TWIN-003h — Configure Twin Fidelity Criteria

Go to TWIN-003 — Configure a Twin Relationship

Statement

The DIDO-TE SHALL configure the Fidelity Criteria applicable to each Twin Relationship requiring assessment of correspondence among participating Twin Realizations.

Source

- [DTE1] U.S. Patent Application US20220237111A1, comparison and validation of virtual and physical Twin Nodes
- [DTE2] Non-Traditional BAA Submission, Digital Twin concepts, scenario testing, monitoring, and Twin Nodes Selection
- [DTE9] Distributed Immutable Data Object Reference Architecture (DIDO-RA), Digital Twin concepts

Rationale

A Twin Relationship does not require participating Twin Realizations to be identical.

Fidelity Criteria establish the acceptable degree of correspondence for represented characteristics when that correspondence affects the purpose of the Twin Relationship.

Fidelity Criteria may address numerical tolerance, temporal accuracy, behavioral correspondence, state correspondence, completeness, resolution, or other measurable characteristics applicable to the relationship.

Explicit Configuration of Fidelity Criteria provides an objective basis for determining whether observed differences among Twin Realizations remain within the acceptable bounds established for a Test Definition, Configuration, requirement, or other governing source.

Fidelity Criteria remain distinct from Synchronization Parameters. Synchronization Parameters govern alignment, while Fidelity Criteria govern the acceptable degree of correspondence.

Applies To

- DIDO-TE
- Twin Relationship
- Twin Realization
- Twin Data Mapping
- Fidelity Criterion

- Synchronization Parameter
- Configuration
- Test Definition
- Validation

Verification

Verification confirms that:

1. Each Twin Relationship requiring assessment of correspondence has configured Fidelity Criteria.
2. Each configured Fidelity Criterion is associated with the applicable Twin Relationship.
3. Each Fidelity Criterion identifies an objectively assessable condition for an applicable represented characteristic.
4. The configured Fidelity Criteria identify the acceptable degree of correspondence required for the applicable purpose.
5. Fidelity Criteria remain distinguishable from Synchronization Parameters, Twin Data Mappings, communication parameters, and Quality of Service characteristics.
6. The configured Fidelity Criteria are traceable to the applicable Test Definition, Configuration, requirement, or other governing source.

Verification includes a Twin Relationship in which at least one represented characteristic is assessed against a configured Fidelity Criterion and produces a determinable result.

Traceability

Plugin Backlinks: Nothing was found.

ConOps Relationship

This requirement supports Configuration of the criteria used to assess correspondence among Twin Realizations before comparison, Validation, or other Test Execution activities that depend on twin fidelity.

Delivery Phase

TBD

Requirement Status

Draft

Statement Reference

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