

TWIN-001 — Establish Twin Identity

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TWIN-001 is a non-leaf requirement group governing the identity used to represent a logical twin independently of the individual [Twin Nodes](#) that realize that twin.

A Twin Identity provides a stable basis for relating multiple Twin Node realizations, including virtual, physical, simulated, or other permitted realizations, without treating any single realization as the twin's identity.

The U.S. Patent Application describes virtual and physical Twin Nodes addressed using an identifier shared by one or more other Twin Nodes. [\[DTE1\]](#)

The [Digital Twin](#) concept in the DIDO Reference Architecture provides the broader relationship between a referent, its digital representation, and the data linking them. [\[DTE9\]](#), Appendix A, *Digital Twin*.

Conformance is assessed against the individual leaf requirements listed below. TWIN-001 does not establish a separate conformance obligation.

Requirements

Requirement ID	Requirement Title	Purpose
TWIN-001a	Assign a Twin Identifier	Establish a stable identifier for the logical twin.
TWIN-001b	Preserve Twin Identity Across Realizations	Preserve the logical Twin Identity when different realizations represent the same twin.
TWIN-001c	Identify a Twin Realization	Assign an identity to each realization participating in the Twin Identity.
TWIN-001d	Identify the Twin Realization Type	Identify the kind of realization participating in the Twin Identity.

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Source

- [\[DTE1\] U.S. Patent Application US20220237111A1](#), virtual and physical Twin Node concepts and identifiers shared among Twin Nodes
- [\[DTE2\] Non-Traditional BAA Submission](#), F17, *Twin Nodes Selection*
- [\[DTE9\] Distributed Immutable Data Object Reference Architecture \(DIDO-RA\)](#), Appendix A, *Digital Twin*

Rationale

A logical Twin Identity must remain distinguishable from any particular Twin Node realization.

Separating Twin Identity from Twin Realization supports using more than one realization of the same twin, including selecting between virtual and real-world realizations during testing.

This separation also prevents communication mechanisms, deployment technologies, container identities, network addresses, or other implementation-specific properties from becoming the authoritative identity of the twin.

Applies To

- Twin Identity
- [Twin Node](#)
- Twin Realization
- [Node](#)
- [Test Definition](#)
- [Test Execution](#)

Traceability

- [TWIN-001a — Assign a Twin Identifier](#)
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ConOps Relationship

Twin Identity supports ConOps activities that register Twin Nodes, associate alternative realizations with the same logical twin, configure a twin relationship, and select an applicable Twin Realization for Test Execution.

Delivery Phase

TBD

Requirement Status

Draft

Notes for Editors

TWIN-001 is a non-leaf requirement group and does not contain an independent normative Statement or Verification section.

The explicit links under Contents remain while the subordinate requirement pages are being created and reviewed. After all child pages exist, you may remove the explicit links because the index menu automatically discovers them.

Do not define Twin Identity in terms of a container identifier, process identifier, host name, network address, DDS entity identifier, or other realization-specific mechanism.

A realization mechanism may carry or represent Twin Identity, but the mechanism does not establish the semantic meaning of that identity.

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