

v3.4-LED-001 – Ledger Architecture & Consensus Abstraction Layer

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1. Purpose & Scope

This document defines the architectural model of the MaxOneOpen ledger system, including modular consensus handling and ledger abstraction logic. It guarantees sovereign, auditable and independently verifiable records with flexible backend pluggability.

2. Ledger Design Principles

- Immutable record layer with optional proof anchors
- Separation of control, record and query planes
- No hardcoded backend (e.g. Ethereum, Substrate, Cosmos)
- Abstraction supports hash-pointer chain, DAG, and zk-rollup variants

3. Consensus Abstraction Logic

Layer	Responsibility	Pluggable Options
Validation	Ensure block conformity	PoA / PoS / DAG validators
Finality	Anchoring & consensus closure	ZK-rollup / Voting / Proof trigger
Replication	Distribute ledger state	Multicast / Broadcast / Merkle mesh
Audit	Track execution proof	Local ZK trace / External pin

4. Sovereign Deployment Requirements

- All forks must implement consensus abstraction interface
- Consensus decisions must be locally validatable without central coordination
- Record structure must allow selective anchoring
- All ledger data must be exportable and schema-verifiable

5. Certification Triggers

- Certification requires demonstration of sovereign consensus
- Pluggable backends must be declared and verifiable
- Certification is void on immutable write bypass or hidden anchors

6. Certification Relevance

Only deployments with sovereign, modular, and exportable ledger logic qualify for MaxOneOpen certification. Centralized, opaque or externally governed consensus structures are disallowed.