

TWIN-005 — Access Twin State

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TWIN-005 is a non-leaf requirement group governing controlled access to the state represented by a [Twin Realization](#) within a [Twin Relationship](#).

Access to Twin State includes identification of the represented state, access to its values, identification of the [Data Source](#), association of the state with time, preservation of provenance, and identification of unavailable state.

The communication mechanism used to obtain state does not, by itself, establish the semantic meaning, source eligibility, or authority of the state.

Conformance is assessed against the individual leaf requirements listed below. TWIN-005 does not establish a separate conformance obligation.

Requirements

Requirement ID	Requirement Title	Purpose
TWIN-005a	Identify Twin State	Identify the state represented by a Twin Realization that participates in the Twin Relationship.
TWIN-005b	Access Twin State Values	Obtain the values associated with identified Twin State.
TWIN-005c	Identify Twin State Source	Identify the Data Source from which an accessed Twin State value originated.
TWIN-005d	Associate Twin State with Time	Associate an accessed Twin State value with the time information required to interpret that value.
TWIN-005e	Preserve Twin State Provenance	Preserve provenance information associated with accessed Twin State.
TWIN-005f	Identify Unavailable Twin State	Identify when required Twin State is unavailable.

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- [TWIN-005g — Detect an Invalid or Unknown Twin Realization State](#)

Source

- [\[DTE1\] U.S. Patent Application US20220237111A1](#), virtual and physical Twin Node concepts, observation of Twin Node behavior, baseline results, and comparison of results
- [\[DTE2\] Non-Traditional BAA Submission](#), Digital Twin concepts, real-time monitoring, scenario testing, and Twin Nodes Selection
- [\[DTE9\] Distributed Immutable Data Object Reference Architecture \(DIDO-RA\)](#), Digital Twin and distributed data concepts

Rationale

A [Twin Relationship](#) depends on access to represented state when that state is used for monitoring, synchronization, simulation, comparison, or Test Execution.

The [Twin Data Mapping](#) establishes the semantic correspondence between represented characteristics and their data representations. TWIN-005 governs access to the resulting state values and the contextual information required to interpret those values.

State access must remain distinguishable from source eligibility and [Source Selection](#). A technically available value does not become authoritative Twin State solely because it is reachable or received through a communication mechanism.

State values also require sufficient context to support reproducibility and comparison. This includes identification of their source, temporal association, provenance, and availability status.

Applies To

- [DIDO-TE](#)
- [Twin Identity](#)
- [Twin Relationship](#)
- [Twin Realization](#)
- [Twin Data Mapping](#)
- [Data Source](#)
- [Source Selection](#)
- [Configuration](#)
- [Test Definition](#)
- [Test Execution](#)

Traceability

- [TWIN-005a — Establish the Initial State of a Twin Realization](#)
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ConOps Relationship

This requirement group supports ConOps activities that access Twin State after the Twin Relationship, Twin Data Mappings, eligible Data Sources, Source Selection criteria, and communication characteristics have been established.

Accessed Twin State supports subsequent synchronization, simulation, comparison, Validation, monitoring, and evidence-producing activities.

Delivery Phase

TBD

Requirement Status

Draft

Notes for Editors

TWIN-005 is a non-leaf requirement group and does not contain an independent normative Statement or Verification section.

The explicit child 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 indexmenu automatically discovers them.

The displayed title has been changed from *Acquire Twin State* to *Access Twin State* because *access* better describes the technology-neutral architectural capability. The existing namespace `twin-005-acquire-twin-state` remains unchanged to preserve the stable URI.

Do not treat successful receipt of data as sufficient evidence that the data represents valid Twin State. Eligibility, Source Selection, Twin Data Mapping, provenance, and other governing Configuration remain separate concerns.

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