

NET-007 — Support Geographically Distributed Nodes

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

Statement

The [DIDO-TE](#) SHALL support communication among [Nodes](#) located at geographically separate execution locations.

Source

- [\[DTE1\] U.S. Patent Application US20220237111A1](#), geographically remote Nodes and communication independent of physical separation
- [\[DTE2\] Non-Traditional BAA Submission](#), distributed systems and Virtual Networks and Communication
- [\[DTE5\] DIDO-TE Requirements Register](#), geographically distributed deployments and distributed Test Environment concepts

Rationale

Distributed testing may involve [Nodes](#) that execute at physically separate locations.

The physical separation of participating Nodes should not prevent those Nodes from participating in the same distributed Test Environment when communication among them is required by the governing [Test Definition](#).

A [Virtual Network](#) provides a network representation that can span the physical locations of participating Nodes while preserving the [Network Topology](#) and communication behavior specified for the test.

Geographic separation is a deployment condition of participating Nodes rather than a distinct type of Node. This requirement therefore does not define a separate class of geographically distributed Node.

Communication among geographically separated Nodes remains subject to the Network Topology, [Communication Characteristics](#), [Communication Protocols](#), and other communication controls established for the test.

This requirement does not prescribe the physical transport, wide-area network, Internet service, cloud provider, tunnel, gateway, or other mechanism used to communicate between locations.

Applies To

- [DIDO-TE](#)
- [Node](#)
- [Virtual Network](#)
- [Network Topology](#)
- [Test Environment](#)
- [Test Definition](#)
- [Test Execution](#)
- [Configuration](#)
- [Communication Characteristic](#)
- [Communication Protocol](#)

Verification

Verification confirms that:

1. Nodes at geographically separate execution locations can participate in the same distributed Test Environment.
2. Geographic separation does not prevent communication required by the governing Test Definition.
3. Communication among geographically separated Nodes conforms to the defined Network Topology.
4. Geographic separation does not introduce communication relationships absent from the defined Network Topology.
5. The physical locations of participating Nodes can be distinguished for verification purposes.
6. Support for geographically distributed Nodes does not require a particular network provider, cloud provider, wide-area networking technology, or physical transport mechanism.

Verification includes at least two Nodes operating at geographically separate execution locations and confirms that the Nodes can communicate as defined by the governing Test Definition and Network Topology.

Traceability

Plugin Backlinks: Nothing was found.

ConOps Relationship

This requirement supports distributed Test Environments whose participating Nodes execute at geographically separate locations.

NET-001 establishes the Virtual Network, NET-002 defines its Network Topology, NET-003 connects participating Nodes through the Virtual Network, and NET-007 ensures that geographic separation does not prevent those Nodes from participating in the required communication relationships.

Delivery Phase

TBD

Requirement Status

Draft

Statement Reference

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{{section>dido:03-dido-te:99-annexes:annex-c-requirements:03-functional-requirements:03-04-virtual-network-and-communication-requirements:net-007-support-geographically-distributed-nodes#Statement&noheader&nofooter&noeditbtn}}
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