, consultation, institutional adoption, operational effectivity and individual scope activation require separate authentic records.

Purpose and application

The full programme lifecycle, from authority and profile development through enquiries, assessment, independent decisions, surveillance, remedies and responsible closure. Applies to the scheme operator and its assigned functions; it is not imposed in full on every individual applicant.

Source requirements and added implementation detail

The controlling ASTRA source is identified above by content fingerprint. Numbered source clauses and annexes retain their own authority. The retained operating material is restructured and expanded with implementation methods, additional profile controls, worked synthetic examples, decision diagrams and record contracts. Added implementation detail is not presented as an earlier institutional approval or as a change to the supplied core standard. Any additional binding criterion requires the applicable technical adoption process.

The displayed publication date identifies the edition; it is not a fabricated authoring, test, approval or operational date. Actual records retain genuine event times and controlled versions. No named outside organisation or standard is incorporated as a normative reference. AF internal instruments and separate legal or contractual duties remain applicable within their actual scope.

Acceptance boundary

A positive grant requires every applicable mandatory condition to PASS, every N/A to have independent justification, every in-scope nonconformity to be verified closed, and competent independent authority. HOLD, unknown state, missing evidence, a favourable average, a signature image or a completed form cannot substitute for those conditions.

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1 Operating model and responsibility

The full programme lifecycle, from authority and profile development through enquiries, assessment, independent decisions, surveillance, remedies and responsible closure. Applies to the scheme operator and its assigned functions; it is not imposed in full on every individual applicant.

Maintain a complete operational slice for each active technical profile. The programme manager coordinates work but cannot make missing specialist evidence exist or direct a favourable technical result.

Decision and authority boundary

A positive grant, renewal or extension requires valid scope, every applicable criterion fulfilled, sufficient usable evidence, closure of every in-scope nonconformity, current competent independent decision authority and effective required permissions. No score, majority vote, membership status or future corrective promise replaces a missing gate. An operational technical release, a programme outcome and an administrative publication are separate actions.

Function	Responsibility and boundary
Scheme / institutional authority	Maintains actual instruments, resources, permissible outcomes and scoped delegations; does not order favourable case results.
Programme and case owner	Coordinates live-scope review, assignments, evidence, deadlines, handovers and communications.
Technical specialists and evaluators	Determine method validity and scope coverage, observe actual work, retain adverse evidence and state limitations.
Independent review / decision	Review the versioned dossier and apply every mandatory gate independently of the original evaluation.
Registry / custody	Implement only authenticated decisions, maintain scope and history, control access, retention and usable recovery.
Independent remedies and oversight	Review complaints, appeals, conflicts and operator performance through unimplicated competent functions.

2 Case and outcome architecture

Required identity or field	Content and interpretation
Record ID	Unique persistent identifier; do not reuse a withdrawn or superseded identifier for a different record.
Template / schema version	Identify this form version and any controlled continuation or equivalent record mapping.
Case and evaluated object ID	Connect to the actual application, asset, person, programme, method or statement.
Legal entity and actual performer	Distinguish accountable organisation, issuer, applicant and subcontracted performer.
Family / module and outcome class	Use the retained family/module and correct accreditation, recognition, qualification, certification, verification or validation class.
Scope / technical profile ID and version	Identify the exact version; a title alone is insufficient.
Site / station / delivery mode	Record physical, remote, mobile and partner-delivery boundaries that affect this record.
Configuration / method / statement version	Identify the actual technical baseline and conditions evaluated.
Creation date and time basis	Use the actual creation date; state time zone when a clock or sequence depends on time.
Relevant event / awareness / decision dates	Keep distinct dates separate. Use a linked chronology where more than one event exists.
Accountable author and role	Identify who recorded the information and within which task authority.
Reviewer / approver and authority	Identify the responsible review or approval function; blank does not mean approved.
Evidence references and versions	Link accessible original evidence, including adverse, missing or superseded items.
Record status and purpose	Use the relevant allowed states; evidence status and conformity status are separate.
Access / confidentiality class	Record authorised access; do not put protected operational detail in a public field.
Retention basis / custody / hold	Name the controlling retention rule, custodian and any preservation hold.
Correction / supersession history	Link the original, reason, person, actual date and affected downstream records.

Case progression is enquiry/application, admission, evaluation, review and actual decision. Holder status is separately active, restricted, suspended, expired, withdrawn or a historical instance result. Evidence may be received without being accepted for a purpose. A system must not force missing evidence into “conforming” or “not applicable”.

Eight-family routing

Family	Evaluated object / boundary
F01	Management Systems Assurance
F02	Critical Processes and Products
F03	Testing and Inspection
F04	Education Programmes
F05	Airports and Aerodromes
F06	Aircraft Maintenance and Technical Services
F07	Ground Operations and Aviation Support Services
F08	Carbon, Environment and Climate Assurance

3 End-to-end operating pathways

PR-002 – Normative Development, Consultation and Profile Release

Trigger: A new profile, substantive requirement, changed limit or proposed interpretation enters development.

Define the need and decision

The technical owner states the sector problem, evaluated object, intended users, expected benefit, failure consequences and evidence gaps. Compare the proposed scope with the existing family and module catalogue. Use an existing route where it genuinely fits; do not create an extra family merely to publish more detail.

Conduct accessible consultation

Issue the actual proposed normative text for at least 60 calendar days. Record the notice, access route, start/end dates and participating views. Preserve each material comment and a reasoned disposition. An internal meeting, generated comment set or file-preparation date does not establish public consultation.

Maintain a prospective transition

Identify affected publications, holders, configurations, tools and competence. State the actual effective version and any additional assessment required. Preserve historical decision bases. Review suitability at the controlling interval and after significant evidence without using an informal interpretation to bypass the version process.

Hold / escalation: Insufficient consultation, invalid ballot, unresolved essential technical dissent, incomplete criteria or absent activation prerequisites results in a recorded development hold; the programme does not advertise a live route.

Record handover: AF-AST-FR-001, AF-AST-FR-004, AF-AST-FR-027, AF-AST-FR-028.

PR-003 – Application, Eligibility and Contract Review

Trigger: An enquiry, formal application, scope extension request or proposed engagement is received.

Receive without granting status

The Secretariat assigns an enquiry/application ID and records the actual receipt. Identify the legal applicant and representative authority. Explain that receipt, an invoice or a completeness check is not accreditation, recognition or permission to use an AF mark.

Check deliverability and independence

Obtain actual assessor, specialist, reviewer and decision-function availability. Screen the entity and candidate personnel for conflicts and prior consultancy. Verify lawful access to essential evidence and safe witnessing. A staffing plan or future appointment does not provide current delivery capability.

Hand over a controlled case

Transfer the accepted scope, terms, reuse map, conflicts, technical profile and access arrangements to the planning function. Preserve the original application and all changes. Reopen admission when a new site, method, task, statement or responsible entity changes the accepted technical boundary.

Hold / escalation: Defer or decline when the essential profile, available competence, independence, lawful access or operating authority cannot be demonstrated. Explain a development route without implying that it is a provisional conformity result.

Record handover: AF-AST-FR-002, AF-AST-FR-003, AF-AST-FR-004, AF-AST-FR-006, AF-AST-FR-018.

PR-004 – Scope Definition, Applicability and Evidence Reuse

Trigger: A scope is first defined, an exclusion is proposed, evidence is reused or the requested boundary changes.

Identify the actual decision object

Distinguish the organisation, process window, product configuration, person, educational programme, service capability, assessment body and environmental statement. Record what the receiving user will be entitled to conclude. A brand-wide label cannot replace that decision definition.

Review exclusions substantively

For each claimed non-applicability, establish which activity and retained responsibility are absent and why the desired result remains valid. Small size, budget, another certificate or lack of evidence is not a sufficient exclusion. Refer material exclusions to a competent technical reviewer.

Carry scope through every record

Check the same tuple in the plan, observations, reports, findings, review, decision, certificate instruction and public record. When the scope changes, preserve the earlier request and assessment history. Do not silently remove a failed activity merely to present the remaining work as an unrestricted success.

Hold / escalation: Unclear outcome class, missing configuration, unsupported exclusion or inaccessible essential reused evidence holds the dependent conclusion until an independently reviewable boundary exists.

Record handover: AF-AST-FR-002, AF-AST-FR-003, AF-AST-FR-004, AF-AST-FR-010.

PR-005 – Personnel Qualification, Authorisation and Monitoring

Trigger: A person enters a role, is assigned to a new technical scope, approaches a review point or loses currency.

Define the role and task

The Competence Manager identifies the actual method, technical domain, consequence, language, judgement and access needs. Separate audit leadership, specialist evaluation, independent review, decision and appeal authority. Do not admit an unrestricted aerospace-expert title as the task definition.

Evaluate knowledge and practical work

Freeze assessment criteria and essential steps before the attempt. Authenticate the candidate and preserve assessment security. Record knowledge, practical performance, assistance and every essential safety/integrity/independence result separately. An aggregate pass cannot compensate for an essential failure.

Restrict and reactivate

Suspend independent role use when the relevant minimum or actual capability is unmet. Define supervised reactivation, updated learning and satisfactory demonstration. Preserve earlier failed attempts and assess affected past work. Notify the assignment function of limits before accepting new cases.

Hold / escalation: Missing verified prerequisites, an essential-step failure, unresolved conflict, inadequate specialist scope or expired/inactive authority prevents independent assignment.

Record handover: AF-AST-FR-005, AF-AST-FR-006, AF-AST-FR-009, AF-AST-FR-027.

PR-006 – Impartiality Screening and Case Recusal

Trigger: A case role, reviewer, panel member, investigator, selector or external provider is proposed or a new conflict emerges.

Map the parties and influence

The Integrity Coordinator identifies the applicant, related entities, operator, funding relationships and proposed case personnel. Include the people selecting reviewers or investigators. Screen institutional structure as well as individual declarations.

Separate prohibited roles

Do not let an evaluator independently decide their own work, a consultant certify the system they designed, or the accrediting entity accredit itself. A technical reviewer may also decide only where separately authorised, independent of evaluation and permitted for the outcome.

Escalate influence and monitor

Preserve attempts at outcome-linked payment, lobbying or retaliation through the protected route. Implicated leadership must not control its own investigation. Review recurring threats and financial concentration at programme level while retaining fair response and confidentiality.

Hold / escalation: Unresolved material influence, a prohibited role combination, a compromised selector or missing eligible panel member blocks the affected assignment or decision.

Record handover: AF-AST-FR-006, AF-AST-FR-017, AF-AST-FR-027.

PR-007 – Assessment Planning, Resources and Site Coverage

Trigger: An admitted case, surveillance, renewal or extension requires an assessment plan or a material plan change.

Build the scope-led work breakdown

The lead assessor decomposes each requested conclusion into requirements, locations, methods, configurations, delivery modes and interfaces. Include prior findings, changes and adverse results. Identify which observations and original records can establish each material condition.

Assign available competence

Match named people to the exact technical tasks, language, consequence and access permissions. Separate evaluation from independent review and decision. Resolve conflicts before assignment. A nominal specialist, trainee or silent second observer is not independent productive technical coverage.

Reconcile actual execution

Record actual participants, productive hours, observations, interruptions and deviations. Add work when essential coverage is missing, or hold/narrow the conclusion through an actual reviewed boundary. Report completed coverage rather than copying the original plan as though every planned action occurred.

Hold / escalation: Missing site evidence, unjustified method grouping, unavailable specialist competence, unsafe access or inadequate time requires additional work, a supported restriction or deferral.

Record handover: AF-AST-FR-007, AF-AST-FR-008, AF-AST-FR-009, AF-AST-FR-010.

PR-008 – Remote and Hybrid Assessment Control

Trigger: Remote evidence access, hybrid assessment, remote witnessing or substitution of physical observation is proposed.

Define what must be established

The lead identifies the exact capability, characteristic or record being evaluated and each essential observation. Explain whether the proposed method can demonstrate preparation, identity, execution, interpretation and reporting, not merely show a finished output.

Establish the live baseline

At opening, confirm actual site, people, task, method version, configuration and instrument status. Distinguish live feeds from prerecorded demonstrations and synthetic cases. Verify that the assessor can choose material evidence rather than view only promotional selections.

Close and protect the records

Retain the session log, permissions, source evidence, interruptions, limitations and additional work. Confirm lawful storage and retention of recordings. Review method validity after changes to equipment, software, location or intended decision use.

Hold / escalation: Missing identity, essential observation, lawful access, adequate fidelity or continuity leaves the dependent requirement not demonstrated and blocks a broader claim.

Record handover: AF-AST-FR-008, AF-AST-FR-009, AF-AST-FR-010, AF-AST-FR-026.

PR-009 – Technical Witnessing and Method-Family Coverage

Trigger: A plan requires observed technical performance or an end-to-end evidence trail.

Select the technical trail

The assessor chooses an actual output and a representative task from the approved population. Include routine, changed, failed and lower-volume work where relevant. Document why the selection represents the requested capability and which limits remain.

Observe essential execution

Witness required preparation, setup, work, monitoring and interpretation. Record actual parameters and deviations within authorised specialist procedures. State assistance, coaching or simulation openly. A curated completed item does not establish independent routine execution of hidden steps.

Hand over for independent review

Provide an attributable witness record with sources, actual observations, findings and precise conclusion. Identify any supplementary work still required. The witness recommendation is evaluation evidence, not the independent final conformity decision.

Hold / escalation: An unobserved essential step, inappropriate method, invalid equipment or unsupported representative grouping requires additional demonstration or an explicitly restricted conclusion.

Record handover: AF-AST-FR-007, AF-AST-FR-009, AF-AST-FR-010, AF-AST-FR-011.

PR-010 – Measurement Traceability, Uncertainty and Decision Rules

Trigger: A measurement, calibration, calculated technical result or quantitative conformity decision is planned or reviewed.

Define the measurand and decision

The technical owner states the property, units, object/configuration, conditions, population and acceptance need. Identify specification limits and whether bounds are inclusive. Separate the measured characteristic from broader claims about the product or organisation.

Evaluate dependence and uncertainty

Distinguish standard and expanded uncertainty, covariance, coverage factor and units. Use input evidence applicable to the actual method and range. Do not copy a calibration-scope uncertainty into an unrelated measurement. Preserve assumptions and limits of a numerical propagation model.

Review and communicate the bounded result

An authorised technical reviewer checks model relevance, arithmetic, actual inputs and the intended claim. Report corrections, uncertainty and coverage where needed, the decision rule, result and limitations. An adverse instrument finding triggers prior-result review and recipient correction, not only recalibration.

Hold / escalation: Invalid calibration, an incomplete uncertainty model, an unapproved retrospective rule or an indeterminate essential characteristic blocks acceptance for the dependent claim.

Record handover: AF-AST-FR-004, AF-AST-FR-011, AF-AST-FR-012, AF-AST-FR-019.

PR-011 – Continuing Validity, Comparisons and Proficiency Activities

Trigger: A technical field becomes active, comparison results arrive, a method changes or adverse validity evidence arises.

Map significant technical fields

The Technical Methods Lead identifies every method family, property/range, equipment configuration, site and signatory capability requiring validity evidence. Distinct technical principles must not disappear in a general annual participation count.

Execute as representative work

Use controlled instructions, actual personnel and declared routine resources. Preserve sample identity, conditions, raw observations and authorised sign-off. Record deviations and assistance rather than presenting specially coached work as ordinary performance.

Verify restoration and maintain the plan

Demonstrate corrective effectiveness through relevant repeat or independent evidence before restoring the affected capability. Update the field coverage after scope changes, low activity, new software or relocated equipment. Carry conclusions into surveillance and signatory authorisation.

Hold / escalation: Unresolved adverse comparison evidence, an unsuitable assigned value or unchallenged essential field prevents a positive competence conclusion for that scope.

Record handover: AF-AST-FR-011, AF-AST-FR-012, AF-AST-FR-019, AF-AST-FR-027.

PR-012 – Technical Reporting, Amendments and Report Review

Trigger: A technical report is prepared, a result is released, an error is found or recipients need a corrected conclusion.

Identify the result and audience

The report author states issuer, client, actual object, site, method/version, configuration, relevant dates and intended conclusion. Identify whether the document is a technical result, evaluation recommendation, readiness report, statement conclusion or independent outcome.

Preserve adverse and repeated work

Record failed, invalid and indeterminate tests and approved retest rationale. Identify changed configuration, repaired articles or missing evidence. Do not replace an adverse original with a favourable repeat without preserving the relationship and technical disposition.

Notify and retain usable history

Reach recipients who relied on an incorrect result, provide the corrected bounded conclusion and record acknowledgement where needed. Preserve originals, supersession and current status. An amended PDF must remain linked to raw evidence and any continuing restriction.

Hold / escalation: An unsupported claim, unresolved essential evidence gap, invalid method or absent authorised signatory holds report release; an already issued unsupported conclusion triggers correction and recipient action.

Record handover: AF-AST-FR-009, AF-AST-FR-010, AF-AST-FR-011, AF-AST-FR-012, AF-AST-FR-014.

PR-013 – Nonconformity, Containment and Corrective Action

Trigger: A failed requirement, credible critical concern, nonconforming work or recurring ineffective action is identified.

Form an evidence-based finding

The evaluator records the exact requirement/version, objective evidence, gap, affected object/site/period and classification rationale. Distinguish a demonstrated failure from an optional observation. Several local failures may together establish a systemic major.

Test occurrence and escape causes

Investigate why the failure happened and why the existing system did not prevent or detect it. Retain competing explanations and evidence. A training record or replacement employee is not sufficient when capacity, interface design, method validity or management pressure caused the problem.

Close, reopen and learn

Record actual effectiveness evidence, closure authority and communications. Missed deadlines trigger the applicable status action, not automatic extension. Recurrence reopens cause and extent analysis. Preserve the original dates and earlier failed conclusions during reissue, reassignment and improvement.

Hold / escalation: Uncontrolled critical concern, unverified effectiveness, missed required closure or open in-scope nonconformity blocks the relevant grant and triggers proportionate continuing-status protection.

Record handover: AF-AST-FR-012, AF-AST-FR-016, AF-AST-FR-026, AF-AST-FR-027.

PR-014 – Independent Review and Outcome Decisions

Trigger: Evaluation is complete enough for independent review or a grant, renewal, extension or adverse decision is proposed.

Confirm the decision mandate

Identify the outcome class, actual authorised issuer and decision function. Verify technical competence and permitted roles. Ensure evaluation, independent review and decision combinations satisfy the core and released profile, including the required three-person accreditation panel.

Review evidence validity

Examine method suitability, measurement uncertainty, source authenticity, adverse results, repetitions and limitations of reuse. Confirm that each requirement conclusion matches the actual configuration and period. Reject an unsupported generated explanation or numerical score as a substitute for evidence.

Communicate and instruct publication

Notify the applicant of scope, reasons, duties and remedies. Give the registry custodian the authenticated instruction and exact public wording. Update status within two calendar days, with immediate urgent notices. Preserve the reviewed dossier, votes, dissent and subsequent correction history.

Hold / escalation: Incomplete dossier, an open in-scope finding, inadequate coverage, unresolved essential uncertainty, conflicted decision role or missing required panel participation blocks a positive result.

Record handover: AF-AST-FR-006, AF-AST-FR-012, AF-AST-FR-013, AF-AST-FR-014.

PR-015 – Surveillance, Renewal and Scope Extension

Trigger: An ongoing outcome is granted, a surveillance/renewal point approaches or a holder requests an extension.

Create the authoritative cycle baseline

The programme manager records the actual independent decision, exact scope, profile, consequence, restrictions and expiry/instance boundary. An ongoing ASTRA outcome has a maximum 24-month period, subject to a shorter profile and the separate controlling AF 9100 rules where applicable.

Review changes before an expanded claim

Planned material changes are reviewed early enough and before affected use. Unplanned non-critical material changes are notified within five calendar days after awareness; critical concerns follow the 24-hour rule. A new station, aircraft task, technical method or ownership boundary cannot be added by reprinting a certificate.

Close the cycle record

Reconcile holder notices, exact registry state, public claims, pending appeals and ongoing duties. A pending appeal, payment, transfer or booked visit does not extend validity. Keep current and historical outcomes readable during issuer or system changes.

Hold / escalation: Overdue required surveillance, unsupported material change, expired status or open renewal findings prevents continued or renewed claims within the affected scope.

Record handover: AF-AST-FR-007, AF-AST-FR-012, AF-AST-FR-013, AF-AST-FR-015, AF-AST-FR-016.

PR-016 – Restriction, Suspension, Restoration and Withdrawal

Trigger: A substantiated concern, overdue control, loss of capability, expiry-related issue or verified corrective action requires a status change.

Establish the trigger and source

The independent decision function identifies the concern, affected credential, controlling requirement and actual event/awareness dates. Separate credible protection concerns from unsubstantiated allegations and administrative disputes. Record what evidence substantiates the proposed status action.

Issue a reasoned notice

State the action, exact affected scope, actual decision date, reason, prohibited claims, required correction, remedy route and resolution deadline. A suspension deadline cannot exceed 90 calendar days from the decision. Preserve original expiry and the earlier status record.

Reconcile every representation

Update the public register within two calendar days and urgently notify affected holders/recipients. Preserve former scope, reasons, remedies and current state. Operator change, appeal receipt, payment or file reissue must not revive withdrawn or unsupported authority.

Hold / escalation: Unverified remedy, unresolved systemic extent, missing independent authority or expired underlying status prevents restoration. Preserve protection and decide the permitted restriction or withdrawal.

Record handover: AF-AST-FR-012, AF-AST-FR-013, AF-AST-FR-014, AF-AST-FR-016.

PR-017 – Complaints, Appeals and Independent Remedy

Trigger: A person raises a complaint, requests reconsideration of a decision or submits a concern containing both.

Accept and classify the issue

The intake function records the first receipt and available response channel. Distinguish service dissatisfaction, a specified decision appeal and protected integrity concerns. Link related issues without changing the original receipt. Good-faith safety reporting does not depend on payment, membership or use of a particular form.

Appoint independent competent reviewers

Use the required three-person independent appeal panel. Exclude original evaluation, review, decision and materially implicated selectors. Obtain relevant technical expertise and protected evidence access. The original decision maker may explain the record but does not vote on the appeal.

Follow systemic and non-retaliation effects

Review related reports, methods, personnel and decisions where a concern is substantiated. Verify corrective effectiveness and communicate appropriate public corrections without unnecessary personal disclosure. Monitor for retaliation through fees, assignments, service denial or confidentiality threats.

Hold / escalation: A conflicted panel, inaccessible essential evidence or unresolved urgent risk prevents an unsupported remedy. Maintain protection, disclose justified timing and obtain independent technical resolution.

Record handover: AF-AST-FR-006, AF-AST-FR-012, AF-AST-FR-013, AF-AST-FR-017.

PR-018 – Protected Reporting and Investigation Interfaces

Trigger: An anonymous or identified safety, integrity, falsification, undue-influence or retaliation concern is received.

Preserve the original report

The Integrity Coordinator captures the first message, actual receipt, available contact and what is alleged. Do not require a fee or formal template. Keep identity separate from technical evidence where appropriate, with access restricted to the actual investigation purpose.

Define the investigation question

State which events, requirements, persons, configurations and periods are in scope. Distinguish fact, inference, allegation and unknown. Plan legitimate evidence collection and fair party response. Do not use a broad investigation as justification to collect irrelevant personal information.

Protect against retaliation and learn

Monitor assignments, fees, access, service treatment and employment-related concerns within the programme responsibility. Investigate suspected retaliation independently. Convert substantiated systemic weaknesses into verified corrective actions and controlled rule or training updates.

Hold / escalation: An implicated investigator, unlawful access or missing essential corroboration prevents a final adverse allegation finding. Necessary technical protection and evidence preservation continue while the facts are established.

Record handover: AF-AST-FR-010, AF-AST-FR-012, AF-AST-FR-017, AF-AST-FR-027.

PR-019 – Privacy, Confidentiality and Controlled Access

Trigger: Personal, confidential, proprietary or controlled technical information is collected, accessed, shared, published or retired.

Define the purpose and necessary data

The information owner identifies the decision or obligation the information supports. Collect only necessary fields and source records. Separate personal identifiers, protected technical detail and public scope data. A broad application request is not an unlimited permission to reuse data.

Arrange sufficient protected review

Use authorised reviewers and secure access that permits examination of essential evidence. Redaction must not remove the material needed for the conclusion. Where adequate lawful review is impossible, retain the gap, limit scope or decline the result rather than accept an assertion by reputation.

Respond to incidents and access changes

Contain unauthorised disclosure, preserve logs, determine affected data and decisions and use the applicable notification process. Review privileges promptly when duties end. Verify integrity and receiving authority before restored or transferred records support a conclusion.

Hold / escalation: Unlawful access, excessive disclosure, inadequate protected evidence or unsupported transfer authority holds the affected processing and dependent conclusion.

Record handover: AF-AST-FR-008, AF-AST-FR-010, AF-AST-FR-017, AF-AST-FR-026.

PR-020 – Cyber Incidents, Evidence Recovery and Service Continuity

Trigger: A cyber/data incident, suspected compromise, service interruption or recovery exercise affects assurance records or operations.

Identify and preserve the event

The incident owner records awareness, original evidence, affected systems, deployed versions, users and initial uncertainty. Preserve relevant logs and source records through authorised means. Separate a detection alert from a confirmed cause and from the technical effect on assured outputs.

Plan correction and trusted recovery

Select the recovery point, authentic sources, permitted configuration and required checks. Preserve post-recovery-point events and identify reconciliation needs. Approve patches and other changes for safety, timing and qualification compatibility; a security fix is also a technical change.

Verify learning and continued control

Repeat failed tests after correction and relevant regression after changes. Review occurrence and escape causes, supplier dependencies and recovery performance. Record residual limitations, owners and follow-up. Retain originals, incident chronology and actual decision history.

Hold / escalation: Broken configuration/evidence links, unreconciled later events, compromised permissions or unresolved critical defects prevents assured return even when the service is online.

Record handover: AF-AST-FR-012, AF-AST-FR-016, AF-AST-FR-026, AF-AST-FR-028.

PR-021 – Credential, Registry and Mark Approval

Trigger: An independent result is ready for issue, public status changes or an AF mark/claim is proposed for use.

Accept only an authentic instruction

The Registry Manager verifies the issuer, independent decision authority, actual decision date, reviewed dossier and exact authorised outcome. A prepared certificate template, payment receipt or signed application is not a grant instruction.

Prepare public and protected views

Publish the fields necessary for honest scope verification while protecting detailed configuration, sensitive locations or personal information under approved arrangements. Keep adequate independent evidence access. Applicant and pilot records are not displayed as accredited holders.

Maintain verification during disruption

Provide a controlled alternative status channel during outage, tied to authentic current decisions. Test recovery of scope, restrictions, expiry and history. An unavailable registry does not extend a credential or make a stale cached page authoritative.

Hold / escalation: No authentic decision, mismatched scope, missing mark permission, expired/suspended status or unlawful public disclosure means no affected publication or current mark use.

Record handover: AF-AST-FR-013, AF-AST-FR-014, AF-AST-FR-016, AF-AST-FR-018.

PR-022 – Provider Agreements, Authorisation and Outsourced Work

Trigger: An external party performs assessment work, supplies technical evidence or seeks authority to act for AF.

Classify the relationship

The Corporate Secretary distinguishes an ordinary applicant, technical subcontractor, relied-upon result provider, delegated operator and legal accrediting issuer. Identify each actual performer and their tasks. A common owner or an MoU title does not establish authority or equivalence.

Obtain prior operating authorisation

An organisation acting for AF requires prior written permission and an executed binding Cooperation and Authorization MoU for actual technical and territorial scope. Competence attestation, operating permission and an individual applicant outcome remain separate decisions.

Exit with preserved responsibility

On suspension, termination or cessation, protect holders, open cases, remedies, records, status information and lawful transfer. The receiver verifies the complete dossier and any required new evaluation. Transfer of files or contract assignment does not transfer broader accreditation or AF authority.

Hold / escalation: Undefined performer, missing competence, unresolved structural conflict, absent prior written approval/MoU or uncontrolled delegation prevents acting for AF in the affected scope.

Record handover: AF-AST-FR-003, AF-AST-FR-006, AF-AST-FR-018, AF-AST-FR-019, AF-AST-FR-028.

PR-023 – Fees, Resources and Financial Separation

Trigger: Services are quoted, charges change, capacity is planned, support is offered or a financial dispute arises.

Cost the actual technical work

The Finance Manager obtains the scope-led resource plan, including competent specialists, witnessing, travel, reporting, independent review, panels, remedies and continuing oversight. Technical work must not be removed solely to reach a market price.

Apply fair access consistently

Use objective eligibility and capacity constraints, with necessary lawful restrictions handled consistently. Consider accessible language and reasonable arrangements without weakening evidence or competence. A fee waiver or financial support decision cannot purchase a favourable outcome.

Monitor integrity and closure duties

Review financial concentration, atypical waivers, outcome-linked incentives, delayed protective work and service access. Refer influence or retaliation concerns independently. Ensure residual record custody, holder notices, remedies and contractual duties are funded during exit.

Hold / escalation: Undisclosed fees, unavailable resources, outcome-linked incentives or terms implying an undefined live route prevent commitment until corrected. A payment never extends an expired status.

Record handover: AF-AST-FR-002, AF-AST-FR-003, AF-AST-FR-018, AF-AST-FR-027.

PR-024 – Internal Audit, Management Review and Improvement

Trigger: An audit is due, quarterly performance/risk review occurs, formal management review is held or significant adverse evidence arises.

Plan risk-based internal audits

The Quality Manager covers every active process at least annually, with extra attention to changes, complaints, invalid results and weak controls. Select competent auditors independent of their own work. Keep self-assessment separate from independent operator review.

Record findings and causes

Use exact criteria and evidence, classify proportionately and determine systemic extent. Include occurrence and escape causes. Review whether commercial incentives or governance weaknesses allowed the problem. Refer urgent protection without waiting for the audit report.

Escalate and retain oversight

Provide independent oversight unedited relevant records and protected resources. Carry material governance, competence or method failures into the independent operator review and controlled version process. Preserve findings, dissent, actions and real completion dates.

Hold / escalation: Unexamined active processes, self-audit of own work, unsupported favourable metrics or unverified corrective effectiveness leaves the review incomplete and requires accountable follow-up.

Record handover: AF-AST-FR-010, AF-AST-FR-012, AF-AST-FR-027, AF-AST-FR-028.

PR-025 – Independent Operator Review and Reliance Arrangements

Trigger: The accrediting operator is preparing to launch, the independent review interval approaches or a reliance arrangement is proposed.

Define an independent mandate

The oversight function establishes the legal operator, active/requested activities, actual review authority, resources, protected access and report recipients. Review before launch and within the maximum 36-month interval, with earlier review after serious concerns.

Plan representative review trails

Select cases and methods across material activities, sites, consequence levels, changed conditions and adverse histories. Compare stated procedures with actual performance. Examine whether the operator can competently evaluate the services it accredits rather than only administer forms.

Control any reliance agreement

Before relying on another party results, document exact parties, activities, acceptance conditions, competent evaluation, monitoring, territories, confidentiality and withdrawal. Check authenticity and fit for each actual use. The accepting party retains responsibility for its acceptance decision.

Hold / escalation: Missing genuinely independent reviewers, inaccessible essential evidence, unsupported methods or unresolved blocking findings prevents a favourable operator-readiness or reliance conclusion.

Record handover: AF-AST-FR-006, AF-AST-FR-018, AF-AST-FR-019, AF-AST-FR-027.

PR-026 – Education Attainment, Cohort Review and Learner Protection

Trigger: An education programme is reviewed, a cohort completes, a delivery route changes or learner protection is threatened.

Freeze the programme boundary

The academic owner records provider, award, discipline, level, curriculum version, language, locations, mode, partners and lawful standing. Separate degree, vocational, short-course and continuing-development routes. Do not infer institution-wide recognition from one programme.

Validate assessments and essential steps

Set rubrics, identity/authorship, moderation, resit and essential practical criteria before use. Control AI-assisted and remote assessment so the learner actual ability is established. Reasonable adjustments preserve the assessed construct. Failed essential skills are not averaged into a pass.

Protect learners through change and closure

Review curriculum, campuses, partners, platforms and key-resource changes before extending scope. Maintain accurate information, retained academic work, transfer or teach-out and accessible remedies. A later programme-status loss does not erase authentic learner records or create a professional licence.

Hold / escalation: Missing completion-route evidence, invalid assessment authenticity, inadequate essential practical resources or absent learner protection prevents a full unqualified programme outcome.

Record handover: AF-AST-FR-005, AF-AST-FR-009, AF-AST-FR-012, AF-AST-FR-021.

PR-027 – Environmental Statement Verification and Validation

Trigger: An environmental capability, historical statement, reduction claim, prospective plan or energy attribute engagement is proposed.

Agree the exact engagement

The environmental lead identifies entity, assets/sites, period, intended users, statement and methodology. Distinguish capability recognition, historical verification and prospective validation. An airport inventory is not automatically the footprint of its tenants or all flights.

Plan substantive and control testing

Assess risks of omission, biased estimation, aggregation, fraud and source dependency. Select material categories, sites and transactions using a reasoned population and sample. Verify original evidence and data transformations, including units and independent recalculation where appropriate.

Issue a bounded conclusion and maintain history

Identify the statement/version, scope, assurance form, period, criteria and limitations. A historical instance statement has no invented continuing certificate duration. Correct later material errors and communicate to recipients. Capability status and verifier accreditation follow separate controls.

Hold / escalation: Missing material evidence, inappropriate factors, incomparable baselines, unresolved double allocation or unsupported forecast wording prevents an unqualified favourable conclusion.

Record handover: AF-AST-FR-004, AF-AST-FR-010, AF-AST-FR-011, AF-AST-FR-012, AF-AST-FR-025.

PR-028 – Change, Transition, Transfer and Programme Closure

Trigger: A programme/profile version, transfer, provider cessation, scope withdrawal or closure affects controlled work.

Identify the actual change and boundary

The programme manager states old/new versions, reasons, entities, profiles, locations, methods, configurations and affected stakeholders. Distinguish document version from technical transfer, operating-authority change and complete closure.

Set prospective implementation conditions

Specify actual effective versions, owners, permitted work, prohibited claims, notices, required additional assessment and verification. Do not waive immediate safety duties. Conditions on development progression do not authorise a conformity certificate with unmet mandatory criteria.

Record completion and residual duties

The actual authorised function decides transition, transfer or closure for an exact scope and date. Keep unresolved notifications, warranties, remedies and custody duties assigned. Closing a project or changing an issuer must not erase failure history or imply continuous authority that never existed.

Hold / escalation: Unresolved essential compatibility, missing receiving capability, abandoned learner/customer duties or an incomplete evidence transfer prevents a supported closure or new-scope release.

Record handover: AF-AST-FR-001, AF-AST-FR-012, AF-AST-FR-015, AF-AST-FR-016, AF-AST-FR-018, AF-AST-FR-028.

PR-001 – Document, Record and Version Control

Trigger: A new document, revised requirement, completed record, correction, import or retirement is proposed.

Classify the object

The Quality Manager identifies whether the item is normative text, implementation guidance, a blank capture tool, a completed record or a public copy. Record its owner, intended users, dependencies and approval path. Do not let a guide or form change a requirement through wording, a default value or a dropdown.

Review before issue

Use technically competent reviewers for the affected subject. Check every internal reference, required field, authority boundary and actual record link. Compare a rendered PDF with its intended content, including tables, formulas, page continuations and form fields. Resolve a defect that could change a decision before dependent issue.

Transfer and retain meaning

Before migration or closure, reconcile record identities, versions, units, timestamps, approvals and relationships. Test retrieval under the receiving permissions. Confirm retention and preservation holds with the receiving custodian. Equal file counts and a successful upload are not acceptance of a complete dossier.

Hold / escalation: A missing source, unresolved changed requirement, unidentified approver or broken evidence relationship prevents the dependent release. Preserve a controlled working copy and assign the exact corrective action.

Record handover: AF-AST-FR-010, AF-AST-FR-026, AF-AST-FR-028.

5 Continuing controls and chronology

Control / source	Trigger and interval	Required response
Ongoing outcome Core 16.1	Independent conformity decision Maximum 24 months	Shorter profile permitted; AF 9100 retains its own controlling rules. Instance results have no invented ongoing validity.
Routine surveillance Core 16.2	Decision / last completed surveillance Maximum 12 months	Complete evaluation; booking is not completion.
High-consequence / novel / integrity exposure Core 16.2	Decision / last completed surveillance Maximum 6 months	Use the shortest triggered interval for inseparable mixed scopes.
Corrective-action plan Core 14.4	Original finding notification 30 calendar days	Immediate protection is separate. Do not reset the original clock.
Major finding closure Core 14.4	Original finding notification 60 calendar days	Verify implementation and effectiveness; review continued conformity immediately.
Minor finding closure Core 14.4	Original finding notification 90 calendar days	All in-scope nonconformities closed before grant, renewal or extension.
Critical protection Core 14.2	Recognition of credible concern Immediately	Stop or contain affected work; preserve evidence.
Holder critical notice Core 14.2	Awareness Within 24 hours	Earlier applicable duties remain in force.
Operator critical status action Core 14.2	Substantiated critical concern Within 24 hours	Suspend or independently justified effective restriction.
Registry status update Core 15.5	Actual status decision Within 2 calendar days	Urgent holder communication does not wait for public update.
Suspension resolution Core 16.5	Suspension decision Maximum 90 calendar days	Restore on evidence, restrict independently unaffected scope or withdraw.
Final evaluation report Core 13.5	Evaluation closure Within 14 calendar days	Explain exceptional delay; existing finding clocks stay unchanged.
Unplanned non-critical material change Core 16.3	Awareness Within 5 calendar days	Expanded claim still requires prior evaluation and decision.
Planned material change Core 16.3	Before implementation / expanded claim Early enough for required prior review	No generic grace period for unassessed scope.
Complaint / appeal acknowledgement Core 27.2	First receipt Within 5 calendar days	Where a reply channel exists; immediate urgent triage.
Control / source	Trigger and interval	Required response
Initial substantive complaint response Core 27.4	First receipt Within 30 calendar days	Not a substitute for immediate protection.
Appeal submission Core 27.3	Notice of contested decision Normally within 30 calendar days	Reasoned good-cause late admission remains available.
Complaint / appeal determination Core 27.4	First receipt Normally within 60 calendar days	Necessary extension: reasons, revised target and progress at least every 30 days.

Control / source	Trigger and interval	Required response
Programme internal audit and formal review Core 29.1; 29.2	Active operation At least annually	Performance and risk reviewed quarterly.
Independent accrediting-operator review Core 29.3	Before launch / last review No more than 36 months	Earlier after serious concerns; no reciprocal self-approval.
Rule/profile suitability review Core 4.6	Issue / last suitability review No more than 3 years	Earlier after material evidence; version is distinct from an interpretation.
Substantive public consultation Core 4.3	Published proposed normative text At least 60 calendar days	Actual comments, dispositions and valid technical approval required.
Assessment and decision records Core 10.6	Last relevant decision At least 7 years	Longer where obligations, life or a hold require; reconcile legally required alternative handling.

Use actual awareness, notification, completion, decision, issue and expiry timestamps with a declared time zone. Days are calendar days unless explicitly stated otherwise. Month intervals end on the corresponding date, or month-end where that date does not exist. Earlier applicable duties prevail. Source: Annex H.

Competence and independent authority

Role	Entry evidence	Boundary
Internal auditor	Task-relevant experience; at least 16 hours AF/process-audit learning; one complete witnessed audit; satisfactory reporting.	Independent of own work; no automatic third-party authority.
Independent auditor	At least 3 relevant professional years including 2 in quality/assurance/technical domain; at least 40 hours AF audit learning; knowledge at least 80%; practical at least 85%; all essential steps; 4 mentored complete audits totalling at least 20 auditor-days.	Observed approval for a bounded route and sector; specialist competence remains separate.
Lead auditor	Qualified independent auditor plus 3 complete audits led under supervision totalling at least 10 auditor-days; demonstrated team planning and reporting.	No leadership or technical scope beyond verified evidence.
Specialist assessor / expert	At least 3 years relevant technical practice, normally 2 within the preceding 5; AF orientation; verified actual task demonstration; non-audit assessor demonstrates evaluation and reporting.	Expertise is not audit leadership or final decision authority.
Technical reviewer	Verified interpretation and technical coverage; 5 satisfactory mentored complete file reviews.	No independent review of own evaluation.
Decision maker	Verified scope, evidence, impartiality, status and remedy knowledge; 5 satisfactory mentored complete decisions; necessary specialist support.	No decision on own evaluation, relevant consultancy or materially interested case.
Application / appeal reviewer	Verified task knowledge, satisfactory observed performance and relevant specialist advice.	Appeal roles exclude original evaluation, review and decision.

These minima are source rules from Annex D, not invented operational appointments. AF 9100 role requirements remain controlling when its route is used. Numerical minima do not replace observed competence.

Worked cases and challenge questions

Synthetic case – Normative Development, Consultation and Profile Release

In a synthetic nine-member committee, six substantive votes with four affirmative meet the arithmetic minima. The publication still cannot activate a profile when essential test parameters or independent evaluators are missing.

Review challenge: identify the exact affected object, requirement, missing or adverse evidence, accountable action, independent decision and historical record. A fictional example is not a real applicant or evidence of a completed pilot.

Synthetic case – Technical Witnessing and Method-Family Coverage

A synthetic laboratory demonstrates one technique on an accessible reference item. The requested scope includes a different geometry with restricted access. The witness supports the first boundary only; separate technical evidence is required for the second.

Review challenge: identify the exact affected object, requirement, missing or adverse evidence, accountable action, independent decision and historical record. A fictional example is not a real applicant or evidence of a completed pilot.

Synthetic case – Restriction, Suspension, Restoration and Withdrawal

A synthetic holder restores a suspended method after verified correction but without renewal. The restoration uses the real date and retains the original expiry. Reports issued during suspension are not retrospectively made authorised.

Review challenge: identify the exact affected object, requirement, missing or adverse evidence, accountable action, independent decision and historical record. A fictional example is not a real applicant or evidence of a completed pilot.

Synthetic case – Fees, Resources and Financial Separation

A fictional sponsor offers to fund a programme on condition that its suppliers receive certificates. The offer cannot control acceptance criteria or decisions. Any support arrangement must remain outcome-neutral and independently reviewed.

Review challenge: identify the exact affected object, requirement, missing or adverse evidence, accountable action, independent decision and historical record. A fictional example is not a real applicant or evidence of a completed pilot.

E1 Explicit acceptance and evidence contract

Apply the following logic to the exact evaluated object and responsible function. A procedural checkpoint, product characteristic, competence decision and public credential are different objects. Their states shall not be collapsed into one score. Source: ASTRA 62.1–62.7 and Annex AL.

State	Sufficient basis	Required next action
PASS	Applicable; current approved predicate met by valid, purpose-specific evidence.	Retain the original evidence and bounded inference. Other mandatory gates still apply.
FAIL	Applicable; valid evidence demonstrates that the approved predicate is not met.	Contain affected use; retain the failure; assess cause, extent and required corrective verification.
HOLD	Applicability, criterion, method, evidence, uncertainty or authority is unresolved.	Resolve the missing basis. Do not manufacture a value, favourable default or product-defect conclusion.
N/A	Activity trigger and retained responsibility are absent; independent exclusion approval exists.	Retain the scope-specific reason and reassess when activity or responsibility changes.
UNSET	Only an uncompleted field in this PDF; not a conformity state.	No conclusion is recorded. Complete review before the field can support a decision.

For a compound source clause, create a child-condition ledger containing every separately testable condition, location, phase and operating mode. A sentence-level checkpoint is a navigation aid, not permission to merge unrelated predicates. Each child receives an ID, responsible owner, criterion, method, source evidence, uncertainty where relevant, current state and independent review. The parent cannot PASS while any mandatory child is FAIL, HOLD or UNSET.

An acceptable measurement interval and an acceptable authority chain are independent prerequisites. Use finite, unit-consistent, unrounded values; negative uncertainty, reversed limits, unknown version or wrong-object evidence produce HOLD. For inclusive [L,H] and accepted interval [a,b], PASS requires $a \geq L$ and $b \leq H$; FAIL requires $b < L$ or $a > H$; otherwise HOLD. Approved one-sided or exclusive boundaries retain their own declared predicate.

Positive-decision conjunction

Every applicable mandatory child is PASS AND each N/A is independently justified AND every in-scope nonconformity is verified closed AND scope, competence, independence and actual authority are valid AND required panel participation and voting rules are satisfied. No average, majority preference or payment supplies missing evidence.

E2 Source-to-implementation crosswalk

The references below use the supplied 248-page FIRST EDITION. Each row retains the original clause identifier and source page. The operating instructions in this document elaborate implementation; they do not replace the full source condition or its applicable annexes. A reference to a whole chapter requires selection of every triggered subclause, not only the examples printed here.

ASTRA ID / page	Source subject	Implementation use
1.3 / 10	Object and responsibility tuple	Requirement, objective evidence and local child predicates
1.5 / 11	Activity-based applicability	Requirement, objective evidence and local child predicates
3.1 / 12	Scheme ownership and constitutional authority	Requirement, objective evidence and local child predicates
3.2 / 12	Accrediting and delivery entities	Requirement, objective evidence and local child predicates

ASTRA ID / page	Source subject	Implementation use
3.3 / 13	Technical committees and programme stewardship	Requirement, objective evidence and local child predicates
3.4 / 13	Case separation and decision panels	Requirement, objective evidence and local child predicates
3.5 / 13	Commercial and leadership boundaries	Requirement, objective evidence and local child predicates
3.6 / 13	Liability, continuity and accountability	Requirement, objective evidence and local child predicates
4.1 / 13	Development request and feasibility	Requirement, objective evidence and local child predicates
4.2 / 14	Profile content and acceptance criteria	Requirement, objective evidence and local child predicates
4.3 / 14	Consultation and technical approval	Requirement, objective evidence and local child predicates
4.4 / 14	Pilot evaluation and method challenge	Requirement, objective evidence and local child predicates
4.5 / 14	Activation gate and scope release	Requirement, objective evidence and local child predicates
4.6 / 14	Interpretation and controlled evolution	Requirement, objective evidence and local child predicates
5.1 / 15	Identity, obligations and accountability	Requirement, objective evidence and local child predicates
5.2 / 15	Process architecture and controlled work	Requirement, objective evidence and local child predicates
5.3 / 15	Risk, safety and opportunity	Requirement, objective evidence and local child predicates
5.4 / 15	Change, configuration and retained knowledge	Requirement, objective evidence and local child predicates
5.5 / 15	External provision and sub-tier responsibility	Requirement, objective evidence and local child predicates
5.6 / 16	Continuity, events and learning	Requirement, objective evidence and local child predicates
6.1 / 16	Institutional and personal conflicts	Requirement, objective evidence and local child predicates
6.2 / 16	Participation and equal treatment	Requirement, objective evidence and local child predicates
6.3 / 16	Consultancy, learning and evaluation	Requirement, objective evidence and local child predicates
6.4 / 16	Integrity of records and professional behaviour	Requirement, objective evidence and local child predicates

ASTRA ID / page	Source subject	Implementation use
6.5 / 17	Independent oversight	Requirement, objective evidence and local child predicates
7.1 / 17	Function-specific competence	Requirement, objective evidence and local child predicates
7.2 / 17	Entry evidence and demonstration	Requirement, objective evidence and local child predicates
7.3 / 17	Essential steps and assessment security	Requirement, objective evidence and local child predicates
7.4 / 17	Initial assessor population	Requirement, objective evidence and local child predicates
7.5 / 18	Maintenance and inactivity	Requirement, objective evidence and local child predicates
7.6 / 18	Applicant personnel and task authority	Requirement, objective evidence and local child predicates
8.2 / 18	Equipment identity and fitness	Requirement, objective evidence and local child predicates
8.3 / 18	Traceability and calibration	Requirement, objective evidence and local child predicates
9.2 / 19	Verification and validation	Requirement, objective evidence and local child predicates
9.4 / 20	Measurement model and uncertainty	Requirement, objective evidence and local child predicates
9.5 / 20	Decision rules and boundary results	Requirement, objective evidence and local child predicates
9.6 / 20	Continuing validity and comparisons	Requirement, objective evidence and local child predicates
9.7 / 20	Technical reporting and amendments	Requirement, objective evidence and local child predicates
10.2 / 21	Confidentiality, personal data and controlled technology	Requirement, objective evidence and local child predicates
10.5 / 21	Remote access and live evidence	Requirement, objective evidence and local child predicates
10.6 / 22	Recovery, retention and closure	Requirement, objective evidence and local child predicates
11.1 / 22	Expression of interest and formal application	Requirement, objective evidence and local child predicates
11.2 / 22	Technical and impartiality review	Requirement, objective evidence and local child predicates
11.3 / 22	Existing evidence and reuse	Requirement, objective evidence and local child predicates

ASTRA ID / page	Source subject	Implementation use
11.4 / 22	Binding terms and holder duties	Requirement, objective evidence and local child predicates
11.5 / 23	Authorisation to act for AF	Requirement, objective evidence and local child predicates
11.6 / 23	Fees, corrections and withdrawal	Requirement, objective evidence and local child predicates
12.1 / 23	Planning from scope and consequence	Requirement, objective evidence and local child predicates
12.2 / 23	Sites and stations	Requirement, objective evidence and local child predicates
12.3 / 23	Method-family witnessing	Requirement, objective evidence and local child predicates
12.4 / 24	Time and productive work	Requirement, objective evidence and local child predicates
12.5 / 24	Multifamily coordination	Requirement, objective evidence and local child predicates
12.6 / 24	Plan approval and changes	Requirement, objective evidence and local child predicates
13.1 / 24	Opening, safety and access confirmation	Requirement, objective evidence and local child predicates
13.2 / 24	Implementation and vertical trails	Requirement, objective evidence and local child predicates
13.3 / 25	Witness control	Requirement, objective evidence and local child predicates
13.4 / 25	Technical judgement and conflicting evidence	Requirement, objective evidence and local child predicates
13.5 / 25	Closing and report	Requirement, objective evidence and local child predicates
14.1 / 25	Finding formulation and classification	Requirement, objective evidence and local child predicates
14.2 / 25	Immediate protection and notifications	Requirement, objective evidence and local child predicates
14.3 / 26	Occurrence, escape and systemic extent	Requirement, objective evidence and local child predicates
14.4 / 26	Plans, closure and effectiveness	Requirement, objective evidence and local child predicates
14.5 / 26	Existing status and new grants	Requirement, objective evidence and local child predicates
14.6 / 26	Recurrence and invalid prior decisions	Requirement, objective evidence and local child predicates

ASTRA ID / page	Source subject	Implementation use
15.1 / 26	Review dossier	Requirement, objective evidence and local child predicates
15.2 / 27	Positive-decision gate	Requirement, objective evidence and local child predicates
15.3 / 27	Panel and dissent	Requirement, objective evidence and local child predicates
15.4 / 27	Permitted outcomes and conditions	Requirement, objective evidence and local child predicates
15.5 / 27	Decision date and communication	Requirement, objective evidence and local child predicates
16.1 / 27	Duration and basis	Requirement, objective evidence and local child predicates
16.2 / 28	Surveillance frequency and coverage	Requirement, objective evidence and local child predicates
16.3 / 28	Material change and notification	Requirement, objective evidence and local child predicates
16.4 / 28	Renewal and interruption	Requirement, objective evidence and local child predicates
16.5 / 28	Suspension, restoration and withdrawal	Requirement, objective evidence and local child predicates
16.6 / 28	Transfer and cessation	Requirement, objective evidence and local child predicates
19.3 / 32	Method performance and detection	Requirement, objective evidence and local child predicates
19.10 / 33	Comparisons and validity programme	Requirement, objective evidence and local child predicates
19.12 / 33	Technical witnessing for accreditation	Requirement, objective evidence and local child predicates
20.3 / 34	Learning outcomes and curriculum alignment	Requirement, objective evidence and local child predicates
20.4 / 34	Admissions, progression and completion	Requirement, objective evidence and local child predicates
20.5 / 34	Assessment validity and academic integrity	Requirement, objective evidence and local child predicates
20.8 / 35	Attainment, improvement and closure of the loop	Requirement, objective evidence and local child predicates
20.9 / 35	Initial operating evidence and readiness only	Requirement, objective evidence and local child predicates
24.1 / 40	Engagement and statement boundary	Requirement, objective evidence and local child predicates

ASTRA ID / page	Source subject	Implementation use
24.2 / 40	C01 – Inventory and data	Requirement, objective evidence and local child predicates
24.3 / 41	C02 – Reduction and transition	Requirement, objective evidence and local child predicates
24.7 / 41	C06 – Low-carbon energy and supply claims	Requirement, objective evidence and local child predicates
24.8 / 41	Materiality and assurance planning	Requirement, objective evidence and local child predicates
24.9 / 42	Verification execution and independent conclusion	Requirement, objective evidence and local child predicates
25.6 / 43	Proficiency and reference-material activities	Requirement, objective evidence and local child predicates
26.4 / 44	Remote, space and long-duration operation	Requirement, objective evidence and local child predicates
27.1 / 44	Accessible intake and classification	Requirement, objective evidence and local child predicates
27.2 / 45	Triage and protection	Requirement, objective evidence and local child predicates
27.3 / 45	Appeal admission and independence	Requirement, objective evidence and local child predicates
27.4 / 45	Investigation, timing and remedy	Requirement, objective evidence and local child predicates
27.5 / 45	Systemic effects and non-retaliation	Requirement, objective evidence and local child predicates
28.1 / 45	Mandatory scope content	Requirement, objective evidence and local child predicates
28.2 / 46	Truthful public wording	Requirement, objective evidence and local child predicates
28.3 / 46	AF marks and authorised use	Requirement, objective evidence and local child predicates
28.4 / 46	Registry states and authenticity	Requirement, objective evidence and local child predicates
28.5 / 46	Registry security, correction and availability	Requirement, objective evidence and local child predicates
29.1 / 46	Internal audit	Requirement, objective evidence and local child predicates
29.2 / 47	Management review and performance	Requirement, objective evidence and local child predicates
29.3 / 47	Independent accrediting-operator review	Requirement, objective evidence and local child predicates

ASTRA ID / page	Source subject	Implementation use
29.4 / 47	Consistency and technical learning	Requirement, objective evidence and local child predicates
29.5 / 47	Financial sustainability and public benefit	Requirement, objective evidence and local child predicates
30.1 / 47	Existing instruments and terminology	Requirement, objective evidence and local child predicates
30.2 / 48	Controlled transition	Requirement, objective evidence and local child predicates
30.3 / 48	Reliance and cooperation agreements	Requirement, objective evidence and local child predicates
30.4 / 48	Scope withdrawal and learner/customer protection	Requirement, objective evidence and local child predicates
31.1 / 48	Minimum records and equivalent systems	Requirement, objective evidence and local child predicates
31.2 / 48	Document hierarchy and phased development	Requirement, objective evidence and local child predicates
31.3 / 49	Actual adoption record	Requirement, objective evidence and local child predicates
31.4 / 49	Implementation and verification	Requirement, objective evidence and local child predicates
31.5 / 49	Review of this edition	Requirement, objective evidence and local child predicates
41.2 / 62	Integrated route and hidden characteristics	Requirement, objective evidence and local child predicates
47.6 / 71	Incident recovery and assured return	Requirement, objective evidence and local child predicates
48.1 / 71	Critical suppliers and actual performers	Requirement, objective evidence and local child predicates
48.2 / 71	Flow-down and acknowledgement	Requirement, objective evidence and local child predicates
52.3 / 76	Practical learning and assessment integrity	Requirement, objective evidence and local child predicates
52.5 / 77	Attainment, improvement and learner protection	Requirement, objective evidence and local child predicates
53.2 / 77	Inventory and comparable reduction	Requirement, objective evidence and local child predicates
54.4 / 79	Occurrence, escape and affected population	Requirement, objective evidence and local child predicates
56.1 / 80	Distinct entities and authoritative records	Requirement, objective evidence and local child predicates

ASTRA ID / page	Source subject	Implementation use
56.2 / 80	Evidence states and requirement conclusions	Requirement, objective evidence and local child predicates
56.3 / 81	Decision and publication safeguards	Requirement, objective evidence and local child predicates
56.4 / 81	Validation and prohibited cases	Requirement, objective evidence and local child predicates
56.5 / 81	Export, migration and meaningful recovery	Requirement, objective evidence and local child predicates
57.1 / 81	Role-specific competence and scope	Requirement, objective evidence and local child predicates
57.2 / 81	Initial cadre and equivalent prior work	Requirement, objective evidence and local child predicates
57.3 / 82	Practical assessment and maintained practice	Requirement, objective evidence and local child predicates
57.4 / 82	Consistency without coerced agreement	Requirement, objective evidence and local child predicates
57.5 / 82	Independent accrediting-operator review	Requirement, objective evidence and local child predicates
58.1 / 82	One scope tuple for each conclusion	Requirement, objective evidence and local child predicates
58.2 / 82	Coverage and productive resources	Requirement, objective evidence and local child predicates
58.3 / 83	Vertical trails and shared failure	Requirement, objective evidence and local child predicates
58.4 / 83	Independent review and non-compensable gates	Requirement, objective evidence and local child predicates
58.5 / 83	Continuing status and real chronology	Requirement, objective evidence and local child predicates
59.1 / 83	Need, benefit and foreseeable consequences	Requirement, objective evidence and local child predicates
59.2 / 83	Distinguish research, pilot and operational use	Requirement, objective evidence and local child predicates
59.3 / 84	Emerging domains and evidence gaps	Requirement, objective evidence and local child predicates
59.4 / 84	Safe experimentation and independent challenge	Requirement, objective evidence and local child predicates
59.5 / 84	Learning, consultation and controlled adoption	Requirement, objective evidence and local child predicates
60.1 / 84	Foundation and retained architecture	Requirement, objective evidence and local child predicates

ASTRA ID / page	Source subject	Implementation use
60.2 / 85	Common operating system and competent people	Requirement, objective evidence and local child predicates
60.3 / 85	Family and technical-profile development	Requirement, objective evidence and local child predicates
60.4 / 85	Integrated pilots and local system acceptance	Requirement, objective evidence and local child predicates
60.5 / 85	Controlled launch, surveillance and evolution	Requirement, objective evidence and local child predicates
61.1 / 86	Publication identity	Explicit verification and acceptance predicate
61.2 / 86	Retained text and authored additions	Explicit verification and acceptance predicate
61.3 / 86	Dependent documents and compatibility	Explicit verification and acceptance predicate
61.4 / 86	Actual approval and activation	Explicit verification and acceptance predicate
61.5 / 87	Correction, custody and file integrity	Explicit verification and acceptance predicate
62.1 / 88	Atomic requirement record	Explicit verification and acceptance predicate
62.2 / 88	Mandatory parameter completion	Explicit verification and acceptance predicate
62.3 / 88	Evidence validity before conformity	Explicit verification and acceptance predicate
62.4 / 88	Four requirement states	Explicit verification and acceptance predicate
62.5 / 89	No compensation or favourable default	Explicit verification and acceptance predicate
62.6 / 89	Exceptions, tailoring and unresolved conflict	Explicit verification and acceptance predicate
62.7 / 89	Decision replay and consistency	Explicit verification and acceptance predicate
63.1 / 90	Domain selection without geographic omission	Explicit verification and acceptance predicate
63.2 / 90	Object and activity rather than a universal label	Explicit verification and acceptance predicate
63.3 / 90	Environment, phase and mode matrix	Explicit verification and acceptance predicate
63.4 / 90	No automatic new programme family	Explicit verification and acceptance predicate
63.5 / 91	Unknown and future environments	Explicit verification and acceptance predicate
63.6 / 91	Interface and lifecycle closure	Explicit verification and acceptance predicate
64.1 / 92	Mission environmental baseline	Explicit verification and acceptance predicate
64.2 / 92	Geometry, reference frames and event time	Explicit verification and acceptance predicate
64.3 / 92	Uncertainty, scenarios and design envelope	Explicit verification and acceptance predicate
64.4 / 92	Resource budgets and coupled margins	Explicit verification and acceptance predicate
64.5 / 92	Heritage and similarity	Explicit verification and acceptance predicate
64.6 / 93	Baseline maintenance and irreversible decisions	Explicit verification and acceptance predicate

ASTRA ID / page	Source subject	Implementation use
65.1 / 94	Structures, mechanisms and deployment	Explicit verification and acceptance predicate
65.2 / 94	Thermal control and thermal protection	Explicit verification and acceptance predicate
65.3 / 94	Power generation, storage and distribution	Explicit verification and acceptance predicate
65.4 / 94	Avionics, electronics and radiation effects	Explicit verification and acceptance predicate
65.5 / 95	Attitude, pointing, sensing and control interfaces	Explicit verification and acceptance predicate
65.6 / 95	Payload function and scientific or service output	Explicit verification and acceptance predicate
65.7 / 95	Integrated platform acceptance	Explicit verification and acceptance predicate
66.1 / 96	End-to-end service definition	Explicit verification and acceptance predicate
66.2 / 96	Link and performance budgets	Explicit verification and acceptance predicate
66.3 / 96	Delay and feasible intervention	Explicit verification and acceptance predicate
66.4 / 96	Data age and time uncertainty	Explicit verification and acceptance predicate
66.5 / 97	Position and navigation-support integrity	Explicit verification and acceptance predicate
66.6 / 97	Secure command and relay interfaces	Explicit verification and acceptance predicate
66.7 / 97	Outage, recovery and service evidence	Explicit verification and acceptance predicate
67.1 / 98	Configuration and operational baseline	Explicit verification and acceptance predicate
67.2 / 98	Command proposal and preconditions	Explicit verification and acceptance predicate
67.3 / 98	Receipt, execution and completion	Explicit verification and acceptance predicate
67.4 / 98	Planning and conflicts	Explicit verification and acceptance predicate
67.5 / 99	Personnel, handover and remote support	Explicit verification and acceptance predicate
67.6 / 99	Anomaly response and safe restoration	Explicit verification and acceptance predicate
67.7 / 99	Rehearsal and independent readiness	Explicit verification and acceptance predicate
68.1 / 100	Fleet membership and common dependencies	Explicit verification and acceptance predicate
68.2 / 100	Distributed function and degradation	Explicit verification and acceptance predicate
68.3 / 100	Tracking and conjunction-information quality	Explicit verification and acceptance predicate
68.4 / 100	Coordination and consent	Explicit verification and acceptance predicate
68.5 / 101	Debris prevention and released items	Explicit verification and acceptance predicate
68.6 / 101	Mission extension and terminal resources	Explicit verification and acceptance predicate
68.7 / 101	Status and long-term custody	Explicit verification and acceptance predicate
69.1 / 102	Consent and exact intervention	Explicit verification and acceptance predicate
69.2 / 102	Interface compatibility	Explicit verification and acceptance predicate

ASTRA ID / page	Source subject	Implementation use
69.3 / 102	Relative-state and completion evidence	Explicit verification and acceptance predicate
69.4 / 102	Interruptions and safe boundaries	Explicit verification and acceptance predicate
69.5 / 103	Transferred material, energy and data	Explicit verification and acceptance predicate
69.6 / 103	Post-intervention configuration and service claim	Explicit verification and acceptance predicate
70.1 / 104	Distinct release objects	Explicit verification and acceptance predicate
70.2 / 104	Integrated environment and interface verification	Explicit verification and acceptance predicate
70.3 / 104	Test and hazardous-work readiness	Explicit verification and acceptance predicate
70.4 / 104	Reuse and cumulative history	Explicit verification and acceptance predicate
70.5 / 105	Return, landing and recovery interfaces	Explicit verification and acceptance predicate
70.6 / 105	Readiness decision and post-event learning	Explicit verification and acceptance predicate
71.1 / 106	Destination-specific conditions	Explicit verification and acceptance predicate
71.2 / 106	Surface mobility and interaction	Explicit verification and acceptance predicate
71.3 / 106	Atmospheric and buoyant exploration	Explicit verification and acceptance predicate
71.4 / 106	Subsurface and ocean-world interfaces	Explicit verification and acceptance predicate
71.5 / 107	Long darkness and resource interruption	Explicit verification and acceptance predicate
71.6 / 107	Construction and surface infrastructure	Explicit verification and acceptance predicate
71.7 / 107	Autonomy and limited intervention	Explicit verification and acceptance predicate
71.8 / 107	Completion, samples and remaining duties	Explicit verification and acceptance predicate
72.1 / 108	Time horizon and recoverability	Explicit verification and acceptance predicate
72.2 / 108	Solar and extreme thermal exposure	Explicit verification and acceptance predicate
72.3 / 108	Low-flux and limited-power missions	Explicit verification and acceptance predicate
72.4 / 108	Autonomy during long communication delay	Explicit verification and acceptance predicate
72.5 / 108	Ageing and long-term digital support	Explicit verification and acceptance predicate
72.6 / 109	Scientific instruments and observation integrity	Explicit verification and acceptance predicate
72.7 / 109	Future-domain feasibility and responsible closure	Explicit verification and acceptance predicate
73.1 / 110	Population, mission and human tasks	Explicit verification and acceptance predicate
73.2 / 110	Integrated life support	Explicit verification and acceptance predicate
73.3 / 110	Consumables and survival time	Explicit verification and acceptance predicate
73.4 / 110	Habitat integrity and interfaces	Explicit verification and acceptance predicate
73.5 / 111	Human factors and effective authority	Explicit verification and acceptance predicate

ASTRA ID / page	Source subject	Implementation use
73.6 / 111	Extravehicular activity and individual equipment	Explicit verification and acceptance predicate
73.7 / 111	Medical capability and health-data boundaries	Explicit verification and acceptance predicate
73.8 / 111	Emergency, refuge and safe return	Explicit verification and acceptance predicate
74.1 / 112	Mission-specific protection classification	Explicit verification and acceptance predicate
74.2 / 112	Contamination pathways and control allocation	Explicit verification and acceptance predicate
74.3 / 112	Scientific cleanliness and background	Explicit verification and acceptance predicate
74.4 / 112	Sample identity and custody	Explicit verification and acceptance predicate
74.5 / 113	Return-chain containment and receiving readiness	Explicit verification and acceptance predicate
74.6 / 113	Anomalies, unknown state and release of information	Explicit verification and acceptance predicate
74.7 / 113	Disposition and residual responsibility	Explicit verification and acceptance predicate
75.1 / 114	Process purpose and environment	Explicit verification and acceptance predicate
75.2 / 114	Inputs, feedstock and source variability	Explicit verification and acceptance predicate
75.3 / 114	Essential variables and remote monitoring	Explicit verification and acceptance predicate
75.4 / 114	Yield, mass balance and circularity	Explicit verification and acceptance predicate
75.5 / 115	Logistics, storage and compatibility	Explicit verification and acceptance predicate
75.6 / 115	Maintenance, spares and distributed production	Explicit verification and acceptance predicate
75.7 / 115	Handover, resource claims and closure	Explicit verification and acceptance predicate
76.1 / 116	System boundary and conversion chain	Explicit verification and acceptance predicate
76.2 / 116	Beamed and remote energy services	Explicit verification and acceptance predicate
76.3 / 116	Cryogenic, chemical and pressure interfaces	Explicit verification and acceptance predicate
76.4 / 116	Nuclear and radiation-source governance	Explicit verification and acceptance predicate
76.5 / 117	Infrastructure availability and failure propagation	Explicit verification and acceptance predicate
76.6 / 117	Degradation, environmental claims and retirement	Explicit verification and acceptance predicate
77.1 / 118	Requirement-to-method completeness	Explicit verification and acceptance predicate
77.2 / 118	Campaign design and article pedigree	Explicit verification and acceptance predicate
77.3 / 118	Measurement and uncertainty readiness	Explicit verification and acceptance predicate
77.4 / 118	Combined effects and sequence	Explicit verification and acceptance predicate
77.5 / 118	Original data and invalid tests	Explicit verification and acceptance predicate
77.6 / 119	Numerical and attribute acceptance	Explicit verification and acceptance predicate
77.7 / 119	Retest and corrective verification	Explicit verification and acceptance predicate

ASTRA ID / page	Source subject	Implementation use
77.8 / 119	Independent campaign closure	Explicit verification and acceptance predicate
78.1 / 120	Released digital configuration	Explicit verification and acceptance predicate
78.2 / 120	Operational domain and prohibited behaviour	Explicit verification and acceptance predicate
78.3 / 120	Evaluation data and model credibility	Explicit verification and acceptance predicate
78.4 / 120	Human authority and consequential decisions	Explicit verification and acceptance predicate
78.5 / 121	Security and trusted updates	Explicit verification and acceptance predicate
78.6 / 121	Monitoring, drift and adaptation	Explicit verification and acceptance predicate
78.7 / 121	Recovery and semantic portability	Explicit verification and acceptance predicate
79.1 / 122	Protect people and essential assets before mission success	Explicit verification and acceptance predicate
79.2 / 122	Emergency feasibility and resources	Explicit verification and acceptance predicate
79.3 / 122	Loss of contact and uncertain physical state	Explicit verification and acceptance predicate
79.4 / 122	Affected populations and historical decisions	Explicit verification and acceptance predicate
79.5 / 122	Terminal evidence and responsible transfer	Explicit verification and acceptance predicate
79.6 / 123	Learning and sustained accountability	Explicit verification and acceptance predicate
80.1 / 124	One complete application schedule	Explicit verification and acceptance predicate
80.2 / 124	Domain and verification completeness	Explicit verification and acceptance predicate
80.3 / 124	Competent independent closure	Explicit verification and acceptance predicate
80.4 / 124	Bounded claim and publication	Explicit verification and acceptance predicate
80.5 / 124	Continuing conformity and change	Explicit verification and acceptance predicate
80.6 / 125	Completion boundary	Explicit verification and acceptance predicate

E3 Detailed operating extensions

AF-AST-PR-001 – Document, Record and Version Control

Implementation basis: 56.1 (p. 80); 56.2 (p. 80); 56.5 (p. 81); 61.1 (p. 86); 61.3 (p. 86); 62.1 (p. 88); 62.7 (p. 89); 78.7 (p. 121); 80.4 (p. 124)

X01.1 Freeze the publication and requirement baseline

The custodian records document code, edition identity, file digest, controlled version, approved applicability and the exact source clause. Keep the public FIRST EDITION label separate from mutable technical configuration and actual approval events.

Completion / hold: PASS requires a uniquely retrievable source and an authorised effective version; a matching filename is insufficient.

X01.2 Reconcile corrected and superseded records

Keep original values, reason, author, event time, receiving acknowledgement and all dependent requirement links. Assess whether changing text, units, relationships or a drawing invalidates earlier decisions.

Completion / hold: HOLD applies when the earlier decision cannot be reconstructed or a required original is inaccessible.

X01.3 Prove semantic transfer

Compare record identities, field meaning, units, configurations, attachments, permissions and adverse status before retiring the source system. Reconcile later events after the selected recovery point.

Completion / hold: Matching counts without matching identities and meanings fails transfer acceptance.

X01.4 Issue and withdraw controlled copies

Notify affected users of actual changes, retain the prior edition basis and remove only unapproved current-use claims. Do not backdate implementation from the printed publication date.

Completion / hold: Release needs authentic authority, a complete distribution record and tested retrieval of both current and historical evidence.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-002 – Normative Development, Consultation and Profile Release

Implementation basis: 4.1 (p. 13); 4.2 (p. 14); 4.3 (p. 14); 4.4 (p. 14); 4.5 (p. 14); 59.3 (p. 84); 62.1 (p. 88); 62.2 (p. 88); 63.5 (p. 91); 80.1 (p. 124); 80.6 (p. 125)

X02.1 Convert need into a bounded development brief

Record the intended beneficiaries, affected object, existing family/module, mission domains, actual duty and evidence gaps. Distinguish a new method from a new programme family.

Completion / hold: HOLD remains until the activity and retained duties can be stated without an unrestricted sector label.

X02.2 Write testable proposed requirements

Assign stable child IDs to independent conditions, define predicates and populate every triggered technical parameter. Identify unresolved scientific assumptions rather than treating them as values.

Completion / hold: No live profile release while an essential criterion, method, authority or parameter is undefined.

X02.3 Test the proposal before approval

Use normal and adverse technical cases, secure mock records and independent first responses. Record unclear wording, discriminatory behaviour, practical burden and invalid inferences.

Completion / hold: Synthetic workflow success alone does not establish field method capability.

X02.4 Complete genuine consultation and activation

Preserve notice, comment population, original responses, reasoned dispositions, eligible voters and substantive votes. The actual technical and institutional approvals precede scope activation.

Completion / hold: Apply the existing consultation and voting gates and then independently prove operator, people, systems and exact-profile readiness.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-003 – Application, Eligibility and Contract Review

Implementation basis: 11.1 (p. 22); 11.2 (p. 22); 11.3 (p. 22); 11.4 (p. 22); 62.1 (p. 88); 62.2 (p. 88); 63.2 (p. 90); 63.6 (p. 91); 80.1 (p. 124); 80.4 (p. 124)

X03.1 Classify request and object separately

Distinguish enquiry, development request, formal application and each requested outcome. Collect actual performer, configuration, site, mission domain and period without assuming the applicant controls the whole mission.

Completion / hold: Only a released, evaluable scope enters live assessment; incomplete scope stays deferred or in development.

X03.2 Confirm competent delivery before commitment

Check actual specialists, independent review, panel availability, lawful evidence access and local or remote witnessing feasibility. Identify missing domain expertise before a commercial offer.

Completion / hold: An unsatisfied essential resource or independence condition prevents an unconditional assessment commitment.

X03.3 Define evidence access and dependencies

Agree usable access to original observations, proprietary technical evidence, upstream/downstream interfaces, relevant incident history and remote records.

Completion / hold: A confidentiality promise does not close inaccessible essential evidence; use a lawful bounded route or defer.

X03.4 Freeze accepted terms and amendments

Name the services, criteria, actual obligations, costs, handovers, permissions, record custody, remedies and withdrawal effects. Treat added mission domains as a scope change, not an administrative edit.

Completion / hold: The accepted contract and every technical result must refer to the same exact object and controlled criteria.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-004 – Scope Definition, Applicability and Evidence Reuse

Implementation basis: 1.3 (p. 10); 1.5 (p. 11); 11.3 (p. 22); 62.1 (p. 88); 62.4 (p. 88); 63.1 (p. 90); 63.3 (p. 90); 63.6 (p. 91); 64.5 (p. 92); 80.1 (p. 124); 80.2 (p. 124)

X04.1 Resolve every applicable domain

Compare the mission concept with AK01-AK32 and the actual activity with F01-F08. Record each phase, mode, duration, interface and retained responsibility.

Completion / hold: Unknown applicability is HOLD; absent equipment or budget never establishes N/A.

X04.2 Establish a defensible similarity argument

Compare object identity, design, sources, environment, software, prior exposure and observability. Assign reused evidence to specific unchanged requirements only.

Completion / hold: Every material difference has accepted new evidence or an explicitly limited conclusion.

X04.3 Maintain separate outcome tuples

A combined case may share provenance and visits but keeps separate methods, criteria, sites, instances, reviewers and independent decisions.

Completion / hold: No shared dossier creates a blanket mission, tenant, supplier or fleet approval.

X04.4 Approve exclusion and re-open triggers

An independent technical reviewer checks the absent trigger and retained duty, names the supported excluded boundary and records conditions that would re-open it.

Completion / hold: Only independently justified exclusions receive N/A; an unexamined consequential interface remains HOLD.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-005 – Personnel Qualification, Authorisation and Monitoring

Implementation basis: 7.1 (p. 17); 7.3 (p. 17); 7.4 (p. 17); 7.5 (p. 18); 57.1 (p. 81); 57.3 (p. 82); 62.5 (p. 89); 73.1 (p. 110); 73.5 (p. 111); 78.4 (p. 120); 80.3 (p. 124)

X05.1 Map competence to an actual task

Separate knowledge, specialist methods, practical evaluation, leadership, review, decision and appeal. Map mission-domain demands and evidence-access limits to each role.

Completion / hold: A general title or training course is not an authorisation for an unfamiliar task.

X05.2 Observe essential performance directly

Define task conditions, representative configuration, rubric, prohibited assistance and essential steps before the demonstration. Preserve failed attempts and material limits of simulation.

Completion / hold: Every essential step passes individually; component scores cannot compensate for essential failure.

X05.3 Test effective human authority

Confirm information, response time, skill and technical access needed for intervention or independent decisions, particularly with delayed mission data and AI support.

Completion / hold: A nominal human approval point fails when timely meaningful intervention is not feasible.

X05.4 Maintain event-time currency

Review actual practice, learning, witnessed work, changing methods, report quality and adverse feedback. Record suspension and supervised reactivation using genuine dates.

Completion / hold: Later authorisation cannot validate prior out-of-scope work; assess affected earlier outputs separately.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-006 – Impartiality Screening and Case Recusal

Implementation basis: 3.2 (p. 12); 3.4 (p. 13); 6.1 (p. 16); 6.3 (p. 16); 6.5 (p. 17); 62.5 (p. 89); 62.7 (p. 89); 78.4 (p. 120); 80.3 (p. 124)

X06.1 Screen institutional and personal influence

Trace ownership, consultancy, employment, finance, close relationships, prior case roles and technical method authorship at assignment time.

Completion / hold: A declared material conflict requires effective exclusion or replacement, not a signature alone.

X06.2 Prevent role-chain self-review

Check who created evidence, advised the applicant, evaluated it, reviewed it and decides the outcome. A technical expert's report remains evaluation evidence where they produced it.

Completion / hold: An evaluator or relevant consultant cannot independently approve the same work.

X06.3 Protect review access and resources

Provide the disinterested reviewer with original adverse evidence, sufficient specialist support and protected reporting. Implicated people shall not select their own investigator.

Completion / hold: HOLD the decision when practical independence or access is compromised.

X06.4 Record challenge and reassignment

Preserve the concern, decision, independent clearance and any affected prior work. Reassign without moving original finding clocks or quietly deleting the contested evidence.

Completion / hold: Only a competent eligible role proceeds; replacement does not automatically validate prior compromised conclusions.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-007 – Assessment Planning, Resources and Site Coverage

Implementation basis: 12.1 (p. 23); 12.2 (p. 23); 12.3 (p. 23); 12.4 (p. 24); 58.2 (p. 82); 63.3 (p. 90); 64.4 (p. 92); 77.1 (p. 118); 77.2 (p. 118); 80.2 (p. 124)

X07.1 Build a phase-by-mode coverage matrix

Identify every needed site, method family, operator role, configuration, normal/degraded scenario and remote limitation. Assign a required observation or justified alternative to each cell.

Completion / hold: No uncovered essential cell can be marked complete from another site's headquarters evidence.

X07.2 Allocate productive effort

Estimate necessary person-hours by actual task, shared-work contribution, specialism and concurrency. Separate travel, reporting, translation delay, review and panel effort.

Completion / hold: Shared administrative evidence can be counted once; distinct technical observations and independent work cannot be removed.

X07.3 Schedule dependencies and adverse work

Place prerequisites before dependent evaluation and reserve access to failed, changed, interrupted and difficult cases. A planned activity is distinct from actual execution.

Completion / hold: An infeasible schedule or unavailable specialist requires additional work or a bounded deferred scope.

X07.4 Close actual coverage

Reconcile planned and actual performer, duration, configuration, observation and evidence; document omissions, rework and resulting limitations.

Completion / hold: The independent reviewer accepts the actual coverage, not the original commercial duration or completion percentage.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-008 – Remote and Hybrid Assessment Control

Implementation basis: 10.5 (p. 21); 13.3 (p. 25); 26.4 (p. 44); 63.3 (p. 90); 66.3 (p. 96); 66.4 (p. 96); 67.3 (p. 98); 74.4 (p. 112); 77.5 (p. 118); 78.7 (p. 121)

X08.1 Qualify remote observability

Specify the essential physical or practical steps, identity, camera/sensor coverage, spatial resolution, timing and what cannot be observed. Compare remote evidence with the intended decision.

Completion / hold: Unobservable essential characteristics remain HOLD unless valid supplementary evidence is accepted.

X08.2 Authenticate source and event time

Confirm live versus recorded content, actual performer, configuration, original timestamp, time scale, permissions and chain of custody.

Completion / hold: Recent receipt or an attractive recording does not prove current state or independent routine performance.

X08.3 Control interruption and substitution

Record loss of feed, sensor saturation, camera movement, substituted articles and coaching. Preserve partial observations and define the unobserved interval.

Completion / hold: No uninterrupted witness claim survives a material gap; repeat or supplement the required observation safely.

X08.4 Reconcile remote completion and custody

Separate instruction, receipt, execution, observed completion and receiving acceptance. Verify retrieval and protected record transfer after the session.

Completion / hold: Only the demonstrated bounded task is accepted; command acknowledgement alone is not physical completion.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-009 – Technical Witnessing and Method-Family Coverage

Implementation basis: 12.3 (p. 23); 13.3 (p. 25); 19.12 (p. 33); 41.2 (p. 62); 62.3 (p. 88); 64.5 (p. 92); 75.3 (p. 114); 77.2 (p. 118); 77.3 (p. 118); 77.7 (p. 119)

X09.1 Define the method family technically

Group only common principles, geometry/material ranges, equipment, competence and failure mechanisms. Identify unique or high-consequence boundaries that cannot be inferred.

Completion / hold: No unrelated technique is added because it shares a performer or report template.

X09.2 Observe the complete task

Follow identification, preparation, setup, essential execution, raw data, interpretation, reporting and independent release within safe authorised arrangements.

Completion / hold: A selected favourable demonstration cannot replace missing essential preparation or interpretation evidence.

X09.3 Challenge hidden and remote properties

State what is directly measured, validly inferred or unknown and test relevant difficult boundaries and false-negative mechanisms.

Completion / hold: Process telemetry or nominal equipment output cannot replace an unobservable required product property.

X09.4 Review change and corrective retest

After an interruption, source change or failed witness, preserve originals and define corrective demonstration including the original failed mechanism.

Completion / hold: A fresh favourable run does not validate earlier affected output or automatically extend method scope.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-010 — Measurement Traceability, Uncertainty and Decision Rules

Implementation basis: 8.2 (p. 18); 8.3 (p. 18); 9.4 (p. 20); 9.5 (p. 20); 62.2 (p. 88); 62.3 (p. 88); 62.4 (p. 88); 62.7 (p. 89); 64.2 (p. 92); 77.3 (p. 118); 77.6 (p. 119)

X10.1 Freeze the quantitative contract

Define the measurand, model, corrected result, units, bounds, inclusivity, actual configuration, uncertainty interpretation and prospective predicate.

Completion / hold: Invalid or missing essential inputs remain HOLD; the assessor does not supply an undocumented limit.

X10.2 Propagate actual uncertainty and dependence

Retain source distributions, sensitivity coefficients, covariance and model discrepancy. Distinguish standard uncertainty, expanded coverage and unbounded knowledge gaps.

Completion / hold: A copied instrument capability or assumed independence cannot replace a use-specific uncertainty budget.

X10.3 Apply state logic without rounding bias

Evaluate the full interval or a prospectively approved alternative with unrounded finite inputs. Preserve PASS, FAIL, HOLD and approved N/A as separate states.

Completion / hold: Boundary overlap remains HOLD; invalid evidence is not converted into a proven product defect.

X10.4 Replay and report independently

Recompute a boundary case with the same frozen inputs, identify any different assumptions and record scope-limited reporting and recipient corrections.

Completion / hold: Unresolved replay disagreement blocks the dependent acceptance even where the nominal arithmetic appears plausible.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-011 – Continuing Validity, Comparisons and Proficiency Activities

Implementation basis: 9.2 (p. 19); 9.6 (p. 20); 19.3 (p. 32); 19.10 (p. 33); 25.6 (p. 43); 62.3 (p. 88); 64.5 (p. 92); 77.2 (p. 118); 77.5 (p. 118); 77.7 (p. 119)

X11.1 Design a purposeful validity programme

Define the measurand or task, coverage, reference basis, participant independence, frequency rationale and adverse-performance response.

Completion / hold: Participation alone is not satisfactory performance or demonstrated detection capability.

X11.2 Separate assigned-value and participant uncertainty

Review preparation, homogeneity, stability, transport, characterisation and uncertainty before attributing differences to a participant.

Completion / hold: Unstable or non-representative challenge material cannot support an unqualified competence conclusion.

X11.3 Evaluate limited and adverse results

Preserve nonresponses, invalid runs, outliers and unrepresented fields. Where an external exercise is unavailable, document a technically equivalent challenge and limitations.

Completion / hold: A missing comparison is not an automatic pass; accepted alternatives must test the actual claimed ability.

X11.4 Close causes and historical extent

Test occurrence and escape causes, re-execute the original adverse mechanism and review outputs that depended on the deficient method.

Completion / hold: New satisfactory performance restores only a bounded current capability after independent acceptance; old evidence is not rewritten.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-012 – Technical Reporting, Amendments and Report Review

Implementation basis: 9.7 (p. 20); 13.5 (p. 25); 28.1 (p. 45); 62.3 (p. 88); 62.4 (p. 88); 65.6 (p. 95); 67.3 (p. 98); 74.6 (p. 113); 77.5 (p. 118); 77.8 (p. 119); 80.4 (p. 124)

X12.1 Reconcile output identity and basis

Confirm actual item, configuration, method, site, period, performer, conditions, raw evidence, corrections and authorised signatory.

Completion / hold: A report title or customer description cannot substitute for verified identity and scope.

X12.2 Separate observed result from interpretation

Label measured, model-derived, declared and unknown information; state uncertainty, detection/access limits and the justified population.

Completion / hold: Qualification, provider competence, scientific inference and operational permission are not interchangeable report conclusions.

X12.3 Control adverse and amended reports

Keep earlier issued versions, exact correction reason, affected characteristics, original failures and recipients who may have relied on them.

Completion / hold: A replacement favourable report cannot erase a valid adverse result or make a missing observation contemporaneous.

X12.4 Review publication against authority

Compare report, scope schedule, registry and public claim with the actual independent decision. Use the printed edition date only as publication identity.

Completion / hold: Every communicated result retains its actual event history and no unsupported broader scope.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-013 – Nonconformity, Containment and Corrective Action

Implementation basis: 14.1 (p. 25); 14.2 (p. 25); 14.3 (p. 26); 14.4 (p. 26); 14.5 (p. 26); 54.4 (p. 79); 62.3 (p. 88); 62.5 (p. 89); 77.5 (p. 118); 77.7 (p. 119); 79.4 (p. 122)

X13.1 Separate evidence gap, technical failure and finding

Record whether data are valid before declaring a failed property. State the exact requirement, observed gap, affected scope and independent classification.

Completion / hold: HOLD is not proof of product failure, but a demonstrated control failure still needs an appropriate finding.

X13.2 Protect and trace the shared extent

Stop or restrict affected use under actual authority, preserve evidence and trace common source, equipment, software, method and personnel dependencies.

Completion / hold: Protection and existing notification clocks run without waiting for root-cause wording or a replacement report.

X13.3 Test occurrence and escape causes

Use competing explanations, actual history, control design, workload and interface evidence. Define effectiveness criteria and exposure before retest.

Completion / hold: Issuing training, changing an owner or recalibrating equipment alone does not close a systemic cause.

X13.4 Close with prospective evidence

Re-execute the original failure mechanism and necessary regression, reconcile prior outputs and recipients, and independently approve closure.

Completion / hold: No grant, renewal or extension with an open in-scope finding; later correction does not backdate earlier validity.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-014 – Independent Review and Outcome Decisions

Implementation basis: 3.4 (p. 13); 15.1 (p. 26); 15.2 (p. 27); 15.3 (p. 27); 62.4 (p. 88); 62.5 (p. 89); 62.7 (p. 89); 77.8 (p. 119); 80.1 (p. 124); 80.2 (p. 124); 80.3 (p. 124); 80.4 (p. 124)

X14.1 Freeze the independent decision dossier

Reconcile exact scope, requirement population, all triggered parameters, evidence versions, configuration, observations, open issues and accountable roles.

Completion / hold: A missing essential source, unresolved configuration or unsupported exclusion keeps the dependent decision on HOLD.

X14.2 Apply the conjunction before the vote

Require all applicable mandatory rows PASS, approved N/A reasons, verified closure, competent independent authority and required panel participation.

Completion / hold: A numerical majority or high score cannot supply absent evidence or waive a mandatory condition.

X14.3 Replay a difficult or disputed conclusion

Use the same inputs, rule, uncertainty and current role authority to reconstruct the state. Identify the exact differing assumption before accepting agreement.

Completion / hold: Unresolved essential dissent results in more work, a real bounded scope or HOLD, never coerced consensus.

X14.4 Publish only the supported outcome

Record genuine decision, issue and expiry/instance, exact class and limitations. Send authenticated instructions to the registry and relevant recipients.

Completion / hold: Public wording and digital status cannot extend the decision or imply operational permission.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-015 – Surveillance, Renewal and Scope Extension

Implementation basis: 16.1 (p. 27); 16.2 (p. 28); 16.3 (p. 28); 16.4 (p. 28); 58.5 (p. 83); 62.5 (p. 89); 64.6 (p. 93); 68.6 (p. 101); 78.6 (p. 121); 80.5 (p. 124)

X15.1 Freeze the actual cycle baseline

Record original decision, maximum duration, selected shorter intervals, criticality and last completed surveillance by independent outcome.

Completion / hold: Bookings and payment do not fulfil surveillance or extend validity.

X15.2 Re-evaluate mission and technical change

Compare environment, duration, fleet, suppliers, task/site, model and monitoring changes. Preserve evidence retained, invalidated and newly required.

Completion / hold: New domain or materially changed duty remains outside the claim until evaluated and independently accepted.

X15.3 Plan and complete meaningful surveillance

Sample actual routine/adverse work, current people, qualified methods, hidden dependencies and necessary local delivery rather than unchanged manuals only.

Completion / hold: All required scope coverage and clocks must be satisfied; missing completion triggers the controlling status action.

X15.4 Renew without manufactured continuity

Complete findings closure, independent review and genuine decision. A late renewal preserves the expired interval and original historical basis.

Completion / hold: Restoration or reprinting is not renewal; operational life and specialist permissions remain separate.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-016 – Restriction, Suspension, Restoration and Withdrawal

Implementation basis: 14.2 (p. 25); 16.5 (p. 28); 28.4 (p. 46); 62.4 (p. 88); 62.5 (p. 89); 68.7 (p. 101); 79.3 (p. 122); 79.4 (p. 122); 80.5 (p. 124)

X16.1 Define the affected boundary

Link the triggering concern to objects, sites, methods, states, actual dates and shared dependencies. Determine whether a genuinely unaffected scope is independently demonstrable.

Completion / hold: A convenient administrative subset is not enough to conceal a systemic deficiency.

X16.2 Implement protection and truthful status

Issue authorised restriction or suspension and clear notices, maintain urgent communication, and prevent new affected claims during the held period.

Completion / hold: The public state follows the actual decision; lack of a live database connection does not defer necessary protection.

X16.3 Evaluate restoration evidence

Check cause correction, original failure retest, affected prior outputs, current authority, original expiry and the remaining technical basis.

Completion / hold: A payment, appeal or later successful task cannot restore status; all required restoration predicates must pass.

X16.4 Resolve within the controlling window

Preserve the original suspension clock and complete restoration, genuine unaffected restriction or withdrawal. Maintain remaining duties and record access.

Completion / hold: Administrative resets and silent extensions are prohibited; unknown terminal or technical states remain explicit.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-017 – Complaints, Appeals and Independent Remedy

Implementation basis: 27.1 (p. 44); 27.2 (p. 45); 27.3 (p. 45); 27.4 (p. 45); 27.5 (p. 45); 62.3 (p. 88); 62.7 (p. 89); 79.4 (p. 122); 80.3 (p. 124)

X17.1 Retain the original issue and chronology

Distinguish complaint, decision appeal and protected concern while preserving first receipt, relevant notices and requested remedy.

Completion / hold: Reclassification does not erase the earlier clock or postpone immediate protection.

X17.2 Secure a genuinely independent review

Exclude original evaluators, reviewers, decision makers and implicated selectors. Provide relevant expertise and lawful access to both favourable and adverse records.

Completion / hold: An appeal panel without genuine independence or technical access cannot issue a supportable remedy.

X17.3 Distinguish later change from original error

Reconstruct what was known at the original event using frozen criteria and authentic evidence; assess genuinely new evidence separately.

Completion / hold: An improved present condition does not make the original decision automatically correct or incorrect.

X17.4 Issue a reasoned bounded remedy

Record evidence, party responses, upheld/corrected/remitted outcome, actual status effect and systemic actions. Preserve ordinary protection and expiry.

Completion / hold: Appeal receipt alone neither restores a suspended credential nor extends its duration.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-018 – Protected Reporting and Investigation Interfaces

Implementation basis: 6.4 (p. 16); 6.5 (p. 17); 27.1 (p. 44); 27.2 (p. 45); 27.5 (p. 45); 62.3 (p. 88); 74.6 (p. 113); 79.4 (p. 122); 79.6 (p. 123)

X18.1 Preserve original concern and essential evidence

Accept relevant anonymous or named concerns, separate source identity from technical allegation and freeze originals against alteration.

Completion / hold: Unknown reporter identity does not permit ignoring credible protection or integrity evidence.

X18.2 Apply disinterested triage

Assess immediate harm, evidence custody, retaliation and necessary authority. Implicated roles do not select or supervise their own investigation.

Completion / hold: Protect first under actual safe authority; an allegation is not a final misconduct finding.

X18.3 Test competing explanations fairly

Reconstruct chronology, scope, source quality and affected populations, obtain lawful party response and document uncertainty.

Completion / hold: Unsubstantiated evidence is not automatically bad faith; unsupported accusations cannot be published as established fact.

X18.4 Close with systemic and recipient action

Address both occurrence and escape, verify correction, protect confidentiality and route any affected prior decision through independent review.

Completion / hold: Closing an intake record does not close unresolved technical, safety or record-custody obligations.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-019 – Privacy, Confidentiality and Controlled Access

Implementation basis: 10.2 (p. 21); 10.6 (p. 22); 62.3 (p. 88); 67.1 (p. 98); 73.7 (p. 111); 74.4 (p. 112); 78.3 (p. 120); 78.7 (p. 121); 80.4 (p. 124)

X19.1 Classify purpose and necessary data

Define why each technical, personal or controlled item is needed, who may use it and which public representation is sufficient.

Completion / hold: Collecting more sensitive material than needed is not a substitute for better technical evidence.

X19.2 Verify actual access rights

Assign person and service identities, role, scope, event-time authority, permitted transfer and expiry. Control emergency access with attribution and review.

Completion / hold: A shared credential or later permission cannot authenticate an earlier unapproved action.

X19.3 Enable sufficient protected technical review

Provide a lawful detailed or appropriately redacted review path without making essential evidence inaccessible to the competent reviewer.

Completion / hold: HOLD or limit the result when sufficient independent review cannot be achieved; secrecy is not a favourable default.

X19.4 Preserve custody and authorised disposal

Retain necessary originals, record legal/technical holds, test recovery and obtain receiving acceptance at transfer. Separate unnecessary personal copies from decision evidence.

Completion / hold: Disposal cannot conceal a required historical decision basis or erase unresolved access and correction duties.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-020 – Cyber Incidents, Evidence Recovery and Service Continuity

Implementation basis: 10.6 (p. 22); 47.6 (p. 71); 56.4 (p. 81); 56.5 (p. 81); 66.7 (p. 97); 67.6 (p. 99); 78.5 (p. 121); 78.7 (p. 121); 79.3 (p. 122); 79.4 (p. 122)

X20.1 Contain the actual evidence dependency

Identify affected configuration, identities, source records, products, commands and decisions. Preserve raw evidence and isolate tests from live assets.

Completion / hold: Service availability alone does not establish trustworthy operation or exclude impact.

X20.2 Select a recoverable trusted baseline

Record recovery point, accepted schema/configuration, permissions, source links and missing or later events. Preserve the source for reconciliation.

Completion / hold: A backup job success is not acceptance of recoverable semantic evidence.

X20.3 Restore and reconcile meaning

Check record identity, source access, units, event time, versions, relationships, adverse states and independent decision instruments after restoration.

Completion / hold: Equal file counts or application startup cannot close missing relationships; dependent conclusions remain HOLD.

X20.4 Authorise return and remaining restrictions

Obtain technical return authority separately from registry/status decisions, inform affected recipients and retest original failure paths plus regression.

Completion / hold: No retrospective validation of outputs issued while essential integrity was unknown.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-021 – Credential, Registry and Mark Approval

Implementation basis: 28.1 (p. 45); 28.2 (p. 46); 28.3 (p. 46); 28.4 (p. 46); 28.5 (p. 46); 56.3 (p. 81); 62.5 (p. 89); 63.2 (p. 90); 80.4 (p. 124)

X21.1 Reconcile credential instruction to the decision

Verify exact holder, issuer, outcome class, object, configuration, family/module, domain/site, criteria and genuine dates.

Completion / hold: A profile title or cover image does not authorise a wider claim.

X21.2 Maintain independent state domains

Keep application, evidence acceptance, technical requirement state, credential status, operational asset state and mark permission distinct.

Completion / hold: Received or reviewed evidence cannot automatically become PASS or an active credential.

X21.3 Control artwork and public projection

Use approved AF artwork, legible identifiers and precise scope wording; provide sufficient public boundaries without disclosing protected detail.

Completion / hold: Public text must not imply unassessed all-space coverage, governmental permission or unevidenced recognition.

X21.4 Test correction and adverse events

Challenge expired/suspended reprints, stale imports, duplicate identities, missing decisions and pending appeals. Retain history and timely notices.

Completion / hold: Only an authentic authorised decision changes status; a new file date never revives authority.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-022 – Provider Agreements, Authorisation and Outsourced Work

Implementation basis: 3.2 (p. 12); 3.6 (p. 13); 5.5 (p. 15); 11.5 (p. 23); 48.1 (p. 71); 48.2 (p. 71); 63.6 (p. 91); 69.1 (p. 102); 75.7 (p. 115); 80.3 (p. 124)

X22.1 Identify actual performance and retained responsibility

Distinguish scheme owner, accredited provider, delegated operator, supplier and applicant. Name the tasks and locations actually performed by each party.

Completion / hold: An intermediary cannot claim direct capability or transfer retained final decision responsibility by contract wording alone.

X22.2 Complete authority and competence independently

Check technical capability, written permission, executed operator MoU where triggered and territorial/activity limits.

Completion / hold: An agreement title without actual competent delivery or valid authority does not release the scope.

X22.3 Flow down technical and custody duties

Transmit configuration, criteria, evidence access, changes, incidents, confidentiality, retention and receiving acceptance to the actual sub-tier performer.

Completion / hold: Commercial approval cannot replace technical acknowledgement and demonstrated implementation.

X22.4 Plan monitored transfer and exit

Retain original decisions, open findings, status, liabilities, records and continuing recipients during substitution or cessation.

Completion / hold: Changing provider cannot turn suspended or unsupported evidence into a valid result.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-023 – Fees, Resources and Financial Separation

Implementation basis: 3.5 (p. 13); 3.6 (p. 13); 6.2 (p. 16); 11.6 (p. 23); 12.4 (p. 24); 29.5 (p. 47); 62.5 (p. 89); 64.4 (p. 92); 80.3 (p. 124)

X23.1 Cost real work rather than favourable outcomes

Build the resource basis from necessary evaluation, specialists, reporting, independent review, panel, protection and continuity.

Completion / hold: A fee or capacity target cannot delete required technical work or purchase a positive decision.

X23.2 Separate commercial and technical authority

Record who approves fees, discounts, grants, resources and case outcomes. Assess funding concentration and incentives without inventing a universal safe percentage.

Completion / hold: Any unresolved influence on technical judgement requires effective control before case assignment or decision.

X23.3 Disclose the actual service conditions

State currency, taxes where applicable, inclusions, travel/testing, cancellation, withdrawal, refund and local conditions through genuine approved terms.

Completion / hold: No template amount is a published fee until actually authorised; financial disputes are not fabricated competence findings.

X23.4 Verify continuity capacity

Test whether independent review, remedies, records and corrective action remain resourced during delayed income or provider exit.

Completion / hold: Lack of reserves for essential duties is an operational readiness gap, not a reason to weaken the standard.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-024 – Internal Audit, Management Review and Improvement

Implementation basis: 29.1 (p. 46); 29.2 (p. 47); 29.4 (p. 47); 54.4 (p. 79); 57.4 (p. 82); 62.7 (p. 89); 77.8 (p. 119); 79.4 (p. 122); 79.6 (p. 123); 80.2 (p. 124)

X24.1 Select meaningful audit trails

Cover every active process, adverse decisions, technical witnesses, changed configurations, calculations, roles and public status, not only approved manuals.

Completion / hold: Auditors remain independent of their work and have the actual technical support needed for the selected trail.

X24.2 Reconcile measures with populations

Define numerator, denominator, exposure, exclusions, missing data and related safety/integrity gates before comparing trends.

Completion / hold: A rising completion percentage or declining complaint count is not proof that essential controls are effective.

X24.3 Moderate reasoning without coercion

Collect independent first responses, compare the exact facts, predicates and assumptions, and preserve legitimate dissent.

Completion / hold: Agreement alone is not correctness; unresolved technical differences require evidence or controlled clarification.

X24.4 Close improvement through actual effectiveness

Assign owners/resources and predetermined effectiveness criteria, preserve original failures and verify subsequent comparable performance.

Completion / hold: Minutes or a training event alone are not closure of an implementation weakness.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-025 – Independent Operator Review and Reliance Arrangements

Implementation basis: 3.2 (p. 12); 6.5 (p. 17); 29.3 (p. 47); 30.3 (p. 48); 57.5 (p. 82); 62.3 (p. 88); 62.7 (p. 89); 80.3 (p. 124)

X25.1 Establish a disinterested operator-review mandate

Define the accrediting operator, activities, scope, independence, protected access, technical expertise and reporting route.

Completion / hold: No self-accreditation, reciprocal nominal approval or assumed external acceptance follows from the review.

X25.2 Sample operator-level vertical cases

Review authentic or explicitly synthetic trails across governance, admission, methods, people, evidence, decisions, remedies, finances and registry.

Completion / hold: A review of the standard text is not a review of implemented operator competence.

X25.3 Challenge reliance boundaries

For third-party results, examine actual scope, method, site, period, configuration, limitations, monitoring and withdrawal conditions.

Completion / hold: An MoU, membership or similar title is not sufficient evidence of equivalence or an unrestricted reliance right.

X25.4 Close findings and state limits

Preserve the independent report, original findings, verified corrective effect and actual follow-up interval under the core.

Completion / hold: Successful document review establishes only the stated review boundary, not universal international acceptance.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-026 – Education Attainment, Cohort Review and Learner Protection

Implementation basis: 20.3 (p. 34); 20.4 (p. 34); 20.5 (p. 34); 20.8 (p. 35); 20.9 (p. 35); 52.3 (p. 76); 52.5 (p. 77); 62.5 (p. 89); 73.1 (p. 110); 78.3 (p. 120); 78.4 (p. 120)

X26.1 Map every completion route

Identify programme, level, mode, campus, partner, prior-learning route and required outcomes. Link each outcome to direct authentic assessment.

Completion / hold: A favourable cohort mean cannot cover an unrepresented completion pathway.

X26.2 Separate learner attainment and programme conformity

Evaluate the individual rubric, essential skills, secure identity and permitted AI assistance; record failures and resits without erasing attempts.

Completion / hold: Every required essential skill passes for the person; institutional process quality is a separate conclusion.

X26.3 Analyse comparable learning evidence

Use explicit populations, denominator, selection and consistent rubric/task difficulty when assessing subgroup or year-to-year differences.

Completion / hold: Attendance or satisfaction alone cannot establish practical attainment or demonstrate causal improvement.

X26.4 Protect learners through change and closure

Verify current instructors/resources, record access, communication and actual teach-out or transfer arrangements.

Completion / hold: A development-readiness report is not full programme recognition; no fictitious graduates or professional privileges are created.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated

FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-027 – Environmental Statement Verification and Validation

Implementation basis: 24.1 (p. 40); 24.2 (p. 40); 24.3 (p. 41); 24.7 (p. 41); 24.8 (p. 41); 24.9 (p. 42); 53.2 (p. 77); 62.2 (p. 88); 62.3 (p. 88); 75.4 (p. 114); 76.6 (p. 117); 80.4 (p. 124)

X27.1 Freeze the statement and assurance objective

Distinguish organisational capability, historical verification, prospective validation and verifier competence. Set boundary, period, intended users, materiality and criteria before substantive work.

Completion / hold: A future plan or partial inventory cannot be relabelled as an achieved complete reduction.

X27.2 Reconstruct source-to-total calculations

Check actual activities, factors, units, data quality, allocation, baseline comparability, corrections and covariance. Preserve omitted material categories separately from numeric uncertainty.

Completion / hold: Correct arithmetic cannot compensate for an unsupported factor, wrong boundary or missing mandatory category.

X27.3 Reconcile physical and exclusive claims

Keep physical delivery, ownership, contractual attributes, cancellation and resource quality distinct. Avoid duplicating exclusive quantities or counting recirculation as new output.

Completion / hold: No favourable public conclusion while relevant allocation, eligibility or technical reuse conditions remain unresolved.

X27.4 Review and communicate the bounded conclusion

Independently evaluate identified and residual misstatement, evidence limitations and permitted wording; retain original and corrected statements and notify recipients.

Completion / hold: Do not issue an unqualified favourable conclusion solely to meet a reporting deadline.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

AF-AST-PR-028 – Change, Transition, Transfer and Programme Closure

Implementation basis: 30.2 (p. 48); 30.4 (p. 48); 31.3 (p. 49); 56.5 (p. 81); 61.3 (p. 86); 62.7 (p. 89); 68.7 (p. 101); 74.7 (p. 113); 75.7 (p. 115); 78.7 (p. 121); 79.5 (p. 122); 80.5 (p. 124)

X28.1 Map the complete change population

Identify affected requirements, profiles, objects, configurations, sites, people, calculations, fields, interfaces and public claims.

Completion / hold: A cosmetic filename or edition-label change cannot hide a changed technical basis.

X28.2 Establish retained and additional evidence

Record what remains valid, what is invalidated, required new demonstration, compatible tools and actual competence. Keep mandatory protective duties active during transition.

Completion / hold: No automatic grandfathering, retrospectively applied requirement or unsupported transfer of scope.

X28.3 Accept custody and local implementation

Reconcile semantic records, permissions, actual receiving capability, remaining learners/customers, open cases, notices and independent decisions.

Completion / hold: Sending an archive or signing a commercial handover does not establish accepted technical custody.

X28.4 Close without abandoning terminal duties

Preserve unknown final states, original status gaps, hazardous inventories, unresolved remedies and actual receiving owners.

Completion / hold: Only demonstrably complete obligations are closed; remaining duties stay assigned after programme or provider cessation.

Record contract: the actor records the input baseline, actual work, deviations, result and evidence link; the named receiving function acknowledges access and the permitted next action. A returned or incomplete handover retains the original event history. Use the associated FR modules and RG record links; no document or database field confers actual authority.

E4 Application-specific parameter completion

These are required information groups from Annex AO, not pre-approved engineering limits. For every triggered group, populate actual values or observable attributes before evaluation, with unit, inclusivity, phase/mode, technical derivation, uncertainty/dependence, method version, owner, independent review, authentic approval and change trigger. An absent trigger requires an approved exclusion; an unsupported or missing essential value is HOLD.

P01 — Mission and scope

Legal owner, performer, family/module, object, domain, configuration, location, duration and modes.

Derivation and evidence: Scope tuple and mission concept; approved applicability matrix.

Completion test: No undefined essential object, duty, phase or exclusion.

P02 — Environment and exposure

Quantity, spatial/temporal boundary, distribution or bound, source/model, uncertainty and coupled effects.

Derivation and evidence: Mission environment baseline and qualified specialist rationale.

Completion test: Selected conditions bound each claimed use; unknown critical mechanisms remain HOLD.

P03 — Requirements and acceptance

Stable ID, owner, characteristic, units, bound inclusivity, predicate, observation and essential-step marker.

Derivation and evidence: Requirement baseline and Annex AL decision rule.

Completion test: Every condition is evaluable before observations are judged.

P04 — Geometry and reference systems

Frame origin/orientation, epoch, time scale, coordinate units, transformation and covariance.

Derivation and evidence: Validated transformation and independent known-answer checks.

Completion test: Correct frame and time are maintained through every interface.

P05 — Materials and process qualification

Material type/condition, geometry, sources, variables, qualified window, machine/tool state and hidden properties.

Derivation and evidence: Actual representative qualification; lot/build genealogy.

Completion test: All influential variables and required product properties are supported.

P06 — Test article and fixtures

Article pedigree, differences from delivered object, mounting, boundary conditions, operating state and exposure history.

Derivation and evidence: Approved representativeness and cumulative-test analysis.

Completion test: No material difference or prior damage invalidates the intended inference.

P07 — Measurement and uncertainty

Measurand, instrument/range, corrections, sensitivity, covariance, coverage, time/space sampling and calibration.

Derivation and evidence: Complete measurement model; valid raw data.

Completion test: Uncertainty and detection capability are fit for the approved decision rule.

P08 — Structure, life and mechanisms

Loads, allowables, factors, life, geometry, material state, mechanisms, detectability and approved reserve.

Derivation and evidence: Qualified structural/life model and representative evidence.

Completion test: Each prospectively defined margin and essential mechanism predicate passes.

P10 — Thermal and environmental control

Node/location, mode, temperatures/gradients, heat inputs, sink/view factors, properties, uncertainty and transient cases.

Derivation and evidence: Correlated thermal model and applicable environment tests.

Completion test: All required hot, cold and transition conditions meet approved limits.

P11 — Communication and timing

Distance, frequency/wavelength, gain/loss, noise, rate, margin, latency, event time, age, clock error and outage.

Derivation and evidence: Validated end-to-end budget and adverse service tests.

Completion test: Required quality, delay and integrity conditions all pass.

P12 — Human and protective response

User/task, representative conditions, essential steps, feasible intervention, health-support interface and emergency resources.

Derivation and evidence: Specialist criteria and observed performance.

Completion test: Every essential protection is effective; no invented universal physiological limit.

P13 — Contamination and samples

Relevant substances/particles, pathway, limit, method/detection, custody, cleanliness, containment and receiving.

Derivation and evidence: Mission-specific technical/protection basis.

Completion test: Required integrity and scientific cleanliness are demonstrated for the actual sample/use.

P14 — Software, AI and models

Purpose/domain, source/build/weights/data, dependencies, target, errors, uncertainty, prohibited behaviour and change limits.

Derivation and evidence: Independent verification and model/use validation.

Completion test: Essential scenarios and target conditions pass; experimental outputs remain separate.

P15 — Security and command authority

Identities, roles, privileges, keys/trust, target, validity window, command sequence, integrity and interruption response.

Derivation and evidence: Written test authorisation and deployed workflow validation.

Completion test: No prohibited authority or unverified command state is accepted.

P16 — Reliability and availability

Population, exposure, failure definition, observation, dependencies, confidence model, downtime and maintenance exclusions.

Derivation and evidence: Prospective statistical design plus engineering mechanism evidence.

Completion test: The actual demonstrated bound meets the approved claim; zero failures is not zero risk.

P17 — Logistics and environmental claims

Identity, amount, units, condition, losses, allocation, lifecycle boundary, factor provenance and exclusive attributes.

Derivation and evidence: Reconciled custody/quantity records and separate suitability/statement evaluation.

Completion test: Quantity and claim integrity pass independently of technical eligibility.

P18 — Decision, continuity and terminal duties

Closed findings, reviewer competence, independence, authority, status clocks, final-state criteria, custody and open obligations.

Derivation and evidence: Authenticated decisions and verified terminal/transfer evidence.

Completion test: Every mandatory gate is complete; incomplete or unknown terminal state remains explicit.

E5 All-space applicability and bounded responsibility

The following Annex AK tags are selected because the document can support these responsibilities. Applicability is decided for the actual case. Tags do not expand a family, create an operating permission or place a whole mission inside a supplier's limited scope. Resolve domain, phase, mode, environment and retained duty before accepting a claim.

Domain / source page	Coverage	Required boundary
AK01 / 187 Terrestrial engineering and supply	Design offices, manufacturing, material sources, procurement and integration.	Every delivered characteristic and essential supplier interface is traceable to accepted evidence.
AK02 / 187 Test facilities and technical providers	Environmental, structural, materials, calibration and inspection services, including mobile and remote work.	Actual method competence and valid result evidence are separately demonstrated.
AK03 / 187 Launch sites and spaceports	Site infrastructure, handling, ground services, emergency interfaces and actual permissions.	No site outcome is used as vehicle, launch or mission permission.
AK04 / 187 Launch and deployment interfaces	Vehicle/payload integration, handling, ascent environment, separation and commissioning.	Every required integration and protective condition is met before the actual commitment.
AK05 / 188 Reusable launch and return articles	Cumulative exposure, refurbishment, thermal protection, hidden damage and life decisions.	Reuse is based on actual history and accepted condition, never a reset life.
AK06 / 188 Low Earth orbit systems	Satellites, stations and services in the declared near-Earth operating environment.	Environment-specific qualification and end-of-life capability support the bounded mission.
AK07 / 188 Medium, geosynchronous and high Earth orbits	Navigation, communication, relay and other specified orbit-dependent services.	No lower-orbit or nominal-link evidence automatically covers a different environment.
AK08 / 188 Highly elliptical and transfer regions	Missions crossing materially different exposure, geometry and communication regimes.	Every phase and transition has a supported envelope and verification path.
AK09 / 189 Cislunar and libration-region systems	Lunar vicinity, relays, gateways, transportation interfaces and regional services.	The exact operating domain and service dependencies are technically complete.
AK10 / 189 Constellations and formation services	Distributed functions, inter-satellite links, fleet management and shared ground support.	Distributed performance and independent redundancy assumptions are validated.

Domain / source page	Coverage	Required boundary
AK11 / 189 Orbital traffic and tracking support	Tracking, conjunction information, data services and inter-operator coordination.	A metric is accepted only for its validated data/model scope; missing data are not zero risk.
AK12 / 189 Cooperative docking and servicing	Authorised inspection, connection, transfer, repair and service interventions.	All essential interface and completion states are independently supported.
AK13 / 190 On-orbit assembly and manufacture	Assembly, additive or other production, finishing and output verification in space.	Process execution is not substituted for evidence of required output properties.
AK14 / 190 Stations and inhabited orbital platforms	Habitation, payload integration, visiting vehicles, occupants and support.	Integrated human protection and resources are accepted independently of mission success.
AK15 / 190 Extravehicular and isolated crew work	Individual equipment, user/task, environment, support and rescue dependencies.	Essential individual and integrated protective tasks pass without averaging.
AK16 / 190 Lunar surface systems	Landers, rovers, infrastructure, observation and processing on the Moon.	Destination-specific evidence bounds the actual region, phase and operating mode.
AK17 / 191 Planetary landers and surface vehicles	Surface exploration, scientific instruments, mobility and handling.	Terrestrial analogy is justified; unknown critical surface conditions remain restricted.
AK18 / 191 Atmospheric and buoyant exploration	Planetary atmospheric vehicles, balloons, aircraft and relevant instruments.	All relevant environment-specific structural and functional predicates pass.
AK19 / 191 Small-body and comet operations	Observation, cooperative contact, sampling and resource demonstrations.	Uncertain body/interaction properties are not treated as established terrestrial conditions.
AK20 / 191 Subsurface and ocean-world exploration	Subsurface, liquid, ice and extreme-pressure exploration systems and their interfaces.	Specialist boundary and contamination evidence precedes dependent use.
AK21 / 192 Interplanetary cruise and deep-space missions	Spacecraft, relays, science operations and long-delay mission support.	Human and autonomous actions are feasible within actual timing and resource limits.
AK22 / 192 Solar and heliophysics missions	Solar observations and missions with relevant thermal, plasma and radiation extremes.	Protection and data-quality evidence cover the actual mission envelope, not a screening equation alone.
AK23 / 192 Outer-system and distant observatories	Low-flux, long-life, long-delay science and infrastructure applications.	Required lifetime and survival margins are met with credible continuity and data integrity.
AK24 / 192 Interstellar precursor and future distant systems	Bounded research and demonstrable capabilities for very long-range or novel concepts.	Research promise is not an operational grant; unsupported capability stays in development.
AK25 / 193 Human exploration and surface habitats	Crew transport interfaces, habitation, exploration support and emergency protection.	Every essential human protection and feasibility predicate is supported by specialists.
AK26 / 193 Planetary protection and sample return	Forward/backward contamination, scientific cleanliness, samples and receiving chain.	No dependent commitment precedes complete protection and receiving evidence.
AK27 / 193 Resource utilisation and remote processing	Resource characterisation, processing, quality, storage, use and residues.	Resource yield, product eligibility and permission remain distinct.
AK28 / 193 Space logistics and distributed supply	Warehousing, transfer, spares, custody, condition, receiving and service continuity.	Only physically or otherwise validly confirmed accepted usable inventory supports mission budgets.

Domain / source page	Coverage	Required boundary
AK29 / 194 Specialised energy infrastructure	Generation, storage, conversion, remote delivery and controlled high-hazard power interfaces.	Performance never substitutes for safety, source authority or terminal accountability.
AK30 / 194 Ground, communication and navigation services	Mission control, RF/optical links, timing, data processing, relays and PNT support.	Availability, correctness, authority and completion are separately demonstrated.
AK31 / 194 Digital and autonomous space systems	Software, programmable hardware, AI, models, twins and defensive security.	All essential behaviours and prohibited transitions are verified for the actual deployment.
AK32 / 194 Retirement and long-term stewardship	Disposal, passivation governance, loss-of-contact states, records and residual obligations.	Final-state claims are truthful and every unresolved duty has an accepted owner.

E6 Workflow and evidence relationships

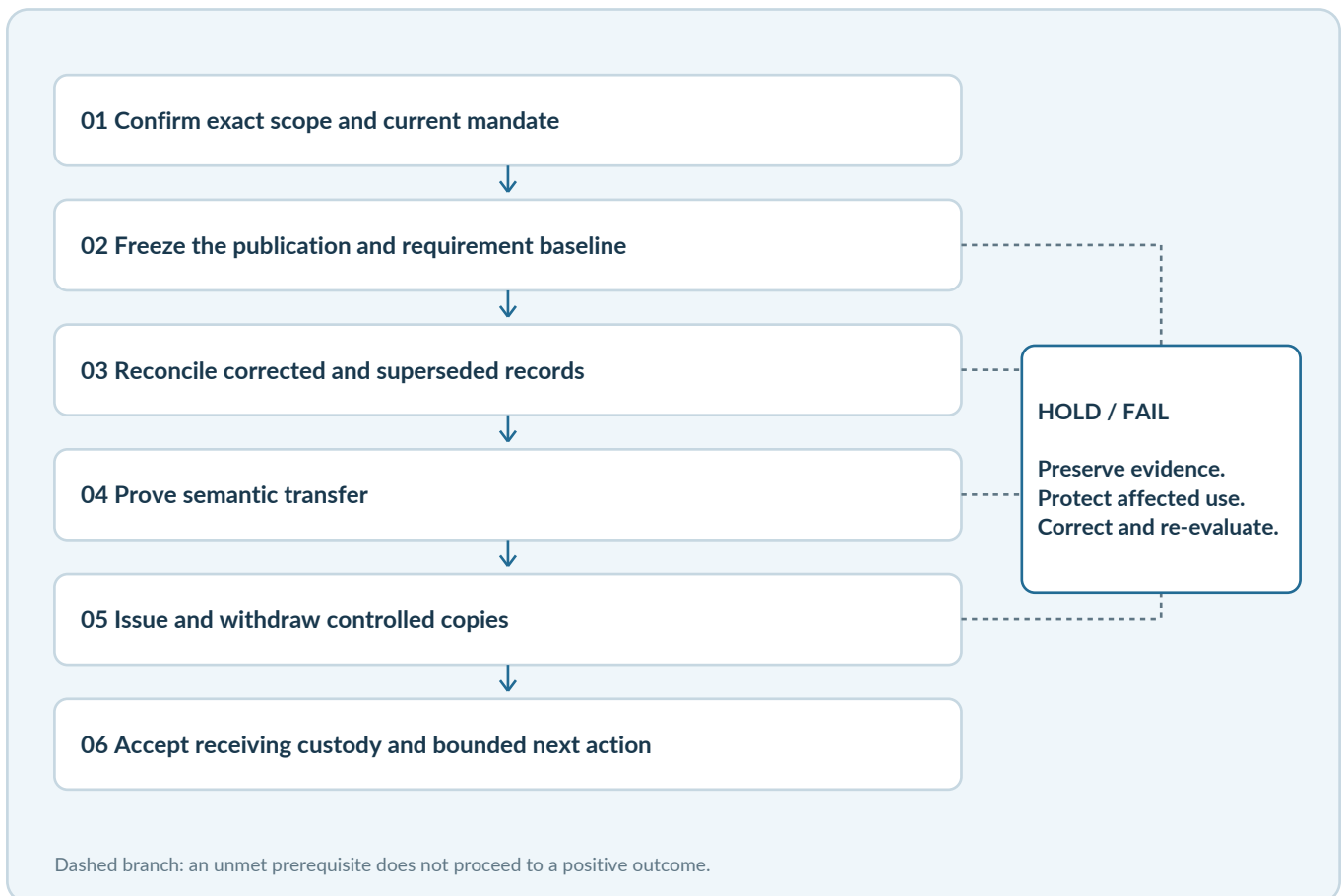
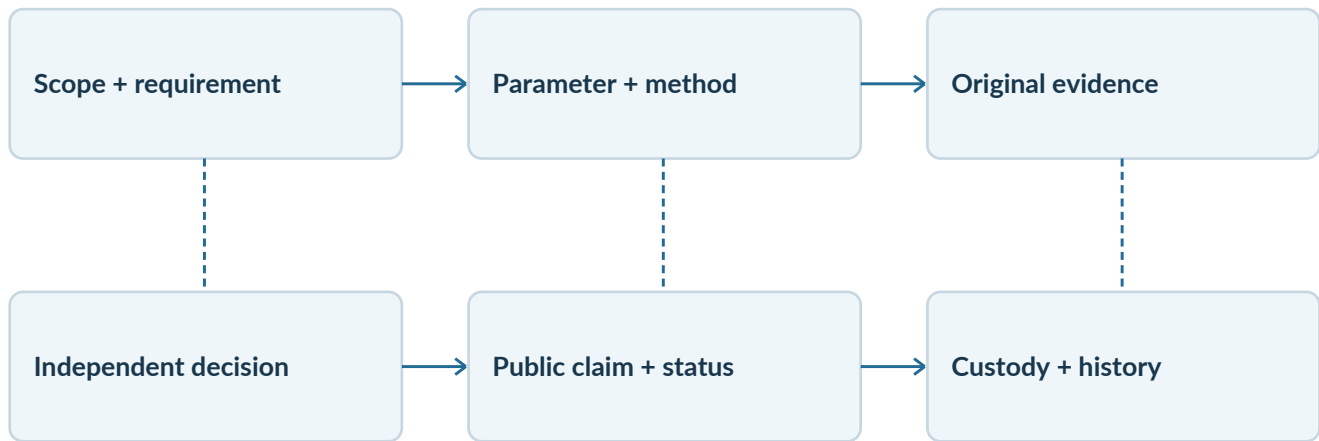


Figure — Implementation sequence for AF-AST-PR-001. Explanatory diagram; the source prerequisites and actual authority remain controlling.



Each relationship carries object identity, controlled version, actual event time and purpose-specific validity.

Figure — Scope-to-custody evidence relationships. A relationship is validated for its decision purpose, not merely because two identifiers exist.

E7 Calculations, assumptions and synthetic charts

The worked calculations below reproduce the supplied standard's Annex AM examples. Charted extensions are newly computed synthetic illustrations of those equations, not measured mission performance or new universal limits. A result is usable only when the actual inputs, model, units, uncertainty and approved application predicate are valid. A successful arithmetic check is not field validation.

AM.Q01 Measurement uncertainty and covariance

Source: ASTRA Annex AM, Q01, page 200. All numerical inputs in this example are synthetic.

$$u_c^2 = \sum(c_i^2 u_i^2) + 2\sum(i < j)(c_i c_j cov_{ij})$$

$$U = k u_c$$

Variables and units

u_i is a standard uncertainty; c_i is a sensitivity coefficient; cov_{ij} is covariance; k is the justified coverage factor. Variance terms carry squared output units.

Example inputs

Synthetic direct sum: $c_1=c_2=1$; $u_1=0.003$ mm; $u_2=0.004$ mm. First assume independence, then correlation $\rho=0.5$. Illustrative $k=2$.

Calculation and checks

1. Independent variance = $0.003^2 + 0.004^2 = 0.000025$ mm².
2. $u_c = 0.005$ mm; $U = 0.010$ mm for the stated k .
3. Correlated covariance = $0.5 \times 0.003 \times 0.004 = 0.000006$ mm².
4. Correlated variance = $0.000025 + 2 \times 0.000006 = 0.000037$ mm².
5. Correlated $u_c = 0.0060827625303$ mm; $U = 0.0121655250606$ mm.

Decision interpretation: The correlated model produces a larger uncertainty. No PASS/FAIL follows until an approved specification and decision rule are applied.

Validity limits: The linear propagation model requires a valid measurement function and adequate approximation. $k=2$ is not a universal guarantee of 95% coverage. Known bias requires correction or explicitly justified treatment; uncertainty does not conceal missing requirements.

ASTRA connections: 9.4–9.5; Annex G; 62; 77

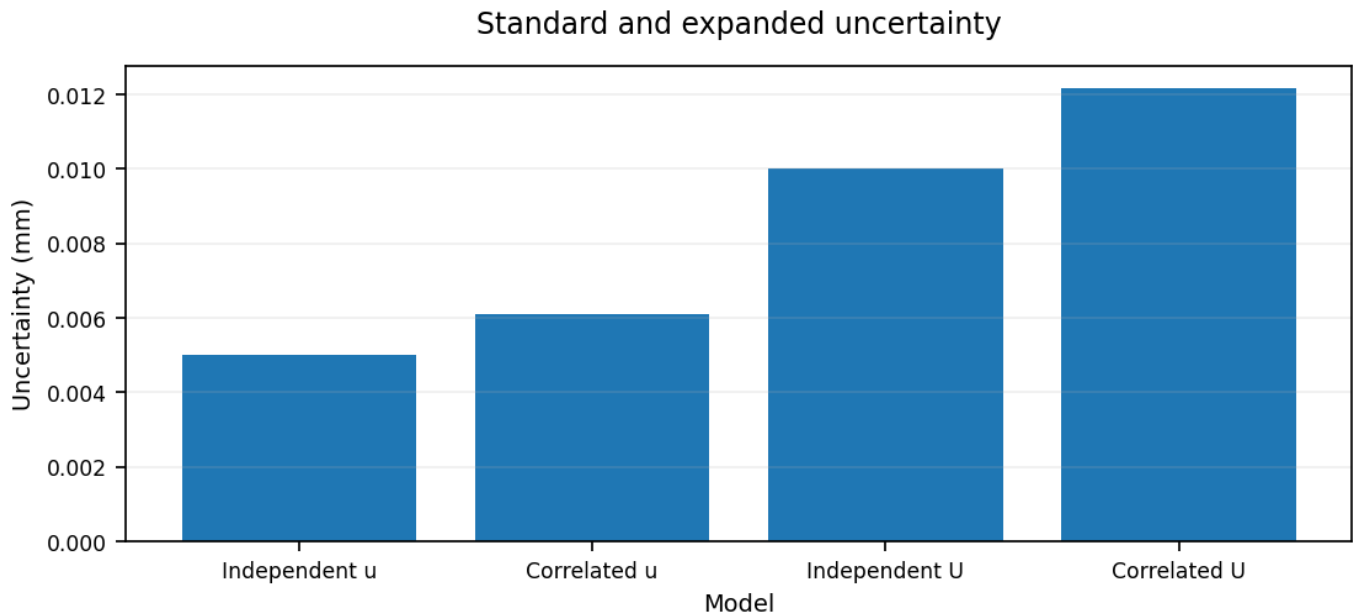


Figure Q01 — Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q02 Inclusive limits and four distinct measurement outcomes

Source: ASTRA Annex AM, Q02, page 201. All numerical inputs in this example are synthetic.

PASS: $y - U \geq L$ AND $y + U \leq H$

FAIL: $y + U < L$ OR $y - U > H$

Otherwise: HOLD; invalid evidence also results in HOLD

Variables and units

L and H are inclusive specification limits; y is a corrected result; U is a non-negative expanded uncertainty with stated coverage.

Example inputs

Synthetic specification [49.970, 50.030] mm; U=0.004 mm. Results y=50.024, 50.028, 50.036 and 50.026 mm.

Calculation and checks

1. $50.024 \pm 0.004 \rightarrow [50.020, 50.028]$ mm: PASS.
2. $50.028 \pm 0.004 \rightarrow [50.024, 50.032]$ mm: HOLD, interval overlaps the upper limit.
3. $50.036 \pm 0.004 \rightarrow [50.032, 50.040]$ mm: FAIL, interval entirely above the limit.
4. $50.026 \pm 0.004 \rightarrow [50.022, 50.030]$ mm: PASS; equality is inside the inclusive upper bound.

Decision interpretation: Neither the overlapping interval nor an invalid run is rounded into acceptance. N/A is an applicability decision, not a measurement outcome.

Validity limits: Use actual endpoints for asymmetric intervals. For an upper-only limit, PASS requires the upper endpoint at or below the limit and FAIL the lower endpoint above it. A coverage interval is not automatically a probability that this particular item conforms.

ASTRA connections: Annex G; 62.3–62.5; 77.6

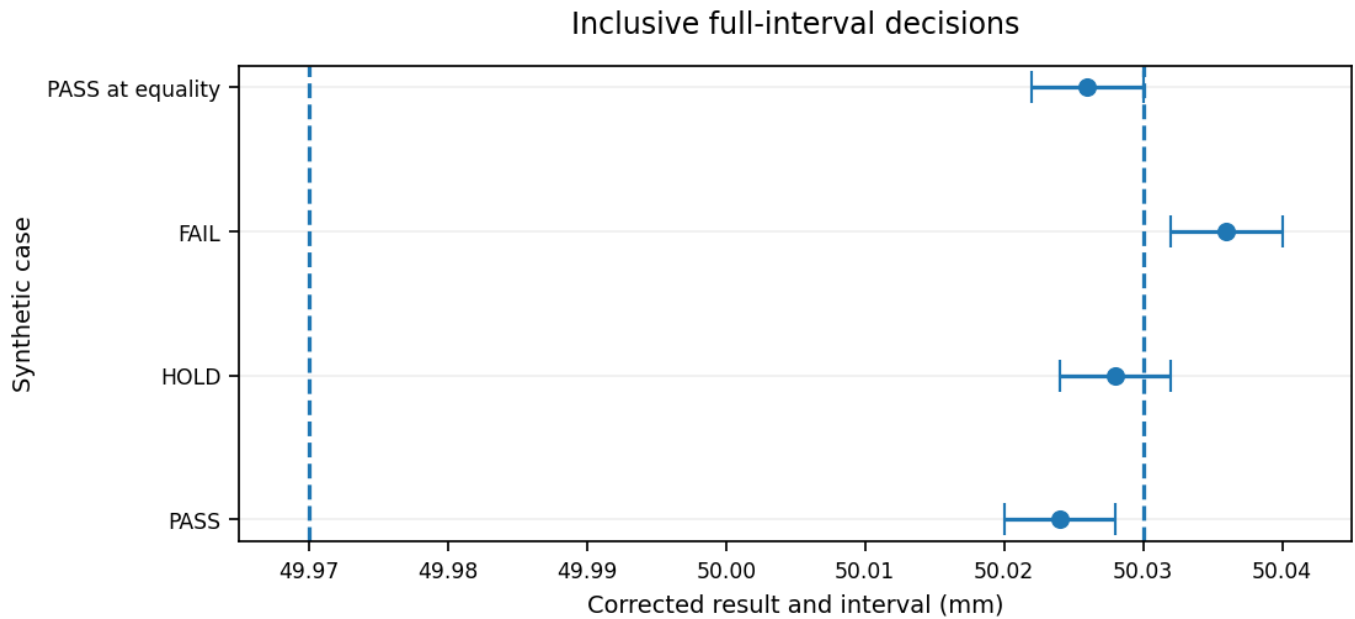


Figure Q02 – Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q03 Positive-decision conjunction and essential failure

Source: ASTRA Annex AM, Q03, page 202. All numerical inputs in this example are synthetic.

$G = S \wedge P \wedge E \wedge F \wedge C \wedge I \wedge A$

Requirement completion = completed applicable rows / all applicable rows

Variables and units

S=valid scope; P=all predicates passed; E=adequate valid evidence; F=all in-scope findings closed; C=competence; I=independence; A=actual authority.

Example inputs

A synthetic file has 200 applicable rows; 190 are complete. One remaining row concerns an essential protective control. Six other gate groups are true.

Calculation and checks

1. Completion = $190/200 = 0.95 = 95\%$.
2. The unverified essential row makes P false and E false for the requested conclusion.
3. $G = \text{true false false} \dots = \text{false}$.

Decision interpretation: No positive grant. The completion percentage is a planning measure only. A conditional development permission is a separate bounded action, not a conformity certificate.

Validity limits: No averaging, vote or commercial action can change a false mandatory gate. N/A requires independent approval of the absent trigger; it is not a way to remove unfinished work.

ASTRA connections: 15.2; Annex G.1; 62.5; 80

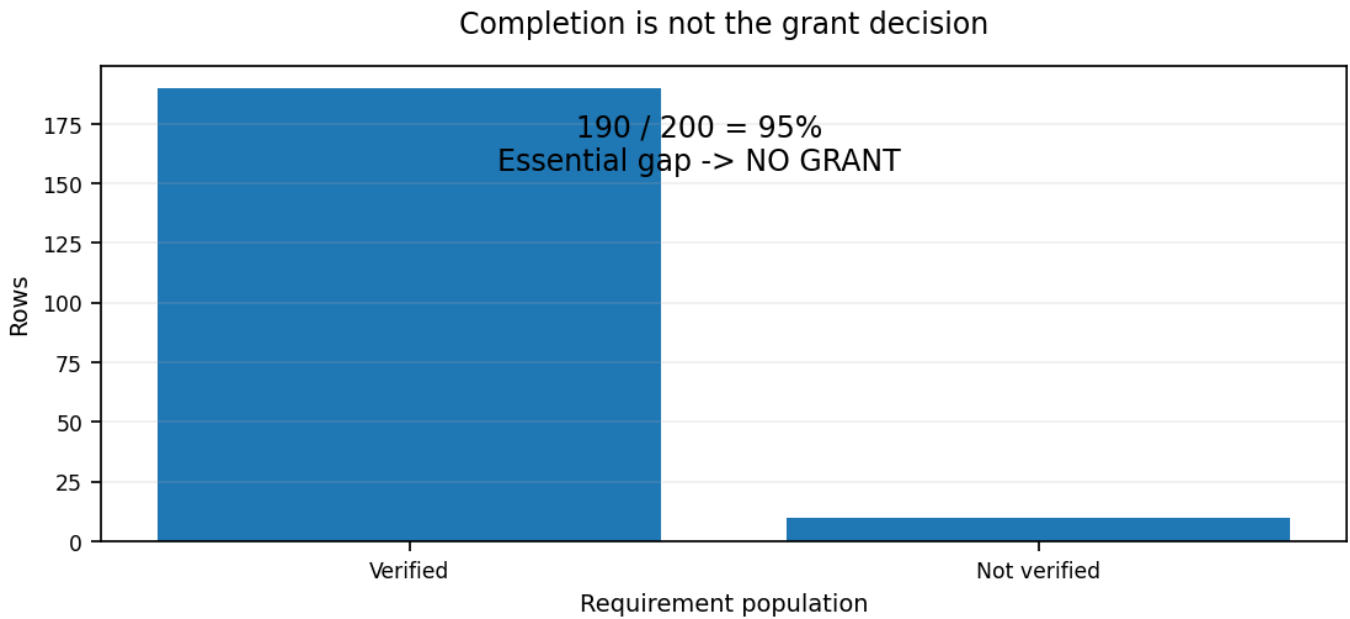


Figure Q03 — Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q04 Committee arithmetic and accreditation panels

Source: ASTRA Annex AM, Q04, page 203. All numerical inputs in this example are synthetic.

Substantive participation minimum = $\text{ceil}(2N/3)$

Affirmative minimum = $\text{ceil}(2V/3)$

Variables and units

N is the eligible committee population; V is the number of substantive yes/no votes. These equations concern the technical committee, not an applicant panel.

Example inputs

Synthetic committee: N=9, V=6, yes=4, no=2. Separate accreditation panel: three eligible members, two affirmative and one adverse.

Calculation and checks

1. Participation: $\text{ceil}(2 \times 9/3) = 6$; actual V=6 meets it.
2. Affirmative: $\text{ceil}(2 \times 6/3) = 4$; actual yes=4 meets it.
3. Accreditation panel: all three must participate; at least two support and all technical gates must pass.
4. Two participating panel members voting yes do not form a valid three-person panel.

Decision interpretation: The committee arithmetic passes for the stated case. The separate panel can decide positively only if technical gates and eligibility are all established.

Validity limits: Abstentions are not substantive committee yes/no votes. Rounding is upward. A mathematical majority never resolves missing technical evidence or an ineligible member.

ASTRA connections: 3.4; 4.3; 15.3; Annex B

Committee participation threshold

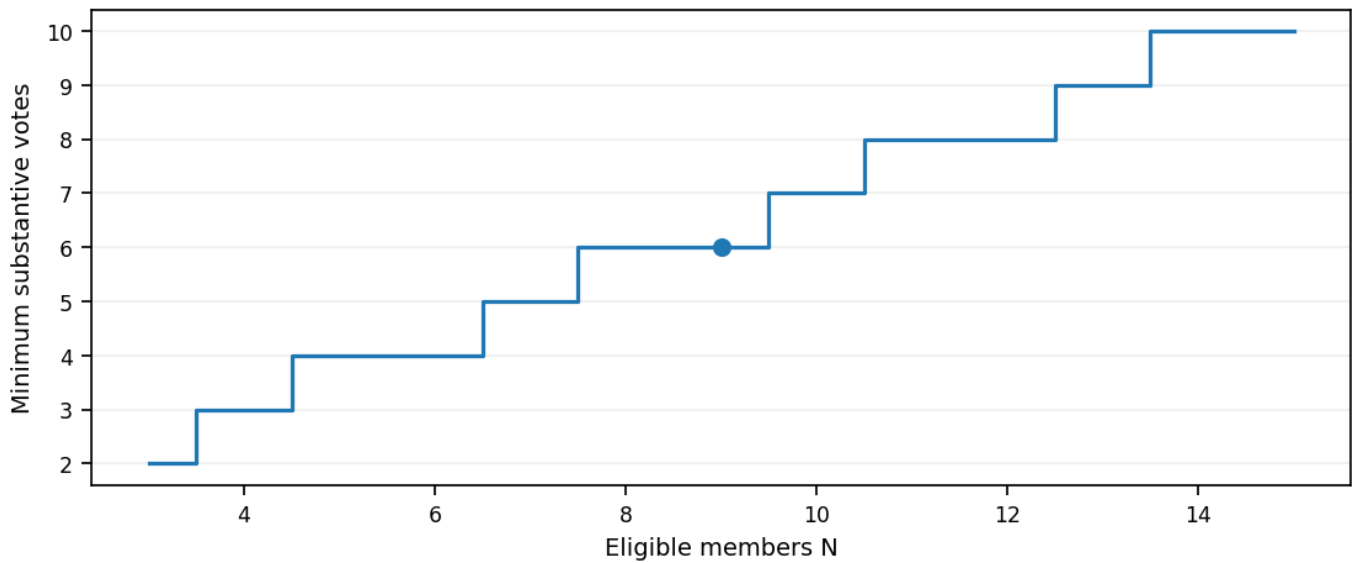


Figure Q04 – Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q05 Productive evaluation time without double counting

Source: ASTRA Annex AM, Q05, page 204. All numerical inputs in this example are synthetic.

$$T_{\text{eval}} = \sum h_i / 8 \text{ evaluator-days}$$

Total resource = evaluation + separate reporting/review/travel resources

Variables and units

h_i are distinct productive technical person-hours. Shared tasks are counted once unless distinct real work is documented.

Example inputs

Synthetic tasks: 12, 12, 12, 8 and 4 productive hours. Report 6 h; independent review 5 h; panel 3 person-hours.

Calculation and checks

1. Evaluation hours = $12+12+12+8+4 = 48$ h.
2. $T_{\text{eval}} = 48/8 = 6$ evaluator-days.
3. Separate report/review/panel time = $6+5+3 = 14$ person-hours.
4. Total stated technical resources = 62 person-hours before travel and other separately justified work.

Decision interpretation: Six evaluator-days describes only this synthetic activity breakdown. It is not a universal minimum or quotation.

Validity limits: Do not count a trainee as an independent productive assessor or two passive observers as two completed tasks. Calendar duration, person-hours and evaluator-days are distinct.

ASTRA connections: 12.4; Annex F.1; 58.2

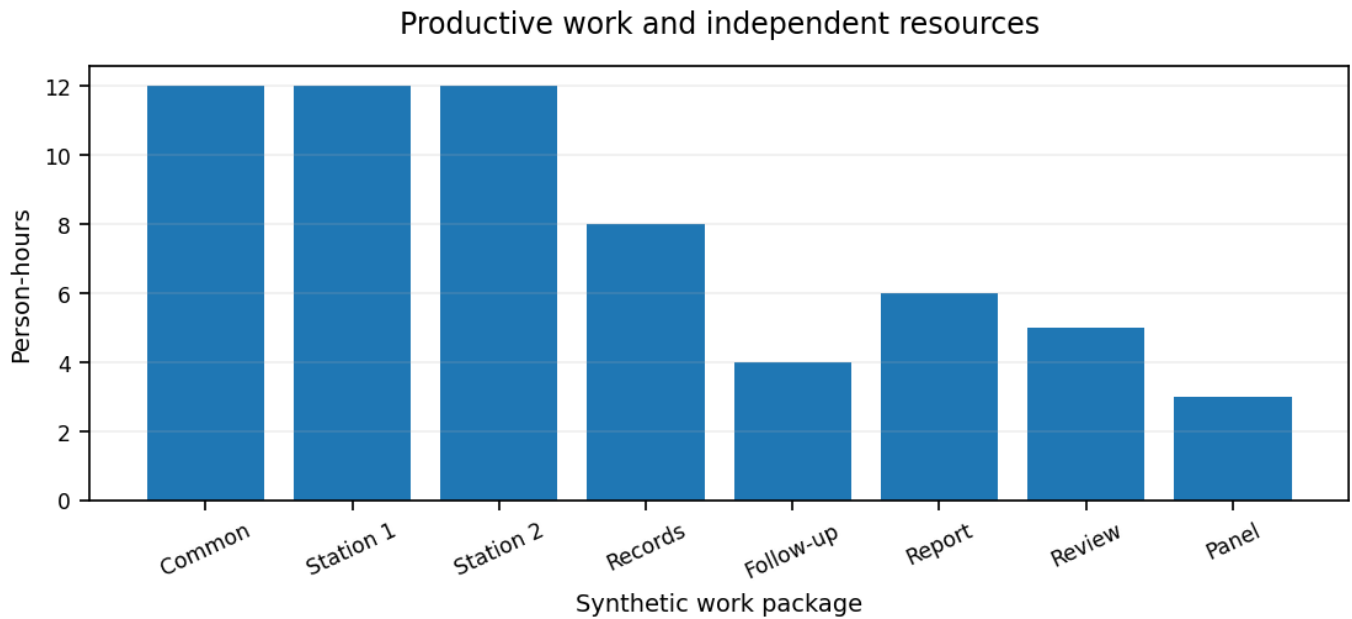


Figure Q05 – Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q06 Random detection sample size

Source: ASTRA Annex AM, Q06, page 205. All numerical inputs in this example are synthetic.

$$P(\text{at least one detection}) = 1 - (1-p)^n$$

$$n_{\min} = \text{ceil}[\ln(1-C)/\ln(1-p)]$$

Variables and units

p is a fixed issue probability per independent representative observation; C is the selected target detection probability; n is a positive integer.

Example inputs

Synthetic $p=0.10$ and $C=0.95$.

Calculation and checks

1. $\ln(0.05)/\ln(0.90) = 28.433158...$; round upward to $n=29$.
2. $P(\text{detection at } n=29) = 1 - 0.9^{29} = 0.9528987130$.
3. At $n=28$, $P = 0.9476652367$, below the specified target.

Decision interpretation: 29 is the minimum integer sample for the stated independent model; the demonstration does not certify 95% conformity.

Validity limits: This calculation is invalid for unexamined dependence, changing p , biased selection or a judgemental sample represented as random. Detection is also conditional on an effective observation method.

ASTRA connections: 9.3; Annex F.5; 55.3

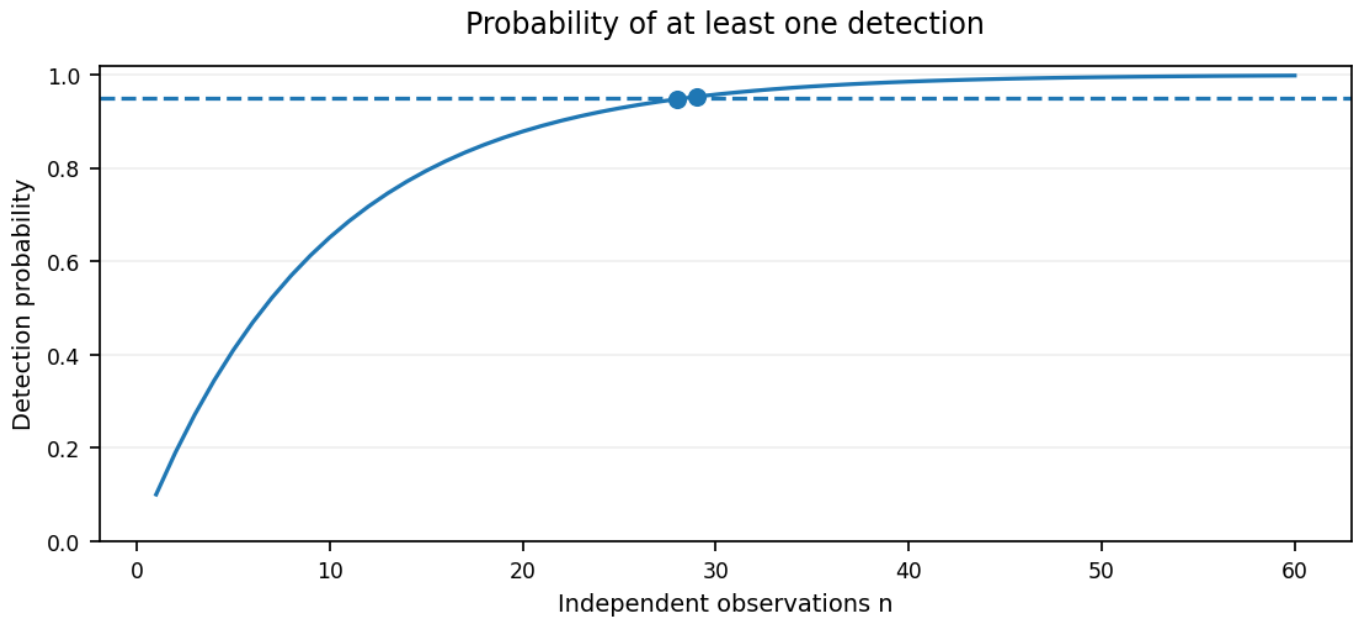


Figure Q06 – Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q07 Zero observed failures and an exact binomial bound

Source: ASTRA Annex AM, Q07, page 206. All numerical inputs in this example are synthetic.

$$p_{\text{upper}} = 1 - \alpha^{(1/n)}$$

$$n_{\text{min}} = \text{ceil}[\ln(\alpha) / \ln(1 - p_{\text{target}})]$$

Variables and units

α =1-confidence; n is a prospectively fixed number of independent comparable binary trials; all n trials have zero observed failures.

Example inputs

Synthetic one-sided confidence 95%, so $\alpha=0.05$. Examine $n=30$ and a target upper failure probability of 0.01.

Calculation and checks

- For $n=30$: $p_{\text{upper}} = 1 - 0.05^{(1/30)} = 0.095033853 = 9.5033853\%$.
- For $p_{\text{target}}=0.01$: $\text{ceil}[\ln(0.05) / \ln(0.99)] = 299$.
- For $n=299$: $p_{\text{upper}} \approx 0.0099691468$, below 1%.

Decision interpretation: Thirty successful trials do not demonstrate a failure probability below 1%. Under the specified model, 299 all-success trials are needed for that particular bound.

Validity limits: A statistical upper confidence bound is not proof of zero risk or total system safety. Nonrepresentative trials, changing configuration, adaptive stopping or unmodelled common causes invalidate this simple inference.

ASTRA connections: 55.1–55.3; 62; 77

Zero failures: one-sided 95% binomial bound

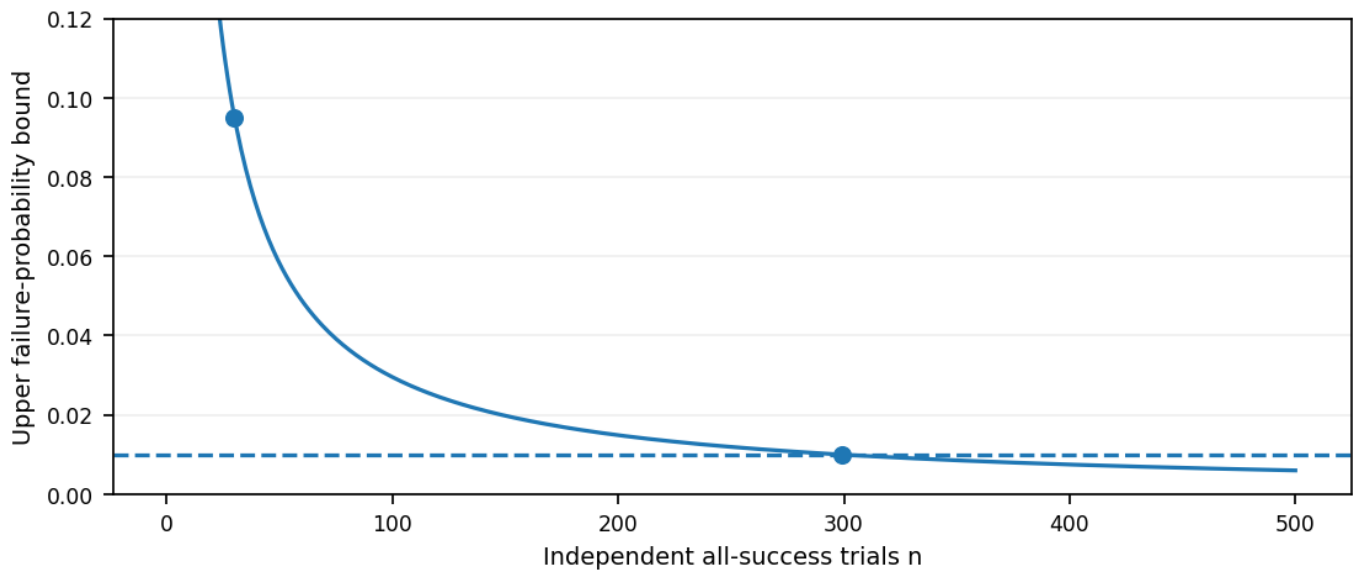


Figure Q07 – Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q08 No failures during exposure: exponential bound

Source: ASTRA Annex AM, Q08, page 207. All numerical inputs in this example are synthetic.

$$\lambda_{\text{upper}} = -\ln(\alpha)/T$$

$$\text{MTBF}_{\text{lower}} = T/[-\ln(\alpha)]$$

Variables and units

T is total comparable exposure time under a justified constant-rate model; $\alpha=1$ -confidence; no failures occur. λ has reciprocal-time units.

Example inputs

Synthetic T=800 operating hours; one-sided confidence=95%, $\alpha=0.05$.

Calculation and checks

1. $-\ln(0.05) = 2.9957322736$.
2. $\lambda_{\text{upper}} = 2.9957322736/800 = 0.003744665342 \text{ h}^{-1}$.
3. $\text{MTBF}_{\text{lower}} = 800/2.9957322736 = 267.0465606 \text{ h}$.

Decision interpretation: The observed zero-failure record supports only the stated model-based lower bound, not infinite mean life.

Validity limits: Ageing, wear-out, maintenance quality, heterogeneity and common causes may violate the constant-rate assumption. MTBF is not a guaranteed individual life and does not extend a mandatory life limit.

ASTRA connections: 55; 79

Zero failures: constant-rate model bound

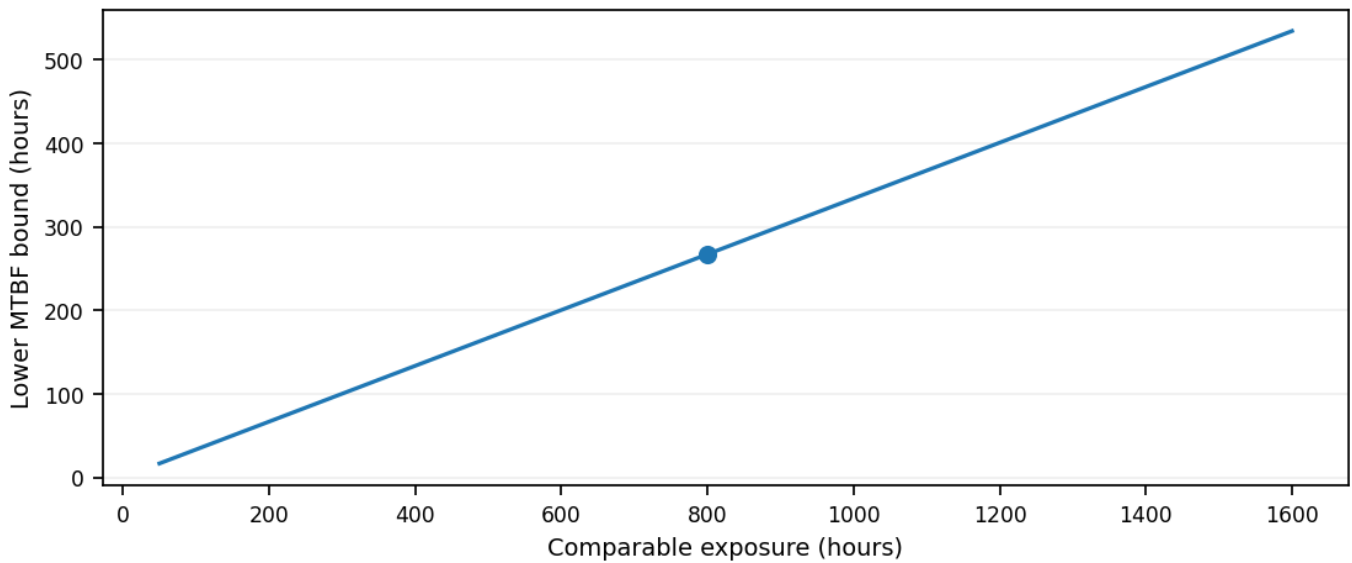


Figure Q08 — Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q09 Availability is not output correctness

Source: ASTRA Annex AM, Q09, page 208. All numerical inputs in this example are synthetic.

$$A_{\text{observed}} = T_{\text{available}} / T_{\text{window}}$$

$$\text{Correct-service fraction} = T_{\text{available_and_correct}} / T_{\text{window}}$$

Variables and units

All categories shall use the same declared window and explicit downtime and integrity definitions. Missing time is separately recorded.

Example inputs

Synthetic window=1,000 h; available=960 h; unavailable=40 h. Of the available time, 20 h produced unacceptable information.

Calculation and checks

1. Availability = $960 / 1,000 = 96\%$.
2. Available-and-correct time = $960 - 20 = 940$ h.
3. Correct-service fraction = $940 / 1,000 = 94\%$.

Decision interpretation: The 96% availability value does not prove correctness during every available hour. The two measures support different requirements.

Validity limits: The service boundary, outages, correctness test, unknown intervals and planned exclusions must be established in advance. A high uptime percentage cannot close an integrity failure.

ASTRA connections: 51.4; 55.1; 66.7; 78.7

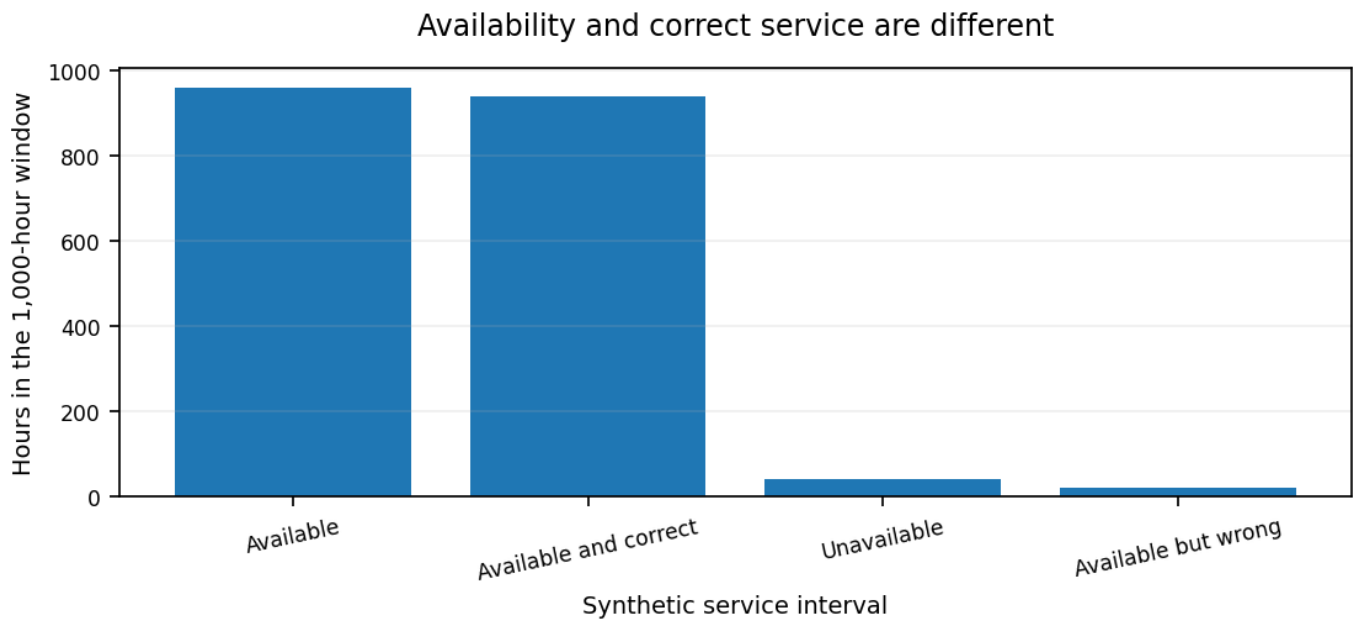


Figure Q09 – Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q15 Light-time and ground-intervention feasibility

Source: ASTRA Annex AM, Q15, page 214. All numerical inputs in this example are synthetic.

$$t_{\text{oneway}} = R/c$$

$$t_{\text{response}} = 2R/c + t_{\text{ground}} + t_{\text{actuation}}$$

Variables and units

R is a simplified constant path length in m; $c=299,792,458$ m/s. Processing, queueing, geometry change and other delays require additional terms where material.

Example inputs

Synthetic $R=2.25 \times 10^{11}$ m; ground processing=20 s; actuation=10 s; approved illustrative hazard-response window=1,200 s.

Calculation and checks

1. One-way light-time=750.519214196 s.
2. Round-trip propagation=1501.038428392 s.
3. Earliest modelled response=1531.038428392 s.
4. The response exceeds 1,200 s by 331.038428392 s.

Decision interpretation: The proposed ground intervention fails the example feasibility predicate and cannot be credited as the timely protective control.

Validity limits: The actual path and timing model must be used for a real mission. No communication architecture removes propagation delay; onboard protection still needs independent validation and authority.

ASTRA connections: 66.3; 67; 72.4; 73.8

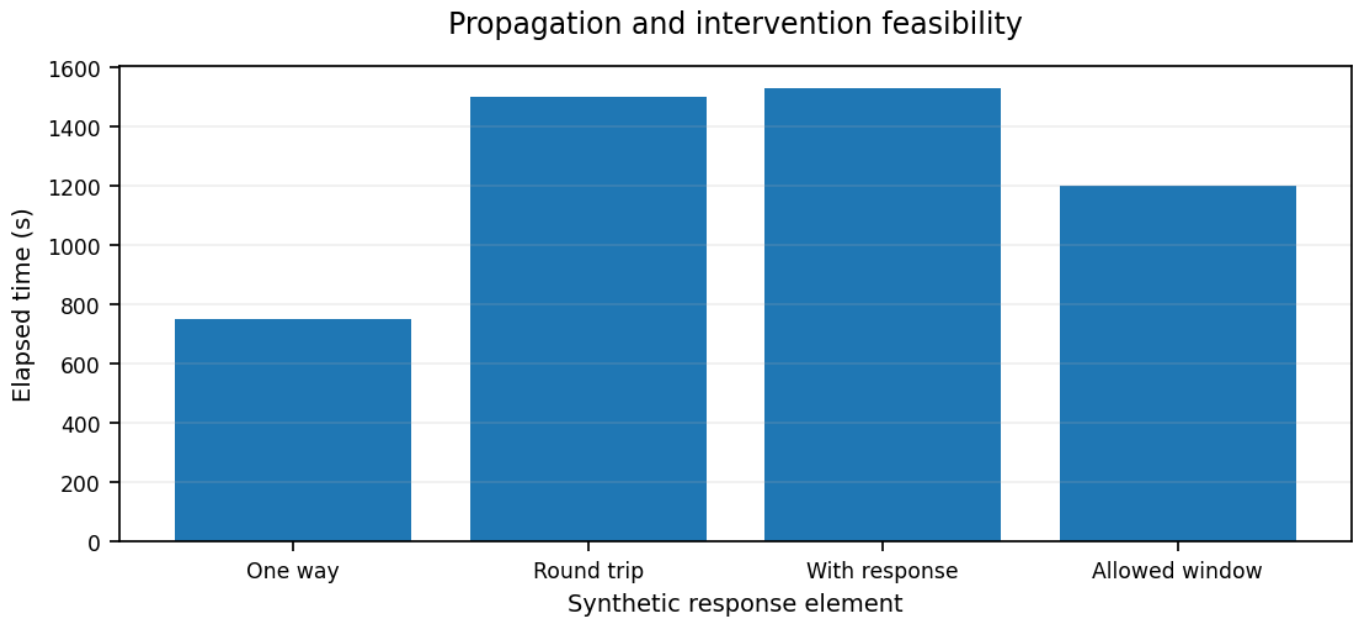


Figure Q15 – Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q16 Outage data storage with overhead

Source: ASTRA Annex AM, Q16, page 215. All numerical inputs in this example are synthetic.

$$B_{\text{required}} = R_{\text{data}} \times t_{\text{outage}} \times f_{\text{overhead}}$$

$$1 \text{ byte} = 8 \text{ bits}$$

Variables and units

Use a defined payload rate and explicit overhead, reserves and decimal/binary storage conventions. Avoid mixing Mbit/s and MB/s.

Example inputs

Synthetic 2.0×10^6 bit/s, 6 h outage, overhead factor=1.25; usable storage= 64×10^9 bit.

Calculation and checks

1. Outage duration= $6 \times 3,600 = 21,600$ s.
2. Required capacity= $2.0 \times 10^6 \times 21,600 \times 1.25 = 54 \times 10^9$ bit.
3. In decimal bytes this is 6.75×10^9 bytes = 6.75 GB.
4. Headroom= 10×10^9 bit; headroom/required=18.5185185%.

Decision interpretation: The example quantity fits in the stated usable capacity. Data priority, integrity and required extra reserve still need their own criteria.

Validity limits: Do not credit unvalidated compression, unavailable storage blocks or capacity already allocated elsewhere. Tests must include overflow, power interruption, duplicate delivery and recovery.

ASTRA connections: 66.3; 67.4; 78.7

Outage storage including the stated overhead

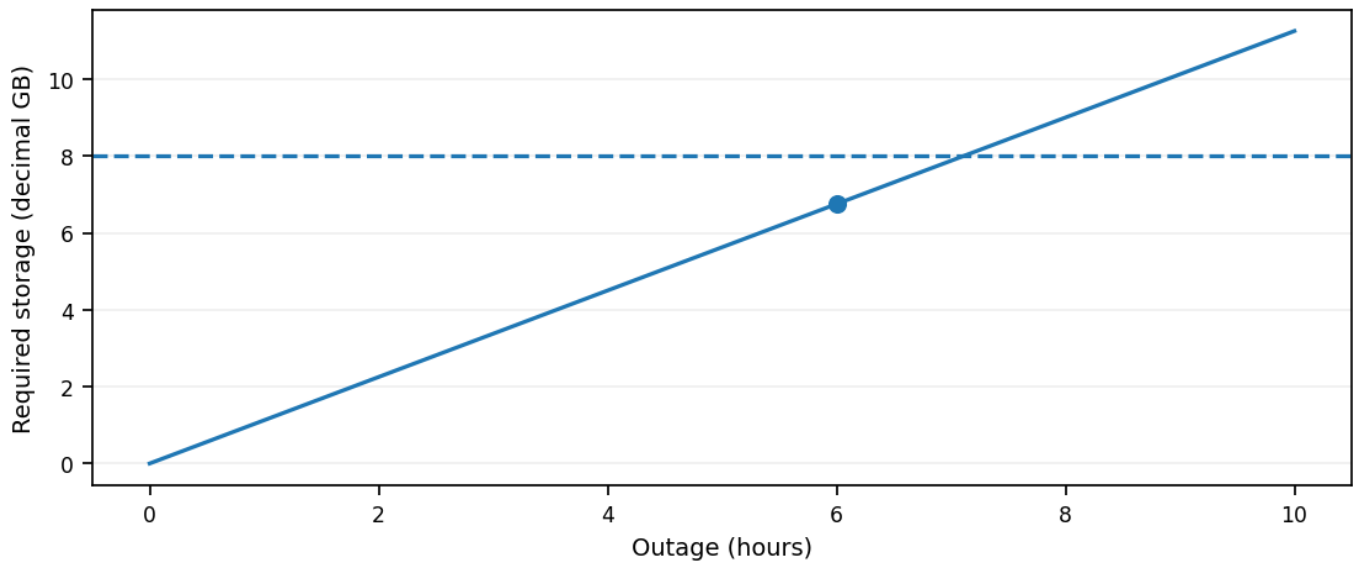


Figure Q16 – Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q17 Clock uncertainty and maximum data age

Source: ASTRA Annex AM, Q17, page 216. All numerical inputs in this example are synthetic.

$u_t = \sqrt{u_{\text{event}}^2 + u_{\text{sync}}^2}$ for justified independence

$U_t = k u_t$

Upper age endpoint = age_estimate + U_t

Variables and units

Time components refer to the same event and time basis. Correlation and systematic conversion errors require appropriate treatment.

Example inputs

Synthetic standard components 3 ms and 4 ms; illustrative $k=2$; maximum inclusive permitted data age=100 ms.

Calculation and checks

- $u_t = \sqrt{3^2 + 4^2} = 5$ ms; $U_t = 10$ ms.
- At age estimate 95 ms, interval=[85,105] ms: HOLD under the full-interval rule.
- At age estimate 80 ms, interval=[70,90] ms: PASS for this age criterion.

Decision interpretation: A recently received packet can still contain stale event data. The 95 ms estimate is not rounded down into acceptance.

Validity limits: This calculation does not account automatically for unrecorded queueing, an incorrect epoch or an unknown time scale. Such validity defects cause HOLD before the age predicate is evaluated.

ASTRA connections: 66.4; Annex G; 77.6

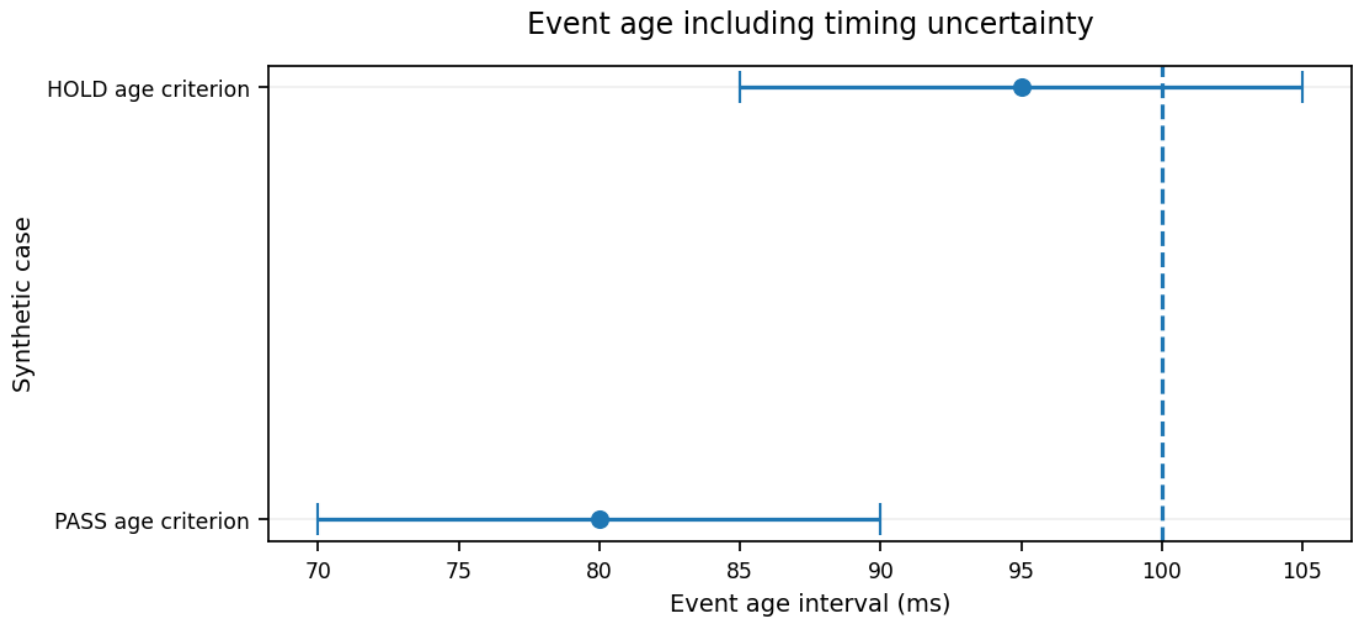


Figure Q17 – Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q18 Structural margin with explicitly assigned factors

Source: ASTRA Annex AM, Q18, page 217. All numerical inputs in this example are synthetic.

$$MS = \text{allowable_lower_bound} / (\text{factor} \times \text{demand_upper_bound}) - 1$$

Variables and units

Use compatible force, stress or other characteristic units and a consistent definition of applied factors. The chosen lower and upper bounds must not double-count uncertainty.

Example inputs

Synthetic allowable lower bound=150 kN; demand upper bound=100 kN; approved example factor=1.25; required example margin=0.10.

Calculation and checks

1. Factored demand=1.25×100=125 kN.
2. MS=150/125-1=0.20.
3. The result 0.20 is at least the example required 0.10.

Decision interpretation: The stated scalar margin passes its example predicate. Every other required load case and mechanism remains separately evaluated.

Validity limits: No factor or margin here is a universal structural design rule. Buckling, joints, thermal loads, dynamics, damage, fatigue and model validity may require distinct analysis and evidence.

ASTRA connections: 33.5; 65.1; 77

Scalar structural margin: approved factors still required

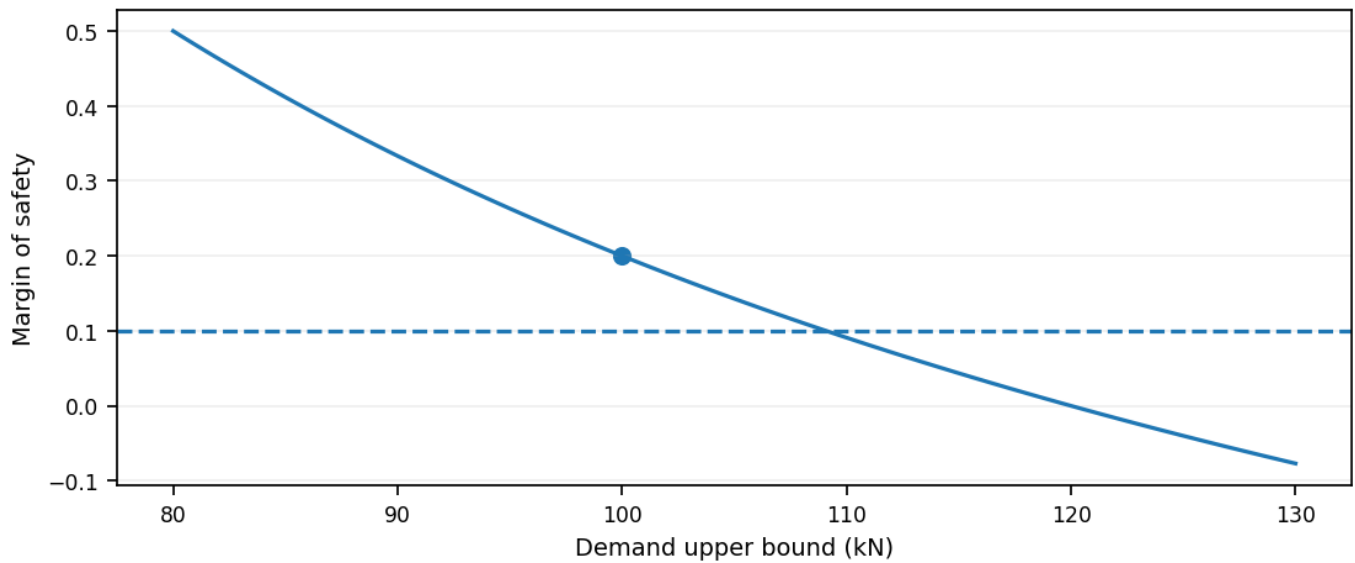


Figure Q18 — Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q19 Vibration spectral integration and units

Source: ASTRA Annex AM, Q19, page 218. All numerical inputs in this example are synthetic.

$$a_{rms}^2 = \int S_a(f) df$$

$$a_{rms} = \sqrt{a_{rms}^2}$$

Variables and units

S_a is acceleration power spectral density. With g^2/Hz and Hz , the integrated variance is g^2 . The specified conventional acceleration conversion is $9.80665 m/s^2$ per g .

Example inputs

Synthetic flat PSD= $0.04 g^2/Hz$ from 20 to 120 Hz; no content outside that illustrative band.

Calculation and checks

1. Bandwidth= $120-20=100 Hz$.
2. Variance= $0.04 \times 100 = 4 g^2$.
3. RMS= $\sqrt{4} = 2 g = 19.6133 m/s^2$.

Decision interpretation: The integration is correct for the stated flat spectrum. It does not define a test severity or establish qualification.

Validity limits: Real piecewise spectra, control methods, fixture dynamics, cross-axis behaviour, time duration and response limits require an approved profile. Do not integrate a logarithmic amplitude representation as though it were a linear PSD.

ASTRA connections: 42; Annex T; 77

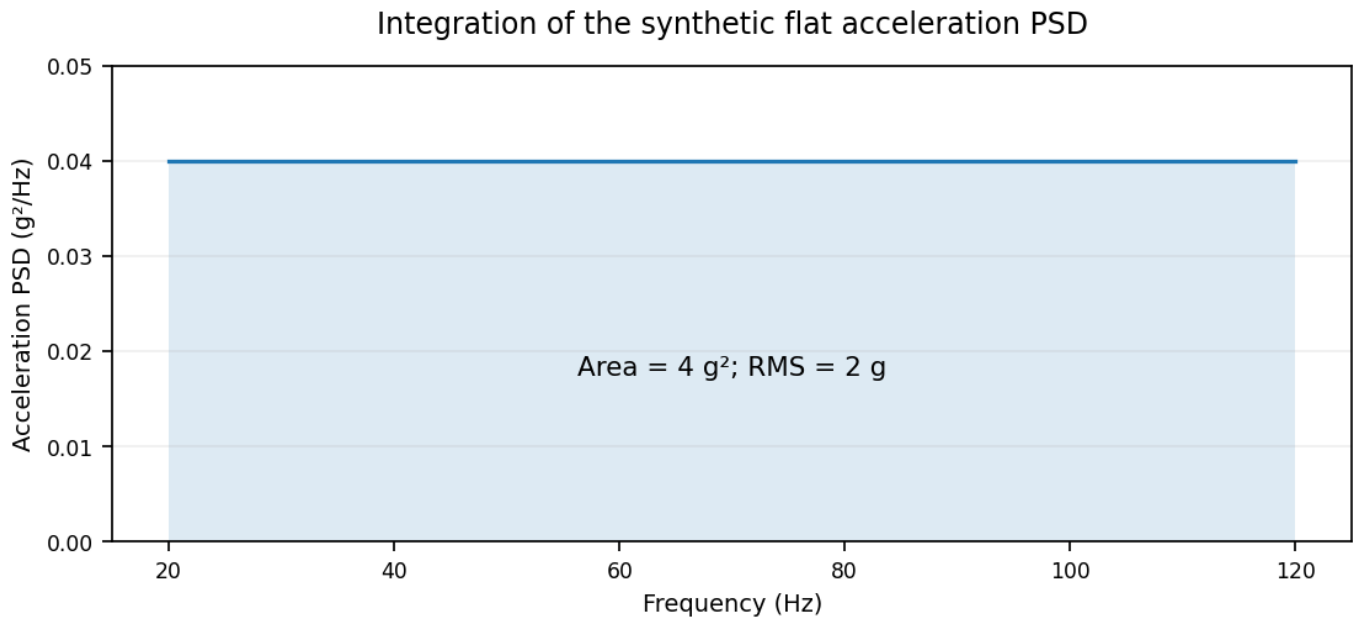


Figure Q19 – Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q22 Process consumables, recovery and unusable inventory

Source: ASTRA Annex AM, Q22, page 221. All numerical inputs in this example are synthetic.

Gross demand = number_of_units × unit_rate × duration

Usable feed need = gross demand × (1-recovery_fraction)

Stock requirement = feed need + unusable allowance + reserved amount

Variables and units

This is a non-physiological process-resource example. Recovery is credited only when quantity, quality and availability are demonstrated for the same duty.

Example inputs

Synthetic four identical process units; 2 kg/day/unit for 10 days; validated illustrative recovery=60%; unusable allowance=5 kg; reserve=8 kg; stock=50 kg.

Calculation and checks

1. Gross demand=4×2×10=80 kg.
2. Fresh usable feed need=80×(1-0.60)=32 kg.
3. Stock requirement=32+5+8=45 kg.
4. Headroom=50-45=5 kg.

Decision interpretation: The example quantity requirement is met. It supplies no crew-consumption rate or health criterion.

Validity limits: Availability, recovery timing, quality, contamination, storage losses and common-resource failure are separate checks. A calculated recycling benefit cannot substitute for demonstrated usable output.

ASTRA connections: 64.4; 73.3; 75.4–75.5

Usable consumables and retained reserves

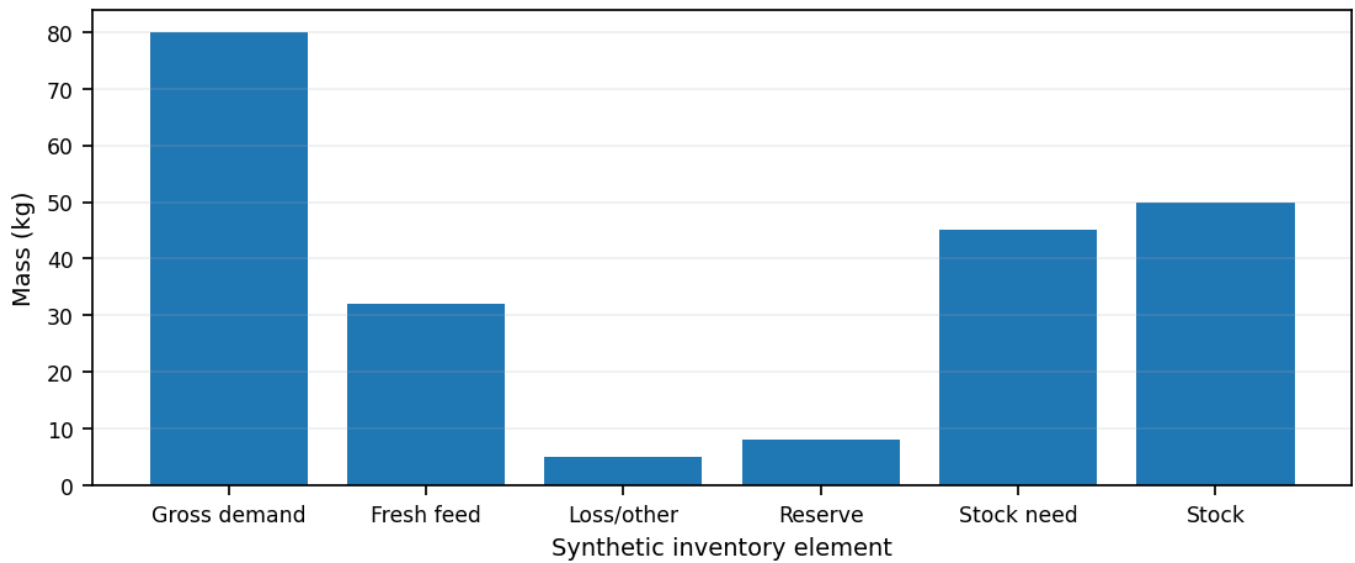


Figure Q22 – Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q23 Material genealogy, yield and retained work

Source: ASTRA Annex AM, Q23, page 222. All numerical inputs in this example are synthetic.

Input = good + reject + tests + losses + work_in_progress

First-pass yield = accepted_first_pass_output/input

Variables and units

All quantities shall use a consistent lot and period. Recovered material remains linked to its origin and is not counted twice as new production.

Example inputs

Synthetic input=500 units; good first-pass=410; reject=30; destructive tests=10; process losses=20; work in progress=30.

Calculation and checks

1. Reconciliation=410+30+10+20+30=500 units.
2. First-pass yield=410/500=82%.
3. If 20 rejected units are later recovered, the recovery does not increase original input or first-pass output.

Decision interpretation: The quantity balance closes. Technical identity, condition and acceptance evidence still determine whether the 410 outputs are eligible.

Validity limits: A closed balance does not prove authenticity, completeness or material quality. Mixing quantities with different units or unverified scrap/recovery transfers invalidates the reconciliation.

ASTRA connections: 18.4; 48.4; Annex AC; 75.4

Original input reconciliation

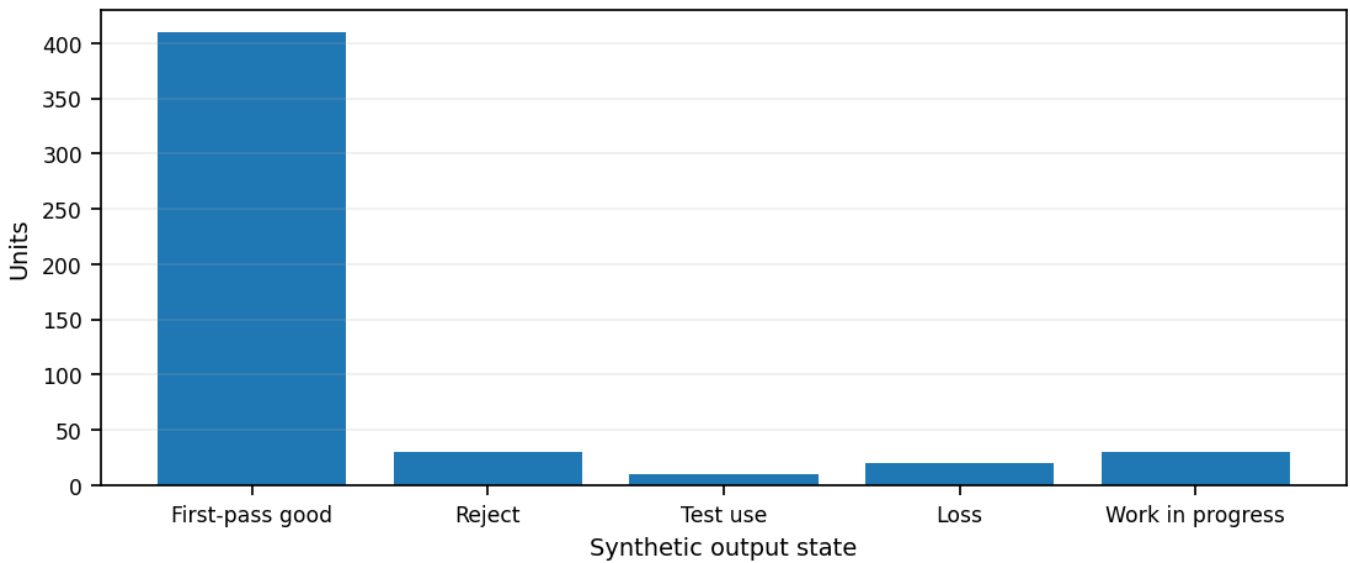


Figure Q23 – Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q24 Environmental inventory and uncertainty

Source: ASTRA Annex AM, Q24, page 223. All numerical inputs in this example are synthetic.

$$E = \sum(A_i \times EF_i)$$

$$u(E) = \sqrt{\sum u_i^2} \text{ only for independent components}$$

Variables and units

A_i are activities and EF_i compatible factors for the same declared boundary. All factors below are deliberately fictional and shall not be used for actual emissions.

Example inputs

Synthetic 200,000 kWh×0.25 kg CO₂e/kWh; 10,000 L×2.50 kg CO₂e/L; 20,000 tonne-km×0.10 kg CO₂e/tonne-km.
Relative standard uncertainties=5%, 10%, 20%.

Calculation and checks

1. Category totals=50,000; 25,000; 2,000 kg CO₂e. Total=77,000 kg CO₂e.
2. For 10,000 defined service events, intensity=7.7 kg CO₂e/event.
3. Standard components=2,500; 2,500; 400 kg CO₂e.
4. $u(E)=\sqrt{(2,500^2+2,500^2+400^2)}=3,558.089375$ kg CO₂e.

Decision interpretation: The arithmetic is correct for this limited synthetic boundary. No real environmental achievement or full lifecycle footprint is asserted.

Validity limits: Covariance is required where sources are dependent. Quantified uncertainty does not absorb omitted lifecycle stages, unsuitable factors, double allocation or missing mandatory categories.

ASTRA connections: 24; 53; Annex L

Partial environmental inventory with standard uncertainty

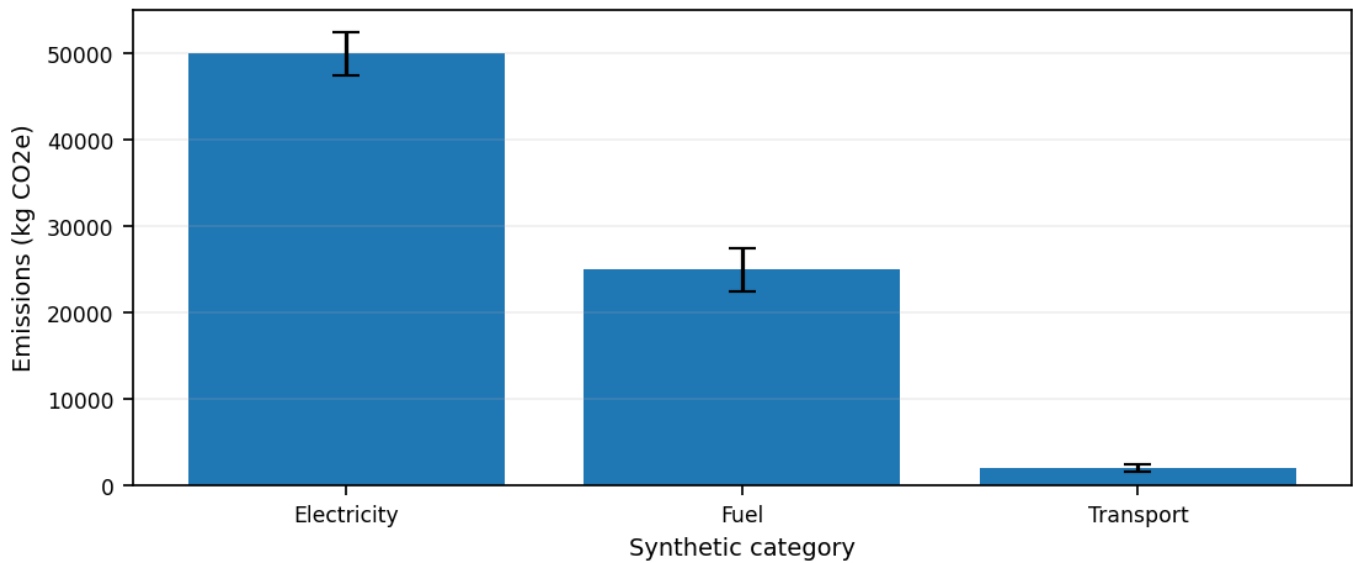


Figure Q24 – Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

AM.Q25 Reliability architecture and common-cause sensitivity

Source: ASTRA Annex AM, Q25, page 224. All numerical inputs in this example are synthetic.

$R_{\text{series}} = R_1 R_2$ for independent required elements

$R_{\text{parallel}} = 1 - (1 - R_1)(1 - R_2)$ for independent full-capability alternatives

$R_{\text{with_common_event}} = (1 - q) R_{\text{parallel}}$

Variables and units

R_1 and R_2 refer to the same mission duration and domain. q is an illustrative independent probability of a common event defeating both alternatives. Perfect switching is assumed only for this example.

Example inputs

Synthetic $R_1=0.98$, $R_2=0.99$; illustrative common-event probability $q=0.01$.

Calculation and checks

1. Series result= $0.98 \times 0.99 = 0.9702$.
2. Ideal independent parallel result= $1 - (0.02 \times 0.01) = 0.9998$.
3. With the stated common event: $0.99 \times 0.9998 = 0.989802$.

Decision interpretation: The architecture and common-dependency assumptions materially change the result. Component figures alone cannot establish system reliability.

Validity limits: Unequal functions, imperfect switching, dormant failures, shared software, maintenance or external resources require a different model. The example probabilities are not actual mission data or prescribed targets.

ASTRA connections: 55.2; 68.1–68.2; 76.5

Architecture assumptions determine reliability

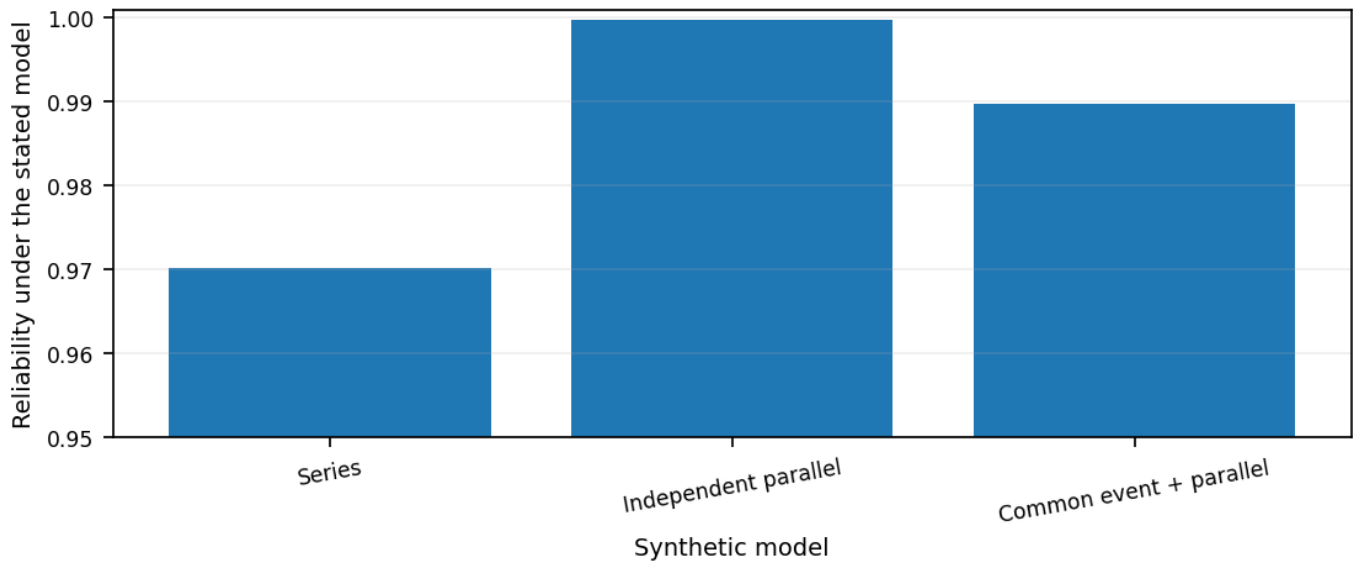


Figure Q25 — Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

Local replay record: retain the actual input manifest, source versions, calculation version, unit checks, independent recomputation, expected/observed boundary results, limitations and decision authority. Do not overwrite the teaching inputs as though they were operational data.

E8 Adverse cases and independent replay

Challenge	Expected handling	Evidence retained
PR-001: Freeze the publication and requirement baseline — required basis missing	PASS requires a uniquely retrievable source and an authorised effective version; a matching filename is insufficient.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-001: Issue and withdraw controlled copies — handover or review incomplete	Release needs authentic authority, a complete distribution record and tested retrieval of both current and historical evidence.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-002: Convert need into a bounded development brief — required basis missing	HOLD remains until the activity and retained duties can be stated without an unrestricted sector label.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-002: Complete genuine consultation and activation — handover or review incomplete	Apply the existing consultation and voting gates and then independently prove operator, people, systems and exact-profile readiness.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-003: Classify request and object separately — required basis missing	Only a released, evaluable scope enters live assessment; incomplete scope stays deferred or in development.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-003: Freeze accepted terms and amendments — handover or review incomplete	The accepted contract and every technical result must refer to the same exact object and controlled criteria.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-004: Resolve every applicable domain — required basis missing	Unknown applicability is HOLD; absent equipment or budget never establishes N/A.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-004: Approve exclusion and re-open triggers — handover or review incomplete	Only independently justified exclusions receive N/A; an unexamined consequential interface remains HOLD.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-005: Map competence to an actual task — required basis missing	A general title or training course is not an authorisation for an unfamiliar task.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-005: Maintain event-time currency — handover or review incomplete	Later authorisation cannot validate prior out-of-scope work; assess affected earlier outputs separately.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-006: Screen institutional and personal influence — required basis missing	A declared material conflict requires effective exclusion or replacement, not a signature alone.	Original input, unresolved value, affected requirement and scope; named action owner.

Challenge	Expected handling	Evidence retained
PR-006: Record challenge and reassignment — handover or review incomplete	Only a competent eligible role proceeds; replacement does not automatically validate prior compromised conclusions.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-007: Build a phase-by-mode coverage matrix — required basis missing	No uncovered essential cell can be marked complete from another site's headquarters evidence.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-007: Close actual coverage — handover or review incomplete	The independent reviewer accepts the actual coverage, not the original commercial duration or completion percentage.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-008: Qualify remote observability — required basis missing	Unobservable essential characteristics remain HOLD unless valid supplementary evidence is accepted.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-008: Reconcile remote completion and custody — handover or review incomplete	Only the demonstrated bounded task is accepted; command acknowledgement alone is not physical completion.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-009: Define the method family technically — required basis missing	No unrelated technique is added because it shares a performer or report template.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-009: Review change and corrective retest — handover or review incomplete	A fresh favourable run does not validate earlier affected output or automatically extend method scope.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-010: Freeze the quantitative contract — required basis missing	Invalid or missing essential inputs remain HOLD; the assessor does not supply an undocumented limit.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-010: Replay and report independently — handover or review incomplete	Unresolved replay disagreement blocks the dependent acceptance even where the nominal arithmetic appears plausible.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-011: Design a purposeful validity programme — required basis missing	Participation alone is not satisfactory performance or demonstrated detection capability.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-011: Close causes and historical extent — handover or review incomplete	New satisfactory performance restores only a bounded current capability after independent acceptance; old evidence is not rewritten.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-012: Reconcile output identity and basis — required basis missing	A report title or customer description cannot substitute for verified identity and scope.	Original input, unresolved value, affected requirement and scope; named action owner.

Challenge	Expected handling	Evidence retained
PR-012: Review publication against authority — handover or review incomplete	Every communicated result retains its actual event history and no unsupported broader scope.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-013: Separate evidence gap, technical failure and finding — required basis missing	HOLD is not proof of product failure, but a demonstrated control failure still needs an appropriate finding.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-013: Close with prospective evidence — handover or review incomplete	No grant, renewal or extension with an open in-scope finding; later correction does not backdate earlier validity.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-014: Freeze the independent decision dossier — required basis missing	A missing essential source, unresolved configuration or unsupported exclusion keeps the dependent decision on HOLD.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-014: Publish only the supported outcome — handover or review incomplete	Public wording and digital status cannot extend the decision or imply operational permission.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-015: Freeze the actual cycle baseline — required basis missing	Bookings and payment do not fulfil surveillance or extend validity.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-015: Renew without manufactured continuity — handover or review incomplete	Restoration or reprinting is not renewal; operational life and specialist permissions remain separate.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-016: Define the affected boundary — required basis missing	A convenient administrative subset is not enough to conceal a systemic deficiency.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-016: Resolve within the controlling window — handover or review incomplete	Administrative resets and silent extensions are prohibited; unknown terminal or technical states remain explicit.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-017: Retain the original issue and chronology — required basis missing	Reclassification does not erase the earlier clock or postpone immediate protection.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-017: Issue a reasoned bounded remedy — handover or review incomplete	Appeal receipt alone neither restores a suspended credential nor extends its duration.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-018: Preserve original concern and essential evidence — required basis missing	Unknown reporter identity does not permit ignoring credible protection or integrity evidence.	Original input, unresolved value, affected requirement and scope; named action owner.

Challenge	Expected handling	Evidence retained
PR-018: Close with systemic and recipient action — handover or review incomplete	Closing an intake record does not close unresolved technical, safety or record-custody obligations.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-019: Classify purpose and necessary data — required basis missing	Collecting more sensitive material than needed is not a substitute for better technical evidence.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-019: Preserve custody and authorised disposal — handover or review incomplete	Disposal cannot conceal a required historical decision basis or erase unresolved access and correction duties.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-020: Contain the actual evidence dependency — required basis missing	Service availability alone does not establish trustworthy operation or exclude impact.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-020: Authorise return and remaining restrictions — handover or review incomplete	No retrospective validation of outputs issued while essential integrity was unknown.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-021: Reconcile credential instruction to the decision — required basis missing	A profile title or cover image does not authorise a wider claim.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-021: Test correction and adverse events — handover or review incomplete	Only an authentic authorised decision changes status; a new file date never revives authority.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-022: Identify actual performance and retained responsibility — required basis missing	An intermediary cannot claim direct capability or transfer retained final decision responsibility by contract wording alone.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-022: Plan monitored transfer and exit — handover or review incomplete	Changing provider cannot turn suspended or unsupported evidence into a valid result.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-023: Cost real work rather than favourable outcomes — required basis missing	A fee or capacity target cannot delete required technical work or purchase a positive decision.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-023: Verify continuity capacity — handover or review incomplete	Lack of reserves for essential duties is an operational readiness gap, not a reason to weaken the standard.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-024: Select meaningful audit trails — required basis missing	Auditors remain independent of their work and have the actual technical support needed for the selected trail.	Original input, unresolved value, affected requirement and scope; named action owner.

Challenge	Expected handling	Evidence retained
PR-024: Close improvement through actual effectiveness — handover or review incomplete	Minutes or a training event alone are not closure of an implementation weakness.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-025: Establish a disinterested operator-review mandate — required basis missing	No self-accreditation, reciprocal nominal approval or assumed external acceptance follows from the review.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-025: Close findings and state limits — handover or review incomplete	Successful document review establishes only the stated review boundary, not universal international acceptance.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-026: Map every completion route — required basis missing	A favourable cohort mean cannot cover an unrepresented completion pathway.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-026: Protect learners through change and closure — handover or review incomplete	A development-readiness report is not full programme recognition; no fictitious graduates or professional privileges are created.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-027: Freeze the statement and assurance objective — required basis missing	A future plan or partial inventory cannot be relabelled as an achieved complete reduction.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-027: Review and communicate the bounded conclusion — handover or review incomplete	Do not issue an unqualified favourable conclusion solely to meet a reporting deadline.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.
PR-028: Map the complete change population — required basis missing	A cosmetic filename or edition-label change cannot hide a changed technical basis.	Original input, unresolved value, affected requirement and scope; named action owner.
PR-028: Close without abandoning terminal duties — handover or review incomplete	Only demonstrably complete obligations are closed; remaining duties stay assigned after programme or provider cessation.	Expected and observed state; independent replay; correction/retest; receiving acknowledgement.

Before local reliance, also select every relevant AP01–AP48 challenge in the core. Keep fictional tests isolated from live credentials, commands and recipients. For each test define the requirement, precondition, expected response, execution steps, actual observations, evidence, defect consequence, correction, retest and acceptance. This publication supplies test designs and examples, not completed local validation records.

E9 Complete all-space implementation workstream

The following workstream connects every new technical chapter, 62–80, to actual execution and receiving evidence. It is applied only to the responsible function and exact object. A training provider or component supplier does not inherit the whole mission owner’s duties; an integrator does not exclude duties it retains merely because a contractor performs the work.

62 – Requirement specification and deterministic decision logic

Condition / source page	Required execution evidence	Acceptance or hold condition
62.1 / p. 88 Atomic requirement record	Inspect each requirement row and its linked method, boundary and predicate.	Every applicable row is evaluable without inventing an object, limit, observation or decision role. Unresolved essential terms result in HOLD.
62.2 / p. 88 Mandatory parameter completion	Recalculate derivations and check mission, interface and obligation coverage.	The complete parameter set is approved prospectively. A blank, TBD, unsupported factor or undefined threshold blocks the dependent release.
62.3 / p. 88 Evidence validity before conformity	Check provenance, configuration, method capability, original data and uncertainty separately from result classification.	Validity is established before PASS or FAIL is assigned; otherwise use HOLD with an explicit invalidity or evidence-gap reason.
62.4 / p. 88 Four requirement states	Execute the truth table in Annex AL using actual scope and evidence.	Exactly one current state is assigned with reason and traceable evidence. All earlier states are retained.
62.5 / p. 89 No compensation or favourable default	Reconcile the complete requirement population with the decision dossier; test missing and negative cases.	The Boolean conjunction in Annex AL is true. Otherwise no positive grant, renewal or extension is permitted.
62.6 / p. 89 Exceptions, tailoring and unresolved conflict	Review each exclusion, alternative method and concession against controlling requirements.	No unapproved exception or unresolved conflict affects a positive conclusion; any known departure remains visible in its separate technical disposition.
62.7 / p. 89 Decision replay and consistency	Independently replay a selected boundary case and reconcile every difference.	The replay produces the same supported state, or the case remains HOLD pending a controlled technical resolution.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

63 – Complete space-domain applicability and mission boundaries

Condition / source page	Required execution evidence	Acceptance or hold condition
63.1 / p. 90 Domain selection without geographic omission	Compare the mission concept and responsibility map with all Annex AK domain rows.	Every domain has a reasoned disposition. Any unassessed domain that can affect a required outcome remains HOLD.
63.2 / p. 90 Object and activity rather than a universal label	Compare application, technical schedule, evidence and proposed public wording.	The object and activities agree throughout the dossier; unsupported sector-wide or geographically unlimited claims are prohibited.
63.3 / p. 90 Environment, phase and mode matrix	Review the complete phase-by-mode matrix and its verification links.	Every safety-, mission- or claim-relevant cell has accepted evidence or an explicit restriction; no essential unexamined cell is passed by analogy.
63.4 / p. 90 No automatic new programme family	Check domain tags against family, module, object and activation records.	Every granted space scope has a valid family connection and independently complete profile; no authority is inferred from the catalogue.
63.5 / p. 91 Unknown and future environments	Examine novelty analysis, experiment authority and unresolved-condition register.	Unknown essential behaviour is not recorded as safe or conforming. Development status and permitted work are explicit.
63.6 / p. 91 Interface and lifecycle closure	Trace each interface to an accountable performer and retained owner.	No essential responsibility, evidence handover or terminal obligation is orphaned.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

64 – Mission architecture and environmental definition

Condition / source page	Required execution evidence	Acceptance or hold condition
64.1 / p. 92 Mission environmental baseline	Audit environment-to-requirement and environment-to-test traceability.	All material environments and coupled effects are bounded by approved assumptions and evidence; undefined exposure blocks qualification acceptance.
64.2 / p. 92 Geometry, reference frames and event time	Recompute selected transformations and challenge wrong-frame and stale-epoch inputs.	Transformations meet the approved error and time bounds; incompatible or ambiguous metadata produces HOLD.
64.3 / p. 92 Uncertainty, scenarios and design envelope	Review scenario construction, dependencies and sensitivity to uncertain inputs.	The accepted envelope covers the declared decisions; unsupported extrapolation is excluded or held.
64.4 / p. 92 Resource budgets and coupled margins	Reconcile subsystem and system budgets by phase and condition; independently check Annex AM calculations used.	Each required margin meets its prospectively approved value under all selected bounding conditions; no reserve is double allocated.
64.5 / p. 92 Heritage and similarity	Review a difference matrix and trace each retained conclusion to applicable original evidence.	Every material difference has a technical disposition and sufficient evidence before the new claim is accepted.
64.6 / p. 93 Baseline maintenance and irreversible decisions	Compare the frozen readiness dossier with the actually delivered configuration and latest accepted mission assumptions.	Every essential gate is complete and all permitted actions are stated; otherwise the irreversible commitment remains blocked.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement;

and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

65 – Spacecraft platform, payload and subsystem assurance

Condition / source page	Required execution evidence	Acceptance or hold condition
65.1 / p. 94 Structures, mechanisms and deployment	Review configuration-specific load, test, inspection, mechanism and deployment evidence.	Each required function and structural criterion is met in its approved envelope; unknown restraint or deployment state blocks dependent operation.
65.2 / p. 94 Thermal control and thermal protection	Review thermal models, instrumentation, balance correlation and hot/cold/transient test coverage.	All required temperatures and gradients meet approved bounds including uncertainty and model discrepancy; unresolved critical locations remain HOLD.
65.3 / p. 94 Power generation, storage and distribution	Reconcile phase budgets and examine actual storage, conversion and protection evidence.	Power, energy and recovery predicates all pass; adequate average generation does not compensate for an unsupported peak or outage condition.
65.4 / p. 94 Avionics, electronics and radiation effects	Inspect parts genealogy, mission susceptibility analysis, specialist results and integrated recovery tests.	All triggered mechanisms have accepted application-specific evidence; a part label or dose-only result does not close unexamined single-event behaviour.
65.5 / p. 95 Attitude, pointing, sensing and control interfaces	Trace error allocation to integrated measurement and closed-loop verification on representative configuration.	Required performance and protective-state predicates pass; undetected loss of critical observability remains an essential gap.
65.6 / p. 95 Payload function and scientific or service output	Reconstruct selected output products from identified inputs, calibration and processing.	Output criteria are met for the stated domain; unsupported scientific or service claims are not inferred from a functioning instrument.
65.7 / p. 95 Integrated platform acceptance	Conduct independent configuration, interface and evidence closure across the complete integration dossier.	All applicable integration gates pass; each unresolved essential interface blocks the dependent mission or system conclusion.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

66 – Communications, navigation support and time services

Condition / source page	Required execution evidence	Acceptance or hold condition
66.1 / p. 96 End-to-end service definition	Trace representative data from origin to authorised use including relays and third parties.	The claimed service boundary is complete and each essential dependency is supported; a link diagram alone is insufficient.
66.2 / p. 96 Link and performance budgets	Independently recompute the budget and validate assumed performance against representative evidence.	The worst required operating cases meet approved link and quality margins; omitted material losses or unknown receiver performance block acceptance.
66.3 / p. 96 Delay and feasible intervention	Test worst-case delay and outage scenarios using the approved mission geometry and timing model.	Required responses are feasible within the approved window; a nominal human review step does not pass if communication makes it ineffective.
66.4 / p. 96 Data age and time uncertainty	Challenge stale, duplicated, reordered, wrong-time-scale and clock-reset data.	Data outside approved age or uncertainty bounds are marked unusable for the affected decision and trigger the defined protective response.
66.5 / p. 97 Position and navigation-support integrity	Compare independent truth/reference evidence and test wrong-frame, stale-source and service-loss cases.	All performance and integrity predicates pass for the declared use; an unavailable or uncertain essential output is not a valid zero-error estimate.
66.6 / p. 97 Secure command and relay interfaces	Execute safe positive and prohibited command-delivery tests using isolated synthetic fixtures.	Unauthorised, stale or wrong-target commands cannot pass the accepted workflow; commanded action and observed physical completion remain distinct.
66.7 / p. 97 Outage, recovery and service evidence	Review outage timelines, replay/reconciliation logs and receiving acceptance.	All necessary state and data integrity checks are complete before assured use resumes; remaining gaps are carried into the affected claims.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

67 – Ground segment, command lifecycle and mission operations

Condition / source page	Required execution evidence	Acceptance or hold condition
67.1 / p. 98 Configuration and operational baseline	Reconcile installed versions and target mappings with approved release records.	Every live mission interface uses an accepted compatible baseline; training or stale configuration cannot be selected as a live authority.
67.2 / p. 98 Command proposal and preconditions	Review selected command records and challenge stale-state and wrong-target preconditions safely.	All prescribed preconditions are demonstrated and the command remains within approved mission authority; otherwise release is blocked.
67.3 / p. 98 Receipt, execution and completion	Trace a command through its full event and evidence history.	Only evidence satisfying the approved completion predicate supports completed status; missing terminal evidence remains unknown or partial.
67.4 / p. 98 Planning and conflicts	Independently reconcile a representative plan and its actual execution log.	No essential conflict remains unresolved; actual execution and deviations are separately evidenced.
67.5 / p. 99 Personnel, handover and remote support	Observe a representative handover and verify access, competence and acknowledgement.	The receiving team acknowledges the complete active state and responsibilities before assuming authority.
67.6 / p. 99 Anomaly response and safe restoration	Examine adverse rehearsals and actual restoration records where available.	Required state, integrity and protection checks pass before resumed dependent action; unresolved essential uncertainty retains a restriction.
67.7 / p. 99 Rehearsal and independent readiness	Compare the rehearsal matrix, observations, corrections and re-execution evidence.	Every required readiness scenario passes or is excluded through a valid scope limitation; no scripted demonstration is claimed as a completed mission.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

68 – Constellations, traffic interfaces and orbital stewardship

Condition / source page	Required execution evidence	Acceptance or hold condition
68.1 / p. 100 Fleet membership and common dependencies	Reconcile fleet and configuration records with actual membership and service commitments.	All included assets and common-cause dependencies are identified; unsupported members remain outside the granted scope.
68.2 / p. 100 Distributed function and degradation	Test representative distributed-service and common-cause scenarios.	The specified service and protective behaviour meet approved predicates; aggregate uptime does not conceal an essential degraded-state failure.
68.3 / p. 100 Tracking and conjunction-information quality	Review data lineage, uncertainty and method validity; challenge stale and inconsistent source cases.	The data and model support the intended decision. Unsupported collision-probability estimates remain HOLD, not reassuring zero values.
68.4 / p. 100 Coordination and consent	Inspect communication records and representative failed-contact or contradictory-message exercises.	Each required acknowledgement and authority is established; unresolved coordination essential to the claim blocks that claim.
68.5 / p. 101 Debris prevention and released items	Review released-item inventory, risk analysis, protective evidence and closure records.	Every triggered prevention and terminal condition has accepted evidence; no unknown disposition is reported as completed.
68.6 / p. 101 Mission extension and terminal resources	Reconcile updated budgets, remaining-life evidence and terminal feasibility.	Required continued-service and terminal predicates both pass; a commercially useful asset is not automatically eligible for extension.
68.7 / p. 101 Status and long-term custody	Trace final-state evidence and accepted transfer of residual duties.	Terminal claims match observed or explicitly bounded inferred states, and every continuing duty has a receiving owner.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

69 – Servicing, docking, assembly and on-orbit interventions

Condition / source page	Required execution evidence	Acceptance or hold condition
69.1 / p. 102 Consent and exact intervention	Check the consent and authority chain against the declared operation and assets.	All required authorities and compatible scope boundaries are valid before intervention; otherwise the activity remains blocked.
69.2 / p. 102 Interface compatibility	Review interface-control records, difference analysis and representative integrated verification.	Every essential interface criterion passes for both participating configurations; unknown critical interfaces remain HOLD.
69.3 / p. 102 Relative-state and completion evidence	Challenge incomplete and contradictory indications using authorised representative simulations or tests.	Each claimed state has sufficient valid evidence and meets its own predicate; ambiguous state cannot be treated as complete.
69.4 / p. 102 Interruptions and safe boundaries	Review the approved scenario set and evidence for required protective transitions.	All essential interruption and protective-state requirements are demonstrated within the authorised envelope.
69.5 / p. 103 Transferred material, energy and data	Reconcile sending and receiving records and inspect suitability evidence.	Both identity/quantity and technical eligibility checks pass; unexplained differences or contamination keep the transfer result open.
69.6 / p. 103 Post-intervention configuration and service claim	Review post-intervention verification and receiving acknowledgement.	The bounded service predicate is met, affected protections are restored and residual responsibilities are accepted.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

70 – Launch, re-entry, reuse and ground-interface assurance

Condition / source page	Required execution evidence	Acceptance or hold condition
70.1 / p. 104 Distinct release objects	Compare all requested results with their actual evidence and authority paths.	No merged or unbounded approval is issued; each required object-specific gate is independently supported.
70.2 / p. 104 Integrated environment and interface verification	Reconcile interface and environment matrices with qualification, acceptance and delivered configuration.	All required interface criteria are met; undeclared differences or missing essential demonstrations block integrated acceptance.
70.3 / p. 104 Test and hazardous-work readiness	Inspect real readiness records and safe witnessing arrangements.	All prerequisite protections and measurement capabilities exist before testing; missing permissions or protective functions prohibit the activity.
70.4 / p. 104 Reuse and cumulative history	Trace item history to approved reuse criteria and measured condition.	All required life and condition predicates pass; missing critical history or inaccessible required inspection blocks reuse acceptance.
70.5 / p. 105 Return, landing and recovery interfaces	Review the approved return/recovery dossier, communication and custody arrangements.	The stated return or recovery claim has sufficient actual evidence; a planned route or lost signal cannot be reported as successful completion.
70.6 / p. 105 Readiness decision and post-event learning	Independently review the frozen pre-event dossier and subsequent anomaly-to-population analysis.	Every essential gate passes at the actual commitment time; later success does not legitimise an unsupported earlier release.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

71 – Lunar, planetary, small-body and ocean-world systems

Condition / source page	Required execution evidence	Acceptance or hold condition
71.1 / p. 106 Destination-specific conditions	Examine destination/region assumptions, uncertainty and required evidence.	All essential environmental inputs are bounded for the declared mission; missing critical environmental knowledge retains a development or restricted status.
71.2 / p. 106 Surface mobility and interaction	Review integrated mobility and resource tests and the justified analogue-transfer argument.	Required mobility and protective-state predicates pass for the approved envelope; unsupported terrain classes remain excluded.
71.3 / p. 106 Atmospheric and buoyant exploration	Review environment-specific material, structural and functional qualification and data validity.	Every essential environmental and functional condition is supported for the stated domain; unvalidated atmosphere assumptions block broader claims.
71.4 / p. 106 Subsurface and ocean-world interfaces	Review pressure-boundary and environmental evidence through authorised specialist assessment.	All triggered boundary, protection and observation predicates pass; uncertain containment or retrieval capability remains explicitly restricted.
71.5 / p. 107 Long darkness and resource interruption	Recalculate resource and survival budgets and review representative dormant/restart tests.	All required survival and recovery conditions meet approved criteria without double-counted reserves; missing state evidence keeps restart dependent actions held.
71.6 / p. 107 Construction and surface infrastructure	Trace design and material records through construction, commissioning and receiving acceptance.	Every essential structural, utility, environmental and operational interface has valid completion evidence before use.
71.7 / p. 107 Autonomy and limited intervention	Challenge the approved autonomous envelope and required protective transitions.	All essential scenarios pass; out-of-domain behaviour is limited or stopped under the approved protective design.
71.8 / p. 107 Completion, samples and remaining duties	Review final-state evidence, sample manifests and accepted residual-duty assignments.	Each conclusion is limited to its demonstrated object and evidence; no lost contact or incomplete transfer is relabelled as complete closure.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

72 – Deep-space, solar and long-duration exploration

Condition / source page	Required execution evidence	Acceptance or hold condition
72.1 / p. 108 Time horizon and recoverability	Review life and support assumptions against mission phases and credible loss cases.	Essential mission and protective functions remain supported for the declared duration; speculative future services are not favourable defaults.
72.2 / p. 108 Solar and extreme thermal exposure	Review environment-specific models, uncertainty, qualified materials and correlated tests.	Required temperature, gradient, integrity and functional limits are met throughout the approved envelope; unexamined coupled effects remain HOLD.
72.3 / p. 108 Low-flux and limited-power missions	Reconcile resource profiles and perform representative low-resource and recovery verification.	Every essential resource and protection predicate passes; unavailable generation or unsupported recovery is not treated as normal service.
72.4 / p. 108 Autonomy during long communication delay	Evaluate latency arithmetic and scenario-based autonomous response evidence.	Protective authority is executable within the approved response time; otherwise redesign, restriction or additional evidence is required.
72.5 / p. 108 Ageing and long-term digital support	Review long-life evidence and test migration, recovery and independent reconstruction.	Essential historical and current evidence remains usable and required support has accepted continuity arrangements.
72.6 / p. 109 Scientific instruments and observation integrity	Reprocess a representative observation from identified source data and calibration.	The stated technical data-quality criteria are met; disputed scientific interpretation is not declared certain by an ASTRA engineering result.
72.7 / p. 109 Future-domain feasibility and responsible closure	Review demonstration-state claims, technical gaps and actual terminal evidence.	Only the demonstrated bounded capability is recognised; speculative performance and unknown final states remain clearly identified.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

73 – Human flight, habitats and extravehicular systems

Condition / source page	Required execution evidence	Acceptance or hold condition
73.1 / p. 110 Population, mission and human tasks	Review the user/task matrix and representative normal and degraded validation.	Each essential task is demonstrated under its approved conditions; unsupported populations and tasks are excluded from the claim.
73.2 / p. 110 Integrated life support	Review integrated requirements, monitored quantities, sensor validity and contingency tests.	Every required environmental and protective predicate is met; unspecified health limits or unverified essential monitoring block acceptance.
73.3 / p. 110 Consumables and survival time	Recompute balances and check source data, quality and concurrent reserve allocations.	All approved reserve and survival predicates pass; quantity sufficiency does not compensate for unsuitable water, atmosphere or other supplies.
73.4 / p. 110 Habitat integrity and interfaces	Inspect configuration-specific boundary and integrated protective evidence.	All essential integrity and interface conditions pass; an unknown boundary or incompatible visiting configuration blocks occupancy-dependent acceptance.
73.5 / p. 111 Human factors and effective authority	Observe representative task and intervention performance, including misleading and degraded information.	Every essential response passes independently; aggregate usability scores do not offset a failed protective task.
73.6 / p. 111 Extravehicular activity and individual equipment	Review qualified equipment, user fit/task evidence and integrated emergency interfaces.	All relevant configuration and protective criteria pass, with actual specialist authority and supported rescue or survival assumptions.
73.7 / p. 111 Medical capability and health-data boundaries	Check actual health-support arrangements, equipment integration and protected data access.	Required support functions are demonstrably available and usable within the mission limits; undocumented specialist capacity is not credited.
73.8 / p. 111 Emergency, refuge and safe return	Assess scenario-specific exercise and resource evidence and independently check timing feasibility.	Every required protective pathway is supported; infeasible response or unavailable essential resources block the dependent human-mission claim.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

74 – Planetary protection, sample return and scientific integrity

Condition / source page	Required execution evidence	Acceptance or hold condition
74.1 / p. 112 Mission-specific protection classification	Review destination, pathway and consequence analysis with qualified independent specialists.	Every triggered protection duty has an explicit owner, criterion and verification path; an undefined classification remains HOLD.
74.2 / p. 112 Contamination pathways and control allocation	Inspect the pathway map and validated evidence for each relied-upon control.	All essential pathways are controlled to the approved technical basis; inaccessible required evidence prevents a favourable conclusion.
74.3 / p. 112 Scientific cleanliness and background	Review measurement-specific contamination budgets and actual verification results.	Required cleanliness and background predicates pass within method uncertainty; uncharacterised contamination remains a limitation on the affected output.
74.4 / p. 112 Sample identity and custody	Reconcile original collection, custody, receiving and subdivision records.	The sample and its history are unambiguous and usable for the claimed purpose; missing essential links block the dependent sample conclusion.
74.5 / p. 113 Return-chain containment and receiving readiness	Review the complete return-to-receiving chain and authorised representative integrity demonstrations.	Every essential interface and receiving capability is accepted before dependent return commitments; otherwise the chain remains incomplete.
74.6 / p. 113 Anomalies, unknown state and release of information	Examine anomaly decisions, actual observations and bounded reporting.	Only supported technical conclusions are released; uncertainty and unresolved protection duties remain visible.
74.7 / p. 113 Disposition and residual responsibility	Trace final-state evidence and accepted residual duties.	No required custody or protection obligation is abandoned and no unverified disposal is claimed complete.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

75 – In-space manufacture, resource use and logistics

Condition / source page	Required execution evidence	Acceptance or hold condition
75.1 / p. 114 Process purpose and environment	Review environment differences and the process-to-property qualification argument.	All essential output properties and influential conditions have an approved evidence path; unsupported transfer remains HOLD.
75.2 / p. 114 Inputs, feedstock and source variability	Trace input lots and samples to process runs and accepted property evidence.	Input identity and suitability meet approved criteria; uncertain composition or life history is not replaced by a nominal source label.
75.3 / p. 114 Essential variables and remote monitoring	Review representative qualification, sensor/model validation and raw production history.	All required variables and output characteristics are supported; an unobservable essential property requires additional evidence or a restricted outcome.
75.4 / p. 114 Yield, mass balance and circularity	Independently reconcile the material ledger and separately review quality acceptance.	Balances meet the approved uncertainty-based criterion and all claimed good output is technically accepted; unexplained losses or duplicate recovery remain open.
75.5 / p. 115 Logistics, storage and compatibility	Inspect the complete shipment and receiving chain, including excursions and damage.	Only accepted usable inventory enters mission budgets; unknown or restricted items are segregated in both physical and digital records.
75.6 / p. 115 Maintenance, spares and distributed production	Review replacement authorisation, production genealogy and configuration-specific verification.	Every essential replacement predicate passes before use; unsupported functional or life equivalence is prohibited.
75.7 / p. 115 Handover, resource claims and closure	Reconcile reported outputs, accepted products, rights/permissions and final-state evidence.	The claim is bounded to measured and accepted achievement; undeveloped scale-up and unknown disposition remain separate.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

76 – Space energy infrastructure and specialised power oversight

Condition / source page	Required execution evidence	Acceptance or hold condition
76.1 / p. 116 System boundary and conversion chain	Trace energy and thermal balances across the actual architecture and conditions.	Every essential stage and interface meets approved functional and protective requirements.
76.2 / p. 116 Beamed and remote energy services	Review written scope, compatible interfaces, performance evidence and safe protective tests.	Delivery and all triggered protective predicates pass; no hazardous or unauthorised operation is justified by a positive efficiency value.
76.3 / p. 116 Cryogenic, chemical and pressure interfaces	Review authorised technical basis, qualification, inspection and integration evidence.	Every essential containment and protection condition is supported; missing hazardous-work authority blocks the activity.
76.4 / p. 116 Nuclear and radiation-source governance	Verify the existence, scope and authenticity of required specialist approvals and integration evidence.	All relevant permissions and assurance interfaces are complete; a generic aerospace credential cannot substitute for them.
76.5 / p. 117 Infrastructure availability and failure propagation	Review dependency analysis and safe tests of loss, isolation and restoration.	Every essential protective path remains effective under the approved failure set; unsupported independence is not credited.
76.6 / p. 117 Degradation, environmental claims and retirement	Reconcile actual condition, model validity, separate environmental statements and final disposition.	Technical life and terminal conditions are met independently of environmental metrics; unknown inventories remain open obligations.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

77 – Verification campaigns and quantitative closure

Condition / source page	Required execution evidence	Acceptance or hold condition
77.1 / p. 118 Requirement-to-method completeness	Reconcile the requirement population, test matrix and actual evidence using stable identifiers.	Every applicable requirement has a valid completed evidence path; any essential uncovered row remains HOLD.
77.2 / p. 118 Campaign design and article pedigree	Review specimen-to-product and test-to-configuration equivalence records.	All material differences and accumulated effects are evaluated before evidence reuse; unrepresentative essential evidence is not accepted.
77.3 / p. 118 Measurement and uncertainty readiness	Inspect the full measurement chain and execute relevant readiness checks.	All required channels are valid for the intended inference; a missing, saturated or misconfigured critical channel prevents that acceptance.
77.4 / p. 118 Combined effects and sequence	Review the interaction matrix and cumulative exposure ledger.	Every material combined mechanism has adequate evidence; passing isolated tests does not automatically close unexamined combinations.
77.5 / p. 118 Original data and invalid tests	Reconstruct a selected run from raw data and contemporaneous records.	The run is independently interpretable and no failed, invalid or missing evidence is concealed.
77.6 / p. 119 Numerical and attribute acceptance	Replay boundary, negative and missing-input cases using Annex AL and Annex AM.	The correct state follows deterministically from valid unrounded inputs and the approved predicate.
77.7 / p. 119 Retest and corrective verification	Review the retest authorisation, all attempts and failure-to-correction trace.	The original deficiency and affected requirements are demonstrably resolved; otherwise the claim remains failed or held.
77.8 / p. 119 Independent campaign closure	Perform independent requirement-by-requirement closure with actual decision authority.	Every applicable gate for the exact claimed object passes; counts, percentages or programme completion dates alone cannot release the object.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

78 – Digital, AI and autonomous mission assurance

Condition / source page	Required execution evidence	Acceptance or hold condition
78.1 / p. 120 Released digital configuration	Reconstruct the released artefact and compare it with the loaded configuration.	The evaluated and deployed digital configurations match, or all differences have accepted verification before use.
78.2 / p. 120 Operational domain and prohibited behaviour	Review domain completeness and execute representative in-domain, out-of-domain and prohibited cases.	All essential domain and protective conditions pass; unbounded authority or unknown out-of-domain behaviour blocks release.
78.3 / p. 120 Evaluation data and model credibility	Inspect data partitions and independently reproduce selected performance and model-validation results.	Prospective scenario-specific criteria are met with disclosed uncertainty and limitations; unsupported extrapolation remains HOLD.
78.4 / p. 120 Human authority and consequential decisions	Challenge automation bias, false-source and delayed-intervention scenarios.	Actual authorised people can perform every required role and source evidence remains verifiable; nominal oversight alone is insufficient.
78.5 / p. 121 Security and trusted updates	Review trust dependencies and execute isolated permitted and prohibited update tests.	All required integrity and protective gates pass; a valid signature alone does not establish functional safety or compatibility.
78.6 / p. 121 Monitoring, drift and adaptation	Review monitoring coverage, alert-to-action records and controlled changes.	Essential performance and protection remain supported; otherwise restrict the affected use and assess earlier outputs.
78.7 / p. 121 Recovery and semantic portability	Execute missing-link, wrong-version, interrupted-write, expired-authority and restore tests.	All essential records and relationships are usable and correct; unresolved evidence loss keeps dependent decisions on HOLD.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

79 – Contingency survivability and terminal-state stewardship

Condition / source page	Required execution evidence	Acceptance or hold condition
79.1 / p. 122 Protect people and essential assets before mission success	Review hazard-to-control-to-verification traceability for failed-mission scenarios.	Every required protective function has accepted evidence independently of mission performance metrics.
79.2 / p. 122 Emergency feasibility and resources	Reconcile scenario timing, resource budgets and exercised interfaces.	All required protective pathways are feasible within their approved response and survival bounds.
79.3 / p. 122 Loss of contact and uncertain physical state	Review the state-classification record against raw evidence and observability limits.	Only a supported state is assigned; uncertain essential conditions retain UNKNOWN in operational records and HOLD in dependent acceptance.
79.4 / p. 122 Affected populations and historical decisions	Inspect end-to-end dependency and look-back analysis with actual notifications.	All materially dependent outputs are addressed; no valid adverse history is erased by later correction.
79.5 / p. 122 Terminal evidence and responsible transfer	Reconcile final-state evidence, inventory and recipient acknowledgement.	Every required terminal criterion is demonstrated or openly limited, and every remaining duty has an actual receiving owner.
79.6 / p. 123 Learning and sustained accountability	Review corrective effectiveness and test retrieval by a receiving competent reviewer.	The affected controls demonstrably improve and the mission record remains interpretable; publication of a lesson alone is not closure.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

80 – Integrated all-domain profile and final release

Condition / source page	Required execution evidence	Acceptance or hold condition
80.1 / p. 124 One complete application schedule	Reconcile the full schedule with Clauses 1, 4, 62 and 63 and Annex C.	No essential scope, parameter, responsibility or evidence field remains undefined before a positive decision.
80.2 / p. 124 Domain and verification completeness	Perform forward and reverse traceability and inspect omitted-domain reasons.	Every applicable condition passes or has a justified approved N/A; no HOLD or FAIL is hidden by a coverage percentage.
80.3 / p. 124 Competent independent closure	Check competence, conflict, access, panel and reasoned decision records.	Both the technical conjunction and applicable authority/panel rules pass; a vote cannot cure absent evidence.
80.4 / p. 124 Bounded claim and publication	Compare the actual decision with credential, registry and all proposed public representations.	Published scope and status exactly match the authorised decision and preserve every material restriction.
80.5 / p. 124 Continuing conformity and change	Audit actual completion, change and status records rather than scheduled dates alone.	The current claim remains fully supported; overdue or invalidated conditions trigger the applicable restriction, suspension or withdrawal.
80.6 / p. 125 Completion boundary	Review the final release dossier and the truthful distinction between prepared text and real implementation.	Only the exact demonstrated and authorised scope is released; incomplete domains remain available for controlled development, not presumed conformity.

Implementation handover: the assigned technical owner supplies the current application schedule, underlying original evidence and scope-limited conclusion. The receiving independent function checks completeness, configuration and actual authority; records disagreement; and accepts only the supported next action. Unavailable evidence or an incomplete domain remains visibly held.

Appendix A — Controlling source requirements

The following text is reproduced from the supplied ASTRA FIRST EDITION. The clause identifier and page refer to that 248-page source. These excerpts and their evidence fields must be read with all triggered normative annexes. Newly authored implementation steps elsewhere in this document do not amend the core standard.

1.3 — Object and responsibility tuple

Source: AF-AST-STD-001, page 10.

Each application shall identify the responsible legal entity, actual performer, object type, family and module, sites and remote functions, configuration or programme version, lifecycle role, applicable period, criticality, profile and exclusions. Products, services, processes, people, supplier scopes, educational programmes, assessment providers and environmental statements are separate objects. A combined dossier may share evidence but shall provide a separate conclusion and status history for each claimed object. Where a duty is outsourced, the record shall identify both the performer and the organisation retaining accountability.

Required evidence: Complete scope tuple; separate requested outcomes; actual-performer map.

1.5 — Activity-based applicability

Source: AF-AST-STD-001, page 11.

The applicant shall make a reasoned applicability decision for every common and family requirement. Non-applicability requires the actual activity and retained responsibility to be absent, without undermining a claimed outcome. Small size, another certificate, customer nomination or outsourcing alone does not justify exclusion. A provider that changes from distribution to repair, or from laboratory testing to product certification, shall reassess its scope before making the broader claim. Technical reviewers shall approve material exclusions and record the supporting evidence.

Required evidence: Approved applicability matrix; technical rationale; review triggers and version history.

3.1 — Scheme ownership and constitutional authority

Source: AF-AST-STD-001, page 12.

Aerospace Federation owns the programme rule set and controls its publication, development, authorised use and registry architecture within its actual rights and powers. The Presidential Council remains the corporate Board of Directors; the President leads implementation within recorded authority. Programme councils, technical groups and case panels are functional arrangements, not new corporate boards. Their mandates shall identify decisions they may make, resources, oversight and limits. This standard shall not alter committee election, leadership succession or constitutional voting rules.

Required evidence: Programme charter; verified delegations; functional-body mandates.

3.2 — Accrediting and delivery entities

Source: AF-AST-STD-001, page 12.

The legal entity making an accreditation decision shall be identified separately from the applicant body and from the entity providing the assessment services being accredited. It shall not accredit itself or its own assessment operation, including through nominal reciprocal arrangements. It shall not also deliver the conformity-assessment services it accredits or applicant-specific consultancy compromising that accreditation. Related training, sector engagement and shared administration shall be assessed for actual influence, finances, access and ownership, with a genuinely independent arrangement where separation is necessary.

Required evidence: Legal delivery model; related-activity analysis; independent oversight and liability arrangements.

3.3 — Technical committees and programme stewardship

Source: AF-AST-STD-001, page 13.

Permanent voting committee offices shall follow the AF constitutional election arrangements. Competent working groups may develop technical proposals without acquiring permanent office or case-decision authority. Each active family shall have a responsible technical owner and a maintained work programme. Representation shall be balanced sufficiently to expose relevant operator, supplier, professional, education and public-interest concerns. No dominant commercial group shall control acceptance criteria to exclude competitors without a defensible technical need.

Required evidence: Committee charter; competence and balance review; technical work programme; recorded objections.

3.4 – Case separation and decision panels

Source: AF-AST-STD-001, page 13.

Evaluation, independent review, decision and appeal shall be assigned through explicit role checks. Final accreditation grants, renewals, extensions and contested adverse decisions shall use three independent authorised panel members: all three participate and at least two support the reasoned outcome, with every mandatory technical gate met. A technical reviewer may serve on that panel only when independent of evaluation and separately authorised. Other outcome classes use the independent authority specified in the released profile. A majority vote cannot resolve missing essential technical evidence by preference.

Required evidence: Assignment matrix; independent review; three-person participation and votes; gate record.

3.5 – Commercial and leadership boundaries

Source: AF-AST-STD-001, page 13.

Leadership may allocate resources, require procedural correction, commission independent investigation and close an unsafe programme within its powers. It shall not order a favourable technical result, remove a justified finding for commercial reasons, substitute an applicant-selected assessor or condition remuneration on grants. Membership, funding, sponsorship, investments and training income shall be excluded from technical decision criteria. Programme managers shall report attempts to influence decisions through the protected integrity route.

Required evidence: Financial separation; influence log; independent escalation; outcome-neutral remuneration.

3.6 – Liability, continuity and accountability

Source: AF-AST-STD-001, page 13.

Each operator shall maintain resources and arrangements for its actual liabilities, including suitable insurance or justified equivalent provision where appropriate. It shall remain responsible for outsourced technical work and its final decisions. Exit or insolvency planning shall protect holders, pending cases, records, status information and lawful transfer. An agreement assigning tasks to a contractor shall not be used to disclaim obligations retained by the issuer or to obscure who is answerable for an incorrect conclusion.

Required evidence: Liability assessment; financial capacity; continuity/closure plan; retained-responsibility clauses.

4.1 – Development request and feasibility

Source: AF-AST-STD-001, page 13.

A new profile shall start from a defined sector need, intended beneficiaries, output type, failure consequences and available evidence. The technical owner shall assess whether a new profile is necessary or an existing one can cover the activity without scope distortion. The development record shall consider feasibility, access, resources, conflicts, proportionate burden and the capability required of evaluators. A catalogue entry or market demand alone is not approval of a method or authority to solicit formal applications.

Required evidence: Development brief; duplicate-scope review; feasibility and resource decision.

4.2 – Profile content and acceptance criteria

Source: AF-AST-STD-001, page 14.

Every released profile shall contain the fields in Annex C: exact scope, prerequisites, measurable or defined attribute criteria, methods, sampling, uncertainty, essential controls, competence, sites, witnessing, decision rules, duration, surveillance, records and permissible claims. Criterion limits shall be derived from the actual technical and obligation basis. They shall be fixed before results are evaluated. There shall be no universal tolerance, environmental test load, staff ratio, curriculum credit total or carbon threshold invented to cover unrelated applications.

Required evidence: Complete approved profile; criterion-to-method map; acceptance rationale.

4.3 – Consultation and technical approval

Source: AF-AST-STD-001, page 14.

Substantive requirements shall receive at least 60 calendar days of public consultation before final technical approval through the applicable AF process. Material comments and dissent shall receive recorded dispositions. Final normative

committee approval requires substantive yes-or-no participation by at least two thirds of eligible voting members and affirmative votes from at least two thirds of those substantive votes, rounded upward. Material new requirements introduced after consultation shall undergo further review or consultation proportionate to their effect. Actual records shall be retained; preparation does not retrospectively establish consultation.

Required evidence: Notice; comments and dispositions; eligible roll; substantive vote and approval records.

4.4 – Pilot evaluation and method challenge

Source: AF-AST-STD-001, page 14.

Before release, the operator shall exercise representative normal and adverse cases, including an undefined scope, inaccessible evidence, a failed critical requirement, a conflict, a rejected result, a status change, an appeal and a recovery failure. Technical pilots shall examine criterion clarity, discrimination, burden, evaluator agreement and evidence sufficiency. Participants shall be told the restricted pilot purpose. Synthetic cases shall be labelled. A pilot participation letter shall not be a live accreditation, certification or recognition result.

Required evidence: Pilot plan; authentic or clearly synthetic cases; findings; verified correction and limitations.

4.5 – Activation gate and scope release

Source: AF-AST-STD-001, page 14.

A scope becomes available only after the independent technical readiness check and authorised institutional activation described in Annex P. Confirm lawful operator identity, complete profile, competent teams and decision authority, executed terms, working evidence and registry systems, remedies, resources and continuity. Release shall identify exact available scopes and unavailable supplements. A partially ready portfolio may open only the independently complete profiles; unrelated incomplete development projects need not block that release. No profile shall borrow an unverified capability from a future programme.

Required evidence: Scope-release checklist; readiness evidence; authorised effective date; published boundaries.

4.6 – Interpretation and controlled evolution

Source: AF-AST-STD-001, page 14.

A controlled interpretation may explain an existing condition but shall not change a threshold, expand a claim, waive competence or convert missing evidence into a pass. Such changes require formal normative version and prospectively defined transition. Review active rules at least every three years and sooner after serious incidents, method failures or material technological change. Retain earlier criteria and decisions. An urgent factual safety communication may protect users but shall not be disguised as an unconsulted new accreditation requirement.

Required evidence: Interpretation register; change classification; transition assessment; version archive.

5.1 – Identity, obligations and accountability

Source: AF-AST-STD-001, page 15.

An applicant shall establish its legal identity, ownership or controlling relationships, actual operating locations, responsible managers and relevant permissions. It shall maintain an obligation register identifying applicable legal duties, contracts, approved technical information, expiry conditions and responsible owners. The assessment shall verify implementation within the declared scope rather than accepting a general compliance declaration. Conflicts between obligations shall be referred to competent authorities and affected work held where needed. Actual evidence providers shall remain identifiable in protected records.

Required evidence: Legal identity; permissions; responsibility matrix; current obligation register.

5.2 – Process architecture and controlled work

Source: AF-AST-STD-001, page 15.

The organisation shall define processes, inputs, outputs, interfaces, competence, resources and acceptance conditions needed for its claimed capability. Procedures shall be accessible and current where work occurs, including shifts, remote teams and subcontractors. Combined documents are acceptable when responsibilities and controls remain clear. The effectiveness of the system shall be demonstrated through actual work and outcome records. An approved manual without an implemented process shall not satisfy the claim.

Required evidence: Process map; current instructions; actual delivery trails; interface controls.

5.3 – Risk, safety and opportunity

Source: AF-AST-STD-001, page 15.

Risk assessment shall address credible consequences, exposure, uncertainty, dependencies, human performance and common causes. The organisation shall identify essential protective controls and assign residual-risk acceptance to an appropriately competent authority. A multiplied ordinal score shall not be treated as a physical probability or used to downgrade an unassessed severe consequence. Opportunities for improvement shall be planned separately with measurable benefit and safeguards. Emergency decisions shall remain attributable and shall not authorise violation of binding safety requirements.

Required evidence: Hazard/risk register; critical controls; accepted limitations; opportunity plan.

5.4 – Change, configuration and retained knowledge

Source: AF-AST-STD-001, page 15.

Material changes to people, methods, equipment, software, facilities, tasks, suppliers and legal control shall receive a documented impact review before dependent use. Baseline, approval, effectivity, training, verification and affected earlier outputs shall be recorded. The organisation shall maintain sufficient knowledge to support long-life services and technical evidence after personnel turnover. A renamed product, migrated database or replacement software version shall not silently inherit the demonstrated capability of its predecessor.

Required evidence: Change record; as-operated baseline; knowledge-transfer evidence; reassessment decision.

5.5 – External provision and sub-tier responsibility

Source: AF-AST-STD-001, page 15.

Outsourced work shall have defined technical scope, actual performer, location, qualification, acceptance, evidence access, notification, records and exit conditions. Critical obligations shall reach the lowest relevant performer with acknowledgement and verification. The commissioning organisation retains its assigned acceptance and oversight duties. A subcontractor certificate shall be checked for authenticity, method, site and current status and treated as relevant evidence, not a substitute for fitness for the actual task. Unapproved substitutions shall trigger hold and review.

Required evidence: Supplier scope and status; flow-down; sub-tier acknowledgement; actual work verification.

5.6 – Continuity, events and learning

Source: AF-AST-STD-001, page 16.

Continuity plans shall address loss of key staff, utilities, premises, suppliers, information and authority. Exercises shall test recovery and integrity, not only document availability. Occurrences, complaints and nonconforming work shall be traced to affected people, outputs and shared causes. Corrective action shall address both occurrence and escape and be checked for effectiveness under representative conditions. Good performance statistics shall not conceal missing critical controls or suppress necessary reporting.

Required evidence: Continuity exercise; event-to-output trace; corrective effectiveness; lessons implemented.

6.1 – Institutional and personal conflicts

Source: AF-AST-STD-001, page 16.

The operator shall review financial, ownership, employment, advisory, family, close personal and adversarial relationships at institutional and case levels. Declaration is an input to control, not the control itself. Where a material threat cannot be effectively managed, the individual or entity shall decline or be replaced. For independent third-party evaluation, review and decision, relevant employment or consultancy for the applicant within the preceding 24 months excludes assignment; older relationships remain subject to risk review.

Required evidence: Live conflict register; prior-work screening; independent disposition and assignment restrictions.

6.2 – Participation and equal treatment

Source: AF-AST-STD-001, page 16.

Access shall be based on published eligibility and actual technical capability, not membership, sponsor status, nationality or enterprise size alone. Necessary legal restrictions and objective capacity limits shall be applied consistently. Fees and

scheduling shall be disclosed before commitment. Reasonable accessibility and language arrangements shall preserve the competence and evidence being assessed. Financial support or fee waivers shall not reduce technical criteria or purchase an outcome.

Required evidence: Eligibility rules; accommodation decisions; fee/capacity terms; equal-treatment checks.

6.3 – Consultancy, learning and evaluation

Source: AF-AST-STD-001, page 16.

General explanation of a requirement and non-client-specific education may be offered through controlled arrangements. A person who designs an applicant's system, corrective solution or technical method shall not independently certify that same work. The operator shall distinguish teaching from examination and independent decision. Training attendance shall not be represented as competence, and purchasing a particular course shall not be required where verified equivalent preparation is acceptable under the profile.

Required evidence: Service boundaries; training/evaluation separation; assignment conflict checks.

6.4 – Integrity of records and professional behaviour

Source: AF-AST-STD-001, page 16.

Personnel shall report actual observations, retain adverse evidence, correct errors transparently and decline work beyond their competence. They shall reject fabricated logs, manipulated results, outcome-linked benefits, corrupt payments and private lobbying. A suspected fabrication shall trigger evidence preservation, impartial investigation and protection of affected decisions; suspicion alone is not a final finding of misconduct. Public allegations and confidential case evidence shall be handled through authorised channels.

Required evidence: Conduct undertakings; protected original data; investigation and correction history.

6.5 – Independent oversight

Source: AF-AST-STD-001, page 17.

The oversight function shall have protected access to unedited results, conflict information, trends and resources needed to challenge programme management. It shall report material unresolved threats to a disinterested constitutional route. Implicated officers shall not select their own investigator or control the evidence made available. Oversight may recommend restrictions, reassessment or governance correction; it shall not replace competent case findings with a preferred commercial result.

Required evidence: Oversight mandate; access and budget; independent reports; resolved or escalated threats.

7.1 – Function-specific competence

Source: AF-AST-STD-001, page 17.

The operator shall define separate competence requirements for application review, audit leadership, specialist evaluation, sampling, laboratory sign-off, independent review, decisions and appeals. Profiles shall state technical fields, methods, criticality, language, professional judgement, evidence interpretation and access permissions. A person may hold several roles only when separately qualified and case independence remains valid. No generic aerospace assessor designation shall imply mastery of all eight families.

Required evidence: Role profiles; technical authorisation matrix; case coverage check.

7.2 – Entry evidence and demonstration

Source: AF-AST-STD-001, page 17.

Minimum assessment-role requirements are set out in Annex D. Verified experience, programme learning, mentored work, knowledge evaluation and observed practical performance shall be assessed together. Numerical minima do not replace demonstrated competence. Specialist non-audit assessors shall demonstrate the actual discipline and assessment task; they are not required to pretend that laboratory or educational evaluation is an organisational audit. Where the work uses AF 9100, its relevant assessor and personnel requirements remain controlling.

Required evidence: Verified history; learning records; mentored cases; observed demonstration and decision.

7.3 – Essential steps and assessment security

Source: AF-AST-STD-001, page 17.

Knowledge and practical criteria shall be fixed before candidate evaluation. Every predesignated essential safety, integrity and independence step shall be passed; component scores shall not be averaged to conceal failure. Equivalent reassessment shall follow evidenced remediation and preserve earlier attempts. Examination questions, scenarios, identity checks and scoring shall be secured and validated. An automated score or AI recommendation shall not be the sole authority for a practical competence decision.

Required evidence: Assessment blueprint; component/essential-step results; secured attempts; independent authorisation.

7.4 – Initial assessor population

Source: AF-AST-STD-001, page 17.

Where no established ASTRA assessor population exists, at least two independent competent professionals shall assess each candidate against the stated role and technical criteria. Their own competence and conflicts shall be documented. Comparable prior work may satisfy specified experience elements only after verification; programme knowledge, witnessed performance and independence shall not be waived. Honorary titles, reciprocal self-approval and attendance at an introductory meeting shall not create assessor authority.

Required evidence: Initial-panel qualifications; equivalence map; witnessed task; remaining scope restrictions.

7.5 – Maintenance and inactivity

Source: AF-AST-STD-001, page 18.

Maintain relevant development, current practice and observed performance at the intervals in Annex D. Review poor reports, inconsistent decisions, complaints, new technologies and changes in methods as well as activity counts. Failure to meet the applicable role minimum shall suspend independent role use until reviewed supervised reactivation. An individual shall notify limitations and request support rather than accept a task outside the authorised scope. Restoration does not erase earlier affected-work concerns.

Required evidence: Practice/development logs; witnessed reviews; suspension and reactivation; prior-work assessment.

7.6 – Applicant personnel and task authority

Source: AF-AST-STD-001, page 18.

Applicants shall demonstrate competence of people whose work affects the claimed capability, including contractors, temporary workers and local station personnel. Employers shall issue actual task authorisations defining scope, equipment, supervision and review conditions. A professional credential, external course or programme recognition is only part of the evidence; it does not itself authorise aircraft release, restricted testing or every task in a facility. Changes and inactivity shall trigger review before independent work resumes.

Required evidence: Task analysis; verified competence; employer authorisations; changed-task review.

8.2 – Equipment identity and fitness

Source: AF-AST-STD-001, page 18.

Equipment, software-controlled instruments, fixtures, tools and reference artefacts shall be uniquely identified and suitable for the required range, resolution, accuracy, uncertainty and duty. Verify acceptance before first use, after repair or configuration change, and when validity is questioned. Records shall include version, location, maintenance, checks, restrictions and status. Calendar calibration alone shall not establish fitness for every method or specimen. Out-of-service equipment shall be prevented from supporting an authorised result.

Required evidence: Equipment register; acceptance and checks; method suitability; restricted-use controls.

8.3 – Traceability and calibration

Source: AF-AST-STD-001, page 18.

Measurement results shall have a technically appropriate documented connection to accepted reference quantities or justified reference bases, with uncertainty contributions and competent calibration evidence. Verify the actual service range and result, not only the provider's logo. Where direct reference traceability is not technically possible, document the alternative reference, method validation and limitations. Do not claim metrological traceability from an unverified

manufacturer declaration or a broken chain of comparisons.

Required evidence: Calibration chain; certificates/results; uncertainty contributions; justified alternative basis.

9.2 – Verification and validation

Source: AF-AST-STD-001, page 19.

Verify established methods in the actual implementation. Validate new, non-standard or materially modified methods for the intended use, addressing relevant bias, precision, selectivity, sensitivity, range, robustness and uncertainty. Establish acceptance criteria before validation data are assessed. Retain failed trials and restrictions. Method transfer between sites, instruments, software or personnel requires evidence that material performance remains valid; a shared procedure number does not demonstrate successful transfer.

Required evidence: Validation/verification plan; raw results; acceptance analysis; transfer and limitation records.

9.4 – Measurement model and uncertainty

Source: AF-AST-STD-001, page 20.

Evaluate uncertainty appropriate to the reported result and decision. Identify measurand, significant corrections, input distributions, sensitivity coefficients, dependence, sample preparation and environmental effects. The calculation shall distinguish standard and expanded uncertainty, coverage factor, units and coverage interpretation. Known material bias shall be corrected or explicitly handled through an approved model, not hidden in a convenient uncertainty allowance. A result shall not inherit an uncertainty copied from an unrelated calibration capability.

Required evidence: Uncertainty budget; corrections; covariance; units; coverage and applicability justification.

9.5 – Decision rules and boundary results

Source: AF-AST-STD-001, page 20.

Agree the decision rule before evaluation and record its treatment of false acceptance, false rejection, uncertainty and criticality. Annex G sets the full-interval rule and alternative-rule controls. Conformity demonstrated, nonconformity demonstrated and indeterminate are separate outcomes under that rule. Indeterminate work remains held from acceptance pending valid disposition. Repeating observations until one passes, rounding a borderline value into compliance or changing the specification after seeing the result is not a valid resolution.

Required evidence: Pre-agreed rule; unrounded inputs; outcome; hold and authorised disposition.

9.6 – Continuing validity and comparisons

Source: AF-AST-STD-001, page 20.

Maintain a planned programme of internal controls and independent or interlaboratory comparison appropriate to each significant technical field. Participation alone is not satisfactory performance. Investigate adverse results, assign causes and assess prior reports. Where a suitable comparison is unavailable or impracticable, approve a technically justified alternative with evidence of challenge and limitations; lack of participation opportunity shall not be described as external proof of competence. Review coverage as methods and volumes change.

Required evidence: Validity-monitoring plan; comparison results; justified alternatives; adverse-result actions.

9.7 – Technical reporting and amendments

Source: AF-AST-STD-001, page 20.

Reports shall identify issuer, client, actual item, scope, method/version, conditions, dates, results, units, uncertainty where needed, deviations, decision rule, conclusion, limitations and authorised signatory. Identify subcontracted results and opinions separately. A report shall not imply that untested characteristics or future production were examined. Amendments shall preserve the original, state the reason and affected conclusion, and reach recipients who relied on an incorrect result.

Required evidence: Attributable report; raw-data linkage; subcontracted-result identity; amendment and recipient log.

10.2 – Confidentiality, personal data and controlled technology

Source: AF-AST-STD-001, page 21.

Collect only information needed for the authorised purpose and apply suitable access, transfer, retention and disposal controls. Agree legally sufficient confidential review of proprietary or restricted evidence. Public registry fields shall be separated from protected technical and personal records. A security or secrecy restriction shall not lead to a favourable conclusion based on inaccessible essential evidence. Use authorised reviewers, a bounded scope or refusal when adequate lawful review cannot be achieved.

Required evidence: Data classification; permissions; secure review; retained evidence and public-field separation.

10.5 – Remote access and live evidence

Source: AF-AST-STD-001, page 21.

Before remote assessment, verify identity, connection security, permissions, camera or sensor adequacy, observation continuity and independent selection of evidence. Record interruptions, inaccessible areas and substitutions. Prerecorded material shall be identified and shall not be represented as live observation. Where physical or practical capability cannot be established remotely, arrange on-site or appropriately controlled witnessed work. Remote convenience shall not reduce scope coverage, time, competence or critical observation.

Required evidence: Remote suitability review; consent/access; live-session record; supplementary coverage.

10.6 – Recovery, retention and closure

Source: AF-AST-STD-001, page 22.

Maintain protected backups and test restoration of data, identity, configuration links and current status. Meeting recovery-time objectives does not establish restored evidence integrity. Retain assessment and decision evidence for at least seven years after the last relevant decision, or longer when justified by applicable obligations, service life or a hold; reconcile any legally required alternative handling without concealing the decision basis. Separate unnecessary personal copies and dispose of them under approved controls.

Required evidence: Restore/integrity tests; retention basis; legal holds; secure disposal and closure transfer.

11.1 – Expression of interest and formal application

Source: AF-AST-STD-001, page 22.

The Secretariat may receive expressions of interest for unreleased scopes but shall label them as development enquiries. A formal application shall state the requested outcome, available technical profile, legal applicant, authorised representative, sites, affiliations, object, methods, configurations and prior relevant results. Receipt does not establish eligibility, acceptance of scope, accreditation or authority to use marks. Administrative completeness shall be distinguished from technical readiness.

Required evidence: Enquiry/application classification; representative authority; scope request; dated receipt.

11.2 – Technical and impartiality review

Source: AF-AST-STD-001, page 22.

Before commitment, verify that the programme is active for the requested scope, the operator is authorised, necessary evaluators and independent decision resources are available, evidence access is feasible and conflicts can be controlled. Resolve unclear methods or outcome terminology before quoting an evaluable scope. Decline or defer work outside real capability; do not accept fees for an assessment whose essential method has not yet been defined without clearly separate development terms.

Required evidence: Admission review; resource/conflict check; accepted, deferred or refused scope with reasons.

11.3 – Existing evidence and reuse

Source: AF-AST-STD-001, page 22.

Review prior reports, approvals and certificates for authenticity, issuer competence, actual method, site, period, conditions and configuration. Identify precisely which requirement and decision use they support and what remains to be evaluated. Include adverse results and restrictions. Another outcome shall not be declared equivalent solely from a similar title or scope label. Evidence reuse may reduce repeated document requests but cannot remove necessary local implementation, witnessing or independent decision.

Required evidence: Reuse matrix; authenticity/scope checks; residual gaps; controlled access to original evidence.

11.4 – Binding terms and holder duties

Source: AF-AST-STD-001, page 22.

The agreement shall identify parties, versions, exact services, evidence and access obligations, fees, limitations, independence, reporting, witnessing, subcontracting, liability, confidentiality, marks, registry publication, surveillance, remedies, termination and records. The holder shall provide materially complete information, maintain conformity, report changes, permit agreed oversight and cease prohibited claims. Governing law and dispute terms require competent selection for the actual relationship; no universal legal jurisdiction is created by this standard.

Required evidence: Executed participation terms; scope schedule; actual authorised signatories.

11.5 – Authorisation to act for AF

Source: AF-AST-STD-001, page 23.

An external organisation acting for AF in accreditation, certification, delegated recognition or scheme operation shall hold prior written permission and an executed binding Cooperation and Authorization MoU with its actual technical and territorial scope. Competence evaluation, operating permission and the individual applicant outcome are separate decisions. Ordinary applicants and members are not required to enter that operator agreement merely to participate. Onward delegation is prohibited unless expressly authorised and technically controlled.

Required evidence: Competence decision; written approval; executed MoU; controlled delegation and scope.

11.6 – Fees, corrections and withdrawal

Source: AF-AST-STD-001, page 23.

Disclose charges, travel, testing, surveillance, reassessment, cancellation and refund conditions before commitment. Permit reasonable correction of administrative omissions without inventing earlier technical evidence. Application withdrawal shall preserve material findings, confidentiality and safety duties. A fee dispute shall follow its fair administrative process and shall not be misclassified as technical incompetence. No payment, refund, renewal booking or withdrawal may alter the historical decision or hide an expired status.

Required evidence: Transparent terms; correction/withdrawal history; financial separation; preserved findings.

12.1 – Planning from scope and consequence

Source: AF-AST-STD-001, page 23.

The plan shall begin with the requested object and requirement set, not a fixed commercial duration. Identify legal entities, technical methods, actual performers, sites, shifts, programme delivery modes, configurations, prior findings, changes and critical interfaces. Select representative routine and adverse work and assign specialists for every material domain. Define what evidence can support each conclusion and where sampling cannot establish the full claim.

Required evidence: Approved scope-led plan; coverage matrix; technical assignments; sample rationale.

12.2 – Sites and stations

Source: AF-AST-STD-001, page 23.

For initial and renewal operational-capability or CAB scopes, establish direct evidence at every included operating site, station or delivery location. Common governance evidence can be shared but local capability shall be demonstrated. Use physical visits where necessary work cannot be validly observed remotely. Surveillance sampling of genuinely homogeneous low-consequence activities requires an approved profile, justified eligibility, rotation and expansion triggers; no generic headquarters sample grants all stations. AF 9100 organisational cases retain the specific site rules of that standard.

Required evidence: Site-by-activity coverage; remote/on-site rationale; rotation and ineligible-site controls.

12.3 – Method-family witnessing

Source: AF-AST-STD-001, page 23.

Group methods only when common principles, equipment, competence, ranges and failure mechanisms justify representativeness. Witness each distinct method or capability family, including material extremes and high-consequence tasks. A single demonstration shall not cover unrelated techniques merely because one employee performs them. Include the whole relevant task from preparation and identity through data interpretation and reporting. Map any unobserved

part to valid supplementary evidence or exclude it from the granted scope.

Required evidence: Witnessing plan; family grouping rationale; observed limits; supplementary evidence.

12.4 – Time and productive work

Source: AF-AST-STD-001, page 24.

Use an activity-based work breakdown for non-organisational assessments, with necessary preparation, observation, data review, sites, shifts and rework. One evaluator-day is eight productive evaluation hours. Travel, breaks, sales, report preparation, translation delay and independent review/decision are separate resources. Do not count a trainee as a fully productive assessor or double-count two observers performing the same task without distinct technical work. AF 9100 organisational time remains governed by its Annex AC. Annex F provides a planning method and examples, not universal technical durations.

Required evidence: Task/time matrix; separate resources; actual productive time; approved additions.

12.5 – Multifamily coordination

Source: AF-AST-STD-001, page 24.

Coordinate visits and common evidence requests when the same applicant uses several families. Preserve each profile, specialist, finding impact, review and outcome. Record which shared control was evaluated, for what scope and by whom. Calculate any efficiency from demonstrably shared work rather than an arbitrary bundled discount on necessary technical observation. A finding in a common control shall trigger review of every dependent outcome, with restrictions limited only where unaffected scope is independently established.

Required evidence: Integrated schedule; shared-work allocation; separate conclusions; cross-scope finding impact.

12.6 – Plan approval and changes

Source: AF-AST-STD-001, page 24.

The lead and competent technical reviewer shall accept the plan before execution. Inform the applicant of scope, access, timing, witnesses and safety arrangements without allowing selective favourable evidence. Changes during work shall retain the original plan, reason, impact and approved replacement. Where capability, access or time is inadequate, add work, restrict the request or defer the conclusion. A report shall disclose actual coverage rather than reproduce the planned coverage as though it occurred.

Required evidence: Plan approval; applicant notice; deviations; completed-versus-planned coverage.

13.1 – Opening, safety and access confirmation

Source: AF-AST-STD-001, page 24.

At opening, confirm scope, participants, independence, permissions, safety constraints, confidentiality, technical limits and reporting arrangements. The lead shall stop or adapt activities that cannot be performed safely and lawfully. Assessment teams observe competence; they do not take operational control of aircraft, hazardous tests or restricted facilities merely by appointment. Explain how missing evidence, unexpected findings and confidential concerns will be handled without prejudging the outcome.

Required evidence: Opening record; actual team; access/safety confirmation; agreed escalation route.

13.2 – Implementation and vertical trails

Source: AF-AST-STD-001, page 24.

Combine document review, interviews, observation and actual results. Trace selected outputs backward through requirements, authorisation, resources, performer, method, materials and configuration, then forward through release, change and feedback. Include failed tests, rework, interruptions, complaints and previous adverse decisions where relevant. Sampling shall be expanded when inconsistencies suggest systemic issues. A signed checklist or assurance statement alone is not evidence that the underlying activity occurred.

Required evidence: End-to-end trails; selected populations; adverse cases; sample expansion and findings.

13.3 – Witness control

Source: AF-AST-STD-001, page 25.

Record the actual task, date, site, equipment, software, personnel, conditions, method version and acceptance basis. Observe essential steps directly where required and prevent coached performance from being misrepresented as routine independent work. Controlled simulation is acceptable only where the profile justifies its fidelity and restrictions. Live work shall not be made unsafe to create a demonstration. A missing essential observation requires supplementary evidence, reassessment or restricted scope, not a presumed pass.

Required evidence: Witness log; essential steps; simulation validity; unobserved-step disposition.

13.4 – Technical judgement and conflicting evidence

Source: AF-AST-STD-001, page 25.

Evaluate whether the evidence supports the specific conclusion under the known assumptions and limitations. Record contradictory results and alternative explanations. Resolve technical disagreement through competent independent review, not by seniority or majority preference outside expertise. An expert shall identify the boundary of advice and data reviewed. Inaccessible essential information, an invalid model or an uncontrolled configuration prevents the dependent positive conclusion even if other performance is strong.

Required evidence: Reasoned technical evaluation; counter-evidence; independent challenge; limitations and holds.

13.5 – Closing and report

Source: AF-AST-STD-001, page 25.

Communicate evidence-based findings, affected scope, immediate protection and the distinction between team recommendation and final decision. Acknowledge factual corrections without erasing valid adverse evidence. Issue the final evaluation report within 14 calendar days of evaluation closure; exceptional delay shall be explained without moving an already notified finding clock. The report shall state actual time, methods, samples, sites, witnesses, criteria, limitations, findings and recommendation.

Required evidence: Closing record; findings and original notification dates; final actual-coverage report.

14.1 – Finding formulation and classification

Source: AF-AST-STD-001, page 25.

A finding shall identify the exact requirement and version, objective evidence, gap, affected object/site/period and classification rationale. Use critical, major, minor and observation categories as defined in Annex G. An observation is not a substitute for a demonstrated failure. Several local failures may together establish systemic breakdown. Determine technical containment separately from administrative grade so that an immediate hazard is not delayed by debate over wording.

Required evidence: Requirement–evidence–gap record; classification; extent and protective decision.

14.2 – Immediate protection and notifications

Source: AF-AST-STD-001, page 25.

Upon a credible critical concern, the responsible organisation shall protect people and affected work immediately, preserve evidence and notify required recipients. A holder shall notify its operator within 24 hours of awareness; earlier applicable duties remain. On a substantiated critical concern, the operator shall suspend the affected status or impose an effectively evaluated restriction within 24 hours. An independent duty function with a pre-existing mandate may act urgently, followed by prompt independent review.

Required evidence: Awareness and action times; containment; notification/acknowledgement; status decision.

14.3 – Occurrence, escape and systemic extent

Source: AF-AST-STD-001, page 26.

The organisation shall determine why the problem occurred and why existing controls did not prevent or detect it. Identify affected and potentially affected outputs, sites, learners, reports, suppliers and configurations, including those already delivered. Test causal explanations with evidence. Training, a revised procedure or blaming an operator alone is not sufficient where workflow, capacity, interface, equipment or management conditions contributed. Preserve rejected hypotheses and material uncertainty.

Required evidence: Population trace; tested causes; occurrence/escape controls; systemic review.

14.4 – Plans, closure and effectiveness

Source: AF-AST-STD-001, page 26.

Submit a corrective-action plan within 30 calendar days of finding notification. Verify major closure within 60 days and minor closure within 90 days, while immediate protection remains separate. Define effectiveness criteria and observation exposure before closing. Review changes for unintended effects. A new finding number, changed owner, amended report or rescheduled plan shall not restart the original clock. Missed deadlines trigger the affected status action in Annex H, not an automatic extension.

Required evidence: Accepted plan; original due dates; implementation and effectiveness evidence; verified closure.

14.5 – Existing status and new grants

Source: AF-AST-STD-001, page 26.

Initial grants, renewals and extensions require closure of every in-scope nonconformity. An existing status may continue with a local minor only after adequate protection, reviewed cause and extent, accepted plan and a reasoned independent conclusion that essential controls remain intact. A major compromising ongoing conformity requires suspension, unless an independently demonstrated unaffected scope can be restricted. A future promise of correction is not present competence.

Required evidence: Independent continuation/restriction rationale; closed findings for grant; current protection.

14.6 – Recurrence and invalid prior decisions

Source: AF-AST-STD-001, page 26.

Recurrent failure or ineffective action shall reopen the causal and extent review and may require wider suspension, re-evaluation of personnel or version of methods. If prior reports or decisions relied on invalid evidence, identify recipients and correct their status and conclusions proportionately. Record what was known at each actual date. Later good evidence shall not be backdated to make an unsupported earlier approval appear valid.

Required evidence: Reopened analysis; affected historical decisions; communication; truthful status history.

15.1 – Review dossier

Source: AF-AST-STD-001, page 26.

The independent reviewer shall examine the exact scope and profile, lawful authority, assessor competence, conflicts, coverage, method validity, evidence, uncertainty, findings, corrections, limitations and proposed claim. All essential records shall be accessible through authorised means. Return incomplete or inconsistent files for correction rather than infer missing results. Evidence reuse shall remain traceable to its original scope and limitations. The reviewed dossier shall be versioned so that the decision can later be reconstructed.

Required evidence: Independent review checklist; versioned dossier; unresolved issues and returned files.

15.2 – Positive-decision gate

Source: AF-AST-STD-001, page 27.

A positive grant, renewal or extension requires valid scope, all applicable criteria fulfilled, adequate evidence, closed in-scope nonconformities, sufficient independent competence and actual authority. Required operating and mark permissions shall be effective before the associated claim is used. This is a conjunction of conditions, not a weighted score. A genuinely bounded unaffected scope may be granted only after independent evaluation; it shall not conceal a systemic deficiency or imply success in the refused scope.

Required evidence: Completed gate; exact granted/refused boundary; authority and permission checks.

15.3 – Panel and dissent

Source: AF-AST-STD-001, page 27.

Apply the three-member accreditation panel rule in Clause 3.4. Members shall receive adequate records and competent technical support and shall not delegate votes. Record attendance, conflicts, affirmative/adverse votes, abstentions, reasons and technical dissent. A two-to-one outcome is possible only when every mandatory gate is substantiated; unresolved essential technical uncertainty requires hold or further work. The chair has no casting vote that can replace absent technical evidence or an ineligible member.

Required evidence: Panel record; all-member participation; technical dissent resolution; actual decision.

15.4 – Permitted outcomes and conditions

Source: AF-AST-STD-001, page 27.

Decisions may grant, refuse, maintain, restrict, suspend, restore, renew, extend, correct or withdraw a stated result. Conditions attached to a valid outcome shall define its actual operating boundary and continuing obligations, not postpone unmet mandatory criteria. Pre-assessment, applicant and pilot status are not provisional conformity certificates. A lawful product concession remains an explicitly bounded technical disposition and does not waive the requirements for an ASTRA attestation.

Required evidence: Reasoned outcome; bounded conditions; applicant notice; separated concession record.

15.5 – Decision date and communication

Source: AF-AST-STD-001, page 27.

Record the actual decision date, issue date, effectivity, expiry or instance boundary, criteria version, responsible issuer and signatory. Notify the applicant of reasons, scope, continuing duties and remedy route. Public status shall match the decision and be updated within two calendar days of a status change, while urgent holder notice is immediate. An invoice date, ceremonial date, signature-image insertion or document reprint shall not become a fictitious conformity date.

Required evidence: Authenticated decision; notice; issue/expiry fields; timely registry instruction.

16.1 – Duration and basis

Source: AF-AST-STD-001, page 27.

Ongoing ASTRA recognition, qualification, certification or CAB accreditation under this common framework shall have a maximum 24-month period from the independent conformity decision, subject to a shorter profile interval and continued fulfilment. AF 9100 cases retain their controlling provisions. An instance result identifies its lot, serial, event, test or historical statement and does not acquire a universal two-year technical validity. Credential duration never extends an equipment life limit, calibration, statutory authorisation or qualified process window.

Required evidence: Ongoing/instance classification; exact dates; linked technical limits.

16.2 – Surveillance frequency and coverage

Source: AF-AST-STD-001, page 28.

Complete ongoing surveillance at intervals no greater than 12 months, reduced to six months for high-consequence, materially novel or significant competence/integrity exposure. Apply the AF 9100 C0–C3 rules when that standard is used. Mixed scopes follow the shortest triggered interval unless genuinely separated. Reassess actual operation, technical witnessing, changes, adverse results and controls; a document check or booked visit alone is not completed surveillance. Missing required completion triggers affected suspension.

Required evidence: Risk-based timetable; completed technical coverage; changed-scope review; overdue action.

16.3 – Material change and notification

Source: AF-AST-STD-001, page 28.

Planned changes shall be notified early enough for required prior review and before using an expanded claim. Unplanned non-critical material changes shall be notified within five calendar days after awareness; critical concerns follow the 24-hour rule. Evaluate ownership, responsible entity, location, methods, key personnel, digital platforms, aircraft/task capability, educational delivery and environmental boundaries. An unchanged commercial name shall not conceal a different technical basis.

Required evidence: Change notification; impact; prior approval; updated scope and evidence.

16.4 – Renewal and interruption

Source: AF-AST-STD-001, page 28.

Plan renewal sufficiently early to complete evaluation, closure, independent review and decision before expiry; initiation at least 90 days beforehand is recommended, not a guarantee. If the renewal decision occurs after expiry, a visible gap remains and the new status starts no earlier than the actual decision. Relevant prior work may inform the review but not substitute for current demonstrated capability. No payment or appeal automatically extends validity.

Required evidence: Renewal plan; current evidence; closed findings; actual dates and disclosed gap.

16.5 – Suspension, restoration and withdrawal

Source: AF-AST-STD-001, page 28.

A suspension shall state scope, reason, prohibited claims, required actions and a resolution deadline no later than 90 days from the decision. Restore only after verified correction, affected-output review and a valid current basis; otherwise restrict to independently unaffected scope or withdraw. Repeated administrative resets are prohibited. Restoration without full renewal preserves the original expiry and does not validate the suspended interval. Technical containment and reporting continue independently of certificate administration.

Required evidence: Status notices; verified restoration; unaffected-scope rationale; historical continuity.

16.6 – Transfer and cessation

Source: AF-AST-STD-001, page 28.

A receiving operator shall verify authenticity, scope, criteria, decision history, findings, surveillance, authority and technical evidence before accepting a transfer, and perform additional evaluation where necessary. Suspended or unsupported status cannot be made valid by changing issuer. Operator cessation shall preserve records, pending remedies, current status, holder communication and lawful access. Transfer of files does not itself transfer accreditation, AF operating authority or a wider technical scope.

Required evidence: Transfer review; additional work; continuity agreement; accurate issuer/status history.

19.3 – Method performance and detection

Source: AF-AST-STD-001, page 32.

Demonstrate method suitability for relevant defect mechanisms or measurands, specimen preparation, surfaces, geometry, matrix effects, interference, access and environmental conditions. For qualitative inspection, evaluate false-positive and false-negative behaviour where material. Detection capability shall be tied to technique, task, equipment and person. A successful reference check on an easy artefact shall not prove the ability to detect every relevant defect in an installed structure.

Required evidence: Method validation; challenge specimens; detection limitations; authorised interpretation.

19.10 – Comparisons and validity programme

Source: AF-AST-STD-001, page 33.

For each significant technical field, define risk-based reference checks, blind or duplicate work, comparison participation and other validity controls. Before granting a new scope, examine available satisfactory comparison evidence or an independently accepted alternative that directly challenges the claimed ability. No arbitrary score shall compensate for unresolved poor performance. Record investigation, affected historical work and successful corrective verification. Programme enrolment alone shall not be counted as a satisfactory result.

Required evidence: Validity coverage map; comparison/alternative results; investigations; restored capability.

19.12 – Technical witnessing for accreditation

Source: AF-AST-STD-001, page 33.

The accrediting team shall witness representative activities for every distinct method family or inspection capability and examine a complete application-to-report trail. Include adverse work, authorised sign-off, uncertainty, outsourced results and subsequent controls. Similar-method grouping requires a written technical rationale. An organisational audit with no relevant technical observation is not a completed laboratory or inspection competence evaluation. The final scope shall match the actual demonstrated capability, locations and limitations.

Required evidence: Witness coverage; complete case trail; independent scope review; accreditation decision.

20.3 – Learning outcomes and curriculum alignment

Source: AF-AST-STD-001, page 34.

Map each required learning outcome to learning activities, prerequisites, assessment opportunities, direct evidence and an accountable academic owner. Annex J provides adaptable evidence dimensions rather than a universal prescribed curriculum. The approved discipline profile shall define the actual knowledge, design, analysis, experimentation, digital,

ethical and practical depth and its workload basis. Credits, contact hours or attendance alone shall not establish outcome attainment.

Required evidence: Outcome–curriculum–assessment map; level/workload rationale; direct assessment evidence.

20.4 – Admissions, progression and completion

Source: AF-AST-STD-001, page 34.

Use transparent entry requirements, recognition of prior learning, transfer-credit review, academic advice and progression decisions. Demonstrate that every completion route meets the programme’s published outcomes and award requirements, including partner and distance routes. Record exceptions and their academically authorised basis. Sample authentic learner work and completion records across relevant routes; do not infer all graduates’ attainment from one showcase project or selected top-performing learner.

Required evidence: Admission/credit decisions; progression; completion checks; representative learner sample.

20.5 – Assessment validity and academic integrity

Source: AF-AST-STD-001, page 34.

Assessment methods shall test the intended knowledge and practical skills at the required level. Set rubrics, essential steps, identity and authenticity checks, moderation and resit rules before use. Preserve failed attempts and due process. AI-assisted and remote assessments shall demonstrate that the learner, rather than an unverified tool or substitute person, possesses the competence. Reasonable adjustments shall preserve the construct being assessed and protect personal information.

Required evidence: Assessment design; moderation; authentic work; essential-step results; integrity/remedy records.

20.8 – Attainment, improvement and closure of the loop

Source: AF-AST-STD-001, page 35.

Evaluate attainment using relevant direct and indirect evidence, defined populations, rubrics and denominators. Examine weak outcomes, completion barriers, subgroup or delivery-mode differences and feedback. Assign improvement actions, implement them and demonstrate their effect on subsequent representative work. A meeting, survey or action list alone is not a completed improvement loop. Do not average a failed essential practical outcome into an overall pass.

Required evidence: Attainment analysis; improvement decision; implemented action; follow-up evidence.

20.9 – Initial operating evidence and readiness only

Source: AF-AST-STD-001, page 35.

A full programme outcome shall be based on authentic completed delivery and assessment evidence, normally at least one complete cohort for the claimed completion route, sufficient to evaluate all applicable outcomes. Where this evidence does not yet exist, the operator may issue only a clearly bounded developmental readiness report, with no live recognition or accreditation claim. The profile shall define suitable evidence for individualised or very low-volume programmes without inventing graduates or records.

Required evidence: Completed delivery evidence; cohort/route coverage; readiness limitations; honest public status.

24.1 – Engagement and statement boundary

Source: AF-AST-STD-001, page 40.

Identify the responsible entity, assets/sites, reporting period, intended users, statement, methodology, criteria and required form of assurance. Separate capability evaluation from statement verification and prospective validation. Approve the boundary, exclusions, materiality approach, data access and reporting conditions before evaluation. An airport operator’s inventory is not automatically the inventory of every aircraft, tenant or service provider connected to it.

Required evidence: Engagement record; exact statement; boundary and period; agreed assurance objective.

24.2 – CO1 – Inventory and data

Source: AF-AST-STD-001, page 40.

Identify direct emissions, purchased-energy emissions and relevant value-chain categories with consistent CO₂-equivalent treatment where applicable. Retain activity data, factors, units, versions, allocation, estimates, gaps and

uncertainty. Explain excluded categories and shared sources. Trace material figures to actual meters, transactions or justified estimation models. A factor supplied for another geography, fuel, year or lifecycle boundary shall not be adopted without a suitability review.

Required evidence: Inventory model; activity/factor evidence; category and boundary rationale; data-quality assessment.

24.3 – C02 – Reduction and transition

Source: AF-AST-STD-001, page 41.

Verify historical reductions against a controlled comparable baseline and disclose structural changes, method changes, output mix and recalculation. Separate absolute and intensity changes and distinguish operational reduction from removal, compensation and avoided emissions. A future transition plan shall state assumptions, milestones, finance/resource dependencies, uncertainties and monitoring. Validation of that plan is not verification of achieved reduction and shall not be labelled as a net-zero achievement.

Required evidence: Baseline/recalculation; comparable actual results; transition assumptions; separate conclusion types.

24.7 – C06 – Low-carbon energy and supply claims

Source: AF-AST-STD-001, page 41.

Trace fuel or energy provenance, chain of custody, transfers, conversion, allocation and contractual attributes. Distinguish physically delivered material from a separated contractual attribute. Check ownership, eligibility, retirement or cancellation where relevant and prevent duplicate allocation of an exclusive claim. A purchased credit or fuel invoice alone does not prove that the complete service is zero-emission. Publish the actual mechanism and limits of the claim.

Required evidence: Custody/attribute ledger; eligibility and allocation; exclusive-claim checks; transparent statement.

24.8 – Materiality and assurance planning

Source: AF-AST-STD-001, page 41.

Set quantitative and qualitative materiality for the intended users, statement and consequences before substantive work. Plan evidence accordingly and consider aggregation, bias, omissions and fraud indicators. There is no universal five-percent materiality or assurance percentage in this standard. Materiality does not authorise knowingly false reporting, omitted mandatory categories or ignoring a significant qualitative issue. Reasonable and limited assurance engagements shall have separately defined work and appropriately worded conclusions.

Required evidence: Materiality rationale; assurance level; strategic and evidence plan; aggregated/qualitative issues.

24.9 – Verification execution and independent conclusion

Source: AF-AST-STD-001, page 42.

Evaluate data controls and substantive evidence, challenge estimates, reconcile interfaces and sample material categories. Preserve identified misstatements and corrections with the original statement. The independent reviewer shall confirm sufficiency for the agreed assurance form. If residual misstatement or missing evidence prevents a supportable conclusion, require correction, qualify the conclusion within permitted rules, or decline it; do not issue an unqualified favourable statement to meet a reporting deadline.

Required evidence: Verification trail; misstatement register; revised statement; independent conclusion and limitations.

25.6 – Proficiency and reference-material activities

Source: AF-AST-STD-001, page 43.

A body organising proficiency exercises or producing reference material requires a separately released technical profile. That profile shall cover competence, planning, assigned values or property characterisation, homogeneity/stability, uncertainty, participant/sample confidentiality, statistical methods, reporting and validity. These functions shall not be inferred from ordinary laboratory accreditation. Until the specialised profile and witnesses are complete, the catalogue shall show the requested activity as development, not granted scope.

Required evidence: Dedicated profile; characterisation/statistical basis; valid specialised witnessing; bounded status.

26.4 – Remote, space and long-duration operation

Source: AF-AST-STD-001, page 44.

For inaccessible, in-space or delayed-communication work, establish evidence acquisition, identity, configuration, time basis, telemetry validity, data loss, permitted remote actions and safe fallback. Explain what is directly observed, inferred or unknown. Independent review shall use appropriately authorised experts and retained records. No space suitability or completed end-of-life action shall be claimed from an unverified signal or terrestrial analogy alone. Mission-specific technical profiles remain prerequisites.

Required evidence: Remote assurance plan; telemetry provenance; inference limits; mission profile and decisions.

27.1 – Accessible intake and classification

Source: AF-AST-STD-001, page 44.

Provide clear channels for complaints, appeals and protected integrity concerns, including anonymous concerns assessed on available evidence. A complaint concerns dissatisfaction or service failure; an appeal seeks reconsideration of a specified decision. A case may contain both and shall retain the first receipt date with linked issue records. Good-faith safety or integrity reporting shall not require payment, membership or a prescribed form. Accessible routes shall not weaken necessary identity checks for a personal decision appeal.

Required evidence: Intake record; issue classification; original receipt; accessible and protected channels.

27.2 – Triage and protection

Source: AF-AST-STD-001, page 45.

Acknowledge receipt within five calendar days where a response channel exists. Assess urgent safety, evidence integrity, confidentiality and retaliation concerns immediately without awaiting acknowledgement. Preserve original records and prevent implicated personnel from controlling the investigation. Protect the reporter's identity as lawfully possible while respecting fair response. An allegation alone is not a finding of misconduct, and inability to substantiate it is not proof of bad faith.

Required evidence: Triage; evidence hold; protection plan; independent assignment and fair response.

27.3 – Appeal admission and independence

Source: AF-AST-STD-001, page 45.

An appeal is normally submitted within 30 calendar days of notice of the contested decision; documented good cause may justify later admission. A three-person independent panel shall exclude the original evaluation, review, decision and materially implicated selectors. Obtain technical expertise relevant to the scope. The original decision maker may explain the record but shall not vote on the appeal. Ordinary programme appeals do not replace statutory remedies or arbitral procedures.

Required evidence: Admissibility; panel conflicts/competence; protected case file; participation boundaries.

27.4 – Investigation, timing and remedy

Source: AF-AST-STD-001, page 45.

Provide an initial substantive complaint response within 30 days and ordinarily determine a complaint or appeal within 60 days of receipt. Necessary exceptional extensions shall state reasons, a revised target and progress at least every 30 days; technical protection and expiry clocks remain active. Examine both original and new evidence and distinguish later changes from errors in the original basis. Uphold, correct, replace, withdraw or return for additional evaluation with reasons and exact status effect.

Required evidence: Investigation trail; party responses; reasoned outcome; communicated timing and remedies.

27.5 – Systemic effects and non-retaliation

Source: AF-AST-STD-001, page 45.

A substantiated concern shall trigger review of related reports, scopes, methods, personnel and previous decisions, not only the individual case. Implement correction and verify effectiveness. Do not retaliate through service denial, fees, assignments or confidentiality threats against good-faith reporting. A pending appeal does not automatically remove protection, restore a credential or extend validity. Public correction shall be proportionate and protect unnecessary personal and confidential information.

Required evidence: Related-case analysis; corrective action; retaliation review; accurate public/status correction.

28.1 – Mandatory scope content

Source: AF-AST-STD-001, page 45.

Each outcome shall state holder and responsible issuer, unique identifier, exact class, family/module, criteria and version, evaluated object, site, technical activity, conditions/ranges, configuration or delivery version, period, decision/issue dates, status and restrictions. Identify ongoing expiry or instance boundary appropriately. The scope schedule forms part of the outcome and shall be available for verification without disclosing protected technical detail. Annex I supplies the minimum schema.

Required evidence: Decision-linked scope schedule; claim class; criteria/version; public/private split.

28.2 – Truthful public wording

Source: AF-AST-STD-001, page 46.

Public wording shall distinguish accredited assessment competence, recognised educational or operational capability, certified conformity and verified historical statements. A label shall not imply statutory approval, all-sector authority, guaranteed safety or recognition by an unevidenced third party. Group logos and commercial package titles shall not conceal excluded sites, tasks or programmes. Every claimed recognition or acceptance arrangement shall be supported by its actual written scope and current terms.

Required evidence: Approved claim; actual acceptance arrangement where claimed; limits clearly communicated.

28.3 – AF marks and authorised use

Source: AF-AST-STD-001, page 46.

Use only authorised AF artwork and approved scope-specific wording. Preserve shape, proportions, legibility and the required identifier; do not create an apparent new certification symbol or apply an organisational mark to imply product approval. Permission shall identify holder, purpose, media, period and restrictions. Suspension or withdrawal shall end affected current claims promptly. Historical factual statements shall state the actual period and status without presenting withdrawn authority as current.

Required evidence: Mark licence; approved artwork/use; monitoring; correction of misuse.

28.4 – Registry states and authenticity

Source: AF-AST-STD-001, page 46.

Maintain separate entity, application, profile, technical scope, decision, credential, authorisation and statement records. Public states shall distinguish active, restricted, suspended, expired, withdrawn and historical instance results. Applicant or pilot records shall not appear in a list of accredited holders. Validate signatures or other authentication, current status and permitted scope rather than treating a scanned certificate image as conclusive. Preserve corrections and prior states.

Required evidence: Validated registry; authenticated decision linkage; separate application/live status; history.

28.5 – Registry security, correction and availability

Source: AF-AST-STD-001, page 46.

Protect registry integrity through least-privilege access, attributable updates, version history and tested recovery. Update status within two calendar days of a decision and communicate urgent restrictions without waiting for a routine update. Correct misleading duplicates, stolen identities and altered certificates through controlled investigation. Provide an alternative verified status channel during outage without extending expiry. The existence of a digital record demonstrates a recorded decision, not universal technical truth.

Required evidence: Access/update logs; two-day control; recovery; corrected misuse and alternative verification.

29.1 – Internal audit

Source: AF-AST-STD-001, page 46.

Audit every active programme process at least annually, with additional attention to risk, changes, complaints and poor performance. Auditors shall be competent and independent of their own work. Examine real application-to-outcome trails, rejected cases, technical witnessing, conflicts, calculations, status changes and corrective effectiveness. A self-assessment or management statement shall not be presented as independent accreditation of the programme itself.

Required evidence: Risk-based audit programme; independent auditors; actual trails; verified follow-up.

29.2 – Management review and performance

Source: AF-AST-STD-001, page 47.

Review programme performance and risk quarterly and conduct a formal management review at least annually. Inputs shall include technical reliability, impartiality, competence, resources, access, holder outcomes, adverse evidence, complaints, data, finances, emerging needs and prior actions. Outputs shall identify decisions, owners, resources, due dates and effectiveness. Commercial growth and certificate volume are not sufficient measures of programme quality or public benefit.

Required evidence: Review inputs/minutes; balanced measures; actions and effectiveness.

29.3 – Independent accrediting-operator review

Source: AF-AST-STD-001, page 47.

Before launch and at intervals no greater than 36 months, obtain an independent review of the accrediting operator's competence, impartiality, technical coverage, governance, decisions and actual implementation, with earlier review after serious concerns. The reviewers shall be competent and free of reciprocal self-approval. Their findings, limits and corrective results shall be recorded. This internal programme requirement does not itself establish membership of an external recognition arrangement or international acceptance.

Required evidence: Independent reviewers; operator evaluation; findings/closure; evidenced limits of standing.

29.4 – Consistency and technical learning

Source: AF-AST-STD-001, page 47.

Use anonymised case comparisons and calibrated exercises to test whether different competent teams reach compatible interpretations and decisions. Investigate material disagreement, including unclear criteria and evidence limitations. Do not force uniform outcomes when objects or evidence genuinely differ. Share lessons through controlled updates and training without exposing confidential information or changing requirements informally. Significant method weaknesses shall trigger review of affected past work.

Required evidence: Inter-evaluator exercises; disagreement analysis; lessons; affected-case correction.

29.5 – Financial sustainability and public benefit

Source: AF-AST-STD-001, page 47.

Maintain adequate resources for competent work, impartial oversight, remedies, data and continuity. Disclose applicable charges and avoid dependence on favourable decisions for financial survival. Evaluate access for smaller organisations and less-resourced participants while preserving technical minima. Report meaningful benefits and limitations using authentic evidence, not assumed sector-wide adoption. Safeguards for competition, controlled technology and conflicts apply to programme outreach as well as assessment.

Required evidence: Budget and independence review; accessible participation; actual benefit measures; lawful outreach.

30.1 – Existing instruments and terminology

Source: AF-AST-STD-001, page 47.

The eight-family architecture and ASTRA identity do not amend existing AF instruments by implication. Record compatibility of every proposed outcome with AF-CON-001, AF-SR-001 and any applicable AF technical standard. Present educational and operational recognition remains available under compatible profiles; a wider accreditation designation requires the explicit higher-instrument decisions identified in Annex N. Do not change AF 9100 or historical certificates merely to align a marketing label.

Required evidence: Compatibility decision; authorised terminology; separate amendment work where needed.

30.2 – Controlled transition

Source: AF-AST-STD-001, page 48.

For a new profile or substantive version, identify affected holders, evidence gaps, changed methods, competence, system updates, communications and effectivity. Set a technically justified transition that does not waive immediate safety duties. Preserve the basis of previous decisions and state when additional assessment is needed. Neither indefinite grandfathering nor automatic retrospective invalidation is presumed. A future requirement is not applied as though it had

governed an earlier decision.

Required evidence: Transition plan; holder impact; competence/tool updates; actual effective versions.

30.3 – Reliance and cooperation agreements

Source: AF-AST-STD-001, page 48.

Any agreement to rely on another party's results shall identify parties, exact activities, acceptance conditions, competent evaluation, monitoring, territorial limits, confidentiality and withdrawal. Verify authenticity and fit for each actual use. Do not infer acceptance from an MoU title, shared event, commercial partnership or similar standard number. The party making an acceptance decision retains responsibility for that decision. Mutual familiarity is not independent competence evidence.

Required evidence: Executed bounded agreement; evidence checks; monitoring; truthful acceptance statements.

30.4 – Scope withdrawal and learner/customer protection

Source: AF-AST-STD-001, page 48.

Before closing a profile or provider operation, identify active holders, open cases, pending appeals, unresolved findings, learners, records, status, contracts and financial duties. Notify affected parties and arrange lawful transfer or teach-out as relevant. A closure shall not erase adverse evidence or imply continued authority. Preserve access to historical decisions and correction channels. If urgent cessation is required, prioritise protection and accurate communication while completing residual obligations.

Required evidence: Closure plan; affected-party notices; transfer/teach-out; retained records and remedies.

31.1 – Minimum records and equivalent systems

Source: AF-AST-STD-001, page 48.

The records in Annex M shall be created when their triggering activity applies. They may be combined in a database or controlled document if identities, required fields, relationships, signatures, access and history remain intact. Templates are capture tools, not completed evidence. The programme shall not invent applicants, calibration results, witnesses, student attainment, emissions figures, appointments or approvals. Blank fields shall remain visibly incomplete until authentic information is entered.

Required evidence: Record dictionary; equivalent-system mapping; genuine data and approvals.

31.2 – Document hierarchy and phased development

Source: AF-AST-STD-001, page 48.

The master documentation plan shall distinguish this prepared standard from planned manuals, procedures, technical profiles, checklists and forms. A planned document code does not mean a file exists or a programme is ready. The standard and its applicable normative annexes state the core requirements; implementation documents translate them without adding unapproved duties. Each released technical profile shall have the complete operating and record set required for its scope before activation.

Required evidence: Document catalogue; actual file/version status; dependency and release checks.

31.3 – Actual adoption record

Source: AF-AST-STD-001, page 49.

Record the authenticated legal operator, technical approval, consultation completion, competent institutional adoption, signatories, effective date, applicable instruments and any necessary compatibility amendments. Keep edition date distinct from legal or operational effectivity. Uncompleted approval fields shall not be filled with assumed names or dates. Programme-wide adoption alone shall not activate every listed technical scope; each profile requires the independent readiness and scope decision in Annex P.

Required evidence: Authentic adoption; completed compatibility conditions; individual scope activation.

31.4 – Implementation and verification

Source: AF-AST-STD-001, page 49.

Implement in the following order: settle authority and permissible outcomes; release core operating controls; validate forms, tools and registry states; establish qualified teams and independent decision functions; complete technical profiles and checklists; conduct representative controlled pilots; close findings; and authorise exact live scopes. Annex Q assigns documentation work packages without imposing an invented calendar promise. Maintain an open-action register and verify that every active dependency is actually available.

Required evidence: Implementation programme; verified dependencies; pilot/closure; exact live-scope notice.

31.5 – Review of this edition

Source: AF-AST-STD-001, page 49.

Maintain a controlled master, version history, interpretation register and distribution record. Reassess suitability at least every three years and sooner after material safety, technical, legal or implementation evidence. Technical changes shall undergo the appropriate normative approval process; editorial changes shall preserve meaning. Retain the actual original and revised decision bases. Publication, arithmetic checks and visual review do not by themselves establish independent field validation or external recognition.

Required evidence: Maintenance programme; actual versions; controlled corrections; verified publication integrity.

41.2 – Integrated route and hidden characteristics

Source: AF-AST-STD-001, page 62.

The production route shall identify every process stage, branch, handover and external performer that can affect a required characteristic. Essential variables shall include relevant preparation and downstream treatment, not only the main machine cycle. Qualification shall cover representative materials, geometry, equipment, software, personnel and environmental conditions. Final inspection shall not be assumed capable of detecting all latent process defects. The route shall preserve failed runs, rework and technical restrictions through product acceptance.

Required evidence: Route and dependency map; qualification matrix; essential variables; hidden-property rationale; original run history.

47.6 – Incident recovery and assured return

Source: AF-AST-STD-001, page 71.

Incident handling shall preserve evidence, contain affected use, identify impacted products and decisions, notify responsible parties and control restoration. Returning a service to availability shall be separated from verifying its data and configuration integrity. Exercises shall test recovery objectives and the meaning of restored records. Missing original evidence shall remain a gap in the dependent conclusion. An incident closure shall include the actual technical return authority and follow-up actions, not only a completed support ticket.

Required evidence: Incident and affected-output record; integrity checks; recovery exercise; authorised return and continuing actions.

48.1 – Critical suppliers and actual performers

Source: AF-AST-STD-001, page 71.

The organisation shall identify suppliers and sub-tier performers according to the technical consequence of their outputs. The scope shall record what each party actually performs, where it operates, its competent personnel, process or method capability and necessary evidence access. A trading or coordinating organisation shall not claim direct performance of outsourced work. Shared ownership, customer nomination or another certificate shall not remove the commissioning organisation's retained acceptance and oversight responsibilities.

Required evidence: Supplier/performance map; criticality; exact capability checks; retained-responsibility and access records.

48.2 – Flow-down and acknowledgement

Source: AF-AST-STD-001, page 71.

Purchasing and subcontract terms shall transmit relevant specifications, configuration, quality and safety conditions, changes, inspection, evidence, notification and retention duties to the actual level of performance. The organisation shall verify acknowledgement and implementation, not only that standard terms were attached to a purchase order. Conflicting instructions shall be resolved before dependent work. Onward delegation and substitution shall be controlled, with technical acceptance distinct from commercial approval.

Required evidence: Requirement flow-down matrix; sub-tier acknowledgement; actual implementation checks; controlled substitution.

52.3 – Practical learning and assessment integrity

Source: AF-AST-STD-001, page 76.

Practical work shall use suitable equipment, current methods, safe supervision and representative tasks. Simulation or remote laboratories shall have a justified educational role and shall not replace essential hands-on competence without a valid basis. Assessment shall establish learner identity and authorship, including when AI tools are permitted. Rubrics, essential steps, moderation and resit rules shall be fixed in advance. Failed essential skills shall not be averaged into a completion decision.

Required evidence: Practical-task and safety plan; assessment blueprint; authenticity checks; observed essential steps; preserved attempts.

52.5 – Attainment, improvement and learner protection

Source: AF-AST-STD-001, page 77.

Programme conclusions shall rely on authentic delivery and assessment evidence for every claimed completion route. Where sufficient completed evidence is absent, only the permitted developmental readiness result shall be used. Improvement shall connect identified weakness, educational cause, action and subsequent comparable outcomes. Changes, closure or loss of status shall protect learner records, communication and teach-out or transfer. Survey satisfaction and a favourable cohort average shall not replace direct evidence of essential attainment.

Required evidence: Route/cohort attainment; improvement follow-up; readiness limitations; teach-out and historical-record protection.

53.2 – Inventory and comparable reduction

Source: AF-AST-STD-001, page 77.

Quantification shall retain actual activity data, suitable factors, units, versions, source quality, corrections and relevant uncertainty. Comparisons shall use a coherent baseline and address structural, methodological and output-mix changes. Absolute and intensity changes shall be reported separately where material. Gross emissions, direct reductions, removals, compensation and avoided emissions shall not be merged into an unexplained net result. Numerical examples in this standard are synthetic and are not real-world factors.

Required evidence: Inventory model; data and factor provenance; baseline/recalculation; separated quantities; uncertainty and claim review.

54.4 – Occurrence, escape and affected population

Source: AF-AST-STD-001, page 79.

Investigation shall examine both why an event occurred and why existing controls failed to prevent or detect it. The organisation shall preserve original evidence, competing explanations and uncertainty. Population tracing shall include already delivered products, services, reports and decisions that share relevant causes. Replacing a person or issuing training shall not alone close a systemic weakness in work design, resources, interfaces or measurement. Later correction shall not be backdated to legitimise earlier unsupported work.

Required evidence: Occurrence/escape analysis; population and dependency trace; tested causes; historical impact and recipient action.

56.1 – Distinct entities and authoritative records

Source: AF-AST-STD-001, page 80.

The information model shall distinguish organisations, people, profiles, applications, assignments, evidence, findings, decisions, credentials, permissions, appeals and status events. Each record shall have a unique identity, version, accountable origin, scope and relevant time basis. A case may support several outcomes, but the conclusion and history of each outcome shall remain separate. Copies and public projections shall identify their relationship to the authoritative source rather than become competing unexplained masters.

Required evidence: Entity dictionary; source-of-record map; relationships; scope and time conventions; controlled projections.

56.2 – Evidence states and requirement conclusions

Source: AF-AST-STD-001, page 80.

Evidence receipt, review, purpose-specific acceptance, rejection, supersession and unavailability shall remain distinct from conformity conclusions. A missing essential source shall not become non-applicable because a database field requires a value. Accepted evidence shall state the requirement and configuration it supports and its limitations. An imported identifier shall not be presumed to refer to the correct object or version. Contradictory evidence shall remain visible

through the independent review process.

Required evidence: Evidence-purpose links; controlled state dictionary; missing/wrong-version checks; reasoned requirement conclusions.

56.3 – Decision and publication safeguards

Source: AF-AST-STD-001, page 81.

The workflow shall test valid scope, complete evidence, fulfilled criteria, closed findings, current competence, case independence and actual authority before publishing a positive outcome. Where a three-person panel is required, all eligible participation and votes shall be recorded. An automated check may flag or block a proposed instruction but shall not create the independent technical decision. Public information shall match the authorised decision and preserve restrictions, expiry and historical gaps.

Required evidence: Decision preflight; authentic decision instrument; panel record where required; public/private reconciliation.

56.4 – Validation and prohibited cases

Source: AF-AST-STD-001, page 81.

Local validation shall cover normal, boundary, missing, invalid and prohibited inputs in the actual deployment. Tests shall include open findings, expired authority, wrong profiles, broken evidence links, suspended status, duplicate imports and interrupted changes. Expected outcomes shall be defined from the controlling requirements before execution. Synthetic fixtures shall be isolated from live claims. Correction shall be followed by repetition of the original failed test and relevant regression, not merely an assurance that the code was changed.

Required evidence: Local validation baseline; expected/observed cases; defect and retest history; actual acceptance and limitations.

56.5 – Export, migration and meaningful recovery

Source: AF-AST-STD-001, page 81.

Transfer shall preserve readable evidence, identities, versions, field semantics, units, time zones, approvals, relationships and current and historical status. Reconciliation shall examine meaning as well as counts; equal file totals may conceal substitutions or missing links. Recovery shall distinguish availability from integrity and reconcile events after the selected recovery point. A sent archive is not accepted custody. The receiving function shall demonstrate usable access and acknowledge continuing duties before dependent cutover.

Required evidence: Export manifest; semantic reconciliation; preserved source; recovery integrity; receiving acceptance and custody.

57.1 – Role-specific competence and scope

Source: AF-AST-STD-001, page 81.

The operator shall map actual assessment tasks to verified discipline, method, language, consequence and judgement requirements. Audit leadership, technical evaluation, independent review, decisions and appeals shall remain separate authorisations. Learning attendance and numerical experience minima shall not replace observed ability. A person competent in one method or programme shall not be assigned unrestricted aerospace authority. The case plan shall identify necessary specialists and limits before accepting the work.

Required evidence: Task-to-role and person matrix; verified entry evidence; observed performance; bounded authorisation.

57.2 – Initial cadre and equivalent prior work

Source: AF-AST-STD-001, page 81.

Where an established assessor population is unavailable, the initial-candidate process in Clause 7.4 and Annex D shall apply. At least two independent competent professionals shall evaluate the relevant role and technical demonstration. Prior experience may satisfy specified elements only through an evidenced equivalence review. Programme knowledge, witnessed performance and independence shall not be waived. Founding status, honorary title or reciprocal approval shall not create an assessor credential.

Required evidence: Initial-panel competence/conflicts; criterion-by-criterion equivalence; witnessed task; independent qualification decision.

57.3 – Practical assessment and maintained practice

Source: AF-AST-STD-001, page 82.

Knowledge and practical criteria shall be defined before evaluation. Essential safety, integrity and independence steps shall be separately passed. Mentored work shall identify what the candidate actually performed and what remained supervised. Continuing development, recent practice, observed performance and review feedback shall maintain the authorisation. Unmet minima or loss of currency shall suspend independent role use until the required supervised reactivation. Later renewal shall not validate prior work performed outside authority.

Required evidence: Blueprint and attempts; mentored-work records; continuing practice; suspension/reactivation; historical impact review.

57.4 – Consistency without coerced agreement

Source: AF-AST-STD-001, page 82.

The programme shall use independent first responses to representative anonymised cases, followed by comparison of reasoning, evidence and outcome. Moderation shall distinguish unclear criteria, different facts, missing expertise and legitimate technical disagreement. A majority answer shall not become technical truth by itself. Quantitative agreement measures shall state their design and limitations and shall not be equated with correctness. Lessons affecting requirements shall follow controlled interpretation or version rather than informal instruction to produce uniform results.

Required evidence: Exercise design; independent responses; moderated reasoning; disagreement causes; controlled learning actions.

57.5 – Independent accrediting-operator review

Source: AF-AST-STD-001, page 82.

The independent operator review shall examine actual governance, competence, impartiality, technical methods, resources, case trails, decisions, remedies and registry integrity. Reviewers shall be genuinely independent and have adequate protected evidence access. The interval and pre-launch requirements in Clause 29.3 remain controlling. Review findings shall have verified correction and a bounded report. Completion of this internal programme review shall not be represented as external recognition or universal international acceptance.

Required evidence: Independent mandate and reviewers; actual case sampling; findings/closure; bounded report and continuing actions.

58.1 – One scope tuple for each conclusion

Source: AF-AST-STD-001, page 82.

Before assessment, record the legal entity, actual performer, object, family/module, site, method or task, configuration, period, consequence, profile version and exclusions. Every requested conclusion shall have its own tuple and outcome class. Common evidence may be shared only after relevance review. An integrated proposal shall not become one unrestricted certificate. Unknown essential scope parameters shall be resolved before the programme accepts an evaluable live application.

Required evidence: Scope tuples; independent requested outcomes; profile completeness; justified evidence-reuse map.

58.2 – Coverage and productive resources

Source: AF-AST-STD-001, page 82.

The plan shall provide competent coverage of necessary sites, methods, shifts, delivery modes, configurations and adverse cases. Resources shall follow actual work, not a commercial target. The eight-hour evaluator-day and separate reporting/review resources remain governed by Clause 12.4; AF 9100 organisational rules apply only to their route. A trainee or second passive observer shall not be counted as additional productive technical coverage. Necessary omitted observations shall require more work or a restricted conclusion.

Required evidence: Work breakdown; person/task coverage; site/method witnesses; actual productive time and changes.

58.3 – Vertical trails and shared failure

Source: AF-AST-STD-001, page 83.

Evaluation shall connect actual outputs backward to requirements, authority, sources, people, methods and configuration, and forward to release, support and feedback. Failed and interrupted work shall be represented. Findings in a shared calibration system, source, procedure or digital platform shall be traced to dependent scopes. Restriction to an unaffected subset requires independent evidence that the boundary is real. Removing a difficult item from the sample shall not resolve a systemic deficiency.

Required evidence: End-to-end trails; adverse-case sample; common-control dependency map; justified scope restrictions.

58.4 – Independent review and non-compensable gates

Source: AF-AST-STD-001, page 83.

The decision dossier shall reconcile scope, authority, competence, independence, coverage, method validity, evidence, uncertainty, findings and claims. Positive grant, renewal or extension requires every applicable gate, including closure of all in-scope nonconformities. A favourable total score, environmental achievement or majority vote shall not supply missing technical evidence. Evaluation and final decision shall remain appropriately separated. The actual decision date shall not be replaced by a ceremony, invoice or file-generation date.

Required evidence: Versioned independent-review dossier; gate conjunction; panel participation; actual reasoned decision and claim.

58.5 – Continuing status and real chronology

Source: AF-AST-STD-001, page 83.

Surveillance, change, renewal, suspension, restoration and withdrawal shall preserve the controlling clocks in Clause 16 and Annex H. Booking an assessment is not its completion. Restoration does not extend original expiry without the required renewal or validate a suspended interval. Historical instance results shall retain their object and period rather than acquire a fictitious ongoing validity. Public status, urgent notices and protected case history shall remain consistent after every material event.

Required evidence: Authoritative cycle baseline; actual completions; status events; preserved gaps; notifications and public reconciliation.

59.1 – Need, benefit and foreseeable consequences

Source: AF-AST-STD-001, page 83.

A development proposal shall state the problem, intended beneficiaries, expected benefit, foreseeable harm, affected people, technical owner and evidence gaps. It shall identify the existing family and object route or justify a separately governed architectural change. The review shall consider technical feasibility, safety, privacy, misuse, access and resources. A projected market or ambitious technology label shall not establish that the proposed method can produce a valid independent conclusion.

Required evidence: Development brief; family/object mapping; benefit and harm review; feasibility and evidence-gap assessment.

59.2 – Distinguish research, pilot and operational use

Source: AF-AST-STD-001, page 83.

Readiness descriptions shall identify what has actually been demonstrated, under which conditions and with what limitations. Research success, laboratory demonstration, restricted pilot, qualified process and operational service shall remain distinct states. Each transition shall have an evidence and authority gate. A prototype may proceed within a safe approved development boundary without a conformity claim. Operational deployment shall not be justified solely by completion of a research milestone.

Required evidence: Demonstration-state register; actual observations; transition criteria; bounded pilot and release decisions.

59.3 – Emerging domains and evidence gaps

Source: AF-AST-STD-001, page 84.

Candidate topics may include new propulsion and energy architectures, advanced materials, adaptive manufacturing, autonomous services, distributed space systems, remote habitation and evolving digital trust mechanisms. These are development directions, not forecasts of maturity or promised programme releases. The technical owner shall determine their specific hazards, dependencies, measurement needs, assessor competence and acceptance criteria. No universal test recipe or claim of future readiness shall replace a completed technical profile.

Required evidence: Topic-specific profile development; hazard and evidence analysis; competence feasibility; prospective acceptance basis.

59.4 – Safe experimentation and independent challenge

Source: AF-AST-STD-001, page 84.

Experimental work shall have authorised boundaries, competent specialists, protections, monitoring and stop conditions suitable for its consequence. The organisation shall state which actions are reversible and which create irreversible commitments. Independent challenge shall examine weak operating history, unobserved failure mechanisms and optimistic assumptions. Synthetic or simulated results shall be identified. A restricted experiment shall not silently expand

into normal production or passenger, crew or public exposure without the relevant evidence and permissions.

Required evidence: Experiment authorisation; safety and observation plan; independent review; exact limitations and stop decisions.

59.5 – Learning, consultation and controlled adoption

Source: AF-AST-STD-001, page 84.

Pilot results shall be assessed for criterion clarity, technical discrimination, burden, repeatability of judgement and adverse outcomes. Material new requirements shall follow the consultation and approval process in Clause 4.3. Adoption shall state which profiles, people, tools and holders are affected and preserve previous decision bases. Horizon scanning shall inform a maintained development portfolio, but shall not be used to impose unconsulted requirements or advertise unavailable accreditation routes.

Required evidence: Pilot findings; reasoned versions ; consultation and ballot records; transition plan; truthful availability catalogue.

60.1 – Foundation and retained architecture

Source: AF-AST-STD-001, page 84.

Implementation shall begin with the actual scheme owner, legal operator, responsibilities, permissible outcome names and controlled requirements. Preserve F01–F08 and the original code-to-subject relationships. The 68 retained technical development subjects and the 108-title base documentation architecture are organising inventories, not measures of competence or proof of activation. A separate programme family shall not be created merely because a technical topic needs more detailed guidance or a dedicated local profile.

Required evidence: Authority and compatibility review; retained architecture; controlled source inventory; development versus activation status.

60.2 – Common operating system and competent people

Source: AF-AST-STD-001, page 85.

Establish the common processes for application, scope, impartiality, resources, evidence, findings, decisions, remedies, records and continuity. Assign real accountable owners and evaluate people for their actual roles. The foundational assessor, profile, registry, operator-review, consistency, surveillance and publication workpacks may support implementation without replacing the core requirements. A prepared form or completed training session shall not establish that the corresponding operational process has been implemented and independently verified.

Required evidence: Working process owners; competent role assignments; authentic operating trails; validated records and controls.

60.3 – Family and technical-profile development

Source: AF-AST-STD-001, page 85.

Develop each family route against its exact objects, sites, methods, levels and service conditions. F03 provider competence, F04 education, F05–F07 operations, F08 statements and F01/F02 system/process work may progress in parallel when dependencies are met. The application schedule shall complete measurable or defined attribute criteria, methods, uncertainty, witnesses, independence, duration and permissible claims. Missing essential parameters keep the particular profile in development without preventing unrelated complete profiles from progressing.

Required evidence: Completed Annex C payload; family-specific criteria; application schedule; technical and independent completeness review.

60.4 – Integrated pilots and local system acceptance

Source: AF-AST-STD-001, page 85.

Before live scope release, perform representative technical and workflow pilots and verify correction of blocking findings. Test actual source access, assessment coverage, adverse results, conflicts, independent decisions, public claims and recovery. Local system validation shall test the actual deployment, not only a reference workbook. Synthetic cases support logic checks but shall not be represented as genuine applicants or field validation. Readiness conclusions shall state precisely which capabilities have been demonstrated.

Required evidence: Pilot plans and executed evidence; findings/retests; local validation; bounded readiness report.

60.5 – Controlled launch, surveillance and evolution

Source: AF-AST-STD-001, page 85.

Launch shall identify exact active profiles, authorised operators, competent resources, terms, public claims and operational effectivity. Scope availability shall follow real release decisions. Continuing review shall monitor technical validity, independence, changes, outcomes, access and resources rather than certificate volume alone. The programme shall maintain usable historical records, controlled version and responsible closure. A later expansion shall preserve earlier code meanings and undergo its own compatibility, technical and activation review.

Required evidence: Actual activation; public availability; surveillance and independent review; version /transition and closure records.

61.1 – Publication identity

Source: AF-AST-STD-001, page 86.

The display title shall be ASTRA with AEROSPACE STANDARD directly beneath it. The standard identifier shall remain AF ASTRA-100:2026 and the document code AF-AST-STD-001. The displayed edition shall be FIRST EDITION and the displayed publication date 30 September 2026. These labels shall not be substituted for an actual technical approval, contract effectivity, operational permission or conformity-decision date.

Verification: Compare cover, identity page, headers, metadata and controlled publication record.

Acceptance / hold rule: Identity fields agree. A publication date alone provides no evidence of adoption or operational authority.

61.2 – Retained text and authored additions

Source: AF-AST-STD-001, page 86.

Clauses 0–60 and Annexes A–AH retain the source architecture, subject identifiers and operational controls, subject to the editorial identity changes stated in Annex AI. This clause, Clauses 62–80 and Annexes AK–AR develop explicit all-space coverage, decision logic, calculations and evidence controls. They shall not be represented as records of completed field evaluation or as proof that the complete consolidated text existed on the displayed edition date.

Verification: Review the internal authorship boundary in Annex AJ and the actual approval dossier.

Acceptance / hold rule: Source-derived requirements and newly authored material are distinguishable; no invented approval, validation or prior effectivity is asserted.

61.3 – Dependent documents and compatibility

Source: AF-AST-STD-001, page 86.

The responsible custodian shall identify every affected profile, manual, procedure, checklist, form and register before use of this text. Existing 108-title architecture and F01–F08 codes shall remain stable. Newly added requirements shall be mapped to the actual dependent documents; a previous checklist shall not be assumed to cover them. Actual constitutional and legal obligations remain separately applicable.

Verification: Reconcile the dependency register against selected requirements and operating versions.

Acceptance / hold rule: Every required operating document is available, consistent and authorised for the intended use. Unresolved conflicts place dependent use on HOLD.

61.4 – Actual approval and activation

Source: AF-AST-STD-001, page 86.

The adoption dossier shall retain the proposed text, consultation, comment dispositions, valid technical decision, institutional authority, operator identity and exact scope activation. Real signatories and event timestamps shall be recorded when the events occur. A blank, generated or copied signature shall not be used as an approval. Technical and institutional release shall remain separate from the acceptance of a particular applicant.

Verification: Trace the authorisation chain and independently verify each necessary approval.

Acceptance / hold rule: All triggered gates in Clause 4 and Annex P are satisfied before live scope use; otherwise the affected scope remains unavailable.

61.5 – Correction, custody and file integrity

Source: AF-AST-STD-001, page 87.

The custodian shall retain controlled source versions, change reasons, affected requirements and distribution records even though no numbered change label appears on the publication. Corrections shall not erase historical decisions. The issued PDF shall have complete content, readable figures, working navigation and an identifiable master. Removal of publication

labels shall not remove record timestamps, method versions or technical configuration controls.

Verification: Reconcile the final file with its manifest and inspect content, navigation and correction records.

Acceptance / hold rule: No missing section, contradictory edition field or unreadable essential figure; the original evidence and actual history remain retrievable.

62.1 – Atomic requirement record

Source: AF-AST-STD-001, page 88.

Each assessed requirement shall have a stable identifier, one accountable owner, an applicability trigger, defined object and configuration, required behaviour or characteristic, observable conditions, verification method and acceptance predicate. Compound statements shall be separated into individually testable rows without deleting any condition. Terms such as adequate, suitable, promptly or representative shall be resolved through the explicit records in this clause before they support an acceptance decision.

Verification: Inspect each requirement row and its linked method, boundary and predicate.

Acceptance / hold rule: Every applicable row is evaluable without inventing an object, limit, observation or decision role. Unresolved essential terms result in HOLD.

62.2 – Mandatory parameter completion

Source: AF-AST-STD-001, page 88.

An application-dependent value shall be entered in a controlled parameter schedule before the relevant test or evaluation. Each entry shall state symbol, meaning, unit, inclusive or exclusive bounds, uncertainty treatment, operating modes, technical derivation, source evidence, approver and change trigger. A declared value is not adequate merely because the applicant selected it. The independent reviewer shall challenge whether it bounds the claimed environment and consequence.

Verification: Recalculate derivations and check mission, interface and obligation coverage.

Acceptance / hold rule: The complete parameter set is approved prospectively. A blank, TBD, unsupported factor or undefined threshold blocks the dependent release.

62.3 – Evidence validity before conformity

Source: AF-AST-STD-001, page 88.

The evaluator shall first determine whether evidence belongs to the correct object, configuration, period, method and authorised performer and whether it is usable for the intended inference. Only valid relevant evidence shall enter a conformity predicate. Rejected, corrupted, missing, unobservable or wrong-version evidence shall remain identified. Evidence may be valid and show failure; an invalid test is not a valid pass or a valid proof of product failure.

Verification: Check provenance, configuration, method capability, original data and uncertainty separately from result classification.

Acceptance / hold rule: Validity is established before PASS or FAIL is assigned; otherwise use HOLD with an explicit invalidity or evidence-gap reason.

62.4 – Four requirement states

Source: AF-AST-STD-001, page 88.

A requirement state shall be PASS, FAIL, HOLD or N/A. PASS means the approved predicate is satisfied by valid evidence. FAIL means valid evidence demonstrates that the predicate is not satisfied. HOLD means applicability, method, evidence, uncertainty or authority is not sufficiently resolved. N/A means the trigger and retained responsibility are absent and independent approval of that exclusion is recorded. Missing equipment, budget, access or time shall not justify N/A.

Verification: Execute the truth table in Annex AL using actual scope and evidence.

Acceptance / hold rule: Exactly one current state is assigned with reason and traceable evidence. All earlier states are retained.

62.5 – No compensation or favourable default

Source: AF-AST-STD-001, page 89.

A positive conformity decision shall require PASS for every applicable mandatory requirement, closure of every in-scope nonconformity, valid independent competence and actual authority. N/A rows shall have approved reasons; HOLD and FAIL rows shall not contribute a favourable default. Weighted scores, averages, majority votes, programme membership

or good results in another discipline shall not compensate for an unmet condition.

Verification: Reconcile the complete requirement population with the decision dossier; test missing and negative cases.

Acceptance / hold rule: The Boolean conjunction in Annex AL is true. Otherwise no positive grant, renewal or extension is permitted.

62.6 – Exceptions, tailoring and unresolved conflict

Source: AF-AST-STD-001, page 89.

An exception shall identify the affected requirement, technical basis, permissible authority, scope, consequence and independent review. It shall not waive a mandatory ASTRA gate or an applicable binding obligation. Tailoring shall define how a requirement is met in the actual application, not silently remove it. If two applicable requirements cannot both be satisfied, the responsible authorities shall resolve the conflict before dependent work; an assessor shall not choose the easier rule.

Verification: Review each exclusion, alternative method and concession against controlling requirements.

Acceptance / hold rule: No unapproved exception or unresolved conflict affects a positive conclusion; any known departure remains visible in its separate technical disposition.

62.7 – Decision replay and consistency

Source: AF-AST-STD-001, page 89.

A decision shall be reproducible from the same frozen requirements, parameter values, original evidence, calculation version, uncertainty model and role assignments. Two competent reviewers reaching different results shall identify the differing input, predicate, assumption or expertise before closure. Interpretation records may clarify a term but shall not change limits after results are known. Equation inputs shall retain unrounded values.

Verification: Independently replay a selected boundary case and reconcile every difference.

Acceptance / hold rule: The replay produces the same supported state, or the case remains HOLD pending a controlled technical resolution.

63.1 – Domain selection without geographic omission

Source: AF-AST-STD-001, page 90.

The mission owner shall assess every domain in Annex AK and record applicable, not applicable or not yet determined. The scope shall include terrestrial preparation, launch and recovery interfaces as well as the in-space activity. Earth orbit, cislunar and libration-region operations, solar and planetary missions, small bodies, ocean-world exploration and interstellar precursor concepts shall not be excluded solely because they differ from conventional satellite operations.

Verification: Compare the mission concept and responsibility map with all Annex AK domain rows.

Acceptance / hold rule: Every domain has a reasoned disposition. Any unassessed domain that can affect a required outcome remains HOLD.

63.2 – Object and activity rather than a universal label

Source: AF-AST-STD-001, page 90.

The claimed object shall be identified as a system, subsystem, component, material, process, service, facility, software artefact, person, educational programme, assessment provider or statement. Record what is designed, built, tested, operated, maintained or retired, by whom and where. A phrase such as all space, space-qualified or complete mission assurance shall not replace the exact boundaries and limitations of the evaluated object.

Verification: Compare application, technical schedule, evidence and proposed public wording.

Acceptance / hold rule: The object and activities agree throughout the dossier; unsupported sector-wide or geographically unlimited claims are prohibited.

63.3 – Environment, phase and mode matrix

Source: AF-AST-STD-001, page 90.

For each applicable domain, define mission phase, operating mode, intended duration, exposure, interfaces, repairability, accessible evidence and credible degraded states. Include dormant storage, transport, separation, commissioning, routine service, communication outage, servicing, retirement and loss-of-mission conditions when relevant. A qualification for one phase shall not automatically cover another phase with different loads, resources or observability.

Verification: Review the complete phase-by-mode matrix and its verification links.

Acceptance / hold rule: Every safety-, mission- or claim-relevant cell has accepted evidence or an explicit restriction; no essential unexamined cell is passed by analogy.

63.4 – No automatic new programme family

Source: AF-AST-STD-001, page 90.

Space-domain tags organise technical applicability within F01–F08. They shall not be counted as additional accreditation families, new public privileges or independently active programmes. The technical owner shall map each space activity to the existing object route and applicable clauses, then define a dedicated profile where the actual method, environment or competence differs. A portfolio listing is not scope activation.

Verification: Check domain tags against family, module, object and activation records.

Acceptance / hold rule: Every granted space scope has a valid family connection and independently complete profile; no authority is inferred from the catalogue.

63.5 – Unknown and future environments

Source: AF-AST-STD-001, page 91.

For a novel environment or technology, the technical owner shall document known conditions, uncertain mechanisms, missing measurements, model limitations and the evidence needed to resolve them. Restricted research may continue only inside its approved protective boundary. An operational or conformity claim shall not be issued until the essential criteria and evidence are complete. Existing equations shall not be extrapolated beyond their validity without a tested justification.

Verification: Examine novelty analysis, experiment authority and unresolved-condition register.

Acceptance / hold rule: Unknown essential behaviour is not recorded as safe or conforming. Development status and permitted work are explicit.

63.6 – Interface and lifecycle closure

Source: AF-AST-STD-001, page 91.

The scope shall include relevant upstream and downstream duties, including supplied design data, ground services, communications, receiving facilities, environmental custody and long-term records. Transfers shall identify the sender, receiver, evidence and acceptance. A contractor delivering one subsystem shall not be made responsible for unrelated mission duties, but an integrator shall not exclude duties it retains because they are performed by others.

Verification: Trace each interface to an accountable performer and retained owner.

Acceptance / hold rule: No essential responsibility, evidence handover or terminal obligation is orphaned.

64.1 – Mission environmental baseline

Source: AF-AST-STD-001, page 92.

The baseline shall define relevant mechanical, thermal, pressure, radiation, plasma, charging, electromagnetic, contamination, micrometeoroid, dust, gravitational and atmospheric conditions by phase and location. Each selected model or data source shall have identity, applicable domain, uncertainty and update responsibility. The omission of a mechanism shall be justified technically, not by lack of a test facility.

Verification: Audit environment-to-requirement and environment-to-test traceability.

Acceptance / hold rule: All material environments and coupled effects are bounded by approved assumptions and evidence; undefined exposure blocks qualification acceptance.

64.2 – Geometry, reference frames and event time

Source: AF-AST-STD-001, page 92.

Trajectory- and geometry-dependent information shall identify frame origin, orientation, epoch, time scale, units, state covariance and transformation version. An exchanged position or orientation shall not be accepted without enough metadata to transform it consistently. Surface-relative, body-fixed, inertial and local engineering coordinates shall remain distinct. Event time, receipt time and ground processing time shall not be merged.

Verification: Recompute selected transformations and challenge wrong-frame and stale-epoch inputs.

Acceptance / hold rule: Transformations meet the approved error and time bounds; incompatible or ambiguous metadata produces HOLD.

64.3 – Uncertainty, scenarios and design envelope

Source: AF-AST-STD-001, page 92.

Define nominal, bounding, dispersed and degraded scenarios and how they support design, test and operational limits. Record whether uncertainty is statistical, epistemic, model discrepancy or an unbounded knowledge gap. Extreme values shall not be combined as independent random variables without justification. A confidence level shall name its variable, population and model rather than describe the whole mission.

Verification: Review scenario construction, dependencies and sensitivity to uncertain inputs.

Acceptance / hold rule: The accepted envelope covers the declared decisions; unsupported extrapolation is excluded or held.

64.4 – Resource budgets and coupled margins

Source: AF-AST-STD-001, page 92.

Mass, power, energy, thermal rejection, timing, data, attitude-control resources and consumables shall have explicit allocation and reserve ownership. Account for concurrent loads, common reserves, environmental degradation, ageing, unavailable recharge and terminal obligations. The same reserve shall not be credited to two simultaneous needs. Positive scalar totals shall not replace transient, local or coupled analysis.

Verification: Reconcile subsystem and system budgets by phase and condition; independently check Annex AM calculations used.

Acceptance / hold rule: Each required margin meets its prospectively approved value under all selected bounding conditions; no reserve is double allocated.

64.5 – Heritage and similarity

Source: AF-AST-STD-001, page 92.

A heritage argument shall compare actual design, materials, manufacturing source, mission exposure, software, interfaces and life history. Identify unchanged evidence, invalidated evidence and new demonstration. Successful service of a related design shall be accepted only for characteristics and mechanisms it actually supports. Lack of a recorded failure shall not prove performance of an unmonitored critical characteristic.

Verification: Review a difference matrix and trace each retained conclusion to applicable original evidence.

Acceptance / hold rule: Every material difference has a technical disposition and sufficient evidence before the new claim is accepted.

64.6 – Baseline maintenance and irreversible decisions

Source: AF-AST-STD-001, page 93.

Changes to mission duration, geometry, environment, operating mode, supplier or external service shall trigger a documented impact review. Before an irreversible commitment, the decision maker shall reconcile the current environmental baseline, actual configuration, evidence, reserves, unresolved issues and protective options. Commercial schedules shall not be used as substitute evidence.

Verification: Compare the frozen readiness dossier with the actually delivered configuration and latest accepted mission assumptions.

Acceptance / hold rule: Every essential gate is complete and all permitted actions are stated; otherwise the irreversible commitment remains blocked.

65.1 – Structures, mechanisms and deployment

Source: AF-AST-STD-001, page 94.

The organisation shall define structural and mechanism functions, materials, interfaces, loads, thermal distortion, life, release states and deployment observability. Qualification shall address relevant manufacturing variability, lubrication or surface condition, storage ageing, constraints and incomplete deployment. Final configuration and any mechanical lock or restraint state shall be independently verified where it affects an essential function.

Verification: Review configuration-specific load, test, inspection, mechanism and deployment evidence.

Acceptance / hold rule: Each required function and structural criterion is met in its approved envelope; unknown restraint or deployment state blocks dependent operation.

65.2 – Thermal control and thermal protection

Source: AF-AST-STD-001, page 94.

Thermal assurance shall account for heat generation, solar and planetary inputs, conduction, radiation, thermal storage, contact conductance, coatings, degradation and operating modes. Distinguish steady-state screening equations from transient qualification. Temperature limits shall identify the actual item, location, mode and measurement uncertainty. A single temperature sensor shall not represent all critical locations without a validated relationship.

Verification: Review thermal models, instrumentation, balance correlation and hot/cold/transient test coverage.

Acceptance / hold rule: All required temperatures and gradients meet approved bounds including uncertainty and model discrepancy; unresolved critical locations remain HOLD.

65.3 – Power generation, storage and distribution

Source: AF-AST-STD-001, page 94.

Power assurance shall identify end-of-life generation, eclipses or outages, duty cycle, distribution losses, peak demand, storage state, switching, grounding and protective isolation. Both available power and stored energy shall satisfy their distinct requirements. Protective tests shall use separately authorised safe procedures. A nominal capacity statement shall not demonstrate usable capacity under ageing and mission temperature.

Verification: Reconcile phase budgets and examine actual storage, conversion and protection evidence.

Acceptance / hold rule: Power, energy and recovery predicates all pass; adequate average generation does not compensate for an unsupported peak or outage condition.

65.4 – Avionics, electronics and radiation effects

Source: AF-AST-STD-001, page 94.

The device and board assurance record shall retain manufacturer, lot, configuration, screening, operating state and environment-specific suitability. Total-dose degradation, displacement effects and single-event behaviour shall be assessed separately when triggered. System response, error containment, recovery and residual data integrity shall be demonstrated. Radiation values shall state material, location, quantity and model; incompatible dose quantities shall not be combined.

Verification: Inspect parts genealogy, mission susceptibility analysis, specialist results and integrated recovery tests.

Acceptance / hold rule: All triggered mechanisms have accepted application-specific evidence; a part label or dose-only result does not close unexamined single-event behaviour.

65.5 – Attitude, pointing, sensing and control interfaces

Source: AF-AST-STD-001, page 95.

The assurance case shall define pointing, knowledge, stability, alignment, jitter, timing, observability, actuator limits and degraded modes for the actual payload and mission. Coordinate frames and error budgets shall be explicit. Verification shall include sensor loss, stale data, actuator saturation and misleading measurements within a safe test arrangement. This clause does not specify guidance or manoeuvre commands.

Verification: Trace error allocation to integrated measurement and closed-loop verification on representative configuration.

Acceptance / hold rule: Required performance and protective-state predicates pass; undetected loss of critical observability remains an essential gap.

65.6 – Payload function and scientific or service output

Source: AF-AST-STD-001, page 95.

Payload requirements shall identify intended outputs, calibration, dynamic range, contamination sensitivity, pointing or timing needs, processing and delivered data quality. Instrument performance, system suitability and scientific interpretation are separate conclusions. Changes in compression, processing or calibration shall retain raw or reconstructable data and algorithm identity. Marketing resolution or accuracy figures shall state the tested conditions and limitations.

Verification: Reconstruct selected output products from identified inputs, calibration and processing.

Acceptance / hold rule: Output criteria are met for the stated domain; unsupported scientific or service claims are not inferred from a functioning instrument.

65.7 – Integrated platform acceptance

Source: AF-AST-STD-001, page 95.

The integrator shall reconcile all subsystem configurations, resource allocations, interfaces, anomalies, software loads, protective controls and operating restrictions. Individually accepted subsystems shall be examined for common-cause failures and conflicting assumptions. Verify the delivered system rather than a earlier demonstration model. Remaining development actions shall not be presented as completed flight acceptance.

Verification: Conduct independent configuration, interface and evidence closure across the complete integration dossier.

Acceptance / hold rule: All applicable integration gates pass; each unresolved essential interface blocks the dependent mission or system conclusion.

66.1 – End-to-end service definition

Source: AF-AST-STD-001, page 96.

Define source, destination, relay, ground station, user, supported modes, data class, service availability, permitted latency, correctness and authority. Separate service connectivity from integrity and from the right to use a frequency or external network. All external dependencies shall have actual service scope, ownership, availability and failure responsibility.

Verification: Trace representative data from origin to authorised use including relays and third parties.

Acceptance / hold rule: The claimed service boundary is complete and each essential dependency is supported; a link diagram alone is insufficient.

66.2 – Link and performance budgets

Source: AF-AST-STD-001, page 96.

Link calculations shall state distance, frequency or wavelength, antenna or optical characteristics, pointing, losses, noise, coding, data rate and required performance. Free-space attenuation shall not be treated as the complete link model. Atmospheric, weather, acquisition, polarisation, interference and implementation effects shall be included when material. Units and logarithmic reference quantities shall be consistent.

Verification: Independently recompute the budget and validate assumed performance against representative evidence.

Acceptance / hold rule: The worst required operating cases meet approved link and quality margins; omitted material losses or unknown receiver performance block acceptance.

66.3 – Delay and feasible intervention

Source: AF-AST-STD-001, page 96.

The service shall distinguish one-way propagation, round-trip exchange, queueing, processing, retransmission, human response and actuation delays. A ground intervention shall count as a protective control only when information and action can arrive within the validated hazard-response window. Store-and-forward or disruption-tolerant operation shall define expiration, duplicate handling, priority and stale-command rejection.

Verification: Test worst-case delay and outage scenarios using the approved mission geometry and timing model.

Acceptance / hold rule: Required responses are feasible within the approved window; a nominal human review step does not pass if communication makes it ineffective.

66.4 – Data age and time uncertainty

Source: AF-AST-STD-001, page 96.

Every consequential data item shall retain event time, time scale, receipt time, sequence, quality flags and relevant uncertainty. Clock drift, conversion error, leap or reset handling and synchronisation loss shall be bounded. Maximum data age and timing uncertainty shall be defined before use. A recent packet receipt shall not make its old event data current.

Verification: Challenge stale, duplicated, reordered, wrong-time-scale and clock-reset data.

Acceptance / hold rule: Data outside approved age or uncertainty bounds are marked unusable for the affected decision and trigger the defined protective response.

66.5 – Position and navigation-support integrity

Source: AF-AST-STD-001, page 97.

The service shall define position, velocity, orientation or time outputs, reference frame, validity interval, uncertainty, integrity indication and user reliance. The validation shall distinguish nominal error from misleading information and unavailable service. Transformations and combined sources shall preserve correlations. The provider shall not imply that a

navigation-support result grants authority to conduct the receiving operation.

Verification: Compare independent truth/reference evidence and test wrong-frame, stale-source and service-loss cases.

Acceptance / hold rule: All performance and integrity predicates pass for the declared use; an unavailable or uncertain essential output is not a valid zero-error estimate.

66.6 – Secure command and relay interfaces

Source: AF-AST-STD-001, page 97.

Command-bearing links shall verify origin, authority, target, sequence, integrity, timing and permitted operation. Relays shall not enlarge the original authority. Replays, duplicates, interrupted delivery, expired credentials and compromised dependencies shall be handled through validated controls. Security tests shall remain inside written safe authorisation and shall not interfere with live assets.

Verification: Execute safe positive and prohibited command-delivery tests using isolated synthetic fixtures.

Acceptance / hold rule: Unauthorised, stale or wrong-target commands cannot pass the accepted workflow; commanded action and observed physical completion remain distinct.

66.7 – Outage, recovery and service evidence

Source: AF-AST-STD-001, page 97.

The operator shall reconcile lost data, delayed messages, incomplete transfers and state changes after an outage. Recovery shall restore meaning, configuration, authority and history as well as network availability. Report actual service measures with time windows, excluded outages and missing data. A service restoration shall not retrospectively validate dependent decisions made with unavailable or corrupted information.

Verification: Review outage timelines, replay/reconciliation logs and receiving acceptance.

Acceptance / hold rule: All necessary state and data integrity checks are complete before assured use resumes; remaining gaps are carried into the affected claims.

67.1 – Configuration and operational baseline

Source: AF-AST-STD-001, page 98.

The ground baseline shall identify deployed hardware, software, databases, operational procedures, configuration dictionaries, simulation models, keys, operators and external services. The controlled baseline shall be linked to each supported flight configuration. A simulator or training installation shall be segregated from live commanding.

Verification: Reconcile installed versions and target mappings with approved release records.

Acceptance / hold rule: Every live mission interface uses an accepted compatible baseline; training or stale configuration cannot be selected as a live authority.

67.2 – Command proposal and preconditions

Source: AF-AST-STD-001, page 98.

Each consequential command or command sequence shall identify authorised intent, target, version, validity interval, preconditions, expected state change, irreversible effects and required review. Before release, verify actual authority, configuration compatibility and sufficiently current state evidence. Success of a syntax check shall not establish physical suitability.

Verification: Review selected command records and challenge stale-state and wrong-target preconditions safely.

Acceptance / hold rule: All prescribed preconditions are demonstrated and the command remains within approved mission authority; otherwise release is blocked.

67.3 – Receipt, execution and completion

Source: AF-AST-STD-001, page 98.

The record shall distinguish command prepared, approved, transmitted, received, accepted, started, completed, failed and unknown. A transmission log or acknowledgement shall not be treated as verified physical completion. Completion criteria shall identify telemetry or other evidence, timing, confidence limits and independent checks needed for the actual action.

Verification: Trace a command through its full event and evidence history.

Acceptance / hold rule: Only evidence satisfying the approved completion predicate supports completed status; missing terminal evidence remains unknown or partial.

67.4 – Planning and conflicts

Source: AF-AST-STD-001, page 98.

Mission plans shall allocate communication, power, thermal, pointing, staffing, observation and maintenance resources and identify prohibited overlaps. Concurrent activities shall be reviewed for coupled effects and common reserves. Planning tools shall be validated against known-answer, conflict, capacity and missing-input scenarios. A scheduled activity shall not be marked executed merely because its time slot elapsed.

Verification: Independently reconcile a representative plan and its actual execution log.

Acceptance / hold rule: No essential conflict remains unresolved; actual execution and deviations are separately evidenced.

67.5 – Personnel, handover and remote support

Source: AF-AST-STD-001, page 99.

Shift and provider handovers shall state current asset condition, unresolved anomalies, active constraints, commands in progress, planned irreversible actions, evidence gaps and actual authority. Duty personnel shall have competence for their assigned mission and available specialist support. A named on-call role without demonstrated availability shall not count as response capability.

Verification: Observe a representative handover and verify access, competence and acknowledgement.

Acceptance / hold rule: The receiving team acknowledges the complete active state and responsibilities before assuming authority.

67.6 – Anomaly response and safe restoration

Source: AF-AST-STD-001, page 99.

The operations team shall classify anomalies, preserve raw evidence, control affected commands and follow authorised mission-specific protective procedures. Restoration shall establish current physical and digital state, cause disposition, remaining restrictions and separate technical return authority. A restarted computer or renewed communication link does not prove that the spacecraft or remote process is safe to resume.

Verification: Examine adverse rehearsals and actual restoration records where available.

Acceptance / hold rule: Required state, integrity and protection checks pass before resumed dependent action; unresolved essential uncertainty retains a restriction.

67.7 – Rehearsal and independent readiness

Source: AF-AST-STD-001, page 99.

Mission readiness shall include representative end-to-end rehearsal across flight configuration, ground systems, people, networks, delays, external support and abnormal conditions. Synthetic data shall be labelled. Failures shall be retained, corrected and retested with the original failing cases. Independent readiness shall state the exact demonstrated configuration and remaining limits.

Verification: Compare the rehearsal matrix, observations, corrections and re-execution evidence.

Acceptance / hold rule: Every required readiness scenario passes or is excluded through a valid scope limitation; no scripted demonstration is claimed as a completed mission.

68.1 – Fleet membership and common dependencies

Source: AF-AST-STD-001, page 100.

Maintain the identity, configuration, ownership, status and responsible control function for each fleet member. Identify shared software, ground infrastructure, suppliers, communication paths, operational procedures and resource constraints. A result for one satellite shall not be copied to an entire constellation without a demonstrated similarity and coverage argument.

Verification: Reconcile fleet and configuration records with actual membership and service commitments.

Acceptance / hold rule: All included assets and common-cause dependencies are identified; unsupported members remain outside the granted scope.

68.2 – Distributed function and degradation

Source: AF-AST-STD-001, page 100.

Define the collective service, required contribution of each element, acceptable degradation, reconfiguration authority and conditions for withdrawal. Verification shall address loss, stale state, conflicting leadership, corrupted shared data and simultaneous failure of common services. A large number of assets shall not be interpreted as independent redundancy without evidence.

Verification: Test representative distributed-service and common-cause scenarios.

Acceptance / hold rule: The specified service and protective behaviour meet approved predicates; aggregate uptime does not conceal an essential degraded-state failure.

68.3 – Tracking and conjunction-information quality

Source: AF-AST-STD-001, page 100.

Tracking and conjunction-support data shall retain source, age, frame, epoch, covariance, hard-body assumptions where used, quality indicators and domain of validity. The responsible function shall assess data sufficiency before relying on a probability or miss-distance result. Screening volume, alert threshold and operational decision thresholds shall remain distinct and prospectively defined.

Verification: Review data lineage, uncertainty and method validity; challenge stale and inconsistent source cases.

Acceptance / hold rule: The data and model support the intended decision. Unsupported collision-probability estimates remain HOLD, not reassuring zero values.

68.4 – Coordination and consent

Source: AF-AST-STD-001, page 100.

Coordination procedures shall identify counterparties, contact reliability, authority, message meaning, acknowledgement and conflicting assumptions. Receipt of a coordination message shall not be treated as consent to an operation or proof that the other party will act. Any change to a shared interface shall preserve actual responsibility and required permissions.

Verification: Inspect communication records and representative failed-contact or contradictory-message exercises.

Acceptance / hold rule: Each required acknowledgement and authority is established; unresolved coordination essential to the claim blocks that claim.

68.5 – Debris prevention and released items

Source: AF-AST-STD-001, page 101.

The lifecycle plan shall identify intentional and potential released objects, retained energy, fragmentation risks, degradation and terminal-state responsibilities. The organisation shall define a lawful technical basis for prevention and end-of-life measures and verify their implementation for the actual configuration. A nominal mission plan shall not establish successful debris prevention or disposition.

Verification: Review released-item inventory, risk analysis, protective evidence and closure records.

Acceptance / hold rule: Every triggered prevention and terminal condition has accepted evidence; no unknown disposition is reported as completed.

68.6 – Mission extension and terminal resources

Source: AF-AST-STD-001, page 101.

Before extending service, reassess remaining energy, support, communications, attitude capability, life, uncertainty, monitoring and resources required for terminal duties. The extension shall not consume a reserve already committed to a required protective or end-of-life function without authorised technical resolution. The decision shall preserve original life history.

Verification: Reconcile updated budgets, remaining-life evidence and terminal feasibility.

Acceptance / hold rule: Required continued-service and terminal predicates both pass; a commercially useful asset is not automatically eligible for extension.

68.7 — Status and long-term custody

Source: AF-AST-STD-001, page 101.

Closure shall record whether an asset is operating, restricted, dormant, disposed, lost or unknown using verified evidence and defined meanings. Loss of communication shall not be labelled successful disposal. Assign remaining notices, monitoring and records to an actual custodian. A closed commercial contract does not close an unresolved technical or environmental obligation.

Verification: Trace final-state evidence and accepted transfer of residual duties.

Acceptance / hold rule: Terminal claims match observed or explicitly bounded inferred states, and every continuing duty has a receiving owner.

69.1 — Consent and exact intervention

Source: AF-AST-STD-001, page 102.

Record participating assets, owners, consent, service objective, configuration, permitted interventions and prohibited actions. Design assurance, service-provider competence and permission for a specific operation shall remain separate. An assumed common ownership or commercial order shall not replace the actual technical authority and access rights needed for the intervention.

Verification: Check the consent and authority chain against the declared operation and assets.

Acceptance / hold rule: All required authorities and compatible scope boundaries are valid before intervention; otherwise the activity remains blocked.

69.2 — Interface compatibility

Source: AF-AST-STD-001, page 102.

Define and verify relevant mechanical, structural, electrical, fluid, thermal, communications, software, timing and contamination interfaces. The evidence shall identify as-operated rather than merely as-designed configurations. Damage, ageing, unknown modifications and inspection accessibility shall be considered. Individually qualified assets shall not be assumed jointly compatible.

Verification: Review interface-control records, difference analysis and representative integrated verification.

Acceptance / hold rule: Every essential interface criterion passes for both participating configurations; unknown critical interfaces remain HOLD.

69.3 — Relative-state and completion evidence

Source: AF-AST-STD-001, page 102.

The service plan shall define which relative states, contact conditions, connection states and completed tasks must be observed or inferred. Sensor limitations, occlusion, stale telemetry, model uncertainty and ambiguous indications shall have explicit handling. A single contact indication shall not by itself prove secure structural, electrical or fluid connection when those are separate requirements.

Verification: Challenge incomplete and contradictory indications using authorised representative simulations or tests.

Acceptance / hold rule: Each claimed state has sufficient valid evidence and meets its own predicate; ambiguous state cannot be treated as complete.

69.4 — Interruptions and safe boundaries

Source: AF-AST-STD-001, page 102.

The assurance case shall identify safe interruption states, autonomy limits, human intervention feasibility, shared failures and irreversible actions. Recovery and abort assumptions shall be validated for the actual environment and available resources. This standard does not authorise an assessor to command an intervention or select hazardous operational parameters.

Verification: Review the approved scenario set and evidence for required protective transitions.

Acceptance / hold rule: All essential interruption and protective-state requirements are demonstrated within the authorised envelope.

69.5 — Transferred material, energy and data

Source: AF-AST-STD-001, page 103.

Transfers shall preserve identity, quantity, units, condition, custody and eligibility of materials, consumables, energy attributes or digital products. Metering, losses, residuals and cross-contamination shall be addressed. Quantity reconciliation shall not be used as proof of chemical, mechanical or functional suitability. Receiving acceptance shall be explicit.

Verification: Reconcile sending and receiving records and inspect suitability evidence.

Acceptance / hold rule: Both identity/quantity and technical eligibility checks pass; unexplained differences or contamination keep the transfer result open.

69.6 – Post-intervention configuration and service claim

Source: AF-AST-STD-001, page 103.

The final dossier shall state actual work, replacement items, software, repairs, observations, limitations, failed attempts, configuration and receiving authority. Verify affected functions and update maintenance, life and operating information. Partial completion shall remain partial. Service completion shall not imply recertification of the whole receiving asset or extension of its life without separate evidence.

Verification: Review post-intervention verification and receiving acknowledgement.

Acceptance / hold rule: The bounded service predicate is met, affected protections are restored and residual responsibilities are accepted.

70.1 – Distinct release objects

Source: AF-AST-STD-001, page 104.

The profile shall distinguish vehicle design, payload integration, site capability, mission readiness, individual operating permission and recovery capability. Each object shall identify responsible entity, configuration, environment, evidence and decision authority. A spaceport capability result shall not release a vehicle or a specific launch.

Verification: Compare all requested results with their actual evidence and authority paths.

Acceptance / hold rule: No merged or unbounded approval is issued; each required object-specific gate is independently supported.

70.2 – Integrated environment and interface verification

Source: AF-AST-STD-001, page 104.

Integration shall address actual handling, transport, mounting, loading, acoustic, dynamic, thermal, electrical, data, separation and contamination interfaces. Verification shall use approved mission-specific conditions and representative fixtures and configurations. Previously accepted payloads shall be reassessed when interface conditions or launch-service assumptions change.

Verification: Reconcile interface and environment matrices with qualification, acceptance and delivered configuration.

Acceptance / hold rule: All required interface criteria are met; undeclared differences or missing essential demonstrations block integrated acceptance.

70.3 – Test and hazardous-work readiness

Source: AF-AST-STD-001, page 104.

Before consequential tests, verify competent authorised performers, approved procedures, protected facilities, instrumentation, exclusion boundaries, independent checks and stop authority. Technical acceptance limits and protective shutdown limits shall be separate. No universal energetic, pressure or thermal operating values are supplied by this standard.

Verification: Inspect real readiness records and safe witnessing arrangements.

Acceptance / hold rule: All prerequisite protections and measurement capabilities exist before testing; missing permissions or protective functions prohibit the activity.

70.4 – Reuse and cumulative history

Source: AF-AST-STD-001, page 104.

Reusable structures, mechanisms, thermal protection, tanks, energy systems and electronics shall retain actual use, exposure, storage, damage, repairs, refurbishment and replacement history. Eligibility shall rely on validated inspection and degradation models for the particular item. A successful prior flight or a cosmetically restored surface shall not reset life or close hidden damage uncertainty.

Verification: Trace item history to approved reuse criteria and measured condition.

Acceptance / hold rule: All required life and condition predicates pass; missing critical history or inaccessible required inspection blocks reuse acceptance.

70.5 – Return, landing and recovery interfaces

Source: AF-AST-STD-001, page 105.

The return assurance case shall identify entry, descent, landing, retrieval, containment, transport and receiving duties within the declared responsibility. Define expected observations and evidence of completion, including unreachable, partial and uncertain outcomes. Public safety, environmental and controlled-material permissions shall be separately confirmed.

Verification: Review the approved return/recovery dossier, communication and custody arrangements.

Acceptance / hold rule: The stated return or recovery claim has sufficient actual evidence; a planned route or lost signal cannot be reported as successful completion.

70.6 – Readiness decision and post-event learning

Source: AF-AST-STD-001, page 105.

Before commitment, reconcile configuration, qualification, ground readiness, people, support, open anomalies and required terminal resources. After the event, preserve original observations, failures and near misses and assess consequences for subsequent vehicles and payloads. Schedule pressure shall not downgrade a blocking finding.

Verification: Independently review the frozen pre-event dossier and subsequent anomaly-to-population analysis.

Acceptance / hold rule: Every essential gate passes at the actual commitment time; later success does not legitimise an unsupported earlier release.

71.1 – Destination-specific conditions

Source: AF-AST-STD-001, page 106.

Define the actual body or environment, region, season or illumination assumptions, terrain, atmosphere, pressure, temperature, radiation, dust, electrostatic effects, gravity and access limitations. The profile shall separate measured conditions from inferred and unknown conditions. A terrestrial, lunar or planetary analogy shall not establish a universal environment specification.

Verification: Examine destination/region assumptions, uncertainty and required evidence.

Acceptance / hold rule: All essential environmental inputs are bounded for the declared mission; missing critical environmental knowledge retains a development or restricted status.

71.2 – Surface mobility and interaction

Source: AF-AST-STD-001, page 106.

Mobility assurance shall define load, terrain interaction, traction or anchoring, stability, dust effects, sensing, energy, thermal behaviour and recoverability relevant to the actual vehicle. Representative tests shall identify differences in gravity, soil or surface material, pressure and scale. A laboratory traverse shall not be equated with full mission access or survivability.

Verification: Review integrated mobility and resource tests and the justified analogue-transfer argument.

Acceptance / hold rule: Required mobility and protective-state predicates pass for the approved envelope; unsupported terrain classes remain excluded.

71.3 – Atmospheric and buoyant exploration

Source: AF-AST-STD-001, page 106.

Atmospheric vehicles shall have defined environmental profiles, materials, structural, buoyancy or flight functions, energy, communication and terminal responsibilities. Pressure, composition, corrosion, turbulence and inaccessible maintenance shall be considered when triggered. Airworthiness or site results from a different planetary or terrestrial context shall not be inherited without technical justification.

Verification: Review environment-specific material, structural and functional qualification and data validity.

Acceptance / hold rule: Every essential environmental and functional condition is supported for the stated domain; unvalidated atmosphere assumptions block broader claims.

71.4 – Subsurface and ocean-world interfaces

Source: AF-AST-STD-001, page 106.

Subsurface or liquid-environment exploration shall identify pressure, thermal, chemical, access, communication, containment and biological/scientific contamination concerns. Verify boundary integrity, sensor observability, retrieval assumptions and evidence custody without providing hazardous access procedures. A surface-system qualification shall not establish suitability for submerged or subsurface duty.

Verification: Review pressure-boundary and environmental evidence through authorised specialist assessment.

Acceptance / hold rule: All triggered boundary, protection and observation predicates pass; uncertain containment or retrieval capability remains explicitly restricted.

71.5 – Long darkness and resource interruption

Source: AF-AST-STD-001, page 107.

Mission planning shall identify darkness, unavailable recharge, thermal survival, communications gaps and delayed resupply. Energy and consumable reserves shall include degradation, uncertainty, interruptions and terminal duties. Restart after dormancy shall verify state and protection, not only a successful boot.

Verification: Recalculate resource and survival budgets and review representative dormant/restart tests.

Acceptance / hold rule: All required survival and recovery conditions meet approved criteria without double-counted reserves; missing state evidence keeps restart dependent actions held.

71.6 – Construction and surface infrastructure

Source: AF-AST-STD-001, page 107.

Habitats, pads, utilities, handling systems, civil works and resource facilities shall have a defined design and environment basis, material provenance, site assumptions, inspection strategy and acceptance authority. Hidden work and critical interfaces shall be verified before concealment. Demonstrating a manufacturing technique shall not establish readiness of an integrated surface installation.

Verification: Trace design and material records through construction, commissioning and receiving acceptance.

Acceptance / hold rule: Every essential structural, utility, environmental and operational interface has valid completion evidence before use.

71.7 – Autonomy and limited intervention

Source: AF-AST-STD-001, page 107.

Autonomous surface work shall define sensing coverage, permitted domain, adaptation limits, command authority, safe cessation and human intervention feasibility. Validation shall include occlusion, unfamiliar conditions, delayed information, partial execution and loss of a shared resource. Human oversight shall not be credited when delay or observability prevents meaningful intervention.

Verification: Challenge the approved autonomous envelope and required protective transitions.

Acceptance / hold rule: All essential scenarios pass; out-of-domain behaviour is limited or stopped under the approved protective design.

71.8 – Completion, samples and remaining duties

Source: AF-AST-STD-001, page 107.

The mission dossier shall distinguish science acquisition, engineering demonstration, collected sample custody, completed construction, final asset state and environmental closure. Unreachable assets shall retain a stated confidence basis and unknowns. Responsibilities for contamination, residues, hazardous inventories and interpreting long-term records shall survive mission and supplier closure.

Verification: Review final-state evidence, sample manifests and accepted residual-duty assignments.

Acceptance / hold rule: Each conclusion is limited to its demonstrated object and evidence; no lost contact or incomplete transfer is relabelled as complete closure.

72.1 – Time horizon and recoverability

Source: AF-AST-STD-001, page 108.

The mission basis shall define duration, distance-dependent communication, resource evolution, repairability, replacement feasibility and the period over which responsibility and evidence must remain usable. A planned future repair, relay or supplier service shall not be credited as available without supported commitments and a demonstrated capability basis.

Verification: Review life and support assumptions against mission phases and credible loss cases.

Acceptance / hold rule: Essential mission and protective functions remain supported for the declared duration; speculative future services are not favourable defaults.

72.2 – Solar and extreme thermal exposure

Source: AF-AST-STD-001, page 108.

Solar, close-body and thermal-extreme missions shall define time-varying flux, geometry, shadowing, surface properties, degradation and transient response. Protection shall be qualified at the relevant material, assembly and system levels. Inverse-square screening and steady-state radiation equations are only applicable within their stated assumptions and do not close transient or coupled behaviour.

Verification: Review environment-specific models, uncertainty, qualified materials and correlated tests.

Acceptance / hold rule: Required temperature, gradient, integrity and functional limits are met throughout the approved envelope; unexamined coupled effects remain HOLD.

72.3 – Low-flux and limited-power missions

Source: AF-AST-STD-001, page 108.

Distant missions shall evaluate end-of-life generation, storage, conversion, thermal support, communication and command survival concurrently. Prioritised load shedding and dormant modes shall have validated authority and state-recovery rules. Average energy sufficiency shall not hide a time-local peak or thermal survival failure.

Verification: Reconcile resource profiles and perform representative low-resource and recovery verification.

Acceptance / hold rule: Every essential resource and protection predicate passes; unavailable generation or unsupported recovery is not treated as normal service.

72.4 – Autonomy during long communication delay

Source: AF-AST-STD-001, page 108.

The mission shall identify decisions that cannot wait for ground response and bound the authority assigned to onboard functions. Validation shall account for delayed or unavailable external information, model mismatch, finite stored procedures and safe terminal behaviour. Ground approval received after the hazardous event would occur is not an effective preventive control.

Verification: Evaluate latency arithmetic and scenario-based autonomous response evidence.

Acceptance / hold rule: Protective authority is executable within the approved response time; otherwise redesign, restriction or additional evidence is required.

72.5 – Ageing and long-term digital support

Source: AF-AST-STD-001, page 108.

The assurance plan shall address materials ageing, accumulated environment, clock stability, memory integrity, software dependencies, obsolete tools, lost expertise and cryptographic migration. Preserve executable or reconstructable models and interpretable data dictionaries. Availability of a signed file does not establish its future readability or the continued correctness of its engineering meaning.

Verification: Review long-life evidence and test migration, recovery and independent reconstruction.

Acceptance / hold rule: Essential historical and current evidence remains usable and required support has accepted continuity arrangements.

72.6 – Scientific instruments and observation integrity

Source: AF-AST-STD-001, page 109.

Observation claims shall identify instrument calibration, alignment, background effects, processing, timing, uncertainty and data-loss conditions. Engineering acceptance of an instrument shall be separated from a scientific inference from its output. Changes in reduction software shall retain earlier processing and the reason for differences.

Verification: Reprocess a representative observation from identified source data and calibration.

Acceptance / hold rule: The stated technical data-quality criteria are met; disputed scientific interpretation is not declared certain by an ASTRA engineering result.

72.7 – Future-domain feasibility and responsible closure

Source: AF-AST-STD-001, page 109.

Very long-range or novel propulsion and infrastructure concepts shall identify what has actually been demonstrated and what remains theoretical or unvalidated. Requirements may define a future scope, but no operational capability shall be granted from aspiration alone. The final record shall preserve terminal-state uncertainty, remaining obligations and custody after active support ends.

Verification: Review demonstration-state claims, technical gaps and actual terminal evidence.

Acceptance / hold rule: Only the demonstrated bounded capability is recognised; speculative performance and unknown final states remain clearly identified.

73.1 – Population, mission and human tasks

Source: AF-AST-STD-001, page 110.

Define intended occupants, roles, mission duration, environmental conditions, physical access, workload, communication and reasonable variation in users. Identify essential tasks and protective actions. Validation shall state participant representativeness, assistance, training and limitations; one expert demonstration shall not establish capability for all users.

Verification: Review the user/task matrix and representative normal and degraded validation.

Acceptance / hold rule: Each essential task is demonstrated under its approved conditions; unsupported populations and tasks are excluded from the claim.

73.2 – Integrated life support

Source: AF-AST-STD-001, page 110.

Life-support requirements shall identify atmospheric, water, waste, temperature, humidity, monitoring, consumable and power interfaces appropriate to the mission. Substance-specific and physiological limits shall be set by the competent actual technical and health authorities before use. Do not infer safe habitat conditions from a single sensor or from nominal supplies. The profile shall identify correlated and common-resource failures.

Verification: Review integrated requirements, monitored quantities, sensor validity and contingency tests.

Acceptance / hold rule: Every required environmental and protective predicate is met; unspecified health limits or unverified essential monitoring block acceptance.

73.3 – Consumables and survival time

Source: AF-AST-STD-001, page 110.

Resource accounting shall separate usable inventory, delivery losses, recovery efficiency, degradation, uncertainty, crew demand, emergency reserves and terminal obligations. A theoretical recycling rate shall not replace demonstrated system recovery and quality. Define the elapsed time to protective intervention and compare it with supported remaining resources. Annex AM provides arithmetic examples, not crew-consumption prescriptions.

Verification: Recompute balances and check source data, quality and concurrent reserve allocations.

Acceptance / hold rule: All approved reserve and survival predicates pass; quantity sufficiency does not compensate for unsuitable water, atmosphere or other supplies.

73.4 – Habitat integrity and interfaces

Source: AF-AST-STD-001, page 110.

Habitat assurance shall address structural and pressure boundaries, penetrations, connections, fire behaviour, contamination, accessibility, maintenance and emergency compartments where applicable. Hidden work shall have

acceptance evidence before concealment. Payload and visiting-system interfaces shall not compromise life support or escape assumptions. Structural or habitat acceptance is not a medical clearance.

Verification: Inspect configuration-specific boundary and integrated protective evidence.

Acceptance / hold rule: All essential integrity and interface conditions pass; an unknown boundary or incompatible visiting configuration blocks occupancy-dependent acceptance.

73.5 – Human factors and effective authority

Source: AF-AST-STD-001, page 111.

Displays, alerts and procedures shall identify state, urgency, limitations and required actions without ambiguous mode or priority. Workload, fatigue, interruptions, language, delayed feedback and automation bias shall be evaluated. A manual override is an effective control only when a person has the information, time, training and physical or technical ability to use it.

Verification: Observe representative task and intervention performance, including misleading and degraded information.

Acceptance / hold rule: Every essential response passes independently; aggregate usability scores do not offset a failed protective task.

73.6 – Extravehicular activity and individual equipment

Source: AF-AST-STD-001, page 111.

The profile shall define the equipment configuration, user/task, environment, interfaces, life, inspections, consumables, communications and rescue dependencies for extravehicular or analogous isolated work. Suit, vehicle, habitat and support equipment shall be evaluated as an integrated system. This standard does not prescribe physiological exposure or hazardous operating sequences.

Verification: Review qualified equipment, user fit/task evidence and integrated emergency interfaces.

Acceptance / hold rule: All relevant configuration and protective criteria pass, with actual specialist authority and supported rescue or survival assumptions.

73.7 – Medical capability and health-data boundaries

Source: AF-AST-STD-001, page 111.

The mission shall identify the qualified health functions, equipment and support access required for its actual population and duration. Engineering assurance shall verify availability, integration, power, maintenance, communication and privacy without inventing treatment protocols or clinical certification. Health information shall be restricted to authorised purposes and handled separately from public conformity records.

Verification: Check actual health-support arrangements, equipment integration and protected data access.

Acceptance / hold rule: Required support functions are demonstrably available and usable within the mission limits; undocumented specialist capacity is not credited.

73.8 – Emergency, refuge and safe return

Source: AF-AST-STD-001, page 111.

Emergency planning shall define scenario, detection, decision time, protection, refuge or return assumptions, rescue interfaces and actual resources. A cooperation agreement shall not count as demonstrated response capability without compatible personnel, access, equipment and timing. Exercises shall distinguish tabletop review from operational demonstration and shall remain safe.

Verification: Assess scenario-specific exercise and resource evidence and independently check timing feasibility.

Acceptance / hold rule: Every required protective pathway is supported; infeasible response or unavailable essential resources block the dependent human-mission claim.

74.1 – Mission-specific protection classification

Source: AF-AST-STD-001, page 112.

The responsible function shall identify destinations, return paths, scientific objectives, exposed materials, biological payloads and applicable protection duties. Forward contamination, backward contamination and scientific interference shall be assessed separately. The selected obligations and technical criteria shall be documented before mission or facility design decisions that depend on them.

Verification: Review destination, pathway and consequence analysis with qualified independent specialists.

Acceptance / hold rule: Every triggered protection duty has an explicit owner, criterion and verification path; an undefined classification remains HOLD.

74.2 – Contamination pathways and control allocation

Source: AF-AST-STD-001, page 112.

Map contamination sources, transport pathways, contact interfaces, releases and receiving environments across manufacture, test, integration, operation, collection, return and disposition. Allocate controls to actual performers and preserve interface assumptions. A cleaning or containment declaration shall not establish effectiveness without method-specific evidence for the relevant material and pathway.

Verification: Inspect the pathway map and validated evidence for each relied-upon control.

Acceptance / hold rule: All essential pathways are controlled to the approved technical basis; inaccessible required evidence prevents a favourable conclusion.

74.3 – Scientific cleanliness and background

Source: AF-AST-STD-001, page 112.

Define species, particulates, molecular residues or other backgrounds capable of affecting the specific measurement. Reference samples, witness materials, blanks, calibration and contamination history shall have traceable identity and handling. A broad cleanliness classification shall not establish suitability for an instrument with a different detection limit or scientific objective.

Verification: Review measurement-specific contamination budgets and actual verification results.

Acceptance / hold rule: Required cleanliness and background predicates pass within method uncertainty; uncharacterised contamination remains a limitation on the affected output.

74.4 – Sample identity and custody

Source: AF-AST-STD-001, page 112.

Each sample shall retain origin description, collection event, container, seal or interface identity, mass or quantity where known, conditions, contamination history, transfers, subdivisions and authorised access. Unknown provenance shall remain unknown. Splitting or pooling shall preserve parent-child links and shall not create duplicate inventories.

Verification: Reconcile original collection, custody, receiving and subdivision records.

Acceptance / hold rule: The sample and its history are unambiguous and usable for the claimed purpose; missing essential links block the dependent sample conclusion.

74.5 – Return-chain containment and receiving readiness

Source: AF-AST-STD-001, page 113.

Where containment or restricted receiving applies, verify compatible transport, return vehicle, retrieval, custody, receiving facility, authorised personnel and contingency arrangements. The profile shall define the evidence needed to establish boundary integrity and safe transfer without specifying hazardous treatment methods. A ready spacecraft does not establish readiness of an absent receiving facility.

Verification: Review the complete return-to-receiving chain and authorised representative integrity demonstrations.

Acceptance / hold rule: Every essential interface and receiving capability is accepted before dependent return commitments; otherwise the chain remains incomplete.

74.6 – Anomalies, unknown state and release of information

Source: AF-AST-STD-001, page 113.

Loss of containment indication, unverified seal condition, missing samples or unexplained contamination shall trigger preservation, restriction and qualified review. Do not equate absent alarms with demonstrated integrity. Technical data and scientific interpretations shall retain limitations; public statements shall not imply a sample is harmless or pristine solely because its custody form is complete.

Verification: Examine anomaly decisions, actual observations and bounded reporting.

Acceptance / hold rule: Only supported technical conclusions are released; uncertainty and unresolved protection duties remain visible.

74.7 – Disposition and residual responsibility

Source: AF-AST-STD-001, page 113.

Final disposition shall identify sample, container, residue, facility, record and long-term custody obligations. Transfer shall include receiving acceptance and usable evidence. Mission completion shall not terminate a continuing protection or scientific-record duty. The custodian shall preserve genuine access conditions and correction channels after organisational closure.

Verification: Trace final-state evidence and accepted residual duties.

Acceptance / hold rule: No required custody or protection obligation is abandoned and no unverified disposal is claimed complete.

75.1 – Process purpose and environment

Source: AF-AST-STD-001, page 114.

Define intended output, material properties, environment, equipment, software, tooling, personnel or autonomous role, inspection access and downstream use. Distinguish research yield, qualified process capability and product acceptance. A terrestrial qualification shall not automatically transfer to a different gravity, vacuum, thermal, contamination or radiation environment.

Verification: Review environment differences and the process-to-property qualification argument.

Acceptance / hold rule: All essential output properties and influential conditions have an approved evidence path; unsupported transfer remains HOLD.

75.2 – Inputs, feedstock and source variability

Source: AF-AST-STD-001, page 114.

Retain origin, composition or material type, condition, contamination, storage, reuse, mixing and representative property evidence for feedstock. Local or recovered resources shall have a characterised variability and sampling basis. A claimed resource abundance shall not establish usable quantity or technical eligibility. Source substitution shall be assessed before use.

Verification: Trace input lots and samples to process runs and accepted property evidence.

Acceptance / hold rule: Input identity and suitability meet approved criteria; uncertain composition or life history is not replaced by a nominal source label.

75.3 – Essential variables and remote monitoring

Source: AF-AST-STD-001, page 114.

The qualified envelope shall identify influential variables, combinations, tolerances, monitoring performance and reaction rules. Retain actual variable histories, interruptions and sensor gaps by output identity. Remote telemetry shall support acceptance only for properties and mechanisms demonstrated to be observable or validly inferred. A successful process command does not prove the intended material transformation occurred.

Verification: Review representative qualification, sensor/model validation and raw production history.

Acceptance / hold rule: All required variables and output characteristics are supported; an unobservable essential property requires additional evidence or a restricted outcome.

75.4 – Yield, mass balance and circularity

Source: AF-AST-STD-001, page 114.

Material accounting shall separate input, good output, reject, sample consumption, process loss, recovered material, work in progress and unknown difference. Internal recirculation shall not be counted repeatedly as new resource production. Mass closure and yield are different measures; neither proves safety or material performance. Units and measurement uncertainty shall be explicit.

Verification: Independently reconcile the material ledger and separately review quality acceptance.

Acceptance / hold rule: Balances meet the approved uncertainty-based criterion and all claimed good output is technically accepted; unexplained losses or duplicate recovery remain open.

75.5 – Logistics, storage and compatibility

Source: AF-AST-STD-001, page 115.

Logistics shall preserve item identity, custody, configuration, life, condition and applicable environmental exposure through packaging, handling, transport, transfer and storage. Receiving systems shall confirm mechanical, fluid, electrical, data and contamination compatibility where relevant. Planned delivery shall not be counted as physically received usable inventory.

Verification: Inspect the complete shipment and receiving chain, including excursions and damage.

Acceptance / hold rule: Only accepted usable inventory enters mission budgets; unknown or restricted items are segregated in both physical and digital records.

75.6 – Maintenance, spares and distributed production

Source: AF-AST-STD-001, page 115.

On-demand or remote production of replacement parts shall satisfy the same applicable design, material, process and acceptance requirements as other sources. Digital files, authorised build configuration, inspection capability and life history shall be controlled. A successfully printed shape shall not establish structural, electrical or environmental suitability. Missing original supply does not waive qualification.

Verification: Review replacement authorisation, production genealogy and configuration-specific verification.

Acceptance / hold rule: Every essential replacement predicate passes before use; unsupported functional or life equivalence is prohibited.

75.7 – Handover, resource claims and closure

Source: AF-AST-STD-001, page 115.

The final claim shall state actual production, quality, quantity, conditions, uncertainty, exclusions and accepted receiving responsibility. Demonstration of a resource process creates no ownership, extraction right or operating permission. Waste, residues, hazardous inventories and long-term custody shall have accepted disposition.

Verification: Reconcile reported outputs, accepted products, rights/permissions and final-state evidence.

Acceptance / hold rule: The claim is bounded to measured and accepted achievement; undeveloped scale-up and unknown disposition remain separate.

76.1 – System boundary and conversion chain

Source: AF-AST-STD-001, page 116.

Define energy source, conversion, storage, distribution, loads, interfaces, heat rejection and terminal duties. Identify normal and degraded states, common dependencies, exposure and maintenance accessibility. Component efficiency or nameplate power shall not be represented as available end-to-end service capability.

Verification: Trace energy and thermal balances across the actual architecture and conditions.

Acceptance / hold rule: Every essential stage and interface meets approved functional and protective requirements.

76.2 – Beamed and remote energy services

Source: AF-AST-STD-001, page 116.

A remote energy-service profile shall identify transmitter, receiver, conversion, alignment, intervening environment, control authority and protection of unintended recipients. The assurance case shall address wrong-target, lost-tracking, interrupted-service and emergency shutdown conditions through authorised safe demonstrations. A received-power measurement alone shall not close protection or permission requirements.

Verification: Review written scope, compatible interfaces, performance evidence and safe protective tests.

Acceptance / hold rule: Delivery and all triggered protective predicates pass; no hazardous or unauthorised operation is justified by a positive efficiency value.

76.3 – Cryogenic, chemical and pressure interfaces

Source: AF-AST-STD-001, page 116.

Specialised energy storage and transfer shall define relevant material compatibility, containment, thermal behaviour, quality, monitoring, protective isolation and emergency interfaces. Actual pressure, composition, exposure and handling limits shall be approved by competent specialists for the specific system. This publication shall not be used as an operating procedure.

Verification: Review authorised technical basis, qualification, inspection and integration evidence.

Acceptance / hold rule: Every essential containment and protection condition is supported; missing hazardous-work authority blocks the activity.

76.4 – Nuclear and radiation-source governance

Source: AF-AST-STD-001, page 116.

Where a mission uses a nuclear or other controlled radiation source, the organisation shall identify the actual competent authorities, permissions, safety case, transport, launch/operation interfaces, security, emergency responsibilities and end-of-life duties. Independent specialist access shall be sufficient for the bounded evaluation. ASTRA shall not grant source-handling, reactor-design or public-safety permission.

Verification: Verify the existence, scope and authenticity of required specialist approvals and integration evidence.

Acceptance / hold rule: All relevant permissions and assurance interfaces are complete; a generic aerospace credential cannot substitute for them.

76.5 – Infrastructure availability and failure propagation

Source: AF-AST-STD-001, page 117.

Utilities, storage, conversion and networks shall be evaluated for common failures, load prioritisation, restoration, fire or containment interfaces and dependence on external support. Protection of people and essential assets shall be distinguished from mission-service continuity. A shared resource cannot be credited as independent backup to itself.

Verification: Review dependency analysis and safe tests of loss, isolation and restoration.

Acceptance / hold rule: Every essential protective path remains effective under the approved failure set; unsupported independence is not credited.

76.6 – Degradation, environmental claims and retirement

Source: AF-AST-STD-001, page 117.

Capacity, conversion and loss models shall reflect ageing and relevant exposure. Environmental claims shall use a separately defined lifecycle boundary and shall not imply technical interchangeability or complete safety. Retirement shall preserve hazardous inventory, terminal protection, custody and monitoring duties.

Verification: Reconcile actual condition, model validity, separate environmental statements and final disposition.

Acceptance / hold rule: Technical life and terminal conditions are met independently of environmental metrics; unknown inventories remain open obligations.

77.1 – Requirement-to-method completeness

Source: AF-AST-STD-001, page 118.

The verification matrix shall include every applicable requirement, object/configuration, method, test or analysis purpose, criterion, uncertainty, evidence and authorised conclusion. Inspection, analysis, demonstration and testing shall be selected for the actual failure mechanism. Annex T domains guide coverage but are not ready-made methods. A complete test list shall not replace requirement-level closure.

Verification: Reconcile the requirement population, test matrix and actual evidence using stable identifiers.

Acceptance / hold rule: Every applicable requirement has a valid completed evidence path; any essential uncovered row remains HOLD.

77.2 – Campaign design and article pedigree

Source: AF-AST-STD-001, page 118.

Define qualification articles, flight or service articles, specimens, representative differences, prior exposure, fixtures, operating modes and cumulative test sequence. Identify which conclusions may be transferred between articles and why. Failed tests, repairs and substitutions shall remain in the same historical chain.

Verification: Review specimen-to-product and test-to-configuration equivalence records.

Acceptance / hold rule: All material differences and accumulated effects are evaluated before evidence reuse; unrepresentative essential evidence is not accepted.

77.3 – Measurement and uncertainty readiness

Source: AF-AST-STD-001, page 118.

Before execution, verify instrument identity, calibration, range, bandwidth, synchronisation, environment, software, raw-data retention and uncertainty suitability. Sensor placement and spatial coverage shall represent the characteristic being accepted. Protect the article and personnel through separately specified stop conditions.

Verification: Inspect the full measurement chain and execute relevant readiness checks.

Acceptance / hold rule: All required channels are valid for the intended inference; a missing, saturated or misconfigured critical channel prevents that acceptance.

77.4 – Combined effects and sequence

Source: AF-AST-STD-001, page 118.

The technical plan shall evaluate whether individual tests adequately address coupled environments and order-dependent damage. Thermal, radiation, mechanical, electrical, contamination and software conditions shall be combined or supported by a justified integrated analysis where necessary. Over-test and under-test shall be assessed against the actual evidence purpose.

Verification: Review the interaction matrix and cumulative exposure ledger.

Acceptance / hold rule: Every material combined mechanism has adequate evidence; passing isolated tests does not automatically close unexamined combinations.

77.5 – Original data and invalid tests

Source: AF-AST-STD-001, page 118.

Retain actual setup, input and response histories, environmental conditions, interruptions, alarms, raw files, corrections, uncertainty and validity classification. An invalid run shall state what evidence remains usable and which requirement is not demonstrated. A repaired or changed article shall not silently replace the originally failed configuration.

Verification: Reconstruct a selected run from raw data and contemporaneous records.

Acceptance / hold rule: The run is independently interpretable and no failed, invalid or missing evidence is concealed.

77.6 – Numerical and attribute acceptance

Source: AF-AST-STD-001, page 119.

Quantitative decisions shall use the prospectively selected predicate and uncertainty rule. Attribute decisions shall name observable states and essential steps rather than unstructured judgement. Equality at an inclusive limit is handled as specified; empty acceptance regions, invalid units and non-finite values produce HOLD. Rounding shall not change an outcome.

Verification: Replay boundary, negative and missing-input cases using Annex AL and Annex AM.

Acceptance / hold rule: The correct state follows deterministically from valid unrounded inputs and the approved predicate.

77.7 – Retest and corrective verification

Source: AF-AST-STD-001, page 119.

Retest shall follow an approved rationale, defined scope and representative configuration. It shall preserve the original failure and address causal, exposure and selection effects. Repeated trials until a pass occurs are not an acceptance strategy. Corrective verification shall include the original failure mode and relevant regression, not merely a new favourable measurement.

Verification: Review the retest authorisation, all attempts and failure-to-correction trace.

Acceptance / hold rule: The original deficiency and affected requirements are demonstrably resolved; otherwise the claim remains failed or held.

77.8 – Independent campaign closure

Source: AF-AST-STD-001, page 119.

The final dossier shall reconcile configuration, criteria, valid results, adverse evidence, untested characteristics, uncertainty, concessions and open duties. Qualification, article acceptance, laboratory competence and ASTRA conformity

shall retain separate decisions. A technical concession shall not be relabelled as fulfilment of the original criterion.

Verification: Perform independent requirement-by-requirement closure with actual decision authority.

Acceptance / hold rule: Every applicable gate for the exact claimed object passes; counts, percentages or programme completion dates alone cannot release the object.

78.1 – Released digital configuration

Source: AF-AST-STD-001, page 120.

Identify requirements, source or logic, generated artefacts, model weights, preprocessing, parameters, tools, dependencies, build environment and loaded target. A version label alone is insufficient to establish the deployed behaviour. Every consequential change shall be attributable and linked to impact, regression and actual release authority.

Verification: Reconstruct the released artefact and compare it with the loaded configuration.

Acceptance / hold rule: The evaluated and deployed digital configurations match, or all differences have accepted verification before use.

78.2 – Operational domain and prohibited behaviour

Source: AF-AST-STD-001, page 120.

Define intended tasks, users, environment, sensor and network assumptions, autonomous authority, prohibited actions and protective states. Experimental uses shall be segregated from live release. Behaviour outside the approved domain shall trigger the defined limitation or protective response rather than an unsupported autonomous expansion.

Verification: Review domain completeness and execute representative in-domain, out-of-domain and prohibited cases.

Acceptance / hold rule: All essential domain and protective conditions pass; unbounded authority or unknown out-of-domain behaviour blocks release.

78.3 – Evaluation data and model credibility

Source: AF-AST-STD-001, page 120.

Evaluation shall retain data provenance, rights, labelling, representative populations, partitions, leakage checks, synthetic contribution and adverse cases. Model verification, calibration and independent validation shall be distinguished. A high aggregate score, large dataset or visual twin is not evidence of every rare or safety-critical condition.

Verification: Inspect data partitions and independently reproduce selected performance and model-validation results.

Acceptance / hold rule: Prospective scenario-specific criteria are met with disclosed uncertainty and limitations; unsupported extrapolation remains HOLD.

78.4 – Human authority and consequential decisions

Source: AF-AST-STD-001, page 120.

Human oversight shall be validated against available information, response time, competence, workload and control access. Automated decision support may organise evidence but shall not independently issue an ASTRA grant, renewal, suspension or restoration. Generated observations and citations shall not be presented as authentic source events.

Verification: Challenge automation bias, false-source and delayed-intervention scenarios.

Acceptance / hold rule: Actual authorised people can perform every required role and source evidence remains verifiable; nominal oversight alone is insufficient.

78.5 – Security and trusted updates

Source: AF-AST-STD-001, page 121.

Protect source, build, machine instructions, operational data, identities and updates according to the actual threat and safety model. Update acceptance shall verify origin, integrity, authority, target, compatibility and interruption behaviour. Reversion to an earlier load shall not reintroduce an unacceptable defect without explicit technical disposition. Security testing requires written safe authorisation.

Verification: Review trust dependencies and execute isolated permitted and prohibited update tests.

Acceptance / hold rule: All required integrity and protective gates pass; a valid signature alone does not establish functional safety or compatibility.

78.6 – Monitoring, drift and adaptation

Source: AF-AST-STD-001, page 121.

Define detectable drift, changed exposure, failure signals, missing-data response, authority and reassessment triggers. Monitor what the method can actually observe, not every property inferred from a live dashboard. Adaptation outside the released envelope shall require renewed assurance before reliance. A monitoring gap shall not be treated as evidence of unchanged performance.

Verification: Review monitoring coverage, alert-to-action records and controlled changes.

Acceptance / hold rule: Essential performance and protection remain supported; otherwise restrict the affected use and assess earlier outputs.

78.7 – Recovery and semantic portability

Source: AF-AST-STD-001, page 121.

Export and recovery shall preserve identities, scope, configuration, evidence states, decisions, history, units, time basis, permissions and relationships. Equal file counts do not establish equal meaning. Reconcile events after the recovery point and obtain receiving acceptance before cutover. Service availability and evidence-integrity acceptance are separate.

Verification: Execute missing-link, wrong-version, interrupted-write, expired-authority and restore tests.

Acceptance / hold rule: All essential records and relationships are usable and correct; unresolved evidence loss keeps dependent decisions on HOLD.

79.1 – Protect people and essential assets before mission success

Source: AF-AST-STD-001, page 122.

The assurance case shall separate mission-success conditions from required protection when the mission objective cannot be achieved. Define credible severe consequences, essential controls, detection, escalation and authorised stop or restriction. Commercial benefit and a favourable aggregate risk score shall not override a missing essential protective condition.

Verification: Review hazard-to-control-to-verification traceability for failed-mission scenarios.

Acceptance / hold rule: Every required protective function has accepted evidence independently of mission performance metrics.

79.2 – Emergency feasibility and resources

Source: AF-AST-STD-001, page 122.

Protective and recovery plans shall identify actual people, communication, access, equipment, energy, consumables, time and external assistance. An assumed response shall be credited only within demonstrated capability and mission constraints. A rescue agreement, proposed future service or unallocated reserve shall not be counted as assured availability.

Verification: Reconcile scenario timing, resource budgets and exercised interfaces.

Acceptance / hold rule: All required protective pathways are feasible within their approved response and survival bounds.

79.3 – Loss of contact and uncertain physical state

Source: AF-AST-STD-001, page 122.

The operator shall define the distinction between missing data, confirmed failure, safe dormant state, lost asset and completed disposition. Preserve last valid observations, their age and uncertainty. The absence of an alarm or signal shall not establish safe state. An inference shall identify its model and limits and shall not be presented as direct observation.

Verification: Review the state-classification record against raw evidence and observability limits.

Acceptance / hold rule: Only a supported state is assigned; uncertain essential conditions retain UNKNOWN in operational records and HOLD in dependent acceptance.

79.4 – Affected populations and historical decisions

Source: AF-AST-STD-001, page 122.

An event shall be traced to affected configurations, fleet members, materials, methods, software, personnel, reports and prior decisions. Determine both occurrence and escape causes and test competing explanations. Changing a supplier, restarting a service or training one person shall not by itself close a shared systemic cause.

Verification: Inspect end-to-end dependency and look-back analysis with actual notifications.

Acceptance / hold rule: All materially dependent outputs are addressed; no valid adverse history is erased by later correction.

79.5 – Terminal evidence and responsible transfer

Source: AF-AST-STD-001, page 122.

Terminal-state claims shall specify the exact intended condition, permitted inference, observation method, resources and residual duties. Transfer shall preserve custody and receiving acceptance of records, hazardous inventory, notices, monitoring and unresolved remedies. A file sent or contract ended is not accepted closure.

Verification: Reconcile final-state evidence, inventory and recipient acknowledgement.

Acceptance / hold rule: Every required terminal criterion is demonstrated or openly limited, and every remaining duty has an actual receiving owner.

79.6 – Learning and sustained accountability

Source: AF-AST-STD-001, page 123.

Lessons shall be translated into controlled requirements, methods, training, resources or interfaces and verified under representative conditions. Protect good-faith reporting and distinguish allegation from substantiated misconduct. Long-term archives shall retain technical meaning, access conditions and correction responsibility after staff, tools or institutions change.

Verification: Review corrective effectiveness and test retrieval by a receiving competent reviewer.

Acceptance / hold rule: The affected controls demonstrably improve and the mission record remains interpretable; publication of a lesson alone is not closure.

80.1 – One complete application schedule

Source: AF-AST-STD-001, page 124.

The schedule shall join the object tuple, F01–F08 selection, Annex AK domains, phase/mode matrix, required methods, parameter records, competence, evidence, independent decisions and continuing controls. All triggers in Annex AO shall be resolved. Shared records may be reused after relevance review, but shall not merge distinct objects, outcome classes or actual authority.

Verification: Reconcile the full schedule with Clauses 1, 4, 62 and 63 and Annex C.

Acceptance / hold rule: No essential scope, parameter, responsibility or evidence field remains undefined before a positive decision.

80.2 – Domain and verification completeness

Source: AF-AST-STD-001, page 124.

Map every applicable domain and requirement to valid verification and to an accountable conclusion. Treat domain counts, test counts and completed checklist percentages as planning measures only. Annex T is not exhaustive of all future methods; a newly discovered material mechanism shall create a controlled additional requirement and evidence task before the affected claim proceeds.

Verification: Perform forward and reverse traceability and inspect omitted-domain reasons.

Acceptance / hold rule: Every applicable condition passes or has a justified approved N/A; no HOLD or FAIL is hidden by a coverage percentage.

80.3 – Competent independent closure

Source: AF-AST-STD-001, page 124.

The independent reviewer shall have verified technical coverage, lawful evidence access and no prohibited case relationship. Technical dissent shall be resolved by evidence, corrected scope or further work. Where a three-person panel is required, all three eligible members shall participate and the established vote rule shall apply only after the technical gates are satisfied.

Verification: Check competence, conflict, access, panel and reasoned decision records.

Acceptance / hold rule: Both the technical conjunction and applicable authority/panel rules pass; a vote cannot cure absent evidence.

80.4 – Bounded claim and publication

Source: AF-AST-STD-001, page 124.

The outcome shall identify legal holder, issuer, object, configuration, family/module, domain, site or remote responsibility, criteria, limitations, actual dates and ongoing or instance basis. Public wording shall not imply unrestricted coverage of all space, universal safety, statutory permission or external recognition without evidence. The approved cover and edition label do not change those boundaries.

Verification: Compare the actual decision with credential, registry and all proposed public representations.

Acceptance / hold rule: Published scope and status exactly match the authorised decision and preserve every material restriction.

80.5 – Continuing conformity and change

Source: AF-AST-STD-001, page 124.

Maintain surveillance, technical validity, people, resources, configuration, monitoring and actual state history under the controlling clocks. Mission, environment, population or technology changes shall trigger impact review before expanded reliance. Restoration shall preserve expiry unless a full renewal has occurred and shall not validate the suspended interval.

Verification: Audit actual completion, change and status records rather than scheduled dates alone.

Acceptance / hold rule: The current claim remains fully supported; overdue or invalidated conditions trigger the applicable restriction, suspension or withdrawal.

80.6 – Completion boundary

Source: AF-AST-STD-001, page 125.

The final document is a requirement and evidence framework. Each actual mission and technical profile shall complete its numerical limits, specialist procedures, permissions and validation. Newly authored provisions shall follow the real adoption process before binding live use. No statement in this publication guarantees that every undiscovered physical phenomenon or future technology has already been validated.

Verification: Review the final release dossier and the truthful distinction between prepared text and real implementation.

Acceptance / hold rule: Only the exact demonstrated and authorised scope is released; incomplete domains remain available for controlled development, not presumed conformity.

Appendix B — Local adoption, validation and receiving acceptance

Gate	Required evidence	Outcome when incomplete
Authority and identity	Actual operator, scoped mandate, permissible result class, named owner, independent decision and remedy functions.	No live scope release.
Requirement population	All applicable clauses and annexes mapped to child conditions, with reasons and independent approval for exclusions.	HOLD the affected conclusion.
Parameters and methods	Prospective values/attributes; technical basis; valid methods; representativeness; calibration, uncertainty and approved predicates.	No dependent acceptance.
People and evidence	Current demonstrated competence; conflict clearance; original usable source evidence; actual configuration and event times.	Reassign or obtain sufficient evidence.
Local tools and tests	Actual deployment tested with positive, boundary, missing, invalid and prohibited inputs; original failed cases retested.	No consequential reliance on unaccepted tools.
Independent closure	Every mandatory requirement PASS, approved N/A, all in-scope nonconformities verified closed, panel rules where required.	No grant, renewal or extension.
Claims and continuity	Decision-linked scope/status; source history; genuine custody, receiving access, retention, urgent notices and terminal duties.	Restrict publication or transfer until resolved.

Record authentic approval and activation in AF-AST-FR-001 and AF-AST-SC-004 or an equivalent controlled record. The edition label is not an effective date for a particular case. Preserve historical decisions under their actual controlling basis; a newer document does not retroactively create missing competence or evidence. Source: Clauses 4, 31, 61, 62 and 80; Annexes P and AR.

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