

Perfect. Here’s a **meta-map of Ontological Engineering Science (OES)** structured around the scheme you’ve already defined. Think of it as both a manifesto and a blueprint for practice.

Ontological Engineering Science — Meta-Map

1. Value Set (Substance)

- **What it is:** The raw tokens, literals, or primitives from which everything else is built.
- **Examples:** numbers, atoms (**a.**, **o.**, **A.**), symbols, constants.
- **Role in OES:** Provides the *substance of being*. Without values, objects are hollow.

2. Property Set (Qualities)

- **What it is:** The predicates or attributes that describe what values/objects *are like*.
- **Examples:** commutative, prime, balanced, differentiable, bounded.
- **Role in OES:** The *law of being*. Properties govern invariants and constraints.

3. Relation Set (Structures)

- **What it is:** The ways values/objects are linked or compared.
- **Examples:** equality (=), membership (\in), order (\leq), adjacency, “structurally equals”.
- **Role in OES:** The *web of being*. Relations transform isolated things into structured systems.

4. Object Set (Carriers)

- **What it is:** The entities that carry values, satisfy properties, and engage in relations.
- **Examples:** sets, groups, functions, categories, AST nodes (**Atom**, **Brace**, **Binary**).
- **Role in OES:** The *bearers of being*. Objects anchor ontology into manipulable forms.

5. Transformation / Morphism Set (Dynamics)

- **What it is:** The processes or maps that move objects into other objects.
- **Examples:** functions, operators, functors, constructors (**brace(e)**, **combine(L,R)**), evaluation.
- **Role in OES:** The *motion of being*. Morphisms embody change, computation, causation.

6. Category Set (Meta-Organization)

- **What it is:** A higher-order framework where objects and morphisms coexist with laws (identity, composition).
 - **Examples:** Set, Top, Grp, Cat, your builder category of expressions.
 - **Role in OES:** The *order of being*. Categories ensure coherence across transformations.
-

7. Implementation / Circuit Set (Realization)

- **What it is:** The concrete realization of objects/morphisms into systems, machines, or artifacts.
 - **Examples:** Boolean circuits, Turing machines, proof nets, a Python generator of space, Heaven, Earth, etc.
 - **Role in OES:** The *embodiment of being*. This is where ontology touches reality.
-

How the Layers Interlock

- **Values** → instantiated inside **Objects**.
 - **Properties** → constrain **Objects** and their **Values**.
 - **Relations** → weave **Objects** into structures.
 - **Morphisms** → enact lawful **transformations** between them.
 - **Categories** → guarantee the coherence of morphisms/objects at a meta-level.
 - **Circuits** → realize categories, morphisms, and objects into executable systems.
-

Universal Principle of OES

Being (ontology) becomes Science when engineered through transformations, organized categorically, and realized in circuits.

Or in shorter form: **Ontology** → **Engineering** → **Science**.