AEROSPACE FEDERATION

ASTRA

AEROSPACE STANDARD

FILLABLE RECORD FORM

Process qualification and product readiness

AF-AST-FR-020

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Aviation / Space / Defense / Future systems

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Publication identity and use

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Publication and operation	Prepared publication. Actual technical approval, consultation, institutional adoption, operational effectivity and individual scope activation require separate authentic records.

Purpose and application

Blank controlled record for Process qualification and product readiness. The fields implement the common and module-specific payload in source Annex M and relevant expanded requirements. Complete only when the actual triggering activity occurs.

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 Completion workflow and validation contract

Blank controlled record for Process qualification and product readiness. The fields implement the common and module-specific payload in source Annex M and relevant expanded requirements. Complete only when the actual triggering activity occurs.

Open a working copy, retain its code and existing field names, and enter record identity before technical details. Complete common identity, the original module fields, all triggered assurance extensions, independent review and receiving handover. An expression of interest, prepared application, test design or unsigned record is not a live positive outcome. Record blank, missing, invalid and disputed information explicitly rather than replacing it with favourable text.

Input group	Validation before reliance	Invalid / incomplete response
Identity and configuration	Stable IDs; actual object and performer; correct profile, method and loaded configuration.	HOLD dependent use; resolve wrong-object or wrong-version evidence.
Numbers and units	Finite real values; compatible units; ordered limits; non-negative uncertainty; unrounded source retained.	Reject malformed inputs. Blank, NaN or infinity is not zero.
States and evidence	Received/reviewed/accepted evidence states separate from PASS/FAIL/HOLD/N/A.	UNSET is not a fifth favourable state; preserve the gap.
People and time	Current competence, conflict clearance and authority at actual event time; declared time convention.	Later renewal cannot validate an earlier unauthorised action.
Approval and custody	Authentic approval instrument, exact permitted action and actual receiving acceptance.	No approval inferred from a typed name, file presence or sending a message.

The PDF stores entered text but does not enforce access rights, numerical logic, identity verification, automatic deadlines or live registry states. A competent authorised person applies the checks. Local digital systems require their own validation. Printing may omit text that exceeds a visible field: complete the continuation record and reference it from the parent field.

2 Acceptance and original record preservation

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 ≥ L and b ≤ 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.

3 Source and record relationship 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
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
9.4 / 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
11.3 / 22	Existing evidence and reuse	Requirement, objective evidence and local child predicates
12.3 / 23	Method-family witnessing	Requirement, objective evidence and local child predicates
13.3 / 25	Witness control	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

ASTRA ID / page	Source subject	Implementation use
14.5 / 26	Existing status and new grants	Requirement, objective evidence and local child predicates
19.12 / 33	Technical witnessing for accreditation	Requirement, objective evidence and local child predicates
41.2 / 62	Integrated route and hidden characteristics	Requirement, objective evidence and local child predicates
54.4 / 79	Occurrence, escape and affected population	Requirement, objective evidence and local child predicates
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
62.7 / 89	Decision replay and consistency	Explicit verification and acceptance predicate
63.1 / 90	Domain selection without geographic omission	Explicit verification and acceptance predicate
63.3 / 90	Environment, phase and mode matrix	Explicit verification and acceptance predicate
63.6 / 91	Interface and lifecycle closure	Explicit verification and acceptance predicate
64.2 / 92	Geometry, reference frames and event time	Explicit verification and acceptance predicate
64.5 / 92	Heritage and similarity	Explicit verification and acceptance predicate
75.3 / 114	Essential variables and remote monitoring	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
77.5 / 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
79.4 / 122	Affected populations and historical decisions	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

4 Detailed module implementation

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-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-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.

5 Workflow and relationship diagram

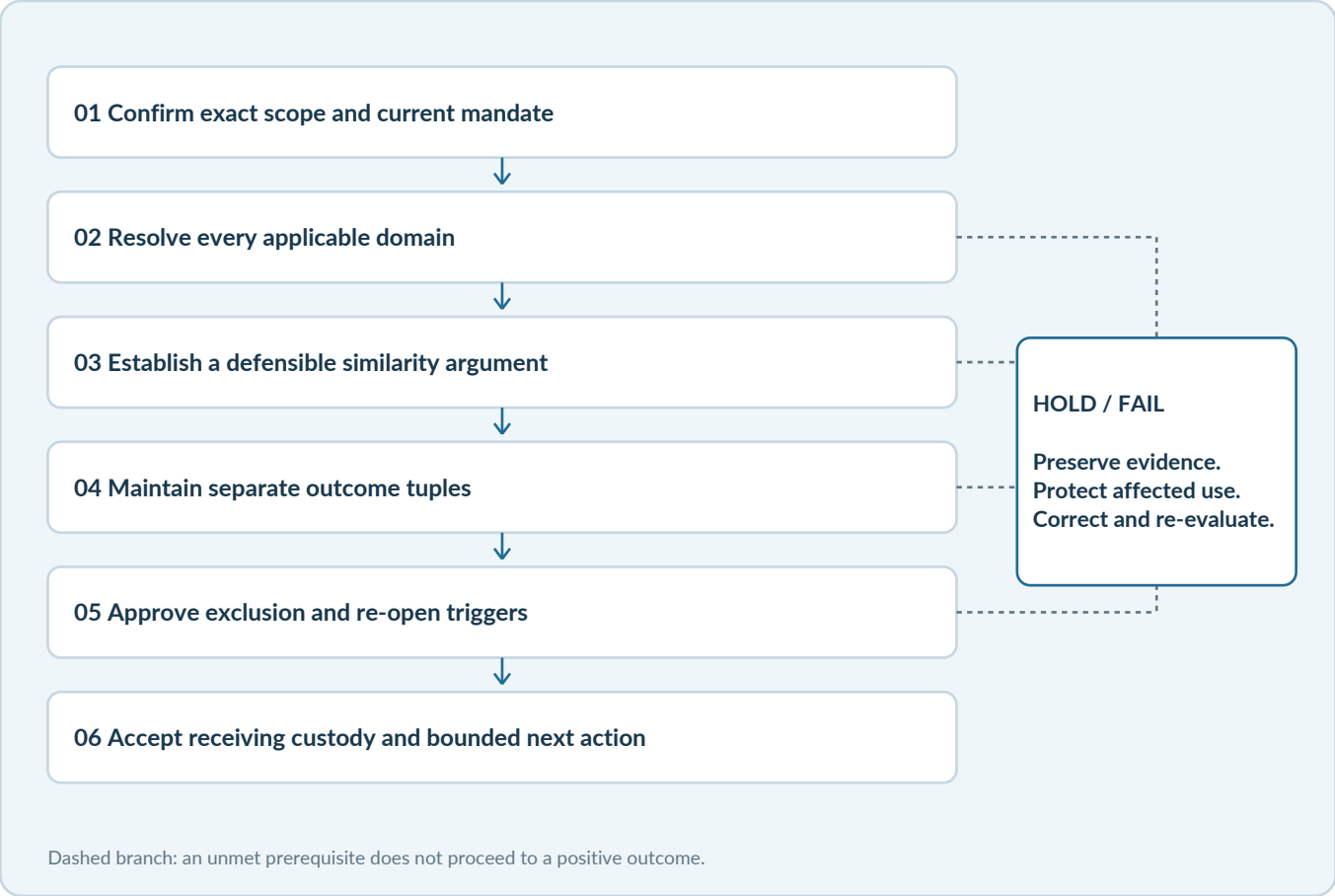
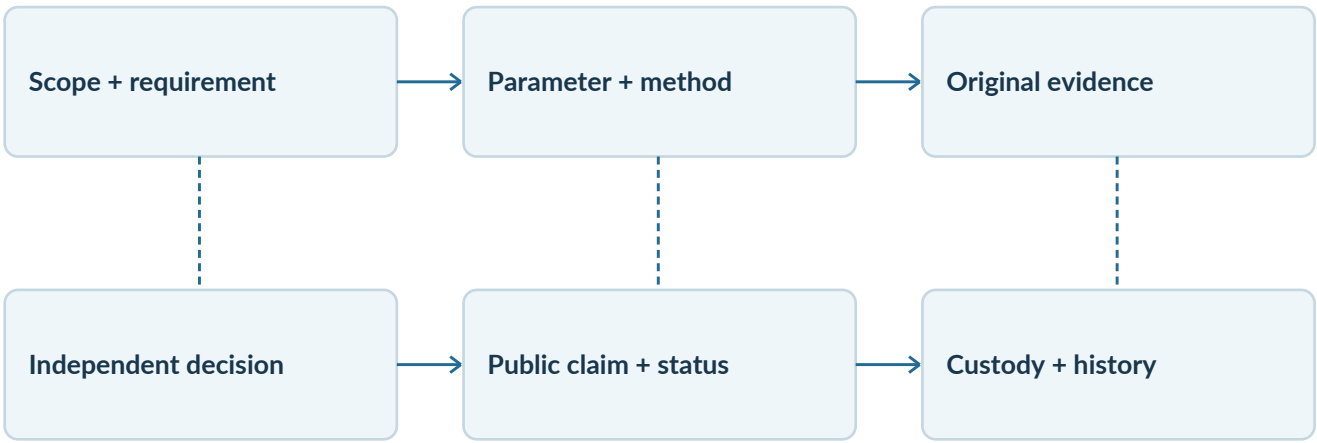


Figure — Implementation sequence for AF-AST-PR-004. Explanatory diagram; the source prerequisites and actual authority remain controlling.



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.

6 Worked recording and calculation examples

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_c² = Σ(c_i² u_i²) + 2Σ(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 ρ=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 × 0.003 × 0.004 = 0.000006 mm².

4. Correlated variance = 0.000025 + 2 × 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

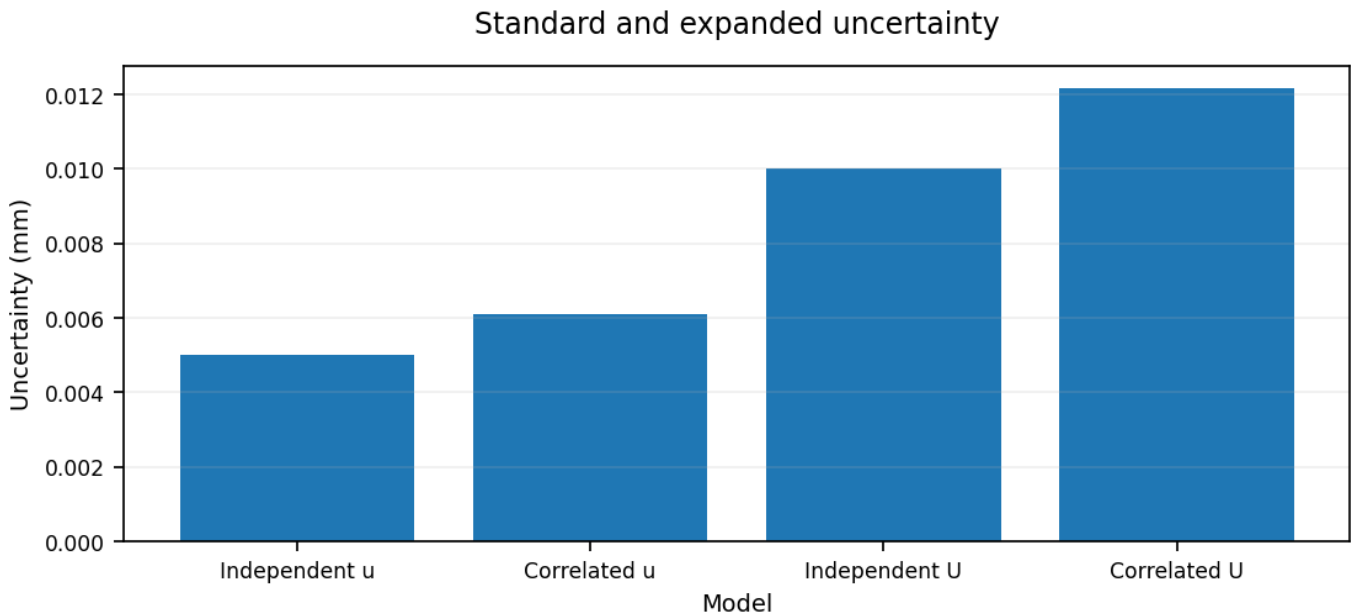


Figure Q01 — Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

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 ≥ L AND y+U ≤ 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 ± 0.004 → [50.020, 50.028] mm: PASS.

2. 50.028 ± 0.004 → [50.024, 50.032] mm: HOLD, interval overlaps the upper limit.

3. 50.036 ± 0.004 → [50.032, 50.040] mm: FAIL, interval entirely above the limit.

4. 50.026 ± 0.004 → [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

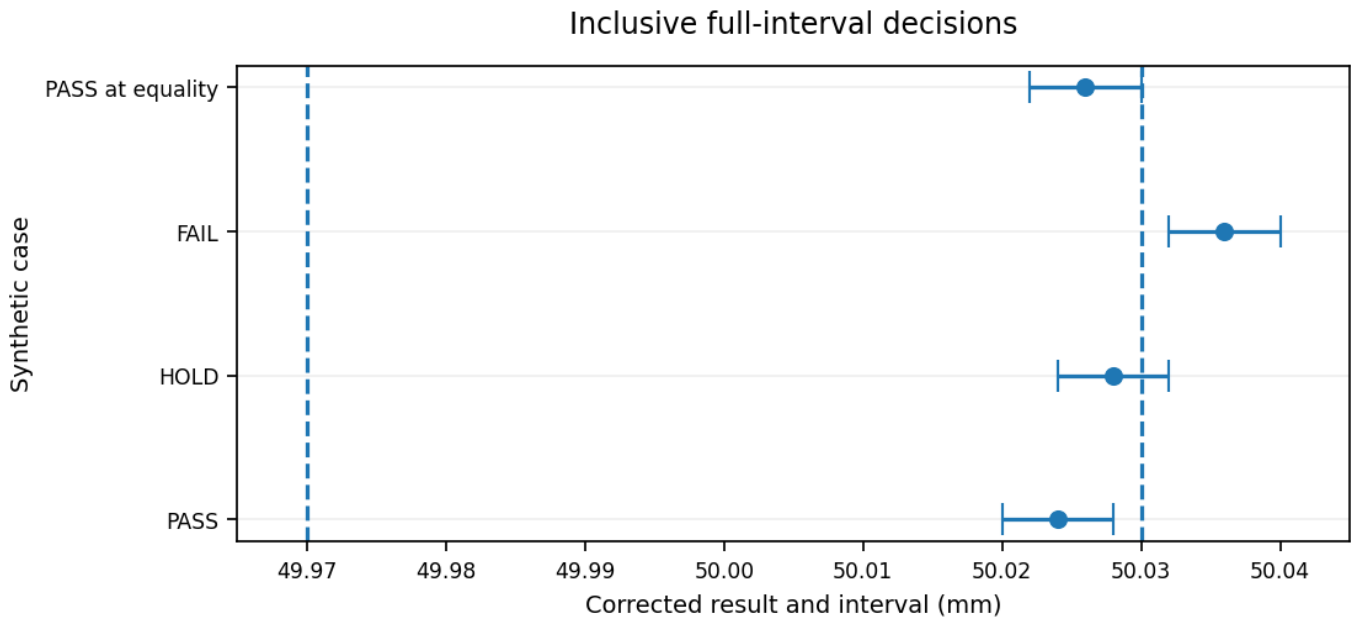


Figure Q02 — Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

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 ∧ P ∧ E ∧ F ∧ C ∧ I ∧ 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 = true false false … = 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

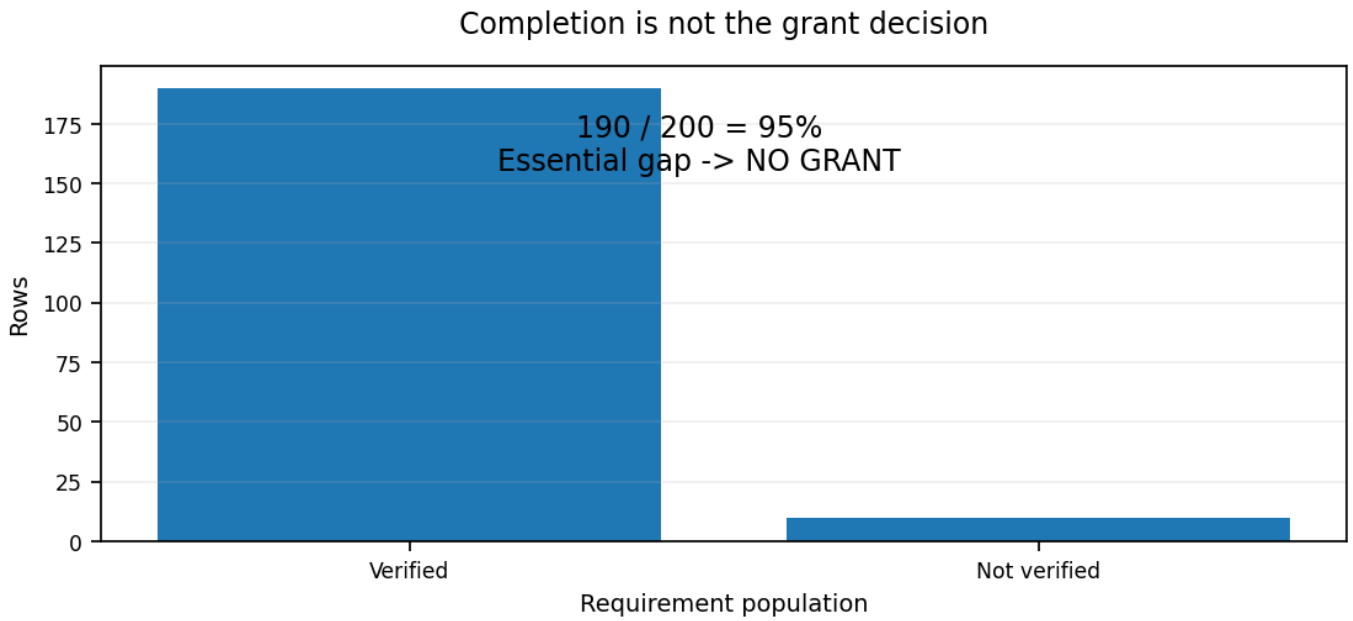


Figure Q03 — Synthetic visualisation. The axes and stated scenario define the quantity; no graph is an accreditation score, approved operating envelope or evidence of a real mission.

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.

7 Missing, invalid and prohibited input cases

Challenge	Expected handling	Evidence retained
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-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-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.

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.

F1 Retained record fields

Existing field identifiers and meanings are retained for continuity with the earlier PDF forms and register payloads. The larger response areas below are blank. Enter authentic information, link original evidence and use controlled continuations when the visible area is insufficient. Do not use the edition date as an actual case, observation or decision date.

Retained fields 1 onward

Record ID

Unique persistent identifier; do not reuse a withdrawn or superseded identifier for a different record. Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

Template / schema version

Identify this form version and any controlled continuation or equivalent record mapping. Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

Case and evaluated object ID

Connect to the actual application, asset, person, programme, method or statement. Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

Legal entity and actual performer

Record the real organisation and person performing each task, site, technical capability, current authority, requirement flow-down, access to original evidence and retained acceptance duties. Coordination is not direct technical performance.

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. Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

Site / station / delivery mode

Record physical, remote, mobile and partner-delivery boundaries that affect this record. Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

Configuration / method / statement version

Record the precise as-designed, built, tested, loaded, delivered or operated state relevant to the decision. Link versioned hardware, software, parameters, material history and interfaces; list differences and retained/new evidence explicitly.

Creation date and time basis

Use the actual creation date; state time zone when a clock or sequence depends on time. Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

Retained fields 10 onward

Relevant event / awareness / decision dates

Keep distinct dates separate. Use a linked chronology where more than one event exists. Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

Accountable author and role

Identify who recorded the information and within which task authority. Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

Reviewer / approver and authority

Identify the responsible review or approval function; blank does not mean approved. Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

Evidence references and versions

Link accessible original evidence, including adverse, missing or superseded items. Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

Record status and purpose

Record exact affected scope, current and prior states, original decision/expiry and actual surveillance completions, changes, action owners and notices. Restoration does not validate a suspended interval or extend expiry without the required renewal.

Access / confidentiality class

Identify authorised source location, custodian, access class, rights, necessary personal/protected information, retention and retrieval method. Provide sufficient lawful independent review; unavailable essential evidence remains HOLD.

Retention basis / custody / hold

Name the controlling retention rule, custodian and any preservation hold. Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

Correction / supersession history

Retain the measurement function, raw and corrected values, units, uncertainty sources, sensitivity and dependence, coverage interpretation and unrounded computation. Independently check the applicable model and boundary predicate; invalid inputs or overlap remain HOLD where required.

Retained fields 18 onward

20.01 Process qualification versus product outcome

Select the precise outcome class and evaluated object. State intended reliance and exclusions. Keep organisational certification, technical qualification, capability recognition, provider accreditation and statement verification/validation distinct.

20.02 Site, material, geometry, machine and tooling

Enter actual content and source/approval references. Record a justified limitation or missing information explicitly. Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

20.03 Software/recipe and approved essential-variable window

Record each child requirement and its prospective numerical limit with unit/inclusivity or observable attribute. State condition, technical derivation, valid verification method, uncertainty and acceptance predicate. Do not relax a criterion after seeing results.

20.04 Input provenance, mixing, reuse and out-time

Preserve item/lot/serial, origin, condition, storage and use exposure, life limits, repair and replacement links. Reconcile split/merge or consumed quantities. A passed functional test does not reset missing history or prove an unobserved property.

20.05 Qualification matrix and representative extremes

Identify every required characteristic, qualified route and essential variable, actual representative article, material genealogy, observations and accepted evidence. Separate process stability, capability and individual product acceptance; no qualified machine approves every output.

20.06 Actual trials, failed runs and observed conditions

Identify contemporaneous raw records, actual performer, object and configuration, conditions, timestamps, transformations and available originals. Distinguish observation, model inference, operator statement and synthetic material; preserve failed and invalid attempts.

20.07 Hidden-property verification and inspection capability

Identify every required characteristic, qualified route and essential variable, actual representative article, material genealogy, observations and accepted evidence. Separate process stability, capability and individual product acceptance; no qualified machine approves every output.

Retained fields 25 onward

20.08 First-article characteristic accountability

Identify every required characteristic, qualified route and essential variable, actual representative article, material genealogy, observations and accepted evidence. Separate process stability, capability and individual product acceptance; no qualified machine approves every output.

20.09 Actual production resources and measurement suitability

Identify every required characteristic, qualified route and essential variable, actual representative article, material genealogy, observations and accepted evidence. Separate process stability, capability and individual product acceptance; no qualified machine approves every output.

20.10 Stability/capability or justified low-volume strategy

Identify every required characteristic, qualified route and essential variable, actual representative article, material genealogy, observations and accepted evidence. Separate process stability, capability and individual product acceptance; no qualified machine approves every output.

20.11 Unit/lot acceptance and independent result boundary

Enter actual content and source/approval references. Record a justified limitation or missing information explicitly. Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

20.12 Excursion, last valid state and affected population

Define the full population and relevant strata, actual selected items and selection method, sample size, exclusions and inference limits. Include changed, difficult and adverse cases. Judgmental samples do not inherit an unsupported statistical confidence claim.

20.13 Change, transfer and retained/new evidence

Enter actual content and source/approval references. Record a justified limitation or missing information explicitly. Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

20.14 Requalification results and actual receiving acceptance

Name sending and receiving parties, exact input/output and configuration, compatible technical conditions, acceptance criteria, evidence and unresolved duties. Record genuine receiving acknowledgement. A sent file, completed invoice or shared premise is not accepted technical handover.

20.15 Release restrictions and continuing monitoring

Record exact affected scope, current and prior states, original decision/expiry and actual surveillance completions, changes, action owners and notices. Restoration does not validate a suspended interval or extend expiry without the required renewal.

Retained fields 33 onward

Required information completeness and remaining gaps

Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

Cross-record scope / configuration / chronology checks

Record the precise as-designed, built, tested, loaded, delivered or operated state relevant to the decision. Link versioned hardware, software, parameters, material history and interfaces; list differences and retained/new evidence explicitly.

Independent review and conflict-clearance reference

Disclose relevant present and prior roles, ownership, finance, consultancy, employment and personal relationships. Apply the actual case-exclusion rules and obtain disinterested clearance or recusal; a signed declaration alone is not effective control.

Actual approval instrument / authenticated workflow event

Record unique equipment and configuration, range, resolution/bandwidth, calibration/verification source and validity at the actual time of use. Evaluate fitness for the intended method. A power-on check or calendar due date alone does not demonstrate measuring capability.

Decision or handover scope, restrictions and recipient

Name sending and receiving parties, exact input/output and configuration, compatible technical conditions, acceptance criteria, evidence and unresolved duties. Record genuine receiving acknowledgement. A sent file, completed invoice or shared premise is not accepted technical handover.

Correction description, original version and reason

Retain the measurement function, raw and corrected values, units, uncertainty sources, sensitivity and dependence, coverage interpretation and unrounded computation. Independently check the applicable model and boundary predicate; invalid inputs or overlap remain HOLD where required.

Author / reviewer / actual dates / custody

Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

Retained fields 40 onward

Parent record / continuation ID and page sequence

Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

Field or requirement continued; exact object and version

Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

Continued actual narrative, repeated records or source index

Identify the actual source records and responsible reviewer for each element named in this field. Keep unknowns, rejected evidence and incomplete receiving actions visible; a completed narrative is not proof of underlying work.

Original evidence / protected attachment references

Identify contemporaneous raw records, actual performer, object and configuration, conditions, timestamps, transformations and available originals. Distinguish observation, model inference, operator statement and synthetic material; preserve failed and invalid attempts.

Author, reviewer, actual date and correction history

Retain the measurement function, raw and corrected values, units, uncertainty sources, sensitivity and dependence, coverage interpretation and unrounded computation. Independently check the applicable model and boundary predicate; invalid inputs or overlap remain HOLD where required.

F2 All-domain assurance extensions

Complete each triggered extension, or link an independently approved non-applicability record. These fields are added to support Clauses 62–80 and Annexes AK–AR. A field may reference an equivalent controlled dossier; sensitive technical information need not be copied into every form.

Mission/domain applicability

Annex AK domain ID(s), activity and retained duty; record absent triggers with independent exclusion approval. Unknown applicability is HOLD.

Phase and operating-mode matrix

Identify normal, degraded, dormant, transport, test, service, emergency and terminal states relevant to the exact object. Link each required cell to evidence.

Complete atomic requirement population

Source clause and child IDs; all separately testable conditions; accountable owner; source version and exact intended conclusion.

Prospective technical parameters

Annex AO groups; actual values or defined attributes; units, bounds and inclusivity; conditions; derivation and genuine approval before evaluation.

Evidence validity and purpose

Original source IDs, configuration, method, performer authority at event time, accessible originals, uncertainty and limits. Received does not mean accepted.

Accepted predicate and uncertainty rule

Approved numerical or attribute predicate; unrounded inputs; uncertainty/dependence; validity domain; prospective alternative-rule authorisation where used.

Current child states and unresolved conditions

PASS / FAIL / HOLD / independently approved N/A by child. Blank is unrecorded. Identify every open finding, missing parameter and unresolved limitation.

Configuration and environment difference matrix

As-designed/built/tested/delivered/operated states; source or software changes; retained and invalidated evidence; required new demonstration.

Resource and shared-dependency review

Concurrent power/energy/data/time/consumables or staff duties, common causes, reserve ownership and support availability; do not count one reserve twice.

Command, remote evidence or service completion

Actual target, actor, event and receipt times, authority, transmission/receipt/execution/completion distinction, observability and unknown physical state.

Adverse-case and boundary-test record

Relevant AP case IDs plus local challenges; preconditions, expected and observed response, raw evidence, defect, correction, retest and genuine acceptance.

Independent calculation and decision replay

Frozen inputs and versions, independent recalculation, boundary result, differences found, disposition and reviewer's actual authority.

Claim and state projection

Exact object, outcome class, family/module/domain, permitted wording, restrictions, actual dates and public/protected information boundary.

Receiving acceptance and remaining duties

Actual recipient, usable evidence access, accepted custody, incomplete tasks, terminal-state obligations, notifications and continuing owner.

Original-versus-current source distinction

Identify retained original records, transparent corrections, changed assumptions and effect on earlier outputs; do not backdate later good evidence.

Authentic approval instrument

Reference actual signed or authenticated approval and scoped authority. A typed name, PDF timestamp or blank form is not approval.

F3 Process-specific extension entries

PR-004 X1 — 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: Unknown applicability is HOLD; absent equipment or budget never establishes N/A.

PR-004 X2 — 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: Every material difference has accepted new evidence or an explicitly limited conclusion.

PR-004 X3 — Maintain separate outcome tuples

A combined case may share provenance and visits but keeps separate methods, criteria, sites, instances, reviewers and independent decisions. Completion: No shared dossier creates a blanket mission, tenant, supplier or fleet approval.

PR-004 X4 — 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: Only independently justified exclusions receive N/A; an unexamined consequential interface remains HOLD.

PR-009 X1 — 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: No unrelated technique is added because it shares a performer or report template.

PR-009 X2 — Observe the complete task

Follow identification, preparation, setup, essential execution, raw data, interpretation, reporting and independent release within safe authorised arrangements. Completion: A selected favourable demonstration cannot replace missing essential preparation or interpretation evidence.

PR-009 X3 — Challenge hidden and remote properties

State what is directly measured, validly inferred or unknown and test relevant difficult boundaries and false-negative mechanisms. Completion: Process telemetry or nominal equipment output cannot replace an unobservable required product property.

PR-009 X4 — 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: A fresh favourable run does not validate earlier affected output or automatically extend method scope.

PR-010 X1 — Freeze the quantitative contract

Define the measurand, model, corrected result, units, bounds, inclusivity, actual configuration, uncertainty interpretation and prospective predicate. Completion: Invalid or missing essential inputs remain HOLD; the assessor does not supply an undocumented limit.

PR-010 X2 — Propagate actual uncertainty and dependence

Retain source distributions, sensitivity coefficients, covariance and model discrepancy. Distinguish standard uncertainty, expanded coverage and unbounded knowledge gaps. Completion: A copied instrument capability or assumed independence cannot replace a use-specific uncertainty budget.

PR-010 X3 — 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: Boundary overlap remains HOLD; invalid evidence is not converted into a proven product defect.

PR-010 X4 — 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: Unresolved replay disagreement blocks the dependent acceptance even where the nominal arithmetic appears plausible.

PR-013 X1 — 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 is not proof of product failure, but a demonstrated control failure still needs an appropriate finding.

PR-013 X2 — 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: Protection and existing notification clocks run without waiting for root-cause wording or a replacement report.

PR-013 X3 — Test occurrence and escape causes

Use competing explanations, actual history, control design, workload and interface evidence. Define effectiveness criteria and exposure before retest. Completion: Issuing training, changing an owner or recalibrating equipment alone does not close a systemic cause.

PR-013 X4 — Close with prospective evidence

Re-execute the original failure mechanism and necessary regression, reconcile prior outputs and recipients, and independently approve closure. Completion: No grant, renewal or extension with an open in-scope finding; later correction does not backdate earlier validity.

F4 Controlled continuation and receiving record

Continuation identity and parent link

Unique continuation ID, parent form and field names; actual author, time, version and access class.

Complete visible narrative / data dictionary

Include all text needed to interpret the result. Attach clearly identified tables or source data when a visible field is too small.

Independent response and limitations

Record reviewer, actual findings, disposition, scope limits and open conditions; maintain protected dissent.

Receiving acknowledgement

Actual recipient, accepted responsibilities, evidence access check, approval reference and time.

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.

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.

9.4 — 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.

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.

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.

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.

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 effective 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.

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.

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.

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.

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.

62.7 — 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.

63.3 — 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.

63.6 — 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.

64.2 — 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.

64.5 — 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.

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.

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.

77.5 — 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.

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.

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.

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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