



## B) Runtime

- 1- Legal entity separation (Gym, Arena, Payments, Logistics)
- 2- learner identity-blindness (pseudonym)
- 3- Black box (zero learner telemetry egress)
- 4- Identity-Blind Services
  - a. Payment services
  - b. Logistics services

## B) Runtime > 5- Gym

- a. Socratic
- b. Adaptive
- c. Forward-only (no gaming)
- d. Proactive Violation Intervention
- e. Internal Engines: EC-Gen, SSS, PPS, LLM-RAG
- f. Governance Compliance Log: ELA Actuals
- g. **Admission**
  - 1 Orchestrator presents gUserID and CET
  - 2 Validations: CET, ELO
- h. **Params**
  - minML, Remediation, RC
- i. **Certification**
  - 1 Async Gym-Cert Heartbeat
  - 2 Revocation ledger

## B) Runtime > 6- Arena

- a. Verbal / Adversarial
- b. Adaptive
- c. ELO coverage
- d. EC verification & derivation
- e. Admission: Orchestrator, Validations
- f. Pass/Fail Outcome (VRT)

## B) Runtime > 7- Experience Credential (EC)

- a. **Gym-Cert-Data**
- b. No learner telemetry
- c. Governance compliance telemetry
- d. Portable
- e. **RCs**
  - 1 Definition
  - 2 Exposure probes
  - 3 Bucketed stats

## C) Infrastructure

- 1- **Orchestrator as trust broker bridge**
  - a. Learner Device as Orchestrator
  - b. Opaque Identity Envelope forwarding
  - c. Crypto & Atomic Independence
- 2- **Identity Selector: Institutional Identity**
  - a. IdP
  - b. Sovereign Gym
  - c. Self-Sovereign
  - d. Shared-device
- 3- **Privacy: Guaranteed | Preserving**
- 4- **Identity-Blind Services**
  - a. Gym, Arena, Payments, Logistics

## A) Design-time > 1- Knowledge Declaration (ELO)

ELO = Epistemic Learning Object

- 1 **Tree1: Truth Anchor & Content (TAC)**
  - a- Weight by Type
    - ontology:1.0, SEA:0.98,
    - lecture:0.94, textbook: 0.8
- 2 **Tree2: Competencies & LOs**
  - a- Competencies
  - b- Learning Objectives
- 3 **Tree 3: Epistemic Table of Contents (eToC)**
  - a- Node Params:
    - Node ID, MinML gate, Coverage, Remediation, RankUp
    - Hierarchy Proximity
    - Bloom Level, ML, Grading weight
  - b- Assessments: Question banks
  - c- Annotations: Authority \* Endorsement
  - d- Practices: Unit, cross-unit, capstone
- 4 **Tree 4: Semantic Latent Layer (SLL)**
  - a- Deep Semantic Compilation
  - b- ReRanking

## A) Design-time > 2- Knowledge Realization

- a. Licensable IP
- b. Epistemic Engineering Artifacts
  - 1 **Reasoning Challenge (RC)**
    - a- Public by default
    - b- Probes count range
    - c- Probabilities: forced hypo, counterfactuals
    - d- Fields
      - 1 Domain Tags
      - 2 Scenario variants
      - 3 Counterfactual templates
      - 4 Reasoning Probes
      - 5 Constraints
  - 2 **Shared Experience Asset (SEA)**
    - a- Institution-Private by default
    - b- Fields
      - 1 Asset type (e.g. checklist, illness script)
      - 2 Tags
      - 3 Applicability Probes
      - 4 Provenance
  - 3 **Annotations (Anns)**
    - a- Contributor Authority factor
    - b- Endorser role factor

## A) Design-time > 3- Epistemic Engineering Economy

- a. **Intellectual Property (IP)**
  - 1 Individual or joint with institution
  - 2 Peer-review (author, instructor, peer)
- b. **Registries**
  - 1 Decentralized / Federated
  - 2 Cloud micro services
  - 3 Usage metering
  - 4 Ledger batch update
  - 5 Semantic and relational search
  - 6 Minimum match anti gaming
  - 7 Search Params
    - a- Node hierarchy proximity
    - b- UpRank
  - 8 Rerank function
- c. **Ledger**
  - 1 Provenance
  - 2 Micro-payments
  - 3 Validation
  - 4 Epistemic Impact Factor
    - a- Exportable / ledger-verifiable
    - b- Contributor authority factor
    - c- Endorser role factor
    - d- Un-gamable usage (Arena, no Gym)
    - e- Active usage (decaying past)
    - f- Adoption breadth across arenas

