

NET-002 — Define Virtual Network Topology

[Go to C.3.4 Virtual Network and Communication Requirements](#)

Statement

The [DIDO-TE](#) SHALL define the [Network Topology](#) of each [Virtual Network](#) specified by the governing [Test Definition](#).

Source

- [\[DTE1\] U.S. Patent Application US20220237111A1](#), Virtual Network configuration, network topography, distributed Nodes, and communication relationships
- [\[DTE5\] DIDO-TE Requirements Register](#), inter-node topology and distributed Test Environment requirements
- [\[DTE9\] Distributed Immutable Data Object Reference Architecture \(DIDO-RA\)](#), distributed network and communication concepts

Rationale

A [Virtual Network](#) establishes a network representation for communication among participating entities.

The [Network Topology](#) defines the arrangement of those communicating entities and the communication relationships among them.

Separating establishment of the Virtual Network from definition of its Network Topology permits the same Virtual Network concept to represent different communication structures for different tests.

The governing [Test Definition](#) specifies the topology required for the test. DIDO-TE defines that topology as part of the Virtual Network used by the Test Environment.

Network Topology remains distinct from the [Communication Characteristics](#) assigned to communication relationships. NET-004 governs configuration of those characteristics.

This requirement does not prescribe a particular routing protocol, network technology, overlay mechanism, middleware implementation, or physical network arrangement.

Applies To

- [DIDO-TE](#)
- [Virtual Network](#)
- [Network Topology](#)

- [Node](#)
- [Test Environment](#)
- [Test Definition](#)
- [Configuration](#)

Verification

Verification confirms that:

1. Each Virtual Network specified by the governing Test Definition has a defined Network Topology.
2. The Network Topology identifies the communicating entities represented by the topology.
3. The Network Topology identifies the communication relationships among those entities.
4. Communication relationships not specified by the governing Test Definition are not inferred solely from technical connectivity.
5. The defined Network Topology is traceable to the governing Test Definition.
6. The Network Topology can be defined independently of the technology used to realize the Virtual Network.

Verification includes a Test Definition specifying multiple communicating entities and communication relationships and confirms that the resulting Network Topology represents those relationships.

Traceability

Plugin Backlinks: Nothing was found.

ConOps Relationship

This requirement defines the communication structure of a Virtual Network established under NET-001.

NET-003 governs connection of participating Nodes through the Virtual Network, while NET-004 governs configuration of the Communication Characteristics associated with communication through that network.

Delivery Phase

TBD

Requirement Status

Draft

Statement Reference

{{section>dido:03-dido-te:99-annexes:annex-c-requirements:03-functional-requirements:03-04-virtual-network-and-communication-requirements:net-002-define-virtual-network-topology#Statement&noheader&nofooter&noeditbtn}}

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<https://wiki.didosolutions.com/dido/03-dido-te/99-annexes/annex-c-requirements/03-functional-requirements/03-04-virtual-network-and-communication-requirements/net-002-define-virtual-network-topology/start>

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