

MO-005c — Infrastructure Baseline Version Control

[Go to MO-005 — Reusable and Version-Controlled Infrastructure Baselines](#)

Statement

[Crucible](#) SHALL place each [Infrastructure Baseline](#) under [Version Control](#).

Derived From

This requirement derives from:

- [MO-005 — Reusable and Version-Controlled Infrastructure Baselines](#)

The Original Requirement states:

The system SHALL establish infrastructure as a reusable and version-controlled asset.[\[C1\]](#)

MO-005c preserves the portion of the Original Requirement that requires infrastructure to be version controlled by identifying the controlled subject as an [Infrastructure Baseline](#).

The separate requirements derived from MO-005 address:

- [MO-005a — Infrastructure Baseline Artifact Management](#)
- [MO-005b — Infrastructure Baseline Identification](#)
- [MO-005d — Infrastructure Baseline Selection](#)
- [MO-005e — Infrastructure Baseline Reuse](#)
- [MO-005f — Approved Baseline Immutability](#)
- [MO-005g — Baseline Revision Deployment Traceability](#)

Assessment

The Original Requirement uses **version-controlled** without identifying the controlled subject or the behaviors associated with Version Control.

The phrase **version-controlled asset** does not identify:

- The object placed under Version Control
- The distinction between the Infrastructure Baseline identifier and a revision identifier
- The relationship between successive revisions
- The content associated with each revision
- The mechanism used to retrieve a prior revision

- The mechanism used to compare revisions
- The change record associated with a revision
- The approval status associated with a revision
- The Provenance associated with a revision
- The Evidence required to demonstrate Version Control

MO-005c:

- Identifies [Crucible](#) as the responsible actor
- Identifies the Infrastructure Baseline as the subject placed under Version Control
- Uses the defined term [Version Control](#)
- Separates Version Control from Artifact management and unique Artifact identification
- Separates Version Control from baseline selection, reuse, immutability, and deployment traceability

Rationale

Version Control preserves the revision history of an [Infrastructure Baseline](#).

A version-controlled Infrastructure Baseline can maintain:

- A stable Artifact identifier
- A distinct identifier for each revision
- The content associated with each revision
- The relationship between successive revisions
- The date and time associated with each revision
- The actor or process responsible for each revision
- The reason for each revision
- The approval status of each revision
- The Provenance associated with each revision
- The Traceability relationships associated with each revision

Version Control supports:

- Retrieval of a specific Infrastructure Baseline revision
- Comparison of two Infrastructure Baseline revisions
- Identification of changes between revisions
- Reproduction of an Infrastructure Deployment from a selected revision
- Preservation of approved revisions
- Creation of a new revision when baseline content changes
- Recovery from an unintended change
- Auditability of baseline evolution
- Preservation of Provenance
- Maintenance of Traceability

The stable Artifact identifier identifies the Infrastructure Baseline across revisions. A revision identifier distinguishes one controlled state of the Infrastructure Baseline from another controlled state.

This requirement does not assign the stable Artifact identifier. MO-005b establishes that requirement.

This requirement does not prohibit modification of an approved revision. MO-005f establishes approved baseline immutability.

This requirement does not require an Infrastructure Deployment to record the applied revision. MO-005g establishes that requirement.

Applies To

This requirement applies to:

- [Crucible](#)
- [Infrastructure Baselines](#)
- [Artifacts](#)
- [Version Control](#)
- Artifact identifiers
- Revision identifiers
- Revision histories
- Revision relationships
- Change records
- Approval records
- Artifact repositories
- Artifact catalog records
- Infrastructure definitions
- Configuration definitions
- Machine Image references
- Image-layer references
- Package and dependency references
- Security configuration
- Compliance configuration
- Deployment parameters
- Validation criteria
- [Evidence](#)
- [Provenance](#)
- [Traceability](#)

Verification

Verification confirms that:

1. Each Infrastructure Baseline is maintained within a Version Control mechanism
2. Each controlled revision is distinguishable from every other revision of the same Infrastructure Baseline
3. Each revision remains associated with the stable Artifact identifier of the Infrastructure Baseline
4. The content associated with each revision is retrievable
5. The relationship between successive revisions is recorded
6. The changes between two revisions can be identified
7. A prior revision can be retrieved without replacing or altering another revision
8. The revision history preserves the applicable Provenance and Traceability

Verification includes:

- Infrastructure Baseline inspection
- Version Control configuration inspection
- Artifact identifier inspection
- Revision identifier inspection
- Revision-history inspection
- Revision-relationship inspection
- Revision retrieval testing
- Prior-revision retrieval testing
- Revision comparison testing
- Change-record inspection
- Approval-record inspection
- Artifact repository inspection
- Artifact catalog inspection
- Evidence inspection
- Provenance inspection
- Traceability inspection

The verification record identifies:

1. The Infrastructure Baseline
2. The stable Artifact identifier
3. Each inspected revision identifier
4. The Version Control mechanism
5. The location of the controlled revision history
6. The relationship between successive revisions
7. The content associated with each inspected revision
8. The result of each revision retrieval test
9. The result of each revision comparison test
10. Each detected missing, duplicate, or conflicting revision
11. Each identified failure or exception
12. The observed result
13. The generated [Evidence](#)

Requirements Realized By

This requirement is realized by:

- [FR-CFG-001 through FR-CFG-005](#)
- [FR-DEP-001 through FR-DEP-007](#)
- [FR-MC-001 through FR-MC-005](#)
- [FR-BAS-001 through FR-BAS-004](#)

Related Architecture Sections

- [5. Descriptions, Composition, and Baselines](#)
- [7. Infrastructure and Deployment](#)

- [10. Reproducibility, Provenance, and Traceability](#)

Referenced By

The following pages reference this requirement:

- [MO-005a — Infrastructure Baseline Artifact Management](#)
- [MO-005b — Infrastructure Baseline Identification](#)
- [MO-005d — Approved Infrastructure Baseline Selection](#)
- [MO-005e — Infrastructure Baseline Reuse](#)
- [MO-005f — Approved Infrastructure Baseline Preservation](#)
- [MO-005g — Infrastructure Deployment Baseline Traceability](#)
- [Annex D: Requirements Traceability](#)

Delivery Phase

Phase 1 and subsequent phases

Implementation Status

Not Assessed

Implementation status requires verification that the current [Crucible](#) implementation places each Infrastructure Baseline under Version Control.

Requirement Status

Draft

This requirement derives from MO-005 in the Crucible System Requirements Specification, Version 1.1 Draft.

Notes for Editors

This requirement page should retain the stable requirement identifier MO-005c.

This page is a leaf requirement page and omits a trailing :start from its namespace.

Changes to the Statement should preserve the Infrastructure Baseline Version Control intent derived from MO-005.

The Version Control record should identify:

- The stable Infrastructure Baseline Artifact identifier
- The revision identifier
- The predecessor revision
- The revision date and time
- The actor or process responsible for the revision
- The revision description
- The reason for the revision
- The approval status
- The associated Provenance
- The associated Traceability
- The supporting Evidence

Material changes should receive review and should update the related verification criteria, requirements realization, related architecture sections, and source records.

To reference this requirement Statement from another wiki page, insert:

```
{{section>dido:02-crusible:99-annexes:annex-c-requirements:01-mission-objectives:mo-005:mo-005c#Statement&noheader&nofooter&noeditbtn}}
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