

NOD-005d — Observe Node Execution

[Go to NOD-005 — Execute a Node](#)

Statement

The [DIDO-TE](#) SHALL observe each [Node](#) throughout its participation in [Test Execution](#).

Derived From

- [NOD-005 — Execute a Node](#)
- [NOD-005a — Authorize Node Execution](#)
- [NOD-005b — Initiate Node Execution](#)
- [NOD-005c — Provide Node Inputs](#)
- [\[DTE5\] 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

Observation captures the behavior, state, interactions, outputs, resource use, timing, and operating conditions of a Node during Test Execution.

The applicable [Node Definition](#), [Node Implementation](#), [Node Configuration](#), and [Test Definition](#) identify the observable characteristics, observation points, collection mechanisms, sampling conditions, and expected behavior.

Observation distinguishes expected Node behavior from a deviation requiring execution control or treatment as a [Test Execution Exception](#). It also associates Node behavior with the applicable [Test Inputs](#), Node Bindings, Test Resources, and Test Results.

Incomplete, inaccurate, intrusive, incorrectly timed, or untraceable observation may conceal a material deviation or alter the behavior being evaluated.

Applies To

- [DIDO-TE](#)
- [Node](#)
- [Node Definition](#)
- [Node Implementation](#)
- [Node Configuration](#)
- [Node Binding](#)

- [Test Definition](#)
- [Test Input](#)
- [Test Resource](#)
- [Test Environment](#)
- [Test Execution](#)
- [Test Execution Exception](#)
- [Test Result](#)
- [Evidence](#)
- [Traceability](#)

Verification

Verification confirms that:

- The DIDO-TE uniquely identifies the Node being observed.
- The DIDO-TE identifies the applicable Test Execution and Test Definition.
- The Test Definition identifies the required observations, observation points, collection mechanisms, timing, frequency, duration, and applicable tolerances.
- The DIDO-TE verifies that each required observation mechanism is available before Node execution begins.
- The DIDO-TE observes the Node from execution initiation through execution completion or termination.
- The DIDO-TE observes the Node state, activity, interactions, outputs, resource use, timing, and applicable operating conditions.
- The DIDO-TE associates each observation with the applicable Node, Test Execution, Test Input, and time.
- The DIDO-TE uses a controlled and consistent time reference for observations.
- The DIDO-TE preserves the sequence of observations across applicable Nodes and Test Resources.
- The DIDO-TE distinguishes an observed value from an expected value or applicable tolerance.
- The DIDO-TE detects a missing, incomplete, delayed, duplicated, corrupted, altered, misattributed, or out-of-sequence observation.
- The DIDO-TE detects a Node state, behavior, interaction, output, or resource use that differs from the applicable criteria.
- The DIDO-TE identifies an observed condition that constitutes a Test Execution Exception.
- The DIDO-TE prevents observation mechanisms from altering Node behavior beyond specified tolerances.
- The DIDO-TE protects sensitive observations from unauthorized disclosure.
- The DIDO-TE preserves each material observation or an integrity-protected reference to it.
- The DIDO-TE records the observation identity, Node, Test Execution, observation point, mechanism, value, unit, time, sequence, expected value, tolerance, finding, and applicable exception.
- Repeated observation of equivalent Node behavior under equivalent conditions produces equivalent observations within specified tolerances.
- The DIDO-TE maintains Traceability among the Node Definition, Node Implementation, Node Configuration, Test Definition, Test Inputs, Node Bindings, Test Resources, observations, exceptions, Test Results, and resulting Evidence.
- A missing, incomplete, inaccurate, intrusive, altered, misattributed, ambiguously timed, or untraceable observation constitutes nonconformance with this requirement.

Verification includes:

- Inspection of required observations and observation mechanisms
- Observation of Node state, behavior, interactions, outputs, resource use, and timing
- Confirmation that observations use a controlled and consistent time reference
- Confirmation that observations identify the applicable Node, Test Execution, and Test Input
- A negative assessment involving a missing observation
- A negative assessment involving an altered or misattributed observation
- A negative assessment involving an observation outside an applicable tolerance
- Confirmation that a material deviation produces a detectable condition
- Confirmation that observation does not alter Node behavior beyond specified tolerances
- Inspection of observation records, exceptions, Test Results, Evidence, and Traceability

Referenced By

- [NOD-005e — Control Node Execution](#)
- [NOD-005f — Handle a Node Execution Exception](#)
- [NOD-005g — Complete Node Execution](#)
- [NOD-005h — Record Node Execution](#)
- [NOD-008c — Observe Node Activity](#)
- [NOD-008 — Observe a Node](#)

Related Architecture Sections

- Add links to the architecture sections governing Node observation, observation points, time synchronization, Test Execution Exceptions, Test Results, 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:03-node-requirements:nod-005-execute-a-node:nod-005d-observe-node-
```

execution#Statement&noheader&nofooter&noeditbtn}}

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Last update: 2026/08/17 14:20

