

NOD-001g — Define Node Observability Requirements

[Go to NOD-001 — Define a Node](#)

Statement

The [DIDO-TE](#) SHALL define the observations required to assess the behaviour and condition of each [Node](#) within the applicable [Test Environment](#).

Derived From

- [NOD-001 — Define a Node](#)
- [\[DTE5\] 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

The DIDO-TE requires observations of Node state, health, activity, interactions, resource use, outputs, exceptions, and timing to assess Node behaviour. Observation requirements identify what the DIDO-TE must observe, when observation occurs, how observations receive collection, and which contextual information accompanies them.

Defined observations provide an objective basis for determining whether the Node entered an expected state, performed an expected action, produced an expected result, exceeded a limit, or encountered an exception.

Explicit observability requirements also expose gaps in the available evidence. The DIDO-TE must not infer successful Node behaviour from the absence of an observation when the Node Definition requires the observation.

Applies To

- [Node](#)
- [Test Environment](#)
- [Test Definition](#)
- [Test Execution](#)
- [Test Result](#)
- [Evidence](#)

Verification

Verification confirms that:

- Each required Node observation has a unique identity.
- The Node Definition identifies the purpose of each required observation.
- The Node Definition identifies the Node condition, state, activity, interaction, resource, output, event, or exception subject to observation.
- The Node Definition identifies the source of each observation.
- The Node Definition identifies the method used to collect each observation.
- The Node Definition identifies whether observation uses an interface, event, status value, metric, log record, trace, probe, monitor, output, or external measurement.
- The Node Definition identifies the lifecycle states and Test Execution periods during which each observation remains applicable.
- The Node Definition identifies the sampling rate, reporting frequency, triggering condition, duration, precision, accuracy, and resolution applicable to each observation.
- The Node Definition identifies the timestamp, Node identity, execution identity, interface identity, configuration identity, and other context required to interpret each observation.
- The Node Definition identifies the time source and synchronisation requirements applicable to temporally correlated observations.
- The Node Definition identifies the permitted latency between the observed event and the availability of its observation.
- The Node Definition identifies the format, unit, range, encoding, schema, and quality requirements applicable to each observed value.
- The Node Definition identifies the expected values, states, thresholds, tolerances, sequences, and correlations applicable to each observation.
- The Node Definition identifies the observations required to assess Node readiness, health, lifecycle state, execution progress, interface activity, resource use, output production, exceptions, and completion.
- The Node Definition identifies the observations required to distinguish Node behaviour from Test Environment, Dependency, Test Resource, or operator effects.
- The Node Definition identifies the observations material to determining a Test Outcome or interpreting a Test Result.
- The Node Definition identifies access-control, confidentiality, integrity, retention, and handling requirements applicable to collected observations.
- The Node Definition identifies observations containing sensitive, regulated, proprietary, or security-relevant information.
- The Node Definition identifies the expected behaviour when a mandatory observation becomes unavailable, incomplete, delayed, corrupted, or ambiguous.
- The DIDO-TE detects the loss, interruption, corruption, or degradation of a mandatory observation.
- The DIDO-TE records the actual observation configuration used during each applicable Test Execution.
- The DIDO-TE preserves each material observation with its identity, time, source, context, and integrity information.
- The DIDO-TE does not treat the absence of a mandatory observation as evidence of successful Node behaviour.
- The DIDO-TE maintains [Traceability](#) among each observation requirement, observation source, Node Definition, Test Definition, Test Execution, observed value, Test Result, Test Outcome, and resulting Evidence.

- An undefined, unavailable, incomplete, untimely, corrupted, ambiguous, or untraceable mandatory observation constitutes nonconformance with this requirement.

Verification includes:

- Inspection of each Node observation requirement
- Inspection of observation sources, collection methods, timing, formats, units, tolerances, and contextual information
- Confirmation that required lifecycle, health, execution, interface, resource, output, and exception observations are identified
- Confirmation that time sources and synchronisation requirements are identified
- Collection of each mandatory observation during an applicable Test Execution
- Comparison of collected observations with their specified precision, frequency, timing, and completeness requirements
- Confirmation that observations contain sufficient context for interpretation
- A negative assessment involving an unavailable mandatory observation
- A negative assessment involving a delayed, incomplete, or corrupted observation
- A negative assessment involving loss of temporal correlation
- Confirmation that the absence of a mandatory observation does not produce a successful assessment
- Inspection of observation configurations, collected records, Evidence, and Traceability

Referenced By

Plugin Backlinks: Nothing was found.

Related Architecture Sections

- Add links to the architecture sections governing Node observation, monitoring, logging, tracing, metrics, 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-001-define-a-node:nod-001g-define-node-observability-requirements#Statement&noheader&nofooter&noeditbtn}}

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