

NOD-011 — Preserve Node State

[Go to Node Requirements](#)

Statement

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

Derived From

- [\[DTE5\] 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

Node-state preservation captures and retains a representation of a Node's state at an identified point or event. The preserved representation supports reconstruction, comparison, analysis, repeatability, Evidence, and restoration when the governing Test Definition requires restoration.

The governing Test Definition identifies the Node, preservation point or event, state information, scope, consistency conditions, capture conditions, protection requirements, retention period, restoration conditions, and disposition conditions.

The governing [Test Procedure](#) specifies the actions used to capture, protect, verify, retain, restore, and dispose of the preserved state representation.

The preserved representation may include the Node's lifecycle state, [Node Configuration](#), internal data, processing position, pending work, Node Bindings, resource assignments, timing information, and other state information identified by the governing Test Definition.

Node-state preservation differs from observation and recording. [NOD-008b — Observe Node State](#) obtains information about Node state. [NOD-008f — Record Node Observations](#) retains observations selected by the governing Test Definition. NOD-011 preserves a sufficiently complete and consistent state representation for the purpose specified by the governing Test Definition.

Preserving Node state does not prevent the Node from subsequently changing state. The preserved representation remains associated with the state that existed at its identified preservation point.

A preserved state representation requires integrity, identity, context, compatibility, and Traceability. An incomplete, inconsistent, altered, misattributed, incompatible, or prematurely disposed representation may prevent reconstruction or restoration and may invalidate affected Test Results or Evidence.

Applies To

- [DIDO-TE](#)
- [Node](#)
- [Node Definition](#)
- [Node Implementation](#)
- [Node Configuration](#)
- [Node Binding](#)
- [Dependency](#)
- [Test Definition](#)
- [Test Procedure](#)
- [Test Environment](#)
- [Test Execution](#)
- [Test Resource](#)
- [Test Result](#)
- [Evidence](#)
- [Traceability](#)

Derived Requirements

NOD-011 is decomposed into the following leaf requirements:

Verification

Verification confirms that the child requirements collectively:

1. Specify each Node state representation requiring preservation.
2. Identify the Node and the preservation point or event associated with each preserved state representation.
3. Specify the state information, scope, consistency conditions, capture conditions, protection requirements, retention period, restoration conditions, and disposition conditions.
4. Capture the identified Node state at the specified preservation point or event.
5. Associate the preserved representation with the governing Node Definition, Node Implementation, Node Configuration, Test Environment, and Test Execution.
6. Preserve the completeness, consistency, integrity, confidentiality, availability, identity, context, and Traceability of the state representation.
7. Detect a missing, incomplete, inconsistent, altered, corrupted, misattributed, incompatible, unavailable, or unauthorized state representation.
8. Verify that the preserved representation satisfies the conditions specified by the governing Test Definition.
9. Retain the preserved representation for the specified retention period.
10. Restore the preserved Node state when the governing Test Definition requires restoration.
11. Verify the actual Node state resulting from restoration.
12. Dispose of the preserved representation when its disposition conditions are satisfied.
13. Prevent unauthorized or premature disposal.
14. Record the capture, protection, verification, retention, restoration, and disposition actions

identified for retention.

15. Maintain Traceability among the Node, preservation specification, preserved state representation, preservation actions, Test Environment, Test Executions, Test Results, and resulting Evidence.
16. Identify nonconformance with a child requirement as nonconformance with NOD-011.

Referenced By

The following pages reference this requirement:

- [NOD-011a — Specify Node State Preservation](#)
- [NOD-011b — Capture Node State](#)
- [NOD-011c — Protect Preserved Node State](#)
- [NOD-011d — Verify Preserved Node State](#)
- [NOD-011e — Retain Preserved Node State](#)
- [NOD-011f — Restore Preserved Node State](#)
- [NOD-011g — Dispose of Preserved Node State](#)
- [NOD-011h — Record Node State Preservation](#)

Delivery Phase

- ☐ Assign the delivery phase.

Implementation Status

- ☐ Implementation status derives from the implementation status of the child requirements.

Requirement Status

- ☐ The proposed derived requirement and its decomposition require review and acceptance.

Issues

- ☐ Assign the source requirement identifier and obligation from the DIDO-TE Requirements Register.
 - ☐ Determine whether Preserved Node State requires a controlled Terms and Definitions entry before finalizing the child requirements.
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Notes for Editors

The explicit child-requirement links remain on this page until all child pages have been created and finalized. The indexmenu then provides the maintained list of child pages.

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