

MO-005g — Baseline Revision Deployment Traceability

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

Statement

[Crucible](#) SHALL record the [Artifact](#) identifier and revision identifier of the [Infrastructure Baseline](#) used by each [Infrastructure Deployment](#).

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-005g preserves the traceability necessary to demonstrate reuse of a version-controlled Infrastructure Baseline by requiring each Infrastructure Deployment to identify the specific Infrastructure Baseline revision used.

The separate requirements derived from MO-005 address:

- [MO-005a — Infrastructure Baseline Artifact Management](#)
- [MO-005b — Infrastructure Baseline Identification](#)
- [MO-005c — Infrastructure Baseline Version Control](#)
- [MO-005d — Infrastructure Baseline Selection](#)
- [MO-005e — Infrastructure Baseline Reuse](#)
- [MO-005f — Approved Baseline Immutability](#)

Assessment

The Original Requirement describes infrastructure as reusable and version controlled but does not require an Infrastructure Deployment to identify the specific Infrastructure Baseline revision used.

Without this relationship, an evaluator cannot reliably determine:

- Which Infrastructure Baseline produced an Infrastructure Deployment
- Which revision of the Infrastructure Baseline applied
- Whether two Infrastructure Deployments reused the same revision

- Whether an approved revision or another revision applied
- Whether a later deployment used a superseded revision
- Whether deployment results remain reproducible
- Whether the deployment record preserves adequate Provenance and Traceability

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

- The deployment record that preserves the relationship
- The stable Artifact identifier of the Infrastructure Baseline
- The revision identifier of the applied baseline
- The Infrastructure Deployment associated with the baseline revision
- The point at which the relationship is recorded
- The treatment of failed or incomplete deployments
- The Evidence required to demonstrate the relationship

MO-005g:

- Identifies [Crucible](#) as the responsible actor
- Identifies each Infrastructure Deployment as the traceability subject
- Identifies the stable Artifact identifier and revision identifier as the required baseline reference
- Establishes a direct relationship between an Infrastructure Deployment and the Infrastructure Baseline revision used
- Separates deployment traceability from Artifact management, identification, Version Control, selection, reuse, and immutability

Rationale

An Infrastructure Deployment represents a realized infrastructure instance produced from a selected Infrastructure Baseline revision.

Recording the stable Artifact identifier and revision identifier enables an evaluator to determine exactly which controlled Infrastructure Baseline state Crucible used for the deployment.

Baseline revision deployment traceability supports:

- Identification of the source baseline for each Infrastructure Deployment
- Confirmation that multiple Infrastructure Deployments reused the same revision
- Reproduction of an Infrastructure Deployment
- Comparison of deployments created from the same revision
- Comparison of deployments created from different revisions
- Detection of deployments created from superseded or unapproved revisions
- Evaluation of baseline changes across deployment history
- Preservation of [Provenance](#)
- Maintenance of [Traceability](#)
- Generation of auditable [Evidence](#)

The stable Artifact identifier identifies the Infrastructure Baseline across its revision history. The revision identifier identifies the controlled Infrastructure Baseline state used for the Infrastructure Deployment.

The recorded relationship remains applicable when deployment-specific parameters produce permitted differences between Infrastructure Deployments. The baseline reference identifies the controlled baseline revision, while the deployment record separately identifies the parameters applied to the deployment.

This requirement does not assign the stable Artifact identifier. MO-005b establishes Infrastructure Baseline identification.

This requirement does not establish Version Control for Infrastructure Baseline revisions. MO-005c establishes Version Control.

This requirement does not require reuse of the same revision across multiple Infrastructure Deployments. MO-005e establishes reuse.

Applies To

This requirement applies to:

- [Crucible](#)
- [Infrastructure Baselines](#)
- Infrastructure Baseline revisions
- [Infrastructure Deployments](#)
- [Artifact](#) identifiers
- Revision identifiers
- Deployment records
- Selection records
- Approval records
- Reuse records
- Deployment-specific parameters
- Artifact catalog records
- Artifact repositories
- Version Control records
- [Evidence](#)
- [Provenance](#)
- [Traceability](#)

Verification

Verification confirms that:

1. Each Infrastructure Deployment has an associated deployment record
2. The deployment record identifies the Infrastructure Baseline used
3. The deployment record contains the stable Artifact identifier of the Infrastructure Baseline
4. The deployment record contains the revision identifier of the Infrastructure Baseline revision used
5. The recorded Artifact identifier resolves to the applicable Infrastructure Baseline
6. The recorded revision identifier resolves to the controlled revision used for the deployment
7. The recorded relationship remains associated with the Infrastructure Deployment

8. The deployment record preserves the required Evidence, Provenance, and Traceability

Verification includes:

- Infrastructure Deployment inspection
- Deployment-record inspection
- Infrastructure Baseline inspection
- Artifact identifier inspection
- Revision identifier inspection
- Artifact catalog inspection
- Artifact repository inspection
- Version Control record inspection
- Baseline-selection record inspection
- Identifier-resolution testing
- Cross-deployment record comparison
- Evidence inspection
- Provenance inspection
- Traceability inspection

The verification record identifies:

1. The Infrastructure Deployment
2. The associated deployment record
3. The Infrastructure Baseline
4. The stable Artifact identifier
5. The applied revision identifier
6. The Artifact catalog record
7. The Version Control record
8. The baseline-selection record
9. The identifier-resolution result
10. The applicable deployment-specific parameters
11. Each missing, invalid, or conflicting baseline reference
12. Each identified failure or exception
13. The observed result
14. 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-005c — Infrastructure Baseline Revision Control](#)
- [MO-005d — Approved Infrastructure Baseline Selection](#)
- [MO-005e — Infrastructure Baseline Reuse](#)
- [MO-005f — Approved Infrastructure Baseline Preservation](#)
- [Annex D: Requirements Traceability](#)

Delivery Phase

Phase 1 and subsequent phases

Implementation Status

Not Assessed

Implementation status requires verification that the current [Crucible](#) implementation records the Artifact identifier and revision identifier of the Infrastructure Baseline used by each Infrastructure Deployment.

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-005g.

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

Changes to the Statement should preserve the relationship between each Infrastructure Deployment

and the specific Infrastructure Baseline revision used.

The deployment record should identify:

- The Infrastructure Deployment identifier
- The stable Infrastructure Baseline Artifact identifier
- The applied revision identifier
- The approval status of the applied revision
- The baseline-selection record
- The deployment date and time
- The operational environment
- The Deployment Platform
- The applicable deployment-specific parameters
- The deployment result
- 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-005g#Statement&noheader&nofooter&noeditbtn}}
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