Life Cycle Management

Arrowhead fPVN UC 2.9 Process Plant
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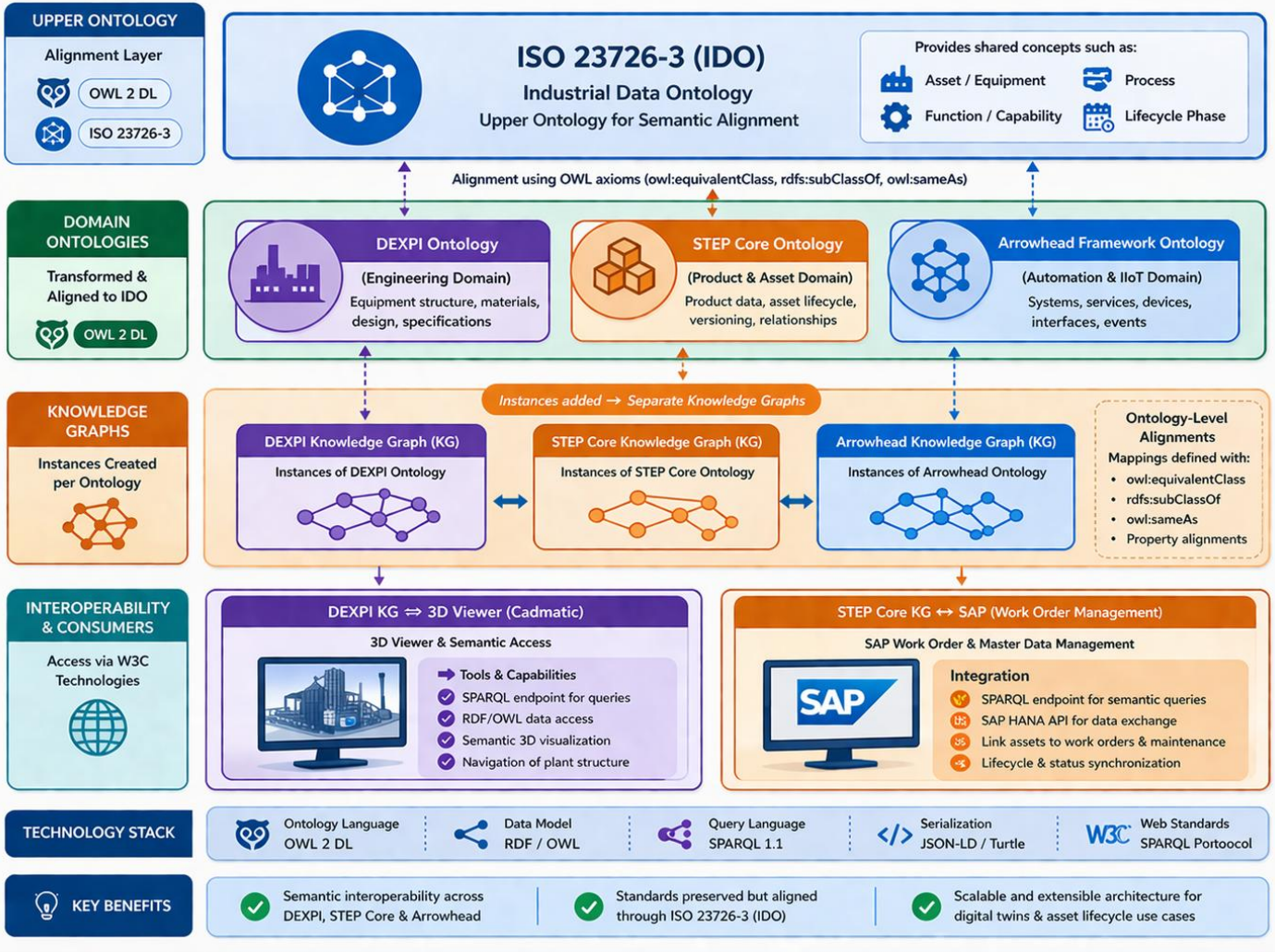
UC 2.9 ARCHITECTURE OVERVIEW

IDO as Upper Ontology for Alignment of DEXPI, STEP Core and Arrowhead Framework Ontology



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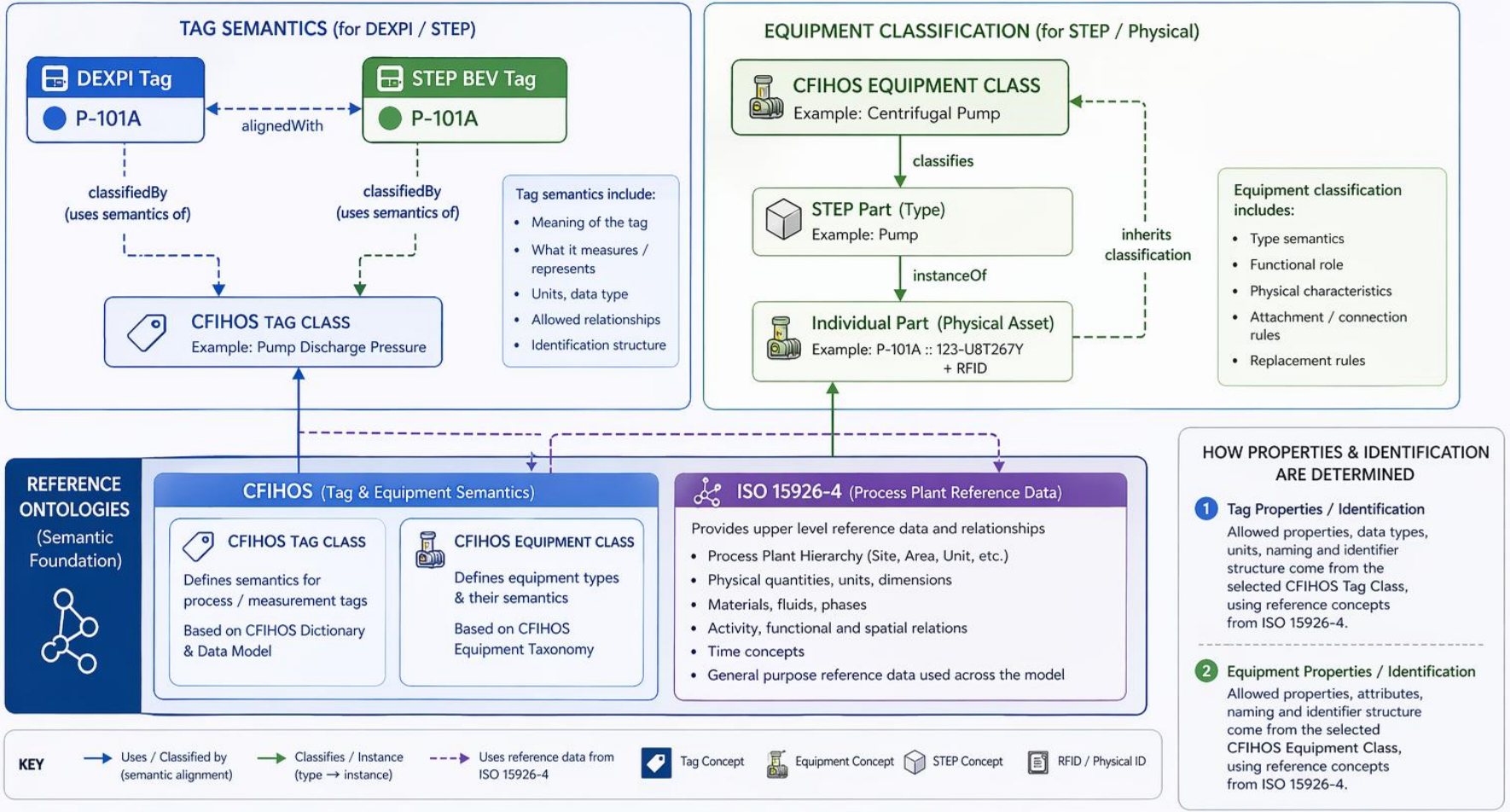
Reference Ontologies Used in the Architecture

CFIHOS and ISO 15926-4 provide the semantic foundation for Tags and Equipment



HOW PROPERTIES & IDENTIFICATION ARE DETERMINED

1. **Tag Properties / Identification**
   Allowed properties, data types, units, naming and identifier structure come from the selected CFIHOS Tag Class, using reference concepts from ISO 15926-4.

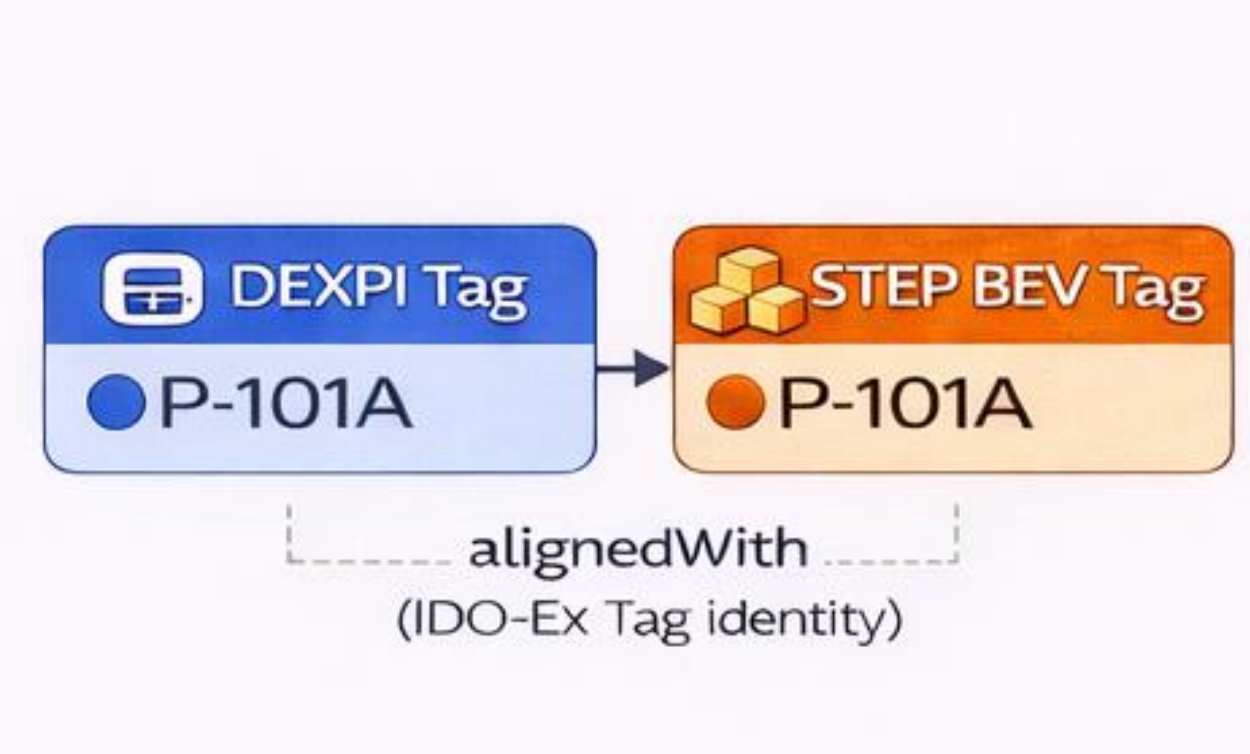
2. **Equipment Properties / Identification**
   Allowed properties, attributes, naming and identifier structure come from the selected CFIHOS Equipment Class, using reference concepts from ISO 15926-4.

We use a mixture of CFIHOS and ISO 15926-4:

- CFIHOS provides domain-specific semantics for Tags and Equipment (what it is).
- ISO 15926-4 provides the common upper ontology and reference data (where it is, how it relates, and general concepts).
- Together they ensure consistent classification, properties and identification across engineering, operations and physical assets.

DEXPI STEP

Alignment (DEXPI ↔ STEP)



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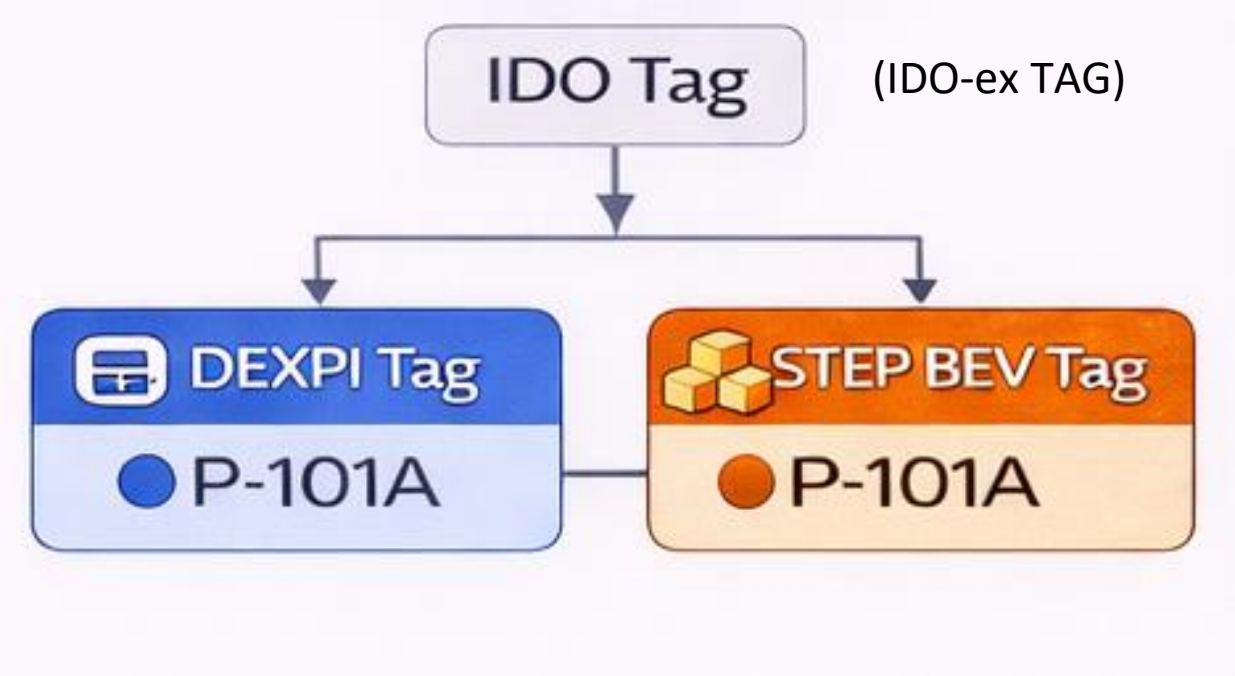
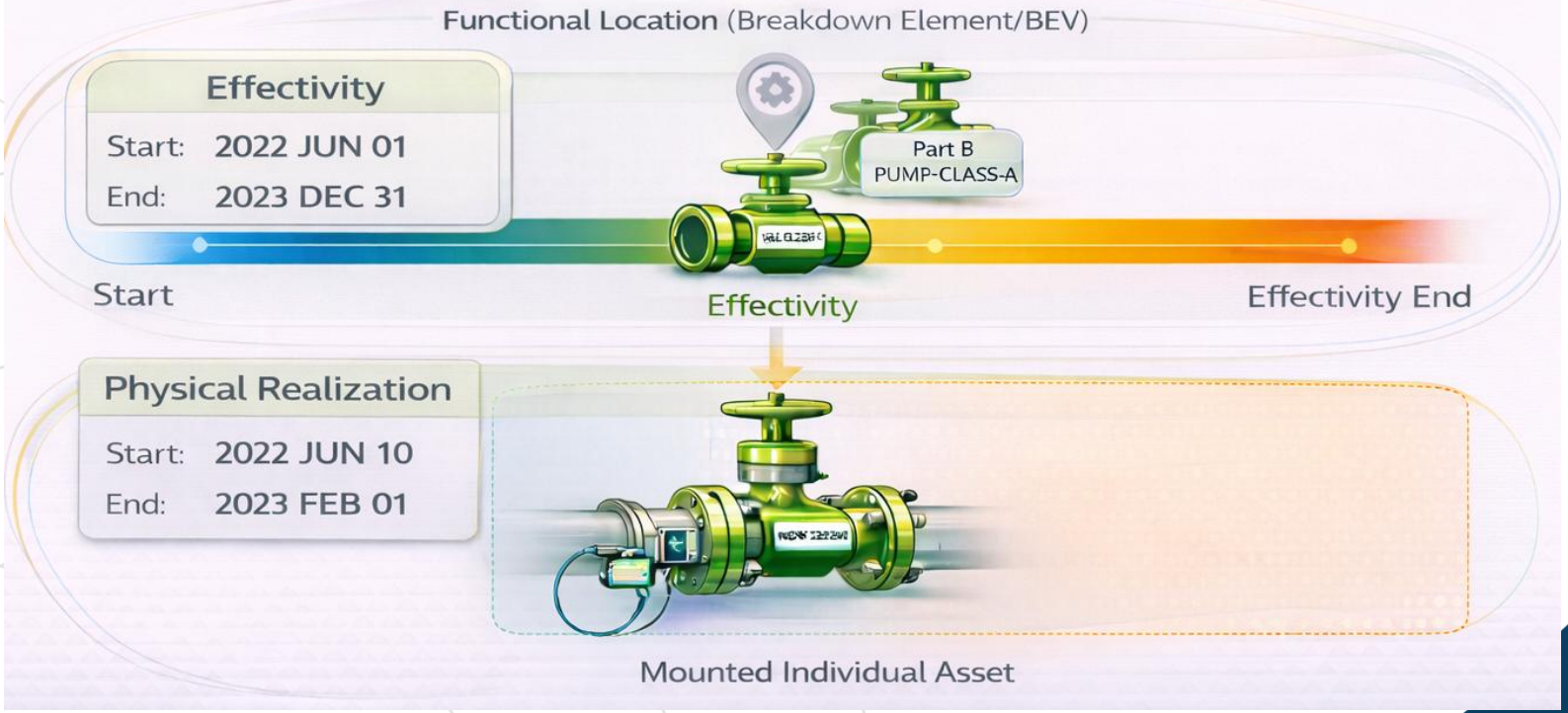
Ontology Structure



Theoretical and **Physical Realization** Allow Parts in a Functional Location to Be Controlled by Start and End Effectivity Dates



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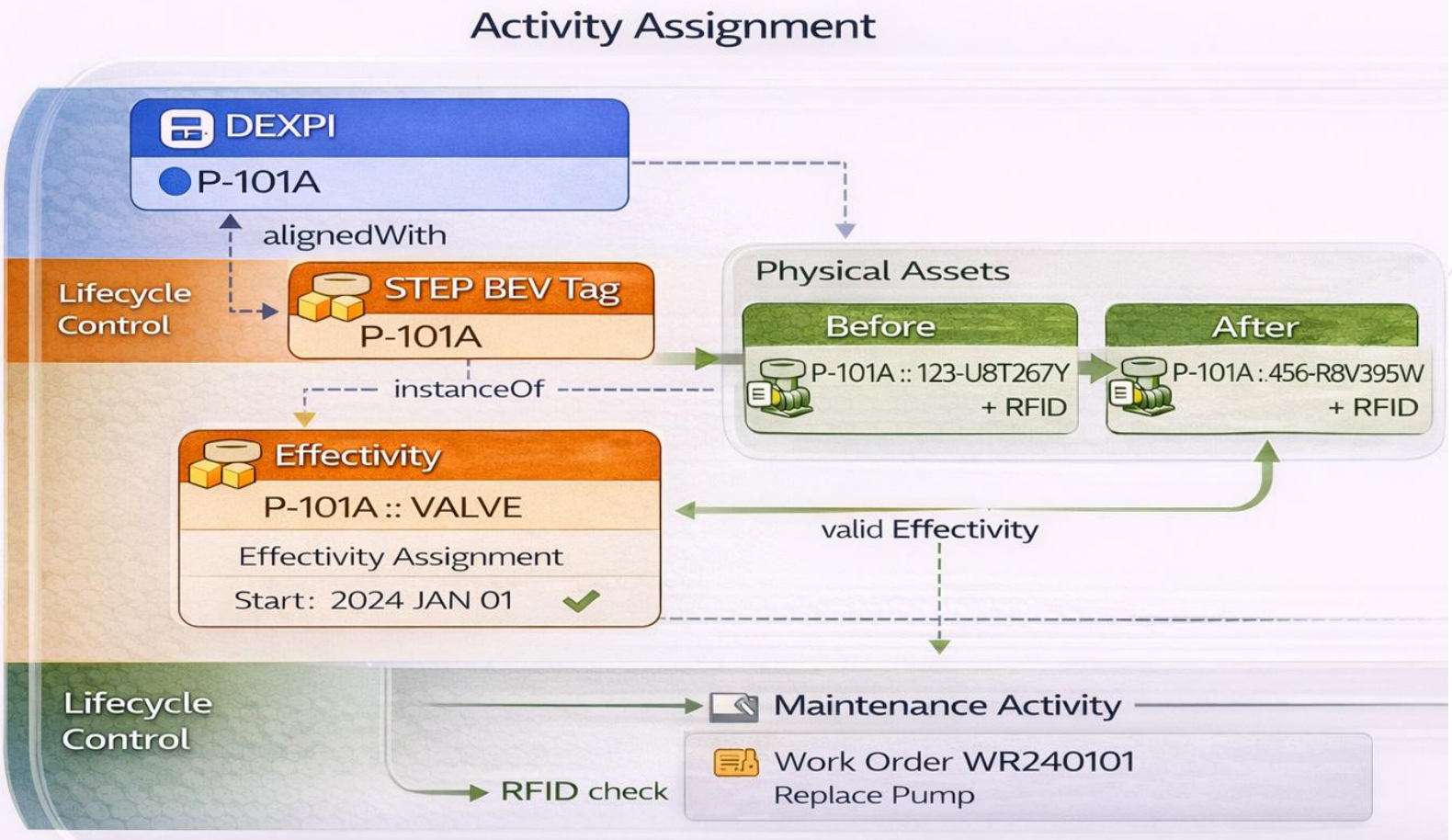

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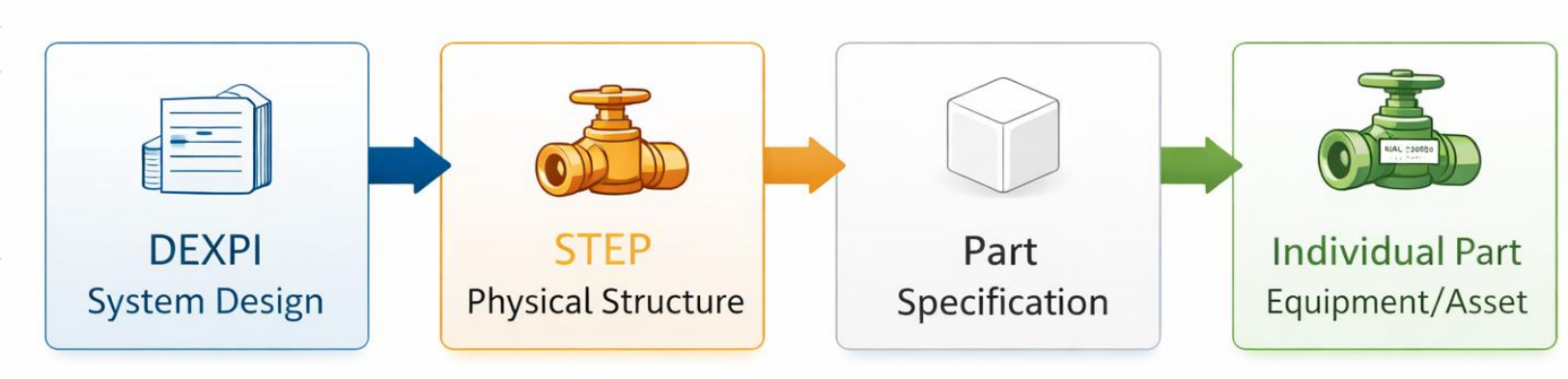
End-to-End Lifecycle Overview



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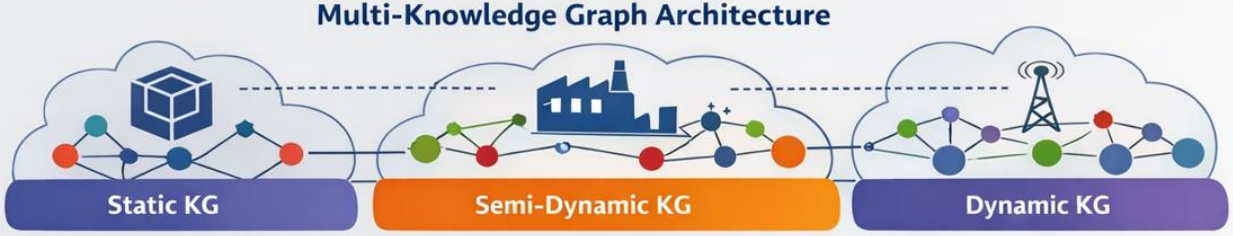
Arrowhead Ontology Framework

Cyber-Physical Ontology dealing with dynamic sensor data and digital information



Key Conclusions

Alignment across
DEXPI, STEP and AFO

Realization from Part
to Individual Asset

Lifecycle control
via effectivity and constraints

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