

TWIN-005b — Determine the Current State of a Twin Realization

[Go to TWIN-005 — Access Twin Realization State](#)

Statement

The [DIDO-TE](#) SHALL determine the current state of each [Twin Realization](#) participating in [Test Execution](#).

Source

- [\[DTE1\] U.S. Patent Application US20220237111A1](#), virtual and physical Twin Node concepts, observation of Twin Node behavior, modification of Twin Nodes, 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

The current state of a [Twin Realization](#) describes the condition of the characteristics represented by that realization at the time the state is determined.

Determination of current state provides the basis for identifying changes from the initial state, observing behavior during [Test Execution](#), synchronizing Twin Realizations, comparing results, and performing [Validation](#).

The current state is determined from characteristics represented by the [Twin Relationship](#) and interpreted through the associated [Twin Data Mappings](#).

Information outside the scope of the Twin Relationship does not become part of the state of the Twin Realization solely because that information is observable or technically accessible.

Applies To

- [DIDO-TE](#)
- [Twin Identity](#)
- [Twin Relationship](#)
- [Twin Realization](#)
- [Twin Data Mapping](#)
- [Data Source](#)

- [Configuration](#)
- [Test Execution](#)

Verification

Verification confirms that:

1. The current state of each Twin Realization participating in Test Execution can be determined.
2. The determined state represents the condition of the characteristics included in the governing Twin Relationship.
3. The determined state conforms to the governing Twin Data Mappings.
4. Information outside the scope of the Twin Relationship is excluded from determination of the current state.
5. The current state can be distinguished from the established initial state.
6. Repeated determination of state preserves the identity of the Twin Realization whose state is being determined.
7. The determined state is traceable to the Twin Realization and the Test Execution in which the determination occurred.

Verification includes determination of the state of a Twin Realization after at least one represented characteristic has changed from its established initial state.

Traceability

Plugin Backlinks: Nothing was found.

ConOps Relationship

This requirement supports observation of the state of a Twin Realization during Test Execution.

Determination of the current state provides the basis for detecting state changes, synchronization, simulation, comparison, Validation, monitoring, and evidence generation.

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:03-03-twin-node-requirements:twin-005-acquire-twin-state:twin-005b-determine-the-current-twin-state#Statement&noheader&nofooter&noeditbtn}}
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