Core Emotion Framework (CEF): TS 21 Appendix B — Integration Examples

Canonical Examples of CEF-KG Population & Cross-System Integration
Version 1.0 — Phase 4

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Status: Canonical Appendix (TS-21)

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0. Purpose and Canonical Position

Appendix B provides **worked examples** demonstrating how the Knowledge Graph Population Pipeline (TS-21) integrates:

- TS-18 ontology entities
- TS-19 reasoning outputs
- TS-20 graph architecture
- EL-Series lexical mappings
- semantic-web data
- simulation outputs

These examples introduce **no new emotional constructs**.
They illustrate the lawful, canonical operation of the population and integration system.

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1. Example 1 — Basic Ontology Population

Input

A JSON-LD instance representing the Sensing operator:

```
{
  "@type": "Operator",
  "operatorId": "Sensing",
  "belongsToCenter": "Head",
  "canonicalSuccessor": "Calculating",
  "hasFacet": ["Sensing_F1", "Sensing_F2", "Sensing_F3", "Sensing_F4", "Sensing_F5"]
}
```

Pipeline Execution

1. Extraction

- Operator extracted
- Facets extracted
- Center reference extracted

2. Normalization

- Operator vector updated
- Facet vector updated
- Center vector validated

3. Instantiation

Nodes created:

- Sensing (Operator)
- Sensing_F1 … Sensing_F5 (Facets)
- Head (Center)

Edges created:

- belongsToCenter(Sensing, Head)
- hasFacet(Sensing, Sensing_F1 … F5)
- canonicalSuccessor(Sensing, Calculating)

4. Inference Enrichment

TS-19 infers:

- Sensing → Deciding (via successor transitivity)

5. Constraint Enforcement

- All transitions lawful
- No facet migration
- No contamination

Output

A fully populated, canonical subgraph for Sensing.

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2. Example 2 — Integration with the EL-Series

Input

EL-1 lexical entry:

"overwhelmed" → maps to Constricting_F4

Pipeline Execution

1. Extraction

Lexical entry parsed.

2. Normalization

Facet ID validated:

- Constricting_F4 exists
- belongsToOperator = Constricting
- center = Heart

3. Instantiation

Node created:

- overwhelmed (LexicalEntry)

Edge created:

- mapsToFacet(overwhelmed, Constricting_F4)

4. Inference Enrichment

TS-19 infers:

- overwhelmed → predictsRigidity (via facet-pattern mapping)

5. Constraint Enforcement

- No new emotional constructs introduced
- Lexical mapping is canonical

Output

Lexical entry integrated into the CEF-KG.

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3. Example 3 — Integration with Semantic-Web Systems

Input

Wikidata entry for “attention”:

Q11028 → cognitive process

Mapping Rule

EL-Series mapping:

- “attention” → Sensing_F2 (Focused Registration)

Pipeline Execution

1. Extraction

Wikidata entity retrieved.

2. Normalization

Mapped to canonical facet:

- Sensing_F2

3. Instantiation

Nodes:

- attention (ExternalConcept)
- Sensing_F2

Edge:

- externalEquivalent(attention, Sensing_F2)

4. Inference Enrichment

TS-19 infers:

- attention → predictsLoadAccumulation (if overactivated)

5. Constraint Enforcement

- No external override of CEF definitions
- No contamination

Output

Semantic-web concept integrated into the CEF-KG.

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4. Example 4 — Integration with Simulation Outputs

Input

Simulation engine output:

Operator: Boosting

activationLevel: 0.92

capacityLimit: 1.0

Pipeline Execution

1. Extraction

Simulation parameters extracted.

2. Normalization

Operator identity preserved.

3. Instantiation

Parameter nodes updated:

- activationLevel(Boosting) = 0.92

4. Inference Enrichment

TS-19 infers:

- stabilityRisk(Boosting) = HIGH
- predictsOverflow(Boosting → Accepting)

5. Constraint Enforcement

- No structural changes
- No illegal transitions

Output

Simulation data integrated with canonical inference.

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5. Example 5 — Integration with Reasoning Engine Outputs

Input

TS-19 inference:

Expanding modulates Accepting

Pipeline Execution

1. Extraction

Inference recognized as dynamic edge.

2. Normalization

Operators validated:

- Expanding (Heart)
- Accepting (Heart)

3. Instantiation

Edge added:

- modulates(Expanding, Accepting)

4. Constraint Enforcement

- Pathway is canonical (TS-3)
- No modulation inversion

Output

Inference integrated into the CEF-KG.

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6. Example 6 — Multi-Source Integration

Input Sources

- JSON-LD operator instance
- EL-Series lexical entries
- simulation parameters
- semantic-web mappings

- TS-19 inference outputs

Pipeline Execution

All sources pass through:

1. Extraction
2. Normalization
3. Instantiation
4. Inference Enrichment
5. Constraint Enforcement

Output

A unified, canonical, contamination-free Knowledge Graph.

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7. Canonical Status

Appendix B is the authoritative integration example set for TS-21.
It demonstrates lawful, constraint-preserving population and integration of the CEF-KG.

It is subordinate only to:

- Core Essence Document
- TS-1 → TS-21
