

NOD-010e — Control a Node Fault

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

Statement

The [DIDO-TE](#) SHALL control each introduced [Fault](#) using the governing [Test Procedure](#).

Derived From

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

Control of an introduced Fault maintains its timing, duration, intensity, scope, and effects within the conditions specified by the governing [Test Definition](#).

Fault control begins when the DIDO-TE introduces the Fault and continues until the Fault terminates or the governing Test Procedure completes the required containment or removal actions.

The DIDO-TE observes the introduced Fault separately from the Node response. This distinction allows the DIDO-TE to determine whether a difference in Node behaviour results from the specified Fault, an incorrectly introduced Fault, or another condition.

Control actions include maintaining, varying, restricting, suspending, resuming, containing, or terminating the Fault. The governing Test Procedure identifies which actions the DIDO-TE performs and the conditions that initiate each action.

An unexpected expansion, persistence, interruption, reduction, or intensification of the Fault constitutes a Test Execution Exception. The DIDO-TE contains such a condition before it affects targets outside the authorized scope.

Applies To

- [DIDO-TE](#)

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

Verification

Verification confirms that:

1. The DIDO-TE uniquely identifies each introduced Fault.
2. The DIDO-TE associates the Fault with its authorization, target Node, Test Definition, Test Procedure, and Fault Injection.
3. The DIDO-TE observes the actual presence, timing, duration, intensity, and scope of the Fault.
4. The DIDO-TE distinguishes the introduced Fault from the observed Node response.
5. The DIDO-TE maintains the Fault within the timing, duration, intensity, and scope specified by the governing Test Definition.
6. The DIDO-TE prevents the Fault from affecting an unauthorized Node, Node Binding, Dependency, Test Resource, Test Environment, or Test Execution.
7. The DIDO-TE applies each Fault-control action when the condition specified by the governing Test Procedure occurs.
8. The DIDO-TE verifies the target before applying a Fault-control action.
9. The DIDO-TE maintains, varies, restricts, suspends, resumes, contains, or terminates the Fault only through an authorized procedure.
10. The DIDO-TE observes the actual effect of each Fault-control action.
11. The DIDO-TE detects a difference between the intended and actual effect of a Fault-control action.
12. The DIDO-TE detects an unexpected expansion, persistence, interruption, reduction, or intensification of the Fault.
13. The DIDO-TE detects an unexpected or prohibited effect of the Fault.
14. The DIDO-TE initiates exception handling when the Fault differs from its specification or authorization.
15. The DIDO-TE prevents an unauthorized, duplicate, conflicting, mistimed, or out-of-sequence Fault-control action.
16. The DIDO-TE prevents the Fault from continuing after a termination condition occurs.
17. An unsuccessful control action leaves the Fault, Node, and affected Test Environment components in known states or identifies their actual states and required corrective action.
18. The DIDO-TE determines the effect of each Fault-control action or deviation on affected Test

Executions, Test Outcomes, Test Results, and Evidence.

19. The DIDO-TE maintains Traceability among the Fault, Fault Injection, authorization, target Node, governing Test Definition, governing Test Procedure, observations, control actions, exceptions, Test Outcomes, Test Results, and resulting Evidence.
20. Missing, delayed, incomplete, ineffective, incorrectly scoped, unauthorized, or untraceable control of an introduced Fault constitutes nonconformance with this requirement.

Referenced By

The following pages reference this requirement:

- [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.

Notes for Editors

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{{section>dido:03-dido-te:99-annexes:annex-c-requirements:03-node-requirements:nod-010-inject-node-faults:nod-010e-control-a-node-fault#Statement&noheader&nofooter&noeditbtn}}
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