

NOD-004e — Stop the Node

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

Statement

The [DIDO-TE](#) SHALL stop each [Node](#) through an identified and authorized lifecycle procedure.

Derived From

- [NOD-004 — Control the Node Lifecycle](#)
- [NOD-004d — Transition the Node State](#)
- [\[DTE5\] 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

Stopping a Node moves it from an operating state to a defined non-operating or inactive state. A controlled stop coordinates the termination of Node activity, completion or interruption of active work, release of resources, closure of [Node Bindings](#), preservation of required data, and recording of the resulting state.

The stop procedure distinguishes an orderly stop from an emergency or forced stop. An orderly stop follows the normal shutdown sequence defined by the [Node Definition](#) or [Node Implementation](#). A forced stop interrupts Node activity when continued operation presents a greater risk to the Node, [Test Environment](#), Test Resources, data, security, or applicable [Test Execution](#).

An uncontrolled, incomplete, unauthorized, or out-of-sequence stop may lose observations, corrupt data, leave resources allocated, preserve unintended connections, or prevent subsequent restart and recovery.

The DIDO-TE records the effect of a stop operation on Test Execution and [Test Results](#).

Applies To

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

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

Verification

Verification confirms that:

- The DIDO-TE uniquely identifies the Node before stopping it.
- The DIDO-TE identifies the actual Node state before initiating the stop operation.
- The DIDO-TE uses an identified and authorized stop procedure.
- The stop operation identifies the initiating authority, target Node, stop type, preconditions, parameters, time constraints, and intended resulting state.
- The DIDO-TE distinguishes an orderly stop from a forced stop.
- The DIDO-TE uses an orderly stop unless an authorized condition requires a forced stop.
- The DIDO-TE coordinates the stop with affected Nodes, Dependencies, Node Bindings, and Test Resources.
- The DIDO-TE prevents new Node activity after the stop sequence reaches the applicable cutoff point.
- The DIDO-TE completes, suspends, cancels, or records active work according to the authorized stop procedure.
- The DIDO-TE preserves required data, observations, logs, configuration information, and Evidence before releasing applicable resources.
- The DIDO-TE closes, releases, or places each applicable Node Binding and Test Resource in its required state.
- The DIDO-TE performs shutdown operations in the required sequence.
- The DIDO-TE observes the Node throughout the stop operation.
- The DIDO-TE detects an unsuccessful, incomplete, interrupted, stalled, duplicate, unauthorized, or timed-out stop operation.
- The DIDO-TE confirms the actual Node state after the stop operation.
- The DIDO-TE detects residual processes, services, connections, bindings, locks, or resource allocations that conflict with the intended stopped state.
- The DIDO-TE determines the effect of a stop operation on each applicable Test Execution and Test Result.
- An unsuccessful stop leaves the Node in a known state or identifies the resulting state and required recovery action.
- The DIDO-TE prevents a Node with an unsuccessful, incomplete, ambiguous, or unauthorized stop result from being treated as stopped.
- The DIDO-TE records the Node identity, initiating authority, stop procedure, stop type, source state, operations, timing, actual resulting state, released resources, preserved data, findings, exceptions, and recovery actions.
- Repeated authorized stops from equivalent operating conditions produce equivalent resulting states within specified tolerances.
- The DIDO-TE maintains Traceability among the Node Definition, Node Implementation, Node

Configuration, Node Bindings, stop procedure, source state, stop activity, resulting state, affected Test Execution, Test Results, findings, exceptions, and resulting Evidence.

- An incorrect, incomplete, unsuccessful, unauthorized, ambiguous, or untraceable stop operation constitutes nonconformance with this requirement.

Verification includes:

- Inspection of the Node identity and source state
- Inspection of the authorized stop procedure and responsible authority
- Observation of an orderly stop
- Observation of an authorized forced stop
- Confirmation that active work is completed, suspended, canceled, or recorded as required
- Confirmation that required data, observations, logs, and Evidence are preserved
- Inspection of released Node Bindings and Test Resources
- Inspection of the resulting Node state
- A negative assessment involving an interrupted or timed-out stop
- A negative assessment involving residual Node activity or allocated resources
- Confirmation that an unsuccessful stop does not produce a successful stopped status
- Inspection of affected Test Executions, Test Results, findings, exceptions, recovery actions, Evidence, and Traceability

Referenced By

- [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 shutdown, Node lifecycle states, active work, Node Bindings, Test Resources, Test Execution, 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-004e-stop-the-node#Statement&noheader&nofooter&noeditbtn}}
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Last update: 2026/08/17 14:20

