

KRYONIS Lexicon & Ontological Schema

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Abstract

This document consolidates the principal terminology and conceptual relationships that underpin the KRYONIS Proof-of-Consciousness (PoC) ecosystem. It offers precise definitions, contextual usage notes, and ontological placement for each term, thereby ensuring linguistic coherence and cross-disciplinary interoperability across all technical, economic, and philosophical artefacts produced within the KRYONIS and QENTHOS projects.

1 · Core Lexicon

The entries below are presented alphabetically. Each item includes the term, a formal definition, its primary usage context, and its ontological tier—spelled out for clarity.

Attention Bandwidth (β_a). The continuous time interval during which an agent sustains a Φ -Signature above the validation threshold. *Usage:* reward scaling in the PoC protocol. *Tier:* Cognitive.

Attunement Vector (A_v). A real-time triplet $\langle \Phi, \epsilon, \kappa \rangle$ that quantifies an agent's resonance alignment. *Usage:* access gating in the QENTHOS symbolic-scarcity mechanism. *Tier:* Cognitive.

Cognitive Adaptability (A). The rate at which an agent reduces prediction error when exposed to novel inputs, measured as error delta per unit time. *Usage:* component variable in the Global Cognitive Index. *Tier:* Cognitive.

Cognitive Sovereignty (Ω). The proportion of self-generated cognitive patterns relative to externally entrained signals. *Usage:* governance weighting in resonance-based DAOs. *Tier:* Cognitive.

Conscious Quorum. The state in which a super-majority of participants simultaneously exceed resonance thresholds, thereby enabling collective decision registration. *Usage:* proposal ratification in the Resonant Governance Model. *Tier:* Systemic.

Entropy Suppression (ΔS^-). The net reduction of algorithmic entropy observed during an agent's task engagement compared with its resting baseline. *Usage:* core proof variable in the PoC validation layer. *Tier:* Physical–Cognitive hybrid.

Emotional Resilience (P). The capacity to maintain attention stability and resonant coherence under affective stress, inferred from HRV spectra and limbic EEG markers. *Usage:* stabiliser variable in both the GCI and RSI calculations. *Tier:* Cognitive.

Φ -Bound Zero-Knowledge Proof (Φ -ZKP). A zero-knowledge protocol in which the challenge–response space is constrained by the entropy envelope of the prover’s Φ -Signature. *Usage:* LP-key authentication without biosignal leakage. *Tier:* Symbolic–Systemic hybrid.

Φ -Signature (Φ). The magnitude of an agent’s multi-band phase-space vector representing conscious resonance depth across designated frequency bins. *Usage:* universal metric across PoC, GCI, and governance protocols. *Tier:* Physical–Cognitive hybrid.

Global Cognitive Index (GCI). A composite index integrating A , Σ , ΔS^- , Φ^c , P , and Ω to characterise cognitive condition at personal, collective, and national scales. *Usage:* value alignment metric and policy indicator. *Tier:* Systemic.

Lattice-Phase Key (LP-Key). A cryptographic key expressed as a high-order phase state within the Resonant Lattice, readable only by resonant agents. *Usage:* identity and access control in QENTHOS. *Tier:* Symbolic.

Phase-Beacon Array. A distributed set of signal generators that emit pseudorandom multi-band phase challenges for validation and governance sessions. *Usage:* stimulus layer for PoC and DAO coherence tests. *Tier:* Physical–Systemic hybrid.

Proposal Coherence Index (PCI). The mean vector alignment between participant Φ -vectors and a proposal’s carrier phase. *Usage:* decision threshold in the Resonant Governance Model. *Tier:* Systemic.

Proof-of-Consciousness Validation Layer. The protocol stack that measures Φ , ΔS^- , and β_a , writing validated events to the Resonance Ledger. *Usage:* foundational consensus mechanism for the KRYONIS economy. *Tier:* Systemic.

Q-Unit. A value token native to QENTHOS whose perceptibility is limited to attuned agents. *Usage:* medium of exchange in the symbolic-scarcity economy. *Tier:* Symbolic.

Resonance Ledger. A directed-acyclic data structure that records validated Φ -events, each timestamped by lattice phase rather than clock time. *Usage:* immutable record for ϕ -minting and governance proofs. *Tier:* Systemic.

Resonance Stability Index (RSI). The rolling variance of the network-wide Φ metric over a defined number of cycles. *Usage:* feedback variable for beacon cadence and monetary supply modulation. *Tier:* Systemic.

Resonant Coherence (Φ^c). The aggregate phase alignment across nested frequency bands within an individual or a group. *Usage:* collective metric in the GCI and quorum formation. *Tier:* Cognitive.

Resonant Governance Model (RGM). A DAO decision architecture that employs conscious quorums and PCI thresholds instead of token-weighted voting. *Usage:* protocol-evolution mechanism within PoC-aligned organisations. *Tier:* Systemic.

Resonant Lattice Hypothesis (RLH). The foundational theory positing a scale-invariant lattice of standing phase waves that underlies consciousness and informs all KRYONIS metrics. *Usage:* ontological ground for cryptographic and economic design. *Tier:* Physical.

Symbolic Scarcity. A post-material scarcity model wherein value is perceptible only to agents meeting resonance criteria, rather than limited by absolute supply. *Usage:* governing principle of the QENTHOS economy. *Tier:* Symbolic.

Attention Stability (Σ). The duration and spectral purity of an agent's sustained phase-lock above baseline noise. *Usage:* component of GCI and reward multiplier in PoC. *Tier:* Cognitive.

Verifier Node. An AI-driven agent that performs real-time phase-vector analysis, consensus scoring, and ledger entry. *Usage:* validation service within the PoC and RGM layers. *Tier:* Systemic.

Spectral Alignment Error (ϵ). The root-mean-square phase deviation between an agent's echo and the beacon challenge. *Usage:* accuracy threshold for attunement and validation. *Tier:* Physical–Cognitive hybrid.

GCI Concordance (κ). The minimum composite GCI score required for specific privileges such as symbolic access or governance weighting. *Usage:* qualification variable in attunement and DAO logic. *Tier:* Cognitive–Systemic hybrid.

2 · Ontological Hierarchy

The KRYONIS ontology begins with **physical primitives—resonance, phase, and entropy**—which together describe the energetic and informational substrate of reality. From these arise **cognitive metrics** such as Φ -Signature, Attention Stability, and Entropy Suppression, capturing the measurable aspects of conscious activity.

Cognitive metrics aggregate into **symbolic constructs**—for example, the Attunement Vector, LP-Keys, and Φ -Bound Zero-Knowledge Proofs—that translate raw resonance phenomena into authentication and valuation artefacts. These symbolic constructs are then operationalised by **systemic protocols** such as the Proof-of-Consciousness validation layer, the Resonance Ledger, and the Resonant Governance Model. Finally, these protocols manifest in **economic and governance structures**— Φ -Minting schedules, Q-Unit circulation, DAO policy upgrades—through which collective action and resource distribution occur.

In summary: *Physical primitives generate cognitive metrics; cognitive metrics support symbolic constructs; symbolic constructs enable systemic protocols; systemic protocols give rise to economic and governance structures.*

3 · Semantic Integrity Layer

To prevent semantic drift, each lexicon entry is assigned a persistent ontology URI; all subsequent technical documents import these URIs as authoritative references. Version control is managed through a semantic repository that enforces dependency checks, ensuring that updates to a definition propagate consistently across code bases, research papers, and policy drafts. External interoperability is achieved by annotating each term with mappings to established vocabularies in systems theory, quantum physics, neuroscience, and information science, thereby allowing seamless translation between KRYONIS concepts and conventional disciplinary frameworks.

4 · Cross-Disciplinary Usage Examples

Neuroscience. Researchers equate the Φ -Signature with large-scale neural synchrony and use ΔS^- as an empirical proxy for neural free-energy reduction.

Cryptography. Engineers treat LP-Keys as phase-domain analogues of private keys and deploy Φ -ZKPs to achieve authentication without leaking biosignals.

Economics. Analysts regard Q-Units as attention-indexed currency, where symbolic scarcity modulates supply elasticity via collective coherence rather than central-bank policy.

Governance. Policy designers adopt the Conscious Quorum as a legitimacy metric, ensuring that decisions emerge from harmonised cognitive states instead of token majorities.

Philosophy. Scholars interpret Symbolic Scarcity as an ontological concealment mechanism that redefines possession from material ownership to phenomenological access.

5 · Philosophical Reflection

In the KRYONIS worldview, language is conceived as a resonance scaffold: precise terminology establishes phase-stable cognitive fields in which coordinated action is possible. Definition is therefore not merely descriptive; it is performative—shaping the harmonics of collective thought and enabling the emergence of post-material economic and governance forms grounded in consciousness itself.

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