Fixpoint Core (FPC) — Conceptual Companion

Version 1.0 — Non-normative

Status

FPC is non-normative. It introduces no kernel identifiers and no RELATION bindings.

FPC has no effect on kernel verification, reproducibility, or provenance. K0 never depends on FPC.

Context

RIS separates a minimal, machine-verifiable kernel level (K0) from optional structural enrichments (K1). Many iterative systems expose stable states that behave as fixpoints. At K0, some operator properties are recorded as axioms to preserve determinism, minimal commitments, and model independence. FPC gives background only.

K0 axioms (operator form)

Let be an admissible region and

$$T : W_r \to W_r.$$

$$T(W_r) \subseteq W_r, \qquad T \circ T = T \text{ on } W_r.$$

Why idempotence appears (conceptual view)

Outside the kernel, idempotence commonly reflects projection-stabilized dynamics: a constraint map

$$P : W_r \to W_r$$

$$U : W_r \to W_r$$

Example (K1 factorization pattern)

If K1 structure is enabled, one illustrative route is:

Assume maps

$$P, U : W_r \to W_r$$

$$P \circ P = P \text{ on } W_r, \qquad U \circ P = P \text{ on } W_r,$$

$$T := U \circ P.$$

$$T = P, \qquad T^2 = T.$$

This is illustrative only; FPC does not assert that any K0 operator admits such a factorization.

Separation

FPC provides explanations, not constraints. Violations of FPC cannot cause kernel verification to fail. K0 correctness, reproducibility, and provenance never depend on FPC.

Placement

This companion is delivered as PDF to keep it outside ASCII-strict linting. Normative, ASCII-strict content remains in

`Docs/fixpoint_core_spec_v1_0.md`

Changes to this companion do not affect reproducible builds.