

TWIN-005e — Associate Twin Realization State with Time

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

Statement

The [DIDO-TE](#) SHALL associate each determined state of a [Twin Realization](#) with the time information required to interpret that state.

Source

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

Rationale

The state of a [Twin Realization](#) represents the condition of its represented characteristics at a particular time.

Without temporal context, two otherwise identical state values may represent different conditions in a Test Execution, and state changes may not be ordered or compared reliably.

The required time information may include timestamps, sequence-related temporal information, synchronization references, or other time data established by the governing [Configuration](#) or [Test Definition](#).

Temporal association remains distinct from communication latency, [Quality of Service](#), and [Synchronization Parameters](#), although those concepts may influence interpretation of time-related behavior.

Applies To

- [DIDO-TE](#)
- [Twin Realization](#)
- [Twin Relationship](#)
- [Configuration](#)
- [Test Definition](#)

- [Test Execution](#)
- [Synchronization Parameter](#)
- [Quality of Service](#)

Verification

Verification confirms that:

1. Each determined state of a Twin Realization has associated time information.
2. The associated time information is sufficient to place the determined state within the temporal context defined by the governing Configuration or Test Definition.
3. States determined at different times remain temporally distinguishable.
4. The temporal association remains linked to the Twin Realization whose state was determined.
5. Communication latency or middleware timing does not replace the required state time information unless the governing Configuration establishes that correspondence.
6. The associated time information supports ordering or comparison of determined states when such ordering or comparison is required.

Verification includes at least two determined states of the same Twin Realization at different times and confirms that their temporal relationship is distinguishable.

Traceability

Plugin Backlinks: Nothing was found.

ConOps Relationship

This requirement provides the temporal context required to interpret changes in the state of a Twin Realization during Test Execution, synchronization, comparison, Validation, monitoring, and evidence generation.

Delivery Phase

TBD

Requirement Status

Draft

Statement Reference

{{section>dido:03-dido-te:99-annexes:annex-c-requirements:03-functional-

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requirements:03-03-twin-node-requirements:twin-005-acquire-twin-  
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