NOD-011b — Capture Node State

Go to NOD-011 — Preserve Node State

Statement

The DIDO-TE SHALL capture each representation of Node state specified by the governing Test Definition using the governing Test Procedure.

Derived From

- NOD-011 — Preserve Node State
- NOD-011a — Specify Node State Preservation
- [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

Capturing Node state creates the representation that the DIDO-TE preserves. The captured representation reflects the specified Node state at an identified preservation point or event.

The governing Test Definition identifies the Node, state information, preservation point, consistency conditions, scope, and capture conditions. The governing Test Procedure specifies the actions and sequence used to capture that information.

Capture may require coordination across Node processes, Node Bindings, Dependencies, Test Resources, and information sources. The Test Procedure identifies the controls required to obtain a consistent representation when the underlying state changes during capture.

The DIDO-TE associates the captured representation with the Node identity, time, sequence, lifecycle state, Node Definition, Node Implementation, Node Configuration, Test Environment, and Test Execution.

Capture does not freeze the live Node state after the preservation point. The Node may continue to change while the preserved representation remains associated with the state existing at the preservation point.

Applies To

- DIDO-TE
- Node

- Node Definition
- Node Implementation
- Node Configuration
- Node Binding
- Dependency
- Test Definition
- Test Procedure
- Test Environment
- Test Execution
- Test Resource
- Evidence
- Traceability

Verification

Verification confirms that:

1. The DIDO-TE uniquely identifies the Node whose state requires capture.
2. The DIDO-TE identifies the preservation specification governing the capture.
3. The DIDO-TE identifies the preservation point or event before beginning capture.
4. The DIDO-TE verifies that the capture condition has occurred.
5. The DIDO-TE captures the state information specified by the governing Test Definition.
6. The DIDO-TE excludes information identified for exclusion by the governing Test Definition.
7. The DIDO-TE uses the capture actions and sequence specified by the governing Test Procedure.
8. The DIDO-TE satisfies the specified consistency conditions during capture.
9. The DIDO-TE coordinates capture across Node processes, Node Bindings, Dependencies, Test Resources, and information sources identified by the governing Test Definition.
10. The DIDO-TE associates the captured representation with the Node identity.
11. The DIDO-TE associates the captured representation with a controlled time and sequence.
12. The DIDO-TE associates the captured representation with the Node Definition, Node Implementation, Node Configuration, Test Environment, and Test Execution.
13. The DIDO-TE distinguishes the captured representation from the live Node state.
14. The DIDO-TE detects a missing, incomplete, inconsistent, interrupted, mistimed, duplicated, or incorrectly scoped capture.
15. The DIDO-TE detects state information attributed to the wrong Node, preservation point, or Test Execution.
16. An unsuccessful capture leaves the Node and capture mechanism in known states or identifies their actual states and required corrective action.
17. The DIDO-TE maintains Traceability among the preservation specification, Node, preservation point, captured state information, governing Test Procedure, Test Environment, Test Executions, Test Results, and resulting Evidence.
18. A missing, incomplete, inconsistent, interrupted, mistimed, duplicated, incorrectly scoped, misattributed, or untraceable capture constitutes nonconformance with this requirement.

Referenced By

The following pages reference this requirement:

- 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

☐ 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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