Quadnition Gold Spec — Extended Description (v2)

Overview:

The Quadnition Gold Spec formalizes the full cryptographic, temporal, and multi-modal verification model behind Quadnition: the first sealed, zero-PII, human-in-the-loop provenance engine. It defines how intent, audio continuity, visual hashing, and machine-state sealing combine into a deterministic, tamper-evident session record.

Core Components:

• Deterministic Merkle v2 hashing with domain separation.

• Multi-carrier SealWeave visual hashing for tamper-visible recovery.

• Micro-dither temporal anchoring for frame-indexed audio continuity.

• HMAC-chained Micro-Seal machine-state logs for reproducible event trails.

• A complete SessionBundle schema capturing audio, video, event logs, manifests, and proofs.

Verification Guarantees:

• Proven continuity of human involvement.

• Multi-modal resistance to tampering or retroactive edits.

• Cross-modal consistency across time, audio, image, and machine state.

• Deterministic PASS/FAIL verifier logic requiring no trust in the author.

Non-Claims:

• Does not detect consciousness.

• Does not perform emotion analysis.

• Does not identify users; all operation is zero-PII by design.

• Does not provide psychological inference.

Purpose:

The Gold Spec establishes the minimum, enforceable guarantees required for any

Quadnition■compatible engine. It acts as the canonical reference for independent verification, audit, research use, and protocol evolution. This specification marks the first complete, mathematically anchored standard for sealed human■machine cognition loops.

This document is intended for engineers, researchers, auditors, forensic analysts, and any lab or institution evaluating Quadnition implementations.