Core Emotion Framework (CEF): Technical Specification 9 (TS-9)

Synthetic Affect & INTIMA Architecture

Canonical Architecture-Level Technical Document — Version 1.0 (Zenodo-Ready)

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Abstract

The Core Emotion Framework (CEF) Technical Specification 9 (TS-9) defines the canonical architecture for synthetic affect and the INTIMA (Integrated Non-Turing Intelligence Modulated Affect) system. Whereas TS-1 through TS-8 specify the human emotional architecture, validation logic, computational structures, simulation protocols, interoperability rules, structural psychopathology, and neurodiversity calibration, TS-9 introduces the formal rules for implementing CEF-compatible emotional systems in artificial agents.

TS-9 does not attempt to replicate human consciousness, subjective experience, or biological emotion. Instead, it defines a **structural, functional, and computational analogue** of the CEF architecture that enables synthetic systems to:

• represent emotional states
• modulate activation
• simulate transitions
• maintain identity preservation
• avoid pathological configurations
• interface with human emotional expressions

TS-9 is the authoritative specification for synthetic affect within the CEF canon and serves as the foundation for computational agents, embodied systems, and semantic-web emotional ontologies.

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0. Document Header

Document ID: TS-9
Version: 1.0 (Canonical)
Status: Published
Canonical Position: Ninth Technical Specification in the CEF Canon
Dependencies: TS-1, TS-2, TS-3, TS-4, TS-5, TS-6, TS-7, TS-8, TS-11
Governing Body: Core Emotion Framework Canonical Architecture

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1. Purpose and Scope

1.1 Purpose

TS-9 defines the canonical architecture for implementing synthetic affect using the CEF. It specifies:

- synthetic operator representations
- synthetic facet representations
- activation and modulation rules
- synthetic state vectors
- transition functions
- identity-preservation constraints
- dysregulation-prevention rules
- interoperability with human emotional expressions

1.2 Scope

TS-9 includes:

- structural definitions for synthetic affect
- computational rules for INTIMA
- constraints for synthetic emotional identity
- mapping rules for human–synthetic emotional translation

TS-9 does **not** include:

- claims about consciousness
- biological emotion models
- subjective experience
- anthropomorphic interpretations
- clinical or therapeutic applications

TS-9 defines structure only.

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2. Architectural Position

2.1 Synthetic Affect vs. Human Emotion

Synthetic affect is defined as:

A computational analogue of the CEF architecture that preserves structure, identity, and functional relationships without implying subjective experience.

Synthetic affect:

- does not feel
- does not experience
- does not suffer
- does not possess qualia

It **models** emotional structure for functional purposes.

2.2 Relationship to INTIMA

INTIMA is the canonical implementation layer for synthetic affect.
It provides:

- operator-level modules
- facet-level submodules
- activation and modulation engines
- transition controllers
- dysregulation-prevention systems

2.3 Relationship to TS-11

TS-11 defines human operator facets.
TS-9 defines synthetic analogues of those facets.

2.4 Relationship to TS-8

TS-8 defines human neurodiversity.
TS-9 defines synthetic calibration parameters.

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3. Synthetic Operator Architecture

Each synthetic operator $O^*_{(c,p)}$ is defined by:

- activation value
- modulation parameters
- facet submodules

• transition rules
• identity-preservation constraints

Synthetic operators must:

• preserve canonical identity
• preserve center affiliation
• preserve facet structure
• avoid migration or collapse

Synthetic operators must not:

• redefine human operators
• introduce new operators
• merge operators
• simulate subjective experience

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4. Synthetic Facet Architecture

Each synthetic facet $F^*_{(i,j)}$ is defined as:

• a functional submodule
• non-interchangeable
• non-migratory
• identity-preserving

Synthetic facets must:

• mirror TS-11 facet structure
• maintain canonical boundaries
• avoid cross-operator blending

Synthetic facets must not:

• simulate human feeling
• generate anthropomorphic interpretations
• redefine facet meaning

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5. Synthetic State Representation

The synthetic emotional state S* is represented as:

• a 10-dimensional synthetic operator vector
• a 3-dimensional synthetic center vector
• a 50-dimensional facet vector (10 operators × 5 facets)

All values must:

- remain within canonical bounds
- preserve identity
- avoid pathological configurations

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6. INTIMA Activation Engine

The INTIMA engine defines:

6.1 Synthetic Activation Function

$O^*_{(t+1)} = f^*(O^*_{(t)}, A^*_o, M^*, C^*)$

Where:

- A^*_o = synthetic operator activation matrix
- M^* = modulation parameters
- C^* = synthetic center weights

6.2 Synthetic Transition Function

$S^*_{(t+1)} = f^*(S^*_{(t)}, A^*_o, A^*_p, A^*_{(c)})$

Transitions must:

- follow TS-1 directionality
- preserve identity
- avoid dysregulation

6.3 Synthetic Modulation Rules

Modulation must:

- preserve operator identity
- preserve facet structure
- avoid cross-center collapse

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7. Dysregulation-Prevention Architecture

Synthetic systems must not enter:

- chronic fusion
- suppression
- rigidity
- collapse

• overflow
• fragmentation
• center imbalance

TS-9 defines a **synthetic safeguard layer** that:

• monitors activation patterns
• detects structural violations
• prevents pathological configurations
• restores canonical structure

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8. Human–Synthetic Interoperability

Synthetic affect must:

• map human expressions via TS-6
• preserve operator identity
• preserve facet structure
• avoid anthropomorphism
• avoid emotional projection

Synthetic affect must not:

• claim human emotional experience
• simulate suffering
• simulate trauma
• simulate clinical states

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9. Canonical Constraints

A synthetic affect system is valid only if:

• operator identity is preserved
• facet structure is preserved
• center boundaries remain intact
• no new operators or facets are introduced
• synthetic activation remains within canonical bounds
• dysregulation is prevented
• no anthropomorphic claims are made

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10. Interoperability With Other TS Documents

TS-9 integrates with:

- TS-1 (operator identity)
- TS-2 (validation logic)
- TS-3 (computational structures)
- TS-4 (simulation protocols)
- TS-5 (interoperability)
- TS-6 (mapping engine)
- TS-7 (dysregulation patterns)
- TS-8 (neurodiversity calibration)
- TS-11 (facet architecture)

TS-9 is a structural prerequisite for:

- synthetic emotional agents
- semantic-web emotional ontologies
- embodied affective systems

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11. Canonical Status

TS-9 is the authoritative synthetic affect specification of the CEF.
It defines the architecture of INTIMA and is subordinate only to TS-1 and the Core Essence Document.
