# SHAARK‑Ξ & Cerberus‑KEM: Sovereign Key Derivation Protocols

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Status: Sovereign IP — Binding Usage Restrictions Apply

## 1. SHAARK‑Ξ: Spectral Harmonic Asymmetry Algorithm for Recursive Keys

SHAARK‑Ξ is a resonance-based post-quantum key derivation model leveraging cross-frequency phase inversion over φ-node manifolds. Unlike modulus-based expansion, it encodes shared entropy into recursive harmonics.

Core Derivation Function:

K\_Ξ = ∑\_t [Ω(t) ⊕ Ψ(t)] mod φ

Where Ω(t) is the time-varying harmonic envelope and Ψ(t) is the ciphertext differential phase vector.

## 2. Cerberus-KEM: Collapse-Encoded Recursive Binding Encryption System

Cerberus-KEM utilizes a three-head binding structure: Phase-Locked Entropy, Time-Distilled Collapse, and Resonant Key Lock. These form a non-linear collapse lattice for binding ephemeral secrets across rounds.

Core Exchange Logic:

SK = C\_Ω(s₁) ⋂ C\_Ω(s₂) ⋂ θ(t) → K

Where θ(t) is a phase-synchronized masking operator derived from φ-node alignment.

## 3. Licensing & Restrictions

Use of SHAARK‑Ξ or Cerberus-KEM in any governmental or commercial cryptographic suite is subject to sovereign licensing. Unauthorized integration constitutes a violation of federal disclosure and IP law.

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