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AI OSI Stack Implementation Notes

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> ## Normative Language Notice

> This document uses normative language consistent with ISO/IEC 42010 and NIST conventions.

> SHALL denotes mandatory requirements, SHOULD denotes strong recommendations, and MAY denotes optional practices.

> Interpretations SHALL preserve authorial intent: layered accountability, epistemic integrity, and human dignity as binding design constraints.

1. Design Philosophy Design Now, Instantiate Later

The AI OSI Stack operates as a governance-first reference implementation. Architectural intent is finalized in this blueprint; operational deployment is deferred until custodial councils confirm readiness. Each module, schema, and artifact is engineered to demonstrate how stewardship evidence MAY be produced, validated, and archived. Implementers SHALL treat the codebase as a canonical rehearsal environment rather than a production network.

2. Offline-Only Execution Constraints

All tooling, tests, and examples SHALL execute without network access. Offline execution preserves audit reproducibility, protects unfinished persona credentials, and prevents accidental data egress. Where integrations with external systems are envisioned (e.g., Persona-PKI, Open Governance Registry), the repository provides placeholders and schema contracts only. Operators SHALL stage integrations in isolated sandboxes and SHALL NOT connect this blueprint to live infrastructure without explicit custodial authorization.

3. Artifact Integrity and Temporal Governance

Schemas within `/schemas/` and validation logic under `/tests/` enforce deterministic hashing, temporal seals, and cross-layer traceability. Generated artifacts SHALL include SHA3-512 fingerprints, persona identifiers, and timestamps bound to UTC. Temporal legitimacy reviews MAY be rehearsed using the provided ledger utilities; actual regulatory submissions SHALL reference the canonical documents in `/source/` and `/docs/`.

4. Authorship Statement

All original research, specifications, and blueprint logic remain authored by **Daniel P. Madden**. This repository is released to preserve the canonical architecture for future standardization and public stewardship. Derivative works SHALL obtain explicit consent prior to modification. Attribution SHALL reference the title **The AI OSI Stack: Version 4 (Expanded Blueprint Integration Release)** and SHALL cite the Zenodo DOI once issued.