ONTO COMMONS

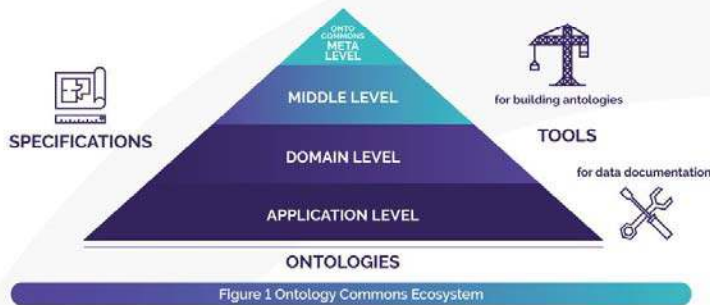ONTOLOGY-DRIVEN
DATA DOCUMENTATION
FOR INDUSTRY COMMONS

Ontology-driven data documentation for Industry Commons

Nadja Adamovic - Technische Universität Wien (TU Wien), Email: nadja.adamovic@tuwien.ac.at

Hedi Karray - Ecole Nationale d' Ingenieurs de Tarbes (ENIT), Email: mkarray@enit.fr

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Figure 1 Ontology Commons Ecosystem

SPECIFICATIONS

ONTO COMMONS META LEVEL

MIDDLE LEVEL

DOMAIN LEVEL

APPLICATION LEVEL

ONTOLOGIES

TOOLS

for building antologies

for data documentation

The OntoCommons project will bring together and coordinate activities of the most relevant EU stakeholders for the development of an **Ontology Commons EcoSystem** (OCES, Fig. 1), consisting of ontologies and tools following specific standardization rules, that can be effectively used as foundation for data documentation in the industrial domain, in order to facilitate data sharing and valorisation and overcome the existing interoperability bottlenecks.

MO
META ONTOLOGY

TLOs
TOP LEVEL ONTOLOGIES
(e.g. BFO, DOLCE, EMMO)

Figure 2 Top Reference Ontology
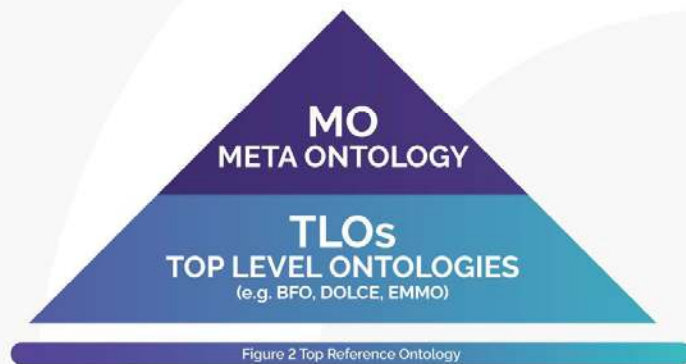
A Top Reference Ontology (Fig. 2) will contain a Meta Ontology that will be developed for the alignment of available Top Level Ontologies e.g. BFO, DOLCE, EMMO).
OntoCommons will not only provide data documentation harmonisation through an ontology but will also provide harmonisation between ontologies, through the TRO through a multilevel alignment: syntactic, terminological and semantic alignment (Figure 3).

Figure 3 Ontology Commons Ecosystem - Figure 4 Intra-ontology interoperability
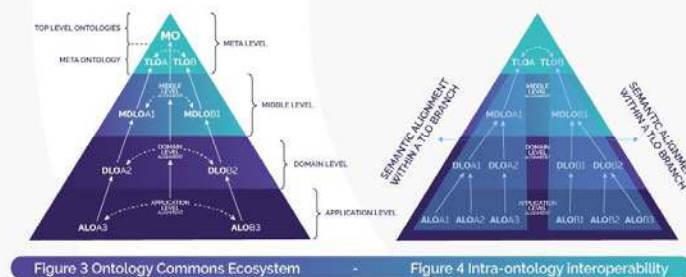
Intra-ontology interoperability is the capability to enable data sharing between a single semantic representation of data from TLO to ALO coming from a **monistic ontology/domain approach** (one-to-one exclusive relation between ontology and domain of interest, Figure 4). This type of interoperability will be addressed by OntoCommons within a TLO ontology branch whose lower ontology levels shares a common semantic framework.

Figure 5 OntoCommons Project Structure

Ontology Commons EcoSystem will

- Target EU activities in different domains including materials and manufacturing
- Harmonise data documentation and also provide harmonisation between ontologies, through Top Reference Ontology
- Enable intra- and cross-domain interoperability
- Host more than one ontology for the same domain (pluralism)
- Deliver demonstration cases
- Involve different stakeholders (e.g. subject-matter experts, ontologists, implementers, industrial stakeholders and end users)

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