

ENV-004I — Validate Environmental Determinism

[Go to ENV-004 — Provide Deterministic Test Environment](#)

Statement

The [DIDO-TE](#) SHALL validate environmental determinism before each [Test Execution](#).

Derived From

- [ENV-004 — Provide Deterministic Test Environment](#)
- [ENV-004j — Detect Environmental Variation](#)
- [ENV-004k — Record Environmental Variation](#)
- [\[DTE5\] DIDO-TE Requirements Register](#), source requirement identifier and obligation to be assigned
- [\[DTE6\] Structured Information Processing Reference Architecture \(SIP-RA\)](#)
- [\[DTE7\] Federated Data Interpretation Systems Reference Architecture \(FDIS-RA\)](#)

Rationale

Environmental determinism exists when the [Test Environment](#) satisfies the controlled conditions specified by the applicable [Test Definition](#).

Validation determines whether the applicable Baselines, Configurations, Test Inputs, time sources, random value sources, execution-ordering controls, resource allocations, external dependencies, and communication conditions satisfy their specified criteria.

Pre-execution validation prevents an invalid environmental condition from undermining the interpretation, [Reproducibility](#), or [Comparability](#) of the resulting [Test Results](#).

Applies To

- [Test Environment](#)
- [Test Definition](#)
- [Test Execution](#)
- [Test Object](#)
- [Node](#)
- [Test Input](#)
- [Test Resource](#)
- [Baseline](#)
- [Configuration](#)

- [Constraint](#)
- [Evidence](#)

Verification

Verification confirms that:

- The applicable Test Definition identifies each environmental condition subject to validation.
- Each validation criterion has a specified value, state, range, sequence, or tolerance.
- The DIDO-TE evaluates each validation criterion before Test Execution.
- The DIDO-TE identifies each criterion as satisfied or unsatisfied.
- The DIDO-TE produces an environmental-determinism validation outcome.
- A valid outcome requires satisfaction of every mandatory environmental criterion.
- The validation outcome identifies each unsatisfied criterion.
- The validation outcome identifies each detected environmental variation.
- The DIDO-TE records the validation outcome as [Evidence](#).
- The DIDO-TE maintains [Traceability](#) among the validation outcome, the Test Definition, the environmental conditions, and the proposed Test Execution.
- An omitted, incomplete, incorrect, unsupported, or untraceable validation constitutes nonconformance with this requirement.

Verification includes:

- Inspection of the environmental criteria specified by the Test Definition
- Inspection of environmental-determinism validation procedures
- Observation of validation before Test Execution
- Comparison of specified and observed environmental conditions
- Testing with an environment that satisfies every mandatory criterion
- Testing with an unsatisfied Baseline or Configuration criterion
- Testing with an unsatisfied Test Input, time-source, or random-value criterion
- Testing with an unsatisfied ordering, resource, dependency, or communication criterion
- Inspection of validation outcomes, Evidence, and Traceability records
- Confirmation that each unsatisfied mandatory criterion produces an invalid outcome

Referenced By

- [ENV-004m — Prevent Execution Under Uncontrolled Conditions](#)

Related Architecture Sections

- Add links to the architecture sections governing environmental validation, deterministic execution, Test Definition, Test Execution, Evidence, and Traceability.

Delivery Phase

Assign the applicable delivery phase.

Requirement Status

Draft

Statement Reference

Use the following syntax to reference this requirement's Statement section from another DokuWiki page:

```
{{section>dido:03-dido-te:99-annexes:annex-c-requirements:02-test-environment-requirements:env-004-provide-deterministic-test-environment:env-004l-validate-environmental-determinism#Statement&noheader&nofooter&noeditbtn}}
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