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Named Control Field Modulation Architecture

by [Nick Clark](#) | Published March 27, 2026 | [PDF](#)

Each affect dimension represented as a tuple of current magnitude, decay rate, policy-defined ceiling and floor, and timestamp, independently readable, writable, and auditable.

What It Is

Each dimension of the affective state is represented as a named control field: a tuple of current magnitude, decay rate, policy-defined ceiling and floor, and timestamp. These fields are independently readable, writable, and auditable. The architecture treats each affect dimension as a discrete, governable control parameter rather than an opaque emotional score.

Named control fields include uncertainty sensitivity, ambiguity tolerance, novelty appetite, persistence, escalation, risk sensitivity, and cooperation disposition. Each can be queried, updated, and constrained independently, enabling fine-grained governance over how affect modulates agent behavior.

Why It Matters

Monolithic emotional scores collapse distinct psychological dimensions into a single number, making it impossible to determine whether an agent is cautious because of high uncertainty or because of low cooperation disposition. Named fields preserve the dimensionality of affect, enabling precise diagnosis and targeted governance.

When affect dimensions are independently addressable, policies can constrain specific dimensions without affecting others. A governance rule might cap escalation tendency without limiting novelty appetite. A diagnostic system can identify which specific dimension is driving anomalous behavior.

How It Works Structurally

Each named control field maintains its own update pipeline. When an event triggers an affective update, the update function evaluates which dimensions are affected and computes new values for each independently. The ceiling and floor values are defined in the agent's policy reference and enforced at every update.

Audit trails record per-dimension changes rather than aggregate state changes, enabling forensic reconstruction of how each affect dimension evolved over the agent's operational history. Decay rates are per-dimension, allowing fast-decaying dimensions like escalation to return to baseline quickly while slow-decaying dimensions like cooperation disposition retain accumulated adjustments.

What It Enables

Named control fields enable affect-aware governance that operates at the correct granularity. Therapeutic agents can target specific affect dimensions for intervention. Companion AI systems can model relational dynamics through cooperation disposition and novelty appetite independently.

Cross-primitive coupling becomes precise: the confidence governor can weight uncertainty sensitivity more heavily than novelty appetite when computing execution authorization, while the forecasting engine might weight novelty appetite more heavily when selecting exploration strategies.

[Affective State All 21 steps →](#)

Emotion as a computational primitive, not a simulation.

Primary Technical Disclosure

[◦ Affective State as a Deterministic Control Primitive for Semantic Agents](#)

Secondary Technical

[◦ Affective State as Seventh Canonical Field](#) • [Named Control Field Modulation Architecture](#) ◦ [Affect-Modulated Promotion Thresholds](#) ◦ [Deterministic Affect Encoding and Update Mechanics](#) ◦ [Emotional Decay Curves With Hysteresis](#) ◦ [Entropy-Governed Valence Stabilization](#) ◦ [Affective Inheritance in Delegation Chains](#) ◦ [Emotional Quarantine and Volatility Management](#) ◦ [Affect-Modulated Trust Slope Validation](#) ◦ [Biological Signal-to-Affective Coupling](#) ◦ [Affective Contagion in Multi-Agent Systems](#) ◦ [Affect-Modulated Discovery Traversal](#) ◦ [Affect-Governance Separation](#) ◦ [Policy-Bounded Affective Updates](#) ◦ [Affect as Cross-Primitive Input](#) ◦ [Affect-Modulated Inference Integration](#) ◦ [Substrate-Agnostic Affect Deployment](#) ◦ [Pseudonymous Emotional Operation](#) ◦ [Temporal Cognition Field](#)

Applications (General)

[◦ Companion AI That Maintains Emotional Consistency Across Sessions](#) ◦ [Therapeutic Agent Affect Management Under Clinical Constraints](#) ◦ [Affective State for Customer Service Agents](#) ◦ [Affective State for Elderly Care Companion Agents](#) ◦ [Affective State for Crisis Response Agents](#) ◦ [Affective State for Negotiation Agents](#) ◦ [Affective State for Educational Tutoring Agents](#) ◦ [Affective State for HR and Recruitment Agents](#)

Applications (Specific)

[◦ Replika's Emotional Memory Is Stateless](#) ◦ [Character.ai's Personality Problem Is Deeper Than Prompting](#) ◦ [Woebot's Therapeutic Affect Has No Persistent State](#) ◦ [Elomia's Empathy Resets Every Session](#) ◦ [Hume AI Measures Emotion but Cannot Govern It](#) ◦ [Affectiva Reads Faces but Not Emotional Trajectories](#) ◦ [Cogito Scores Conversations Without Emotional State](#) ◦ [Beyond Verbal Decoded Voice Without Building Emotional Memory](#) ◦ [EmotiBit Captures Physiology Without Affective Governance](#) ◦ [RealEyes Measures Attention Without Emotional Persistence](#)

[Affective State overview →](#)

AQ

deterministic

autonomy

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-
- nick@qu3ry.net
- 72 28 14 36 01



[Invented by Nick Clark](#) | Founding Investors: Devin Wilkie