

NOD-008b — Observe Node State

[Go to NOD-008 — Observe a Node](#)

Statement

The [DIDO-TE](#) SHALL observe each state of a [Node](#) identified by the governing [Test Definition](#).

Derived From

- [NOD-008 — Observe a Node](#)
- [NOD-008a — Establish Node Observation](#)
- [\[DTE5\] 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 of Node state establishes the actual lifecycle state, readiness, availability, health, configuration status, isolation status, and operating condition of a Node.

The governing Test Definition identifies the Node states and state-related conditions subject to observation. It also identifies the expected values, permitted transitions, timing, and operating constraints used to evaluate those observations.

The DIDO-TE preserves the distinction between a commanded state, an expected state, a state reported by the Node, and an observed state. A state reported by the Node does not establish the actual state when other observations contradict that report.

State observation continues across the transitions identified by the governing Test Definition. This allows the DIDO-TE to determine whether a requested transition occurred, whether the Node reached the expected resulting state, and whether the Node maintained that state for the required period.

An unknown, stale, inconsistent, or incorrectly attributed Node state may permit an unsuitable Node to participate in Test Execution or may cause observations and Test Results to receive an incorrect interpretation.

Applies To

- [DIDO-TE](#)
- [Node](#)
- [Node Definition](#)

- [Node Implementation](#)
- [Node Configuration](#)
- [Node Binding](#)
- [Test Definition](#)
- [Test Environment](#)
- [Test Execution](#)
- [Test Execution Exception](#)
- [Test Result](#)
- [Evidence](#)
- [Traceability](#)

Verification

Verification confirms that:

1. The governing Test Definition identifies each Node state subject to observation.
2. The governing Test Definition identifies the expected values, permitted transitions, timing, and operating constraints governing each observed state.
3. The DIDO-TE observes each Node state identified by the governing Test Definition.
4. The DIDO-TE distinguishes commanded, expected, reported, and observed Node states.
5. The DIDO-TE identifies the source of each state observation.
6. The DIDO-TE associates each state observation with the identity of the Node.
7. The DIDO-TE associates each state observation with a controlled time and sequence.
8. The DIDO-TE observes each state transition identified by the governing Test Definition.
9. The DIDO-TE identifies the event or control action that initiates an observed state transition.
10. The DIDO-TE verifies that a requested state transition reaches the expected resulting state.
11. The DIDO-TE detects a transition to an unexpected or prohibited state.
12. The DIDO-TE detects a Node that fails to leave its source state.
13. The DIDO-TE detects a Node that fails to reach the expected resulting state within the specified time.
14. The DIDO-TE detects an unrequested, unauthorized, incomplete, interrupted, or out-of-sequence state transition.
15. The DIDO-TE detects a difference between the state reported by the Node and the observed state.
16. The DIDO-TE detects a missing, unknown, stale, ambiguous, conflicting, or incorrectly attributed Node state.
17. The DIDO-TE prevents a Node with an unsuitable or unknown state from participating in an activity that requires another state.
18. The DIDO-TE determines the effect of an unexpected or unknown Node state on affected Test Executions, Test Results, and Evidence.
19. The DIDO-TE maintains Traceability among the Node identity, Node Definition, Node Implementation, Node Configuration, governing Test Definition, commanded state, expected state, reported state, observed state, state transitions, Test Environment, Test Executions, Test Results, and resulting Evidence.
20. A missing, stale, ambiguous, conflicting, incorrectly attributed, unsuitable, or untraceable Node-state observation constitutes nonconformance with this requirement.

Referenced By

The following pages reference this requirement:

- [NOD-008e — Detect a Node Deviation](#)
- [NOD-008f — Record Node Observations](#)
- [NOD-011 — Preserve Node State](#)

Delivery Phase

☐ Assign the delivery phase.

Implementation Status

☐ Assign the implementation status.

Requirement Status

☐ The proposed derived requirement requires review and acceptance.

Issues

☐ Assign the source requirement identifier and obligation from the DIDO-TE Requirements Register.

Notes for Editors

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{{section>dido:03-dido-te:99-annexes:annex-c-requirements:03-node-requirements:nod-008-observe-a-node:nod-008b-observe-node-state#Statement&noheader&nofooter&noeditbtn}}
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Last update: 2026/08/17 14:20

