

NOD-002c — Resolve Node Dependencies

[Go to NOD-002 — Provision a Node](#)

Statement

The [DIDO-TE](#) SHALL resolve each mandatory [Dependency](#) required to provision a [Node](#).

Derived From

- [NOD-002 — Provision a Node](#)
- [NOD-001d — Define Node Dependencies](#)
- [NOD-002a — Select the Node Definition](#)
- [NOD-002b — Select the Node Implementation](#)
- [\[DTE5\] 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

A Node Implementation may depend on other Nodes, services, software components, libraries, data, configurations, credentials, network facilities, time sources, storage, hardware, infrastructure, or external systems.

Dependency resolution maps each defined requirement to a specific, available, compatible, authorised, and verifiable provider or artifact. It also establishes applicable versions, configurations, ordering constraints, substitutions, and integrity information.

Unresolved or incorrectly resolved Dependencies prevent complete provisioning and introduce uncertainty about the cause of subsequent Node behaviour or failure.

Applies To

- [DIDO-TE](#)
- [Node](#)
- Node Definition
- Node Implementation
- [Dependency](#)
- [Provisioning](#)
- [Test Environment](#)
- [Evidence](#)

Verification

Verification confirms that:

- Each Dependency requirement has a unique identity.
- Each mandatory Dependency maps to a uniquely identified provider, service, resource, or artifact.
- The resolved Dependency satisfies the capability required by the Node Definition and Node Implementation.
- The resolved Dependency has an identified version, revision, variant, configuration, interface, or protocol when applicable.
- The resolved Dependency satisfies applicable compatibility requirements.
- The resolved Dependency satisfies applicable availability, capacity, timing, location, security, integrity, and access constraints.
- The resolved Dependency remains available during each lifecycle period for which the Node requires it.
- Dependencies required during provisioning, configuration, initialisation, execution, observation, shutdown, recovery, and restoration remain distinguishable.
- Relationships and ordering constraints among Dependencies remain identified.
- Transitive Dependencies material to provisioning or subsequent Test Execution remain identified.
- The DIDO-TE verifies the identity, source, version, configuration, and integrity of each mandatory Dependency.
- The DIDO-TE verifies access to each mandatory Dependency before relying on it.
- The DIDO-TE distinguishes externally controlled Dependencies from Dependencies controlled by the DIDO-TE.
- The DIDO-TE identifies the controls and observations applicable to externally controlled Dependencies.
- A substitute replaces a Dependency only when the Node Definition permits substitution.
- Each substitute satisfies the applicable equivalence or acceptance criteria.
- The DIDO-TE records each substitute and the basis for its acceptance.
- The DIDO-TE detects a missing, unavailable, incompatible, altered, incorrectly configured, inaccessible, or unauthorised mandatory Dependency.
- The DIDO-TE prevents provisioning from proceeding when an unresolved mandatory Dependency affects the validity of the provisioned Node.
- The DIDO-TE records the actual Dependencies and substitutes resolved for the Node.
- The DIDO-TE records Dependency identities, sources, versions, configurations, integrity values, resolution activities, findings, and exceptions.
- The DIDO-TE maintains [Traceability](#) among each Dependency requirement, resolved Dependency, provider or source, Node Definition, Node Implementation, Test Environment, provisioning activity, provisioned Node instance, and resulting Evidence.
- An unresolved, unidentified, incompatible, altered, unavailable, incorrectly substituted, unauthorised, or untraceable mandatory Dependency constitutes nonconformance with this requirement.

Verification includes:

- Inspection of the Node Definition and Node Implementation Dependency requirements
- Inspection of mandatory, conditional, optional, and transitive Dependencies
- Inspection of Dependency identities, providers, sources, versions, configurations, and integrity

information

- Verification of Dependency availability and accessibility
- Comparison of resolved Dependencies with applicable compatibility and acceptance criteria
- Confirmation of Dependency relationships and resolution order
- Confirmation that externally controlled Dependencies remain identified
- A negative assessment involving a missing or unavailable mandatory Dependency
- A negative assessment involving an incompatible version or configuration
- A negative assessment involving an altered Dependency artifact
- A negative assessment involving an unapproved or inequivalent substitute
- Confirmation that unresolved mandatory Dependencies prevent invalid provisioning
- Inspection of Dependency resolution records, substitutions, findings, exceptions, Evidence, and Traceability

Referenced By

- [NOD-002e — Instantiate the Node](#)
- [NOD-002g — Record Node Provisioning](#)
- [NOD-002h — Validate the Provisioned Node](#)

Related Architecture Sections

- Add links to the architecture sections governing Dependency management, Dependency manifests, artifact integrity, Provisioning, Test Environment composition, security, 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-002-provision-a-node:nod-002c-resolve-node-dependencies#Statement&noheader&nofooter&noeditbtn}}
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