

NOD-004a — Establish the Initial Node State

[Go to NOD-004 — Control the Node Lifecycle](#)

Statement

The [DIDO-TE](#) SHALL establish the initial state of each [Node](#) before initiating a Node lifecycle transition.

Derived From

- [NOD-004 — Control the Node Lifecycle](#)
- [\[DTE5\] 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 initial Node state provides the controlled starting point for subsequent lifecycle operations. It identifies the actual condition of the Node before the DIDO-TE starts, activates, suspends, resumes, stops, restarts, recovers, or terminates it.

The applicable [Node Definition](#), [Node Implementation](#), and [Node Configuration](#) determine the permitted initial states and the criteria for establishing them.

An unknown, ambiguous, unauthorized, or unsuitable initial state prevents the DIDO-TE from determining whether a requested lifecycle transition is valid. Residual processes, data, connections, locks, resources, or configuration from an earlier operation may also affect subsequent [Test Execution](#).

Establishing and recording the initial state supports lifecycle control, reproducibility, fault isolation, recovery, [Evidence](#), and [Traceability](#).

Applies To

- [DIDO-TE](#)
- [Node](#)
- [Node Definition](#)
- [Node Implementation](#)
- [Node Configuration](#)
- [Test Definition](#)
- [Test Environment](#)
- [Test Execution](#)

- Evidence
- Traceability

Verification

Verification confirms that:

- The DIDO-TE uniquely identifies the Node before establishing its initial state.
- The Node Definition or Node Implementation identifies the permitted initial states.
- The DIDO-TE uses identified and authorized criteria and procedures to determine the initial Node state.
- The DIDO-TE observes the actual Node state rather than relying solely on an intended or previously recorded state.
- The DIDO-TE identifies active processes, services, connections, bindings, resources, and applicable persistent data associated with the Node.
- The DIDO-TE identifies residual Node activity or state from an earlier operation.
- The DIDO-TE confirms that the initial Node state satisfies the applicable Node Definition, Node Implementation, Node Configuration, Test Definition, and Test Environment constraints.
- The DIDO-TE detects an unknown, ambiguous, conflicting, unauthorized, or unsuitable initial Node state.
- The DIDO-TE prevents a lifecycle transition when the initial Node state does not satisfy the transition preconditions.
- The DIDO-TE identifies the corrective or recovery action required when the initial Node state is unsuitable.
- The DIDO-TE records the Node identity, observed state, applicable criteria, procedure, authority, time, findings, exceptions, and resulting status.
- Repeated determination of an unchanged initial Node state under equivalent conditions produces an equivalent result.
- The DIDO-TE maintains Traceability among the Node Definition, Node Implementation, Node Configuration, Test Definition, Test Environment, observed initial state, findings, exceptions, and resulting Evidence.
- An unknown, ambiguous, unauthorized, unsuitable, incorrectly determined, or untraceable initial Node state constitutes nonconformance with this requirement.

Verification includes:

- Inspection of the Node identity
- Inspection of permitted initial states and transition preconditions
- Inspection of the authorized state-determination criteria and procedure
- Observation of the actual Node state
- Inspection of active processes, services, connections, bindings, resources, and persistent data
- A negative assessment involving an unknown initial state
- A negative assessment involving residual activity from an earlier operation
- Confirmation that an unsuitable initial state prevents a lifecycle transition
- Inspection of findings, exceptions, recovery actions, Evidence, and Traceability

Referenced By

- [NOD-004b — Start the Node](#)
- [NOD-004c — Confirm Node Readiness](#)
- [NOD-004d — Transition the Node State](#)
- [NOD-004f — Restart or Recover the Node](#)
- [NOD-004g — Handle a Node Lifecycle Exception](#)
- [NOD-004h — Record Node Lifecycle Activity](#)

Related Architecture Sections

- Add links to the architecture sections governing Node lifecycle states, lifecycle transitions, Node Configuration, Test Environment control, recovery, 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-004-control-the-node-lifecycle:nod-004a-establish-the-initial-node-state#Statement&noheader&nofooter&noeditbtn}}
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