

MEA CORE SPECIFICATION (Minimal / Foundational / Axiomatic)

Version 0.1 — Kernel Draft

1. Primitive Definitions

1.1 Concept

A *concept* is a stable semantic unit that can be decomposed into constituent sub-concepts via dependency relations.

1.2 Dependency

A *dependency* is an ordered relation between concepts indicating structural or semantic requirement.

Notation: $\mathbf{A} \rightarrow \mathbf{B}$ means “A depends on B.”

1.3 Anchor

An *anchor* is a concept with fixed semantic weight derived from natural-language invariants (as formalized in the Key).

Anchors cannot be redefined without breaking the system.

1.4 Frame

A *frame* is the contextual boundary within which concepts and dependencies operate. MEA requires frame transparency: the frame must be knowable or derivable.

2. The I⁵ Cognitive Pipeline

Inputs entering the system must pass through the following ordered stages:

1. **Illuminate** — Identify the object of analysis and isolate the relevant signal.
2. **Elucidate** — Resolve the internal structure; identify components and dependencies.
3. **Explain** — Produce a coherent synthesis maintaining dependency integrity.
4. **Experience** — Ground the synthesized form in example or application.
5. **Examine** — Evaluate for contradiction, incompleteness, or misalignment with anchors.

Progression is *monotonic*: stages cannot be skipped.

Regression to a previous stage is allowed; recomputation is allowed; mutation of the input is not.

3. Dependency Rules

3.1 Completeness Rule

A concept is *complete* when all its dependencies are identified and internally consistent.

3.2 Non-Circularity Rule

Cycles $A \rightarrow B \rightarrow A$ are invalid unless explicitly marked as *reciprocal dependencies*, which require justification and stable resolution.

3.3 Minimality Rule

A dependency graph must include no superfluous nodes.

If a concept does not alter interpretation, it is excluded.

3.4 Anchor Priority Rule

If a dependency contradicts an anchor, the dependency is invalid; the graph must be revised.

4. Semantic Invariance (Key of English)

The following rules are invariant and may not be overridden:

- Root words encode stable conceptual primitives.
- Modifiers (prefix/suffix with dash) alter scope, not anchor meaning.
- Prepositions express dependency directionality.
- Conjunctions express graph-merging rules.
- Articles constrain instantiation (general/specific/unique).

These rules determine *how* concepts are parsed, not *what they mean*.

5. Valid Output Criteria

For MEA analysis to be considered valid, the output must:

1. Preserve all anchors.
2. Contain no unresolved dependencies.
3. Contain no contradictions after the Examine stage.
4. Maintain frame consistency with the original input.
5. Be reproducible when the same input is processed by a separate user or agent following the protocol.

If these conditions are not met, the analysis is invalid.

6. Mutation Rules

The system permits **reinterpretation** but forbids **semantic mutation**.

- Reinterpretation = revealing structure already present.
- Mutation = altering a concept's meaning such that its anchors or dependencies shift arbitrarily.

Mutation invalidates the process.

7. System Boundaries

7.1 MEA does not:

- impose value judgments
- prescribe ideology
- dictate policy
- override empirical data
- generate meaning independent of the input

7.2 MEA does:

- clarify structure
- enforce consistency
- expose contradiction
- standardize interpretation
- anchor reasoning