

MO-004 — DIDO Baseline Comparison and Validation

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Original Requirement

The DIDO-TE source material states:

Creating baseline results using validated nodes and comparing them against tests with modified nodes to identify discrepancies or improvements.

The source material further states:

This approach ensures that any changes or updates to the system are validated against a known benchmark, enhancing reliability and trust in the distributed system.

□ Identify the authoritative source requirements, original requirement identifiers, and controlling citations for the DIDO Baseline comparison and Validation objective.

Assessment of Original Requirement

The Original Requirement preserves mission-level intent for establishing reference results, comparing subsequent [Test Results](#) with those reference results, identifying differences, and using the comparison to support [Validation](#).

The Original Requirement does not express independently interpretable or independently verifiable normative statements.

The following Specification Discipline and Authoring findings apply:

- **Creating** does not identify an explicit responsible [Actor](#)
- **Creating** does not use an explicit normative modal
- **Baseline results** does not identify the Test Results selected for inclusion in the [Baseline](#)
- **Validated nodes** does not identify the applicable [Validation Criteria](#)
- **Validated nodes** does not identify the [Validation Decision](#) establishing the validation status of each [Node](#)
- **Comparing them** uses an ambiguous pronoun
- **Tests with modified nodes** does not identify the selected [Test Runs](#), Test Results, Nodes, Node modifications, or controlling [Configurations](#)
- **Identify discrepancies or improvements** does not identify the characteristics subject to comparison
- **Discrepancies** does not identify the difference, measurement, tolerance, or comparison method

- **Improvements** does not identify the direction, magnitude, or criteria constituting improvement
- **Any changes or updates** is open-ended and does not identify the changes subject to Validation
- **The system** does not identify the applicable [Distributed System](#)
- **Validated against a known benchmark** does not identify the controlling Baseline, Baseline Version, Validation Criteria, or Acceptance Criteria
- **Enhancing reliability and trust** describes an intended benefit rather than an observable DIDO-TE behavior
- **Trust** is subjective and does not establish an objectively verifiable outcome
- The source does not distinguish the comparison result from the resulting Validation Decision
- The source does not identify the required [Evidence](#), [Provenance](#), or [Traceability](#)

The source combines at least two independently verifiable outcomes:

- Comparison of selected Test Results with the controlling DIDO Baseline Test Results
- Production of a Validation Decision using the comparison result and applicable Validation Criteria

These outcomes require separate verification.

DIDO-TE can compare selected Test Results with DIDO Baseline Test Results without making a Validation Decision.

A Validation Decision requires more than identifying a difference. It requires applicable Validation Criteria and an authorized basis for determining whether the observed difference is acceptable, unacceptable, beneficial, detrimental, or inconclusive.

The comparison can identify:

- Equality
- Difference
- Direction of difference
- Magnitude of difference
- Difference within an applicable tolerance
- Difference outside an applicable tolerance
- Insufficient information to complete the comparison

The Validation Decision can determine:

- The applicable Validation Criteria are satisfied
- The applicable Validation Criteria are not satisfied
- Available information is insufficient to make a conclusive decision

The Original Requirement therefore requires:

- Identification of [DIDO-TE](#) as the responsible Actor
- Replacement of nonnormative language with explicit normative obligations
- Identification of the controlling DIDO Baseline
- Identification of the controlling DIDO Baseline Version
- Identification of the DIDO Baseline Test Results
- Identification of the selected comparison Test Results
- Identification of the characteristics subject to comparison

- Identification of the comparison method
- Identification of the applicable measurement precision and tolerances
- Separation of Baseline comparison from the Validation Decision
- Identification of the applicable Validation Criteria
- Identification of the authorized Actor or process responsible for the Validation Decision
- Identification of the Evidence required to support the comparison and Validation Decision
- Confirmation that the derived requirements collectively preserve the complete intent of MO-004

The decomposition preserves MO-004 as the stable parent requirement identifier. Each proposed replacement requirement receives a lettered identifier and a separate leaf requirement page.

Proposed Statements

The Original Requirement is decomposed into the following proposed replacement requirements:

- [MO-004a — DIDO Baseline Comparison](#)
- [MO-004b — Validation Decision Based on DIDO Baseline Comparison](#)

Requirement Status

- ☐ Review and approve the decomposition of MO-004 into MO-004a and MO-004b.
- ☐ Determine whether MO-004a and MO-004b collectively supersede MO-004.
- ☐ If MO-004a and MO-004b are accepted as the complete replacement for MO-004, mark MO-004 as superseded and preserve this page as the parent Traceability record.

Issues

The following unresolved issues affect the decomposition of MO-004:

- ☐ Identify the authoritative source requirements, original requirement identifiers, and controlling citations for the DIDO Baseline comparison and Validation objective.
- ☐ Determine whether DIDO Baseline requires a separate shared Terms and Definitions entry or identifies a DIDO-specific application of Baseline.
- ☐ Determine whether Baseline Test Result requires a separate shared Terms and Definitions entry.
- ☐ Define the criteria for selecting Test Results for inclusion in a DIDO Baseline.
- ☐ Define the Validation Criteria and Validation Decision establishing that a Node is a validated Node.
- ☐ Define the changes to a Node that cause the Node to be classified as a modified Node.

- ☐ Define the relationship among the controlling DIDO Baseline, the selected Nodes, the modified Nodes, the selected Test Definition, the selected Test Environment, and the selected Test Runs.
 - ☐ Define the Test Result characteristics subject to comparison.
 - ☐ Define the comparison methods, measurement conditions, precision, exclusions, and tolerances.
 - ☐ Define how DIDO-TE classifies equality, difference, improvement, degradation, and inconclusive comparison results.
 - ☐ Define the treatment of missing, invalid, incomplete, incompatible, or unavailable DIDO Baseline Test Results.
 - ☐ Define the treatment of Incomplete Test Runs used to produce DIDO Baseline Test Results or comparison Test Results.
 - ☐ Define the effect of each applicable Test Run Termination Reason on DIDO Baseline comparison and Validation.
 - ☐ Define the Evidence required to support each comparison result and Validation Decision.
 - ☐ Determine whether MO-004a and MO-004b provide complete coverage of the approved intent of MO-004.
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Notes for Editors

This page should retain the stable parent requirement identifier M0 - 004.

This page is a non-leaf requirement page and retains a trailing : start in its namespace.

The child requirements are leaf requirement pages and omit a trailing : start from their namespaces.

This page preserves:

- The Original Requirement
- The assessment of the Original Requirement
- The reason for decomposition
- Traceability to the proposed replacement requirements
- The unresolved cross-cutting issues affecting the decomposition
- The supersession decision

MO-004a addresses comparison of selected [Test Results](#) with the controlling DIDO [Baseline](#) Test Results.

MO-004b addresses the [Validation Decision](#) made using the comparison result and the applicable [Validation Criteria](#).

The child requirements must not combine Test Result comparison and the resulting Validation

Decision into a single normative Statement.

The supporting requirements should define:

- DIDO Baseline establishment
- DIDO Baseline approval
- DIDO Baseline Versioning
- DIDO Baseline Test Result selection
- Comparison Test Result selection
- Node selection
- Node modification
- Test Definition selection
- Test Environment selection
- Test Run selection
- Test Result characteristics subject to comparison
- Comparison methods
- Measurement conditions
- Measurement precision
- Permitted exclusions
- Permitted tolerances
- Equality
- Difference
- Improvement
- Degradation
- Inconclusive comparison
- Validation Criteria
- Validation Decisions
- Incomplete Test Runs
- Test Run Termination Reasons
- Evidence
- Provenance
- Traceability

MO-004 should not be marked as superseded until the requirement owner:

- Confirms the authoritative Original Requirement and its controlling citations
- Approves the interpretation of DIDO Baseline comparison
- Approves the relationship between the comparison result and the Validation Decision
- Approves MO-004a
- Approves MO-004b
- Confirms that the child requirements collectively preserve the complete approved intent of MO-004
- Confirms that no additional child requirements are required

After supersession, this page should remain as the parent Traceability record and should continue to preserve the Original Requirement and its assessment.

Material changes to the decomposition should update the child requirements, Requirement Status, Issues, source records, and Traceability records.

Do not rename this page after an external citation unless a redirect or move plan is in place.

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