

TWIN-003g — Configure Twin Synchronization Parameters

[Go to TWIN-003 — Configure a Twin Relationship](#)

Statement

The [DIDO-TE](#) SHALL configure the [Synchronization Parameters](#) governing synchronization within each [Twin Relationship](#) that requires synchronization.

Source

- [\[DTE1\] U.S. Patent Application US20220237111A1](#), virtual and physical Twin Node concepts and comparison of Twin Node behavior
- [\[DTE2\] 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](#) may require corresponding state, events, behavior, or other represented characteristics to remain aligned among participating [Twin Realizations](#).

[Synchronization Parameters](#) establish the conditions governing that alignment. Such parameters may address update intervals, timestamps, ordering, allowable lag, synchronization triggers, tolerances, or other synchronization characteristics applicable to the Twin Relationship.

Explicit Configuration of Synchronization Parameters prevents synchronization behavior from being determined implicitly by communication timing, middleware defaults, scheduling behavior, or other implementation-specific mechanisms.

Synchronization Parameters govern alignment among represented characteristics. They do not establish the semantic correspondence defined by a [Twin Data Mapping](#) or the eligibility or selection of a [Data Source](#).

Applies To

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

- [Data Source](#)
- [Synchronization Parameter](#)
- [Configuration](#)
- [Quality of Service](#)

Verification

Verification confirms that:

1. Each Twin Relationship requiring synchronization has configured Synchronization Parameters.
2. Each configured Synchronization Parameter is associated with the applicable Twin Relationship.
3. The configured Synchronization Parameters identify the conditions governing synchronization of the applicable represented characteristics.
4. Synchronization behavior is distinguishable from communication timing or middleware defaults not included in the configured Synchronization Parameters.
5. The configured Synchronization Parameters remain distinguishable from Twin Data Mappings, Data Source eligibility, Source Selection criteria, and Quality of Service characteristics.
6. The configured Synchronization Parameters are traceable to the applicable Twin Relationship Configuration.

Verification includes a Twin Relationship in which at least one represented characteristic is synchronized between participating Twin Realizations according to configured Synchronization Parameters.

Traceability

Plugin Backlinks: Nothing was found.

ConOps Relationship

This requirement supports Configuration of the conditions governing synchronization among Twin Realizations before synchronized state or behavior is used during Test Execution, simulation, comparison, or Validation.

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-003-configure-a-twin-relationship:twin-003g-configure-twin-synchronization-parameters#Statement&noheader&nofooter&noeditbtn}}
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