

TWIN-005f — Preserve Twin Realization State Provenance

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

Statement

The [DIDO-TE](#) SHALL preserve the provenance associated with each determined state of a [Twin Realization](#).

Source

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

Rationale

Interpretation of the state of a [Twin Realization](#) depends on knowing how the state was derived.

Provenance preserves the relationship among the determined state, its constituent state values, their originating [Data Sources](#), the Twin Realization, and the governing Test Execution context.

Preserved provenance supports reproducibility, comparison, [Validation](#), evidence generation, and later investigation of unexpected results.

Communication metadata alone does not establish complete provenance unless the governing architecture explicitly defines that metadata as part of the provenance record.

Applies To

- [DIDO-TE](#)
- [Twin Realization](#)
- [Twin Relationship](#)
- [Data Source](#)
- [Twin Data Mapping](#)
- [Test Execution](#)
- [Traceability](#)
- [Evidence](#)

Verification

Verification confirms that:

1. Each determined state of a Twin Realization has associated provenance information.
2. The provenance identifies the Twin Realization whose state was determined.
3. The provenance identifies the Data Source of each constituent state value.
4. The provenance preserves the association between the determined state and the Test Execution in which the state was determined.
5. The provenance remains associated with the determined state after the state is recorded, transferred, or used for subsequent analysis.
6. The preserved provenance supports traceability from the determined state to the information used to derive it.

Verification includes reconstruction of the origin and Test Execution context of a recorded state using preserved provenance information.

Traceability

Plugin Backlinks: Nothing was found.

ConOps Relationship

This requirement preserves the origin and derivation context of the state of a Twin Realization so that subsequent comparison, Validation, evidence generation, and analysis remain traceable and reproducible.

Delivery Phase

TBD

Requirement Status

Draft

Statement Reference

```
{{section>dido:03-dido-te:99-annexes:annex-c-requirements:03-functional-requirements:03-03-twin-node-requirements:twin-005f-preserve-twin-state-provenance#Statement&noheader&nofooter&noeditbtn}}
```

© 2026 Dido Solutions, Inc. and Jackrabbit Consulting, Inc.

From:
<https://wiki.didosolutions.com/> - Dido Solutions, Inc Wiki

Permanent link:
<https://wiki.didosolutions.com/dido/03-dido-te/99-annexes/annex-c-requirements/03-functional-requirements/03-03-twin-node-requirements/twin-005-acquire-twin-state/twin-005f-preserve-twin-state-provenance>

Last update: 2026/08/20 17:31

