

Lifecycle Semantics

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Discussion

Lifecycle Semantics defines meaning through states, events, transitions, transition constraints, and lifecycle rules.

A [lifecycle](#) describes how a thing changes over time. Lifecycle Semantics explains what each state means, which events establish a state, which transitions are valid, which transitions are prohibited, and which conditions govern movement from one state to another.

Lifecycle Semantics differ from a simple status code. A status code names a state. Lifecycle Semantics defines the meaning of the state in relation to prior states, successor states, events, actors, rules, evidence, and governance constraints.

Lifecycle Semantics also differs from implementation logic. Implementation logic executes state changes. Lifecycle Semantics define what those state changes mean within the governed domain.

Lifecycle semantic content includes:

- Lifecycle states
- Initial states
- Terminal states
- Events
- State transitions
- Transition rules
- Valid predecessor states
- Valid successor states
- Prohibited transitions
- Triggering events
- Transition conditions
- Actor roles
- Evidence requirements
- Reversal and cancellation rules
- Audit requirements
- Traceability to [domain](#) meaning

A governed architecture preserves [traceability](#) from lifecycle Semantics to the [conceptual model](#), business rules, policies, schemas, implementation artefacts, and conformance tests that express or enforce lifecycle meaning.

Definition

meaning defined through states, events, transitions, and constraints that govern how a thing changes

over time

Source

DIDO Solutions usage, informed by state-machine modelling, business process modelling, software architecture, semantic modelling practice, and lifecycle governance practice.

Note

Lifecycle Semantics establishes the domain meaning of state progression. A lifecycle state has reliable meaning only when the architecture defines the state, the event that establishes the state, the valid predecessor and successor states, and the rules that govern transitions.

Example

An FX trade lifecycle defines the following states:

State	Meaning
Proposed	a trade exists as a submitted proposal that has not completed required validation
Rejected	a proposed trade failed one or more required validation checks
Confirmed	counterparties or authorised systems accepted the trade as valid under the confirmation rules
Settled	settlement evidence shows completion of the settlement obligation
Cancelled	an authorised action ended the trade lifecycle before settlement or reversed the active trade state under governed rules

The lifecycle also defines valid transitions:

From state	Event	To state	Lifecycle meaning
Proposed	ValidationFailed	Rejected	the proposal does not satisfy the rules required for confirmation
Proposed	ValidationPassed	Confirmed	the proposal satisfies the rules required for confirmation
Confirmed	SettlementEvidenceReceived	Settled	the confirmed trade has settlement evidence
Confirmed	CancellationAccepted	Cancelled	an authorized cancellation ends the confirmed trade lifecycle
Settled	CorrectionRequested	ExceptionReview	a governed exception process reviews a settled-state correction

A field named `lifecycleState` has datatype semantics when the schema constrains it to values such as `Proposed`, `Confirmed`, `Settled`, and `Cancelled`. The field has lifecycle Semantics only when the architecture defines what each state means and which transitions create valid state

progression.

For example, the transition from Proposed directly to Settled violates lifecycle Semantics when the architecture requires confirmation before settlement. The error is not merely an invalid status value. The error represents an invalid interpretation of the trade lifecycle.

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