

Ontologies and standards for manufacturing and materials data interoperability

DIGITAL TECHNOLOGY

Improving manufacturing and materials data quality, interoperability and traceability

Digital technologies are changing how products are designed and manufactured but are also generating an increasing amount of data that need to be properly managed to maintain an adequate level of processes efficiency. OntoTrans, NanoMECommons, OntoCommons, Open Model, VIPCOAT and Oyster have joined forces in this Project Group to strengthen the use of translation to support the standardised and ontological representation of manufacturing workflows and the connection between end-users and the data and materials modelling solutions needed to optimise industrial processes.

The project group share the common objectives of:

- ◆ Enabling innovative processes by achieving data harmonisation, interoperability and traceability.
- ◆ Offer specific ontologies and standardised data documentation.
- ◆ Create a translation environment that speaks both the language of the end-user and industrial players to bridge the gap between industrial challenges and well-informed business decisions by making information and potential modelling solutions readily available.

Results

- ◆ Open Translation Environment (OTE) and Industrial Applications;
- ◆ Ontology Commons Ecosystem;
- ◆ OpenModel full platform;
- ◆ Open Innovation Environment (OIE);
- ◆ Ontology for coating;
- ◆ Harmonisation of the nanoindentation protocol for use at the industrial level



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Challenges

Societal = Contributing to the industry's transition into green and digital, to provide higher-quality industrial products. competitiveness.

Scientific and Technological = Creation of an open innovation platform that can be used by the research, industrial, political and public sectors alike to provide a hierarchy of networked ontologies of different levels of generality (from top-level to application level) for which multiple forms of interoperability will be provided.

Industrial = Fostering translation and establishing a shared semantic basis, open and standardised data documentation to help the industry reap the benefits of materials modelling and accelerate innovation.

Who benefits?



Start-ups & SMEs



Large enterprises



Researchers & Academia



Policy makers & Funding Agencies



Civil Society and NGOs

Meet the projects

ONTOTRANS

OntoTrans - Ontology driven Open Translation Environment. ontotrans.eu

Grant Agreement No.862136

nanomecommons

NanoMECommons - Transnational and multidisciplinary research and innovation network to tackle the problem of nanomechanical materials characterisation in multiple industries. nanomecommons.net

Grant Agreement No.952869

ONTO COMMONS

OntoCommons - Ontology-driven data documentation for Industry Commons. ontocommons.eu

Grant Agreement No.958371

Open Model

OpenModel - Integrated Open Access Materials Modelling Innovation Platform for Europe. open-model.eu

Grant Agreement No.953167

VIPCOAT

VIPCOAT - Virtual Open Innovation Platform for Active Protective Coatings Guided by Modelling and Optimization. ms.hereon.de/vipcoat

Grant Agreement No.952903

OYSTER

Oyster - Open characterisation and modelling environment to drive innovation in advanced nano-architected and bio-inspired hard/soft interfaces. oyster-project.eu

Grant Agreement No.760827

ReaxPro

ReaxPro - Accelerating reactive process innovation. reaxpro.eu

Grant Agreement No.814416



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