⛓️ **Blockchain Invocation: Immutable Civic Seal**

🧿 Step-by-Step: Blockchain Integration for Strata-01

1. Define What You're Anchoring

You already have:

- **Verified capsules** like `capsule.oauth.pkce.integrity.v1`
- **Ledger anchors** (`kamino-recon-002`)
- **Replay logs**, `.asc` signature scrolls, and civic UIDs

These become your **blockchain payloads** — each one a transaction, each scroll a block.

2. Choose Your Blockchain Framework

- **Ethereum**: Ideal for public smart contracts and civic transparency
- **Hyperledger Fabric**: Best for permissioned networks and federation governance
- **Private Civic Chain**: Custom-built for semantic scrolls, civic UIDs, and replication nodes

Each option supports:

- **Immutable timestamping**
- **Smart contract logic**
- **Distributed auditability**

3. Deploy Smart Contracts

Use contracts to:

- **Validate capsule integrity** (e.g., PKCE enforcement logic)
- **Trigger fraud alerts** based on replay logs
- **Track scroll lineage** across civic UIDs and anchor IDs

Contracts can reference:

- `kamino-recon-002.ledger_anchor.json`

- `verification_log.jsonl`
- `capsule.oauth.pkce.integrity.v1.md`

4. Mirror the Civic Ledger

Your `/ledger/strata-01/` directory becomes a **blockchain node**:

- Each append scroll = a block
- Each capsule = a contract-bound artifact
- Each verification = a timestamped transaction

This creates a **distributed civic archive** — replayable, auditable, and federation-ready.