

ENV-004g — Control Resource Allocation

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

Statement

The [DIDO-TE](#) SHALL control resource allocation 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

Resource allocation affects the behaviour and performance of a [Test Object](#), participating [Nodes](#), and supporting [Test Resources](#).

Relevant resources include processors, memory, storage, network capacity, accelerators, devices, virtual machines, containers, process limits, and service quotas.

Differences in resource quantity, capacity, topology, placement, availability, or contention can introduce environmental variation into a [Test Execution](#).

The applicable Test Definition establishes the required allocations, limits, tolerances, and permitted contention. The DIDO-TE applies these controls and records actual resource conditions during Test Execution.

Applies To

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

Verification

Verification confirms that:

- The applicable Test Definition identifies each resource subject to allocation control.
- Each resource has a unique identity and specified provider.
- Each resource allocation specifies its required quantity, capacity, topology, placement, availability, limit, or tolerance.
- The DIDO-TE applies each required resource allocation before Test Execution.
- The DIDO-TE maintains each required resource allocation during the applicable period.
- The DIDO-TE measures actual resource allocation and utilisation during Test Execution.
- The DIDO-TE detects resource exhaustion, unauthorised reallocation, unavailable resources, and conditions outside the specified limits.
- The DIDO-TE records resource identities, allocations, utilisation, contention, changes, and detected deviations as [Evidence](#).
- The DIDO-TE maintains [Traceability](#) among each resource allocation, the affected Test Environment element, the Test Definition, the Test Execution, the Evidence, and the [Test Results](#).
- A missing, incorrect, unavailable, exhausted, uncontrolled, or untraceable resource allocation constitutes nonconformance with this requirement.

Verification includes:

- Inspection of the resource allocations specified by the Test Definition
- Inspection of resource identities, providers, quantities, capacities, topologies, placements, limits, and tolerances
- Comparison of required and applied resource allocations
- Observation of resource allocation and utilisation during Test Execution
- A negative assessment using insufficient or unavailable resources
- A negative assessment using an unauthorised resource reallocation
- A negative assessment that introduces resource contention outside the permitted tolerance
- Confirmation that the DIDO-TE detects and records each deviation
- Inspection of resource Evidence and Traceability records
- Confirmation that each negative assessment produces a nonconformance result

Referenced By

Plugin Backlinks: Nothing was found.

Related Architecture Sections

- Add links to the architecture sections governing resource allocation, capacity, placement, utilisation monitoring, Test Configuration, 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:

<code dokuwiki>

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