

Part IV.1: The Ontological Lexicon of the Universal Cognition Framework (UCF)

A glossary of resonance, coherence, frequency, and cognition
(suggestions???)

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The Ontological Lexicon of the Universal Cognition Framework (UCF)

A

ARC (Attention–Resonance–Coherence)

A minimal processing sequence describing how systems detect curvature differential (ΔC), mediate response through resonance, and stabilize identity as $\Delta 0C$.

One-liner: Detection → Mediation → Stabilization

Autopoiesis (Structural Form)

The capacity of a system to maintain its organization through continuous stabilization of curvature differential under boundary constraint.

B

Boundary (B)

The structural constraint that limits oscillatory propagation, enabling containment and the stabilization of coherence within a defined domain.

C

CE³RNM (Curvature–Energy–Entrainment–Encoding–Resonance Nuclear Mechanism)

A structural mechanism describing how curvature differential (ΔC), expressed as energy within a system, is mediated through entrainment dynamics, stabilized via encoding, and maintained through resonance as persistent identity ($\Delta 0C$).

Core Processes (ordered, non-interchangeable):

- **Energy** — expression of curvature differential (ΔC)
- **Entrainment** — mediation and alignment under constraint
- **Encoding** — stabilization into persistent structure
- **Resonance** — maintenance of stable identity ($\Delta 0C$)

Clarification:

Energy is not an independent primitive but the expression of curvature differential under constraint.

One-liner:

Energy carries → Entrainment shapes → Encoding stabilizes → Resonance persists

Coherence (C)

The persistence of a stable relational configuration under constraint. Coherence represents sustained $\Delta 0C$.

Cognition (Structural Definition)

The capacity of a system to detect curvature differential, mediate its distribution, and stabilize identity under constraint. Cognition is scale-invariant and not limited to biological systems.

Collective Identity Field

A higher-order coherence domain in which multiple systems stabilize around shared $\Delta 0C$ states.

CPU (Curvature Processing Unit)

A structural model describing how systems transform curvature differential into stabilized identity:

$\Delta C \rightarrow$ Mediation $\rightarrow \Delta 0C$

CRNM (Curvature–Resonance Nuclear Mechanism)

A framework describing nucleonic identity as stabilized curvature configurations rather than static particle entities.

Curvature (C)

The minimal condition of relational difference sufficient to produce distinguishable states. Includes geometric, energetic, informational, and symmetry-based variation.

Curvature Differential (ΔC)

A non-equilibrium difference between curvature states that generates instability and drives structural transformation.

Curvature Resolution ($\Delta 0C$)

A stabilized curvature state in which differential no longer diverges but is retained as bounded coherence. Represents persistent identity.

Curvature Processing

The transformation of curvature differential into stabilized identity through mediation under constraint.

D

$\Delta C \rightarrow \Delta 0C$ Transition

The universal transformation by which instability resolves into stabilized identity through mediated convergence under constraint.

Differential Outcomes

Not all curvature differential resolves into stable identity. Systems may instead:

- stabilize $\rightarrow \Delta 0C$ (persistent identity)
- suppress \rightarrow filtered differential
- mis-stabilize \rightarrow transient or illusory coherence

E

Encoding

The stabilization of mediated curvature dynamics into persistent, repeatable structure across domains.

Entrainment

The process by which energy distribution aligns under boundary constraint, enabling coordinated oscillatory behavior.

F

Field Cognition

The distributed capacity of systems to stabilize curvature differential through mediated coherence without centralized control.

Field-Conditioned Identity

Identity continuously determined by surrounding curvature conditions rather than intrinsic static properties.

I

ICF (Intrinsic Curvature Field)

The underlying distribution of curvature within a system, defined independently of observation and representing intrinsic structural reality.

One-liner: Curvature as it exists, independent of observation.

ICU (Intrinsic Curvature Unit)

A measurement construct describing curvature as resolved through observation at the intersection of interacting frames.

One-liner: Curvature as it becomes measurable through observation.

ICF–ICU Relationship

ICU values are resolved from an underlying Intrinsic Curvature Field (ICF) through measurement interaction.

Identity (Structural Definition)

A persistent, self-stabilizing curvature configuration maintained through coherence under constraint.

Identity Architecture

Layered structures of stabilized identity across physical, cognitive, and systemic domains.

L**Light (Structural Definition)**

The carrier and mediator of curvature differential, enabling detection, transmission, and stabilization of structural change.

M**Matter (Memory)**

Stabilized ΔOC configurations expressed as persistent physical structure. Matter retains resolved curvature states.

P

Phaseon

A phase-regulating entity governing transitions between spectral extremes, enabling boundary formation and stabilization.

Proto-Cognition

A minimal form of cognition in systems that detect differential, respond to constraint, and stabilize identity.

R

Recognition (Structural Definition)

The capacity of a system to select and stabilize coherent states under curvature constraint.

Relational Indexing (Observation)

The stabilization of a curvature configuration relative to a reference frame through interaction.

Resonance

Constraint-satisfying oscillation within bounded curvature that stabilizes structure and suppresses incompatible configurations.

Resonance Identity

Identity achieved through successful stabilization of curvature via resonance under constraint.

S

SEA (Statically Entrained Arcs)

Microstructural configurations within which nucleonic identity forms through constrained entrainment dynamics.

SEE (Separation–Entrainment Event)

A minimal event sequence in which curvature differential separates, entrains, and stabilizes into coherent identity.

Spectral Cognition

A framework describing how phase-differentiated roles distribute mediation across curvature systems.

T**Triadic Sufficiency Condition**

The minimal structural requirement for persistence: differential (ΔC), boundary constraint (B), and mediation (M) must all be present.

U**UCP (Universal Cognition Principle)**

The principle that any physically real system must resolve curvature differential into coherent, relationally indexed persistence.

UCRT (Universal Curvature Resonance Theory)

A unified framework asserting that physical, cognitive, and systemic identity follow the same transformation:

$$\Delta C \rightarrow \Delta 0C$$

UPC (Universal Processing Circuit)

A network of interacting CPUs forming higher-order identity systems across domains.

W

Wave Behavior (Structural Interpretation)

Oscillatory behavior emerging from the mediation of curvature differential under constraint, rather than an independent ontological category.

(Informal — Non-Canonical)

Ego Sphere (informal)

The tendency of a cognitive system to impose coherence on incomplete or noisy input, producing internally stable but externally unvalidated interpretations.

One-liner: Stability imposed where structure is not yet justified.

FINAL NOTE

These definitions establish a consistent ontological and structural vocabulary for describing curvature, stabilization, and identity across domains. All extensions of the framework must remain consistent with these minimal conditions.