

MO-006a — Operational Lifecycle Assignment

[Go to MO-006 — Infrastructure Lifecycle Management](#)

Statement

[Crucible](#) SHALL associate each [Infrastructure Environment](#) with an identified [Operational Lifecycle](#).

Derived From

This requirement derives from:

- [MO-006 — Infrastructure Lifecycle Management](#)

The Original Requirement states:

The system SHALL support infrastructure lifecycle management from initial deployment through retirement.[\[C1\]](#)

MO-006a preserves the lifecycle-management intent of the Original Requirement by requiring each Infrastructure Environment to have an identified Operational Lifecycle.

The separate requirements derived from MO-006 address:

- [MO-006b — Operational Lifecycle Initiation](#)
- [MO-006c — Current Lifecycle State Determination](#)
- [MO-006d — Lifecycle Transition Execution](#)
- [MO-006e — Infrastructure Environment Retirement](#)

Assessment

The Original Requirement refers to infrastructure lifecycle management but does not require an explicit relationship between an Infrastructure Environment and the Operational Lifecycle governing that environment.

Without an identified Operational Lifecycle, an evaluator cannot reliably determine:

- Which lifecycle applies to the Infrastructure Environment
- Which lifecycle states apply
- Which lifecycle transitions apply
- Which lifecycle revision governs the environment
- Which transition conditions apply
- Which Retirement conditions apply
- Whether the lifecycle differs from the lifecycle assigned to another Infrastructure Environment

The phrase **infrastructure lifecycle management** does not identify:

- The Infrastructure Environment governed by the lifecycle
- The Operational Lifecycle assigned to the environment
- The identifier of the assigned lifecycle
- The revision of the assigned lifecycle
- The scope of the lifecycle assignment
- The Evidence required to demonstrate the assignment

MO-006a:

- Identifies **Crucible** as the responsible actor
- Identifies each Infrastructure Environment as the subject of the assignment
- Identifies an Operational Lifecycle as the assigned lifecycle
- Requires the Operational Lifecycle to be identified
- Separates lifecycle assignment from lifecycle initiation, state determination, transition execution, and Retirement

Rationale

An identified Operational Lifecycle defines the lifecycle framework applicable to an Infrastructure Environment.

The lifecycle assignment provides the basis for determining:

- The lifecycle states applicable to the Infrastructure Environment
- The permitted transitions between lifecycle states
- The conditions applicable to each transition
- The activities allocated to Crucible
- The activities allocated to external actors or systems
- The initial lifecycle stage
- The terminal lifecycle stage
- The applicable approval and control points
- The Evidence associated with lifecycle activities

Different Infrastructure Environments can require different Operational Lifecycles because of differences in:

- Mission purpose
- Operational environment
- Security classification
- Compliance obligations
- Deployment Platform
- Infrastructure Baseline
- Organizational policy
- Operational authority
- Maintenance model
- Retirement and disposition requirements

Identifying the Operational Lifecycle supports:

- Consistent lifecycle execution
- Determination of the current lifecycle state
- Controlled lifecycle transitions
- Lifecycle-specific verification
- Reproducibility of lifecycle actions
- Preservation of [Provenance](#)
- Maintenance of [Traceability](#)
- Generation of auditable [Evidence](#)

This requirement establishes the association between an Infrastructure Environment and an Operational Lifecycle.

This requirement does not initiate the assigned Operational Lifecycle. MO-006b establishes lifecycle initiation.

This requirement does not determine the current lifecycle state. MO-006c establishes current lifecycle state determination.

This requirement does not execute lifecycle transitions. MO-006d establishes lifecycle transition execution.

This requirement does not transition the Infrastructure Environment to Retirement. MO-006e establishes Infrastructure Environment Retirement.

Applies To

This requirement applies to:

- [Crucible](#)
- [Infrastructure Environments](#)
- [Operational Lifecycles](#)
- Operational Lifecycle identifiers
- Operational Lifecycle revisions
- Lifecycle-assignment records
- Lifecycle states
- Lifecycle transitions
- Transition conditions
- Operational environments
- Deployment Platforms
- Infrastructure Baselines
- Security profiles
- Compliance profiles
- Organizational policies
- Operational authorities
- [Evidence](#)
- [Provenance](#)
- [Traceability](#)

Verification

Verification confirms that:

1. The Infrastructure Environment is identified
2. An Operational Lifecycle is associated with the Infrastructure Environment
3. The associated Operational Lifecycle has an identifier
4. The associated Operational Lifecycle revision is identifiable
5. The lifecycle assignment applies to the identified Infrastructure Environment
6. The lifecycle assignment distinguishes the applicable Operational Lifecycle from other available lifecycles
7. The assignment record preserves the required Evidence, Provenance, and Traceability

Verification includes:

- Infrastructure Environment inspection
- Operational Lifecycle inspection
- Operational Lifecycle identifier inspection
- Operational Lifecycle revision inspection
- Lifecycle-assignment record inspection
- Cross-environment lifecycle-assignment comparison
- Lifecycle applicability inspection
- Evidence inspection
- Provenance inspection
- Traceability inspection

The verification record identifies:

1. The Infrastructure Environment
2. The assigned Operational Lifecycle
3. The Operational Lifecycle identifier
4. The Operational Lifecycle revision
5. The lifecycle-assignment record
6. The effective assignment condition
7. The authority or process responsible for the assignment
8. Each conflicting or missing lifecycle assignment
9. Each identified failure or exception
10. The observed result
11. The generated [Evidence](#)

Requirements Realized By

This requirement is realized by:

- [OR-001 — Operational Roles](#)
- [OR-002 — Deployment Environments](#)
- [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-006b — Infrastructure Lifecycle Initiation](#)
- [MO-006c — Infrastructure Lifecycle State Recording](#)
- [MO-006d — Infrastructure Lifecycle Transition Execution](#)
- [MO-006e — Infrastructure Environment Retirement](#)
- [Annex D: Requirements Traceability](#)

Delivery Phase

Phase 1 and subsequent phases

Implementation Status

Not Assessed

Implementation status requires verification that the current [Crucible](#) implementation associates each Infrastructure Environment with an identified Operational Lifecycle.

Requirement Status

Draft

This requirement derives from MO-006 in the Crucible System Requirements Specification, Version 1.1 Draft.

Notes for Editors

This requirement page should retain the stable requirement identifier M0-006a.

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

Changes to the Statement should preserve the association between each Infrastructure Environment and an identified Operational Lifecycle.

The lifecycle-assignment record should identify:

- The Infrastructure Environment identifier
- The Operational Lifecycle identifier
- The Operational Lifecycle revision
- The effective assignment condition
- The assignment date and time
- The authority or process responsible for the assignment
- The applicable operational environment
- The applicable Deployment Platform
- The applicable security and compliance constraints
- 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-006:mo-006a#Statement&noheader&nofooter&noeditbtn}}
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