

TWIN-006c — Apply Synchronization Parameters

[Go to TWIN-006 — Synchronize Twin Realization State](#)

Statement

The [DIDO-TE](#) SHALL perform synchronization so that the resulting synchronization behavior satisfies the configured [Synchronization Parameters](#).

Source

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

Rationale

[Synchronization Parameters](#) define the conditions governing synchronization among participating [Twin Realizations](#).

Such conditions may address timing, ordering, update intervals, synchronization triggers, allowable lag, tolerances, or other characteristics required to maintain the intended correspondence among represented states.

TWIN-003g configures the Synchronization Parameters. This requirement governs their use during synchronization.

Applying the configured Synchronization Parameters prevents middleware defaults, communication timing, scheduling behavior, or other implementation-specific mechanisms from implicitly determining synchronization behavior.

Applies To

- [DIDO-TE](#)
- [Twin Relationship](#)
- [Twin Realization](#)
- [Twin Data Mapping](#)
- [Synchronization Parameter](#)

- [Configuration](#)
- [Quality of Service](#)

Verification

Verification confirms that:

1. Synchronization uses the configured Synchronization Parameters.
2. Each configured Synchronization Parameter that governs the synchronization activity is applied.
3. Observed synchronization behavior satisfies the configured values or conditions of the Synchronization Parameters.
4. Middleware defaults or implementation-specific timing behavior do not replace configured Synchronization Parameters.
5. Changes to configured Synchronization Parameters produce corresponding changes in synchronization behavior when those parameters affect the synchronization activity.
6. The Synchronization Parameters used during synchronization are traceable to the governing Configuration.

Verification includes execution of synchronization using at least one configured Synchronization Parameter and confirms that the observed synchronization behavior conforms to that parameter.

Traceability

Plugin Backlinks: Nothing was found.

ConOps Relationship

This requirement governs execution of synchronization after the Synchronization Parameters have been configured under TWIN-003g.

The configured parameters determine the conditions under which represented state is synchronized among participating Twin Realizations.

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-006-synchronize-twin-state:twin-006c-apply-synchronization-parameters#Statement&noheader&nofooter&noeditbtn}}
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Last update: 2026/08/20 18:48

