

ENV-004f — Control Execution Ordering

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

Statement

The [DIDO-TE](#) SHALL control execution ordering in accordance with the applicable [Test Definition](#).

Derived From

- [ENV-004 — Provide Deterministic Test Environment](#)
- [\[DTE5\] 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

Execution ordering determines the sequence in which test activities, events, operations, messages, state transitions, and interactions occur.

An unintended difference in ordering can change system behaviour and the resulting [Test Results](#). Concurrent and distributed systems also contain ordering that the Test Environment cannot control without altering the behaviour under test.

The applicable Test Definition distinguishes required ordering from permitted concurrency and variation. The DIDO-TE enforces required ordering and observes actual ordering where variation remains permissible.

Control and observation of execution ordering permit investigators to identify ordering differences and assess their effect on Test Results.

Applies To

- [Test Environment](#)
- [Test Definition](#)
- [Test Execution](#)
- [Test Procedure](#)
- [Test Object](#)
- [Node](#)
- [Test Resource](#)
- [Constraint](#)
- [Evidence](#)

Verification

Verification confirms that:

- The applicable Test Definition identifies each required execution-ordering constraint.
- Each ordering constraint identifies the affected activities, events, operations, messages, state transitions, or interactions.
- Each ordering constraint specifies the required predecessor, successor, dependency, synchronisation point, or permitted concurrency.
- The DIDO-TE enforces each required ordering constraint.
- The DIDO-TE observes actual execution ordering where the Test Definition permits variation.
- The DIDO-TE detects an execution-ordering violation.
- The DIDO-TE records actual ordering, synchronisation events, permitted variations, and detected violations as [Evidence](#).
- The recorded information provides sufficient precision to reconstruct the relevant execution order.
- The DIDO-TE maintains [Traceability](#) among each ordering constraint, the Test Procedure, the Test Execution, the Evidence, and the Test Results.
- An uncontrolled, unobserved, incorrectly ordered, or untraceable execution sequence constitutes nonconformance with this requirement.

Verification includes:

- Inspection of the execution-ordering constraints in the Test Definition
- Inspection of predecessor, successor, dependency, synchronisation, and concurrency criteria
- Observation of a Test Execution that follows the required ordering
- Observation of permitted concurrent or variable ordering
- A negative assessment that violates a required ordering constraint
- Confirmation that the DIDO-TE detects and records the violation
- Reconstruction of the relevant execution order from recorded Evidence
- Inspection of Traceability records
- Confirmation that the negative assessment produces a nonconformance result

Referenced By

Plugin Backlinks: Nothing was found.

Related Architecture Sections

- Add links to the architecture sections governing Test Procedure sequencing, concurrency, synchronisation, event observation, 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-004f-control-execution-ordering#Statement&noheader&nofooter&noeditbtn}}
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