

WHAT CAN ONTOLOGIES DO FOR STANDARDISATION?

OntoCommons.eu project in the
standardisation ecosystem

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OntoCommons.eu and the standardisation landscape

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Global context for standardisation efforts

- **Standardisation efforts** have led to the emergence of conceptual models in many vertical industries.
- **High proliferation of digital information** where decision-making is increasingly automated based on **data coming from a myriad of sources**
 - ***New challenges for efficient management and analysis of available data.***
- **Ontologies** help **map large data volumes** through **semantic queries** using ontology vocabulary that helps simplify **analytics**.
- **OntoCommons.eu** can serve as a basis for developing a landscape analysis to **assess all ICT Standardisation efforts in ontologies**.

OntoCommons builds on existing solutions for ontology standardisation in a Global setting, to enable intra-ontologies interoperability

OntoCommons.eu work around standards

The OntoCommons work around standards revolves around three main aspects:

- **Ontologies for standards organisations**
- Ontologies for **sub standards**
- Ontology standards and the **industrial ecosystem**

**The ontologies work revolves around standards organisations,
sub standards, and industrial ecosystem**

Ontologies for standards and sub-standards integration

- Standards reflect **consensus on the semantics of terms**, though **different standards have different semantics for the same terms**.
- **Standards integration** concerns the explicit representation of **overlapping sets of concepts in standards** and the difference in their semantics to **ensure consistency**.

OntoCommons.eu cooperates with the relevant initiatives to contribute to standards integration and conformance, through the use of ontologies

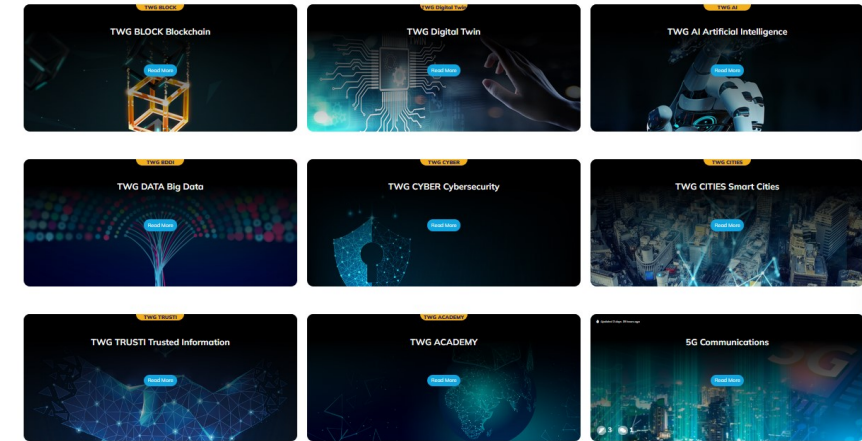
Ontology standards and the industrial ecosystem

- **Industry 4.0** is driven by digital **data**, **connectivity**, and **cyber systems**, and it has a huge impact on business opportunities.
- To guarantee **reliable and secure interactions between systems**, a coherent approach for the *semantic communication in between multiple intelligent systems* is vital.
- Ontologies can provide the solution by **formalizing the smart manufacturing knowledge in an interoperable way**.

The OntoCommons demonstrators will prove the effectiveness of the proposed ecosystem of ontologies (Ontology Commons EcoSystem - OCES) in the industrial domain.

How OntoCommons builds on existing solutions in a Global setting

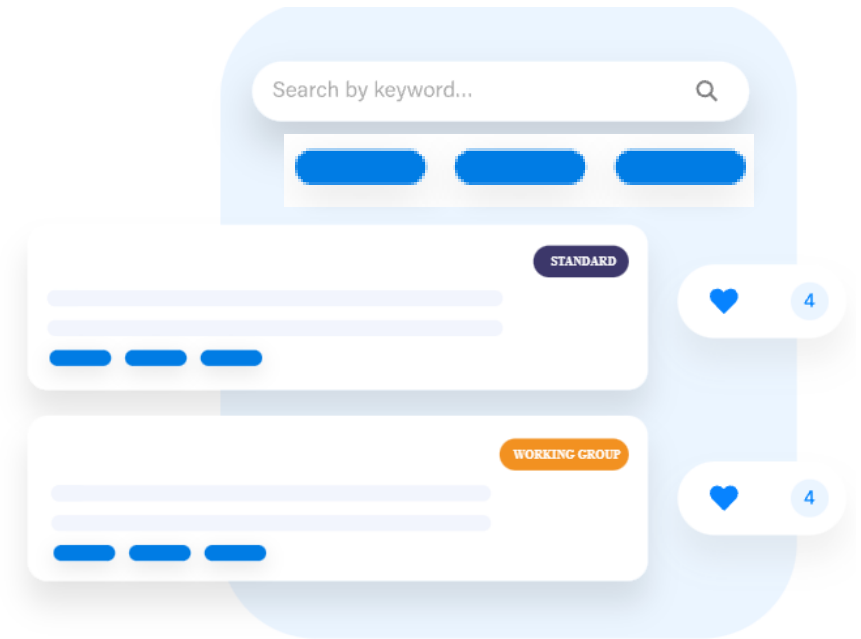
- Contribute to **WGs** to support the taxonomy or ontology **SDOs** efforts, (IOF, ISO/IEC JTC1, IEEE, ETSI (SAREF), CEN, OMG, ONEM2M, Digital Twin Consortium, W3C.....)
- Cooperate with **IEEE** to create a dedicated **Industry Commons Group**
- Collaborate with **EC JRC** to liaise with SDOs on semantic implementations of existing materials **testing interoperability standards**;



OntoCommons.eu will Create Recommendations, gaps or priorities around the Ontology domain from a standardisation perspective and list them in OntoCommons.eu Roadmap

How OntoCommons builds on existing solutions in a Global setting

- Map **International Standardisation initiatives** regarding **data documentation** based on **ontologies** and **taxonomies** in any of the **NMBP related domains**;
- Monitor the number of ontology applications that are potentially supported by **StandICT.eu**
- Feed results in **EU Multi Stakeholder Platform MSP on ICT Standardisation**



OntoCommons will increase the effectiveness of its activities by cooperating with existing relevant initiatives



Thank you very much for your attention!

Dimitris Kiritisis, Professor of ICT for Sustainable Manufacturing





Thank you

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