TWIN-003e — Configure Twin Communication Parameters

Go to TWIN-003 — Configure a Twin Relationship

Statement

The DIDO-TE SHALL configure the Communication Parameters required for information exchange within each Twin Relationship.

Source

- [DTE1] U.S. Patent Application US20220237111A1, virtual and physical Twin Node concepts and exchange of information during testing and comparison
- [DTE2] Non-Traditional BAA Submission, Digital Twin concepts and Twin Nodes Selection
- [DTE9] Distributed Immutable Data Object Reference Architecture (DIDO-RA), DDS publish-subscribe and communication concepts

Rationale

A Twin Relationship may depend on one or more communication mechanisms to exchange information among participating Twin Realizations and associated Data Sources.

Communication Parameters identify the communication characteristics required to realize that exchange. These parameters may address endpoints, addressing, protocol or middleware selection, Topic identification, message characteristics, connection behavior, or other communication properties applicable to the Twin Relationship.

Explicit Configuration of Communication Parameters prevents incidental deployment, network, discovery, or middleware behavior from implicitly determining how information is exchanged.

Communication Parameters govern information exchange but do not establish the semantic correspondence, eligibility, authority, or Source Selection of the data exchanged.

Applies To

- DIDO-TE
- Twin Relationship
- Twin Realization
- Data Source
- Twin Data Mapping
- Communication Parameter

- Configuration
- DDS

Verification

Verification confirms that:

1. Each Twin Relationship requiring information exchange has configured Communication Parameters.
2. Each configured Communication Parameter is associated with the applicable Twin Relationship.
3. The configured Communication Parameters identify the communication characteristics required for the applicable exchange.
4. Communication Parameters remain distinguishable from Twin Data Mappings, Data Source eligibility, and Source Selection criteria.
5. A deployment, discovery, network, or middleware default does not replace a required configured Communication Parameter.
6. The configured Communication Parameters are traceable to the applicable Twin Relationship Configuration.

Verification includes inspection of a Twin Relationship that exchanges information using a configured communication mechanism and confirms that the applicable communication characteristics are represented explicitly.

Traceability

Plugin Backlinks: Nothing was found.

ConOps Relationship

This requirement supports Configuration of the communication characteristics used to exchange information within a Twin Relationship before state acquisition, synchronization, simulation, comparison, or other Test Execution activities occur.

Delivery Phase

TBD

Requirement Status

Draft

Statement Reference

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