

DigiEmu Core Certification Technical Requirements v1.0

Status: Normative Supporting Framework – Enterprise Edition

Scope: Technical Certification Criteria

Date: 2026-02-17

1. Purpose

This document defines the mandatory technical criteria required for certification under the DigiEmu Core Certification Policy. It establishes measurable validation standards for enterprise implementations.

2. Certification Levels

Level 1 – Deterministic Snapshot Compliance

Level 2 – Audit & Verification Compliance

Level 3 – Enterprise Governance Compliance

Each level builds cumulatively upon the previous level.

3. Determinism Validation Requirements

Certified systems MUST demonstrate deterministic snapshot generation, canonical serialization compliance, and SHA-256 hash reproducibility across independent validation environments.

4. Hash Integrity Verification

Implementations MUST provide reproducible hash validation procedures. Independent recomputation MUST produce byte-identical SHA-256 outputs.

5. Immutability Enforcement

ContentVersion and Snapshot entities MUST be immutable once committed. Database-level constraints or equivalent enforcement mechanisms MUST prevent retroactive mutation.

6. State Reconstruction Capability

Certified systems MUST reconstruct historical knowledge states from immutable stored entities. Reconstruction MUST yield identical canonical payload and hash values.

7. Tenant Isolation Verification

Multi-tenant implementations MUST enforce strict data boundaries. Cross-tenant mutation or data exposure SHALL invalidate certification.

8. Testing & Evidence Requirements

Certification applicants MUST provide:

- Determinism test results
- Hash validation logs
- Architecture documentation
- Security model summary
- Version alignment declaration.

9. Security & Operational Controls

Enterprise-level certification requires documented access control policies, secure deployment practices, and operational monitoring procedures supporting snapshot verification.

10. Governance Alignment

Certification eligibility requires alignment with the DigiEmu Governance & Versioning Policies. Major specification updates require recertification review.