

MO-005e — Infrastructure Baseline Reuse

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

Statement

Crucible SHALL apply the same approved [Infrastructure Baseline](#) revision to two or more [Infrastructure Deployments](#).

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-005e preserves the reuse intent of the Original Requirement by requiring **Crucible** to apply the same approved Infrastructure Baseline revision to multiple Infrastructure Deployments.

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-005f — Approved Baseline Immutability](#)
- [MO-005g — Baseline Revision Deployment Traceability](#)

Assessment

The Original Requirement describes infrastructure as reusable but does not identify the behavior that demonstrates reuse.

The phrase **reusable asset** does not identify:

- The managed subject that is reused
- The revision that is reused
- The approval condition applicable to that revision
- The operation that constitutes reuse
- The minimum number of Infrastructure Deployments needed to demonstrate reuse
- Whether reuse applies to the same revision or different revisions

- The relationship between reuse and modification of approved baseline content
- The Evidence required to demonstrate reuse

MO-005e:

- Identifies **Crucible** as the responsible actor
- Identifies an approved Infrastructure Baseline revision as the reused subject
- Defines reuse as application of the same revision to multiple Infrastructure Deployments
- Establishes two Infrastructure Deployments as the minimum verification threshold
- Separates reuse from selection, Version Control, immutability, and deployment traceability

Rationale

Reuse occurs when **Crucible** applies the same approved Infrastructure Baseline revision to more than one Infrastructure Deployment.

Reuse supports:

- Consistent infrastructure composition
- Reduction of duplicated configuration effort
- Repeatable deployment processes
- Comparison of Infrastructure Deployments created from the same baseline revision
- Reproduction of previously deployed infrastructure
- Controlled deployment across multiple operational environments
- Controlled deployment across multiple Deployment Platforms
- Preservation of approved infrastructure configurations
- Maintenance of Provenance
- Maintenance of Traceability
- Generation of auditable **Evidence**

The minimum threshold of two Infrastructure Deployments distinguishes demonstrated reuse from a single application of an Infrastructure Baseline revision.

The Infrastructure Deployments can differ in deployment instance, location, operational environment, Deployment Platform, execution time, or intended use, provided that Crucible applies the same approved Infrastructure Baseline revision.

This requirement does not require the Infrastructure Deployments to produce identical platform-specific results. Applicable Deployment Platform parameters and Provider Implementations can produce permitted differences while preserving the selected Infrastructure Baseline revision.

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

This requirement does not require each Infrastructure Deployment to record the applied baseline identifiers. MO-005g establishes deployment traceability.

Applies To

This requirement applies to:

- [Crucible](#)
- [Infrastructure Baselines](#)
- Approved Infrastructure Baseline revisions
- [Infrastructure Deployments](#)
- Artifact identifiers
- Revision identifiers
- Approval records
- Selection records
- Deployment records
- Deployment Platforms
- Operational environments
- Deployment parameters
- Provider Implementations
- Artifact catalog records
- Artifact repositories
- [Evidence](#)
- [Provenance](#)
- [Traceability](#)

Verification

Verification confirms that:

1. The approved Infrastructure Baseline revision is identified
2. Two or more Infrastructure Deployments are identified
3. Crucible applies the same approved Infrastructure Baseline revision to each identified Infrastructure Deployment
4. The applied Artifact identifier is the same for each identified Infrastructure Deployment
5. The applied revision identifier is the same for each identified Infrastructure Deployment
6. Each application completes with an identified result
7. The generated Evidence demonstrates reuse of the same approved revision

Verification includes:

- Infrastructure Baseline inspection
- Approval-record inspection
- Artifact identifier inspection
- Revision identifier inspection
- Infrastructure Deployment inspection
- Baseline application testing
- Multiple-deployment testing
- Deployment-record comparison
- Applied-content comparison
- Evidence inspection
- Provenance inspection

- [Traceability inspection](#)

The verification record identifies:

1. The approved Infrastructure Baseline
2. The stable Artifact identifier
3. The approved revision identifier
4. The approval status
5. Each Infrastructure Deployment used to demonstrate reuse
6. The application result for each Infrastructure Deployment
7. The Artifact identifier applied to each Infrastructure Deployment
8. The revision identifier applied to each Infrastructure Deployment
9. Each identified difference attributable to deployment-specific parameters
10. Each identified failure or exception
11. The observed result
12. The generated [Evidence](#)

Requirements Realized By

This requirement is realized by:

- [OR-002 — Deployment Environments](#)
- [OR-004 — Concurrent Environment Management](#)
- [OR-005 — Distributed Environment Management](#)
- [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-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 applies the same approved Infrastructure Baseline revision to two or more Infrastructure Deployments.

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-005e.

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

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

The reuse record should identify:

- The stable Infrastructure Baseline Artifact identifier
- The applied revision identifier
- The approval status of the applied revision
- Each Infrastructure Deployment
- The application date and time
- The operational environment
- The Deployment Platform
- The applicable deployment-specific parameters
- The application 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-005e#Statement&noheader&nofooter&noeditbtn}}
```

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