

NOD-010c — Prepare Node Fault Injection

[Go to NOD-010 — Inject Node Faults](#)

Statement

The [DIDO-TE](#) SHALL prepare each authorized [Fault Injection](#) using the governing [Test Procedure](#).

Derived From

- [NOD-010 — Inject Node Faults](#)
- [NOD-010a — Specify a Node Fault](#)
- [NOD-010b — Authorize Node Fault Injection](#)
- [\[DTE5\] 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

Preparation establishes the controlled conditions required before the DIDO-TE introduces the specified [Fault](#).

Preparation confirms the identity, configuration, state, readiness, and isolation requirements of the target [Node](#). It also establishes the injection mechanism, observation sources, containment controls, termination controls, recovery mechanisms, required Test Resources, and controlled time reference.

The governing Test Procedure specifies the preparation actions and their required sequence. The governing [Test Definition](#) supplies the Fault specification and the conditions that preparation must establish.

Preparation does not introduce the Fault. The DIDO-TE preserves a distinguishable boundary between completing preparation and initiating Fault Injection.

Incomplete or incorrectly sequenced preparation may introduce the Fault prematurely, prevent observation of its effects, defeat containment or termination controls, affect an unintended target, or prevent recovery.

Applies To

- [DIDO-TE](#)
- [Fault](#)
- [Fault Injection](#)

- [Node](#)
- [Node Definition](#)
- [Node Implementation](#)
- [Node Configuration](#)
- [Node Binding](#)
- [Dependency](#)
- [Test Definition](#)
- [Test Procedure](#)
- [Test Environment](#)
- [Test Execution](#)
- [Test Resource](#)
- [Authorizing Authority](#)
- [Evidence](#)
- [Traceability](#)

Verification

Verification confirms that:

1. The DIDO-TE uniquely identifies the authorized Fault Injection.
2. The DIDO-TE verifies the authorization before beginning preparation.
3. The DIDO-TE verifies that the authorization covers the Fault, target Node, injection point, timing, duration, intensity, and scope specified by the governing Test Definition.
4. The DIDO-TE uniquely identifies the target Node.
5. The DIDO-TE verifies the Node Definition, Node Implementation, Node Configuration, Node Bindings, lifecycle state, and readiness state of the target Node.
6. The DIDO-TE identifies each Test Environment, Test Execution, Node, Dependency, and Test Resource within the authorized Fault scope.
7. The DIDO-TE identifies each Test Environment, Test Execution, Node, Dependency, and Test Resource excluded from the authorized Fault scope.
8. The DIDO-TE prepares the injection mechanism specified by the governing Test Procedure.
9. The DIDO-TE verifies that the injection mechanism targets the specified injection point.
10. The DIDO-TE prepares each observation source required to detect the Fault and its effects.
11. The DIDO-TE verifies the availability, readiness, timing, and attribution of each required observation source.
12. The DIDO-TE establishes each containment control specified by the governing Test Procedure.
13. The DIDO-TE establishes each suspension and termination control specified by the governing Test Procedure.
14. The DIDO-TE prepares each recovery mechanism and Test Resource specified by the governing Test Procedure.
15. The DIDO-TE verifies that the recovery mechanisms can restore the target Node and affected Test Environment components to their specified states.
16. The DIDO-TE establishes a controlled and consistent time reference for Fault Injection and observation.
17. The DIDO-TE prevents preparation from introducing the Fault.
18. The DIDO-TE prevents Fault Injection before completion of every mandatory preparation action.
19. The DIDO-TE detects a missing, incomplete, unsuccessful, out-of-sequence, incorrectly scoped, or unauthorized preparation action.
20. An unsuccessful preparation leaves the target Node, injection mechanism, Test Resources, and

Test Environment in known states or identifies their actual states and required corrective action.

21. The DIDO-TE maintains Traceability among the authorization, Fault, Fault Injection, target Node, governing Test Definition, governing Test Procedure, preparation actions, observation sources, containment controls, termination controls, recovery mechanisms, Test Resources, and resulting Evidence.
22. Missing, incomplete, unsuccessful, incorrectly sequenced, incorrectly scoped, unauthorized, or untraceable preparation constitutes nonconformance with this requirement.

Referenced By

The following pages reference this requirement:

- [NOD-010d — Inject a Node Fault](#)
- [NOD-010e — Control a Node Fault](#)
- [NOD-010f — Recover from a Node Fault](#)
- [NOD-010g — Record Node Fault Injection](#)

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.
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Notes for Editors

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requirements:nod-010-inject-node-faults:nod-010c-prepare-node-fault-injection#Statement&noheader&nofooter&noeditbtn}}
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