Ontology driven Open Translation Environment

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The **OntoTrans** project responds to the industrial innovation challenges more efficiently by accessing the relevant information and utilising materials modelling more effectively.

OntoTrans provides a general-purpose ontology-based **Open Translation Environment (OTE)** able to support the development of dedicated Apps delivering a smart guidance for materials producers and product manufacturers (including associated Translators) through the whole steps of the translation process, by:

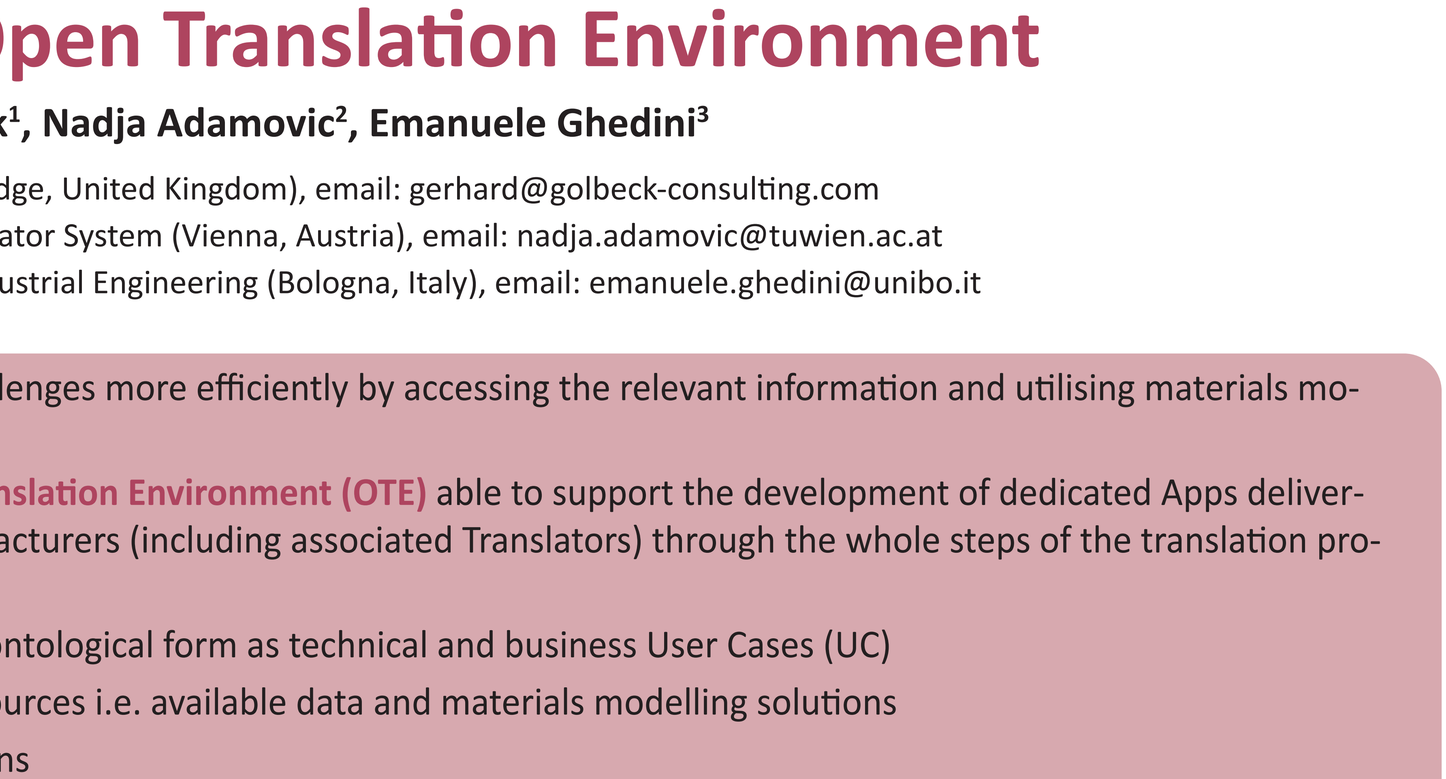
1. representing manufacturing process challenges in a standard ontological form as technical and business User Cases (UC)
2. connecting user cases with existing appropriate information sources i.e. available data and materials modelling solutions
3. recommending consistent materials modelling workflow options
4. supporting simulation and validation activities
5. providing semantic results interpretation to facilitate sharing and re-use of user cases and results

Impact in Industry

- Shorter product development cycle, faster time to market
- Faster response to customer, market and regulatory needs
- Improved products and more agile/targeted manufacturing processes

By means of:

- Creating a Digital Twin of the Innovation Case
- Model and data-driven R&D and engineering workflows based on semantic knowledge representation
- Realising the end-to-end vision from product conception to customer



Open Translation Environment (OTE)

Project objectives

O1 - OTE core components

a) Semantic representation: European Materials & Modelling Ontology (EMMO)

b) Recommendation: an ontology-based Recommendation System (OntoRec)

c) Knowledge database: RDF triplestore database called Onto-Knowledge-Base (OntoKB)

O2 - OTE key components

OTE key components, whose development is aimed to provide means of interactions between the OTE core components, the users and other existing tools, and will comprise:

a) Application Programming Interfaces (APIs) for information exchange between the OTE and:

Open Simulation Platform (OSP)

H2020 European Material Modelling Marketplace Projects

Data Analytics tools

b) Exploratory Search System (ESS)

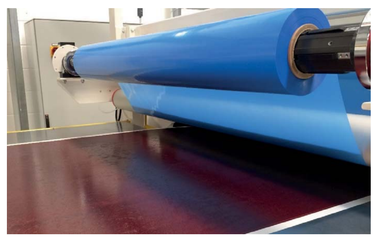
c) End User Applications (APPS)

O3 - OTE testing in four application cases

OntoTrans is developed and tested alongside industrial challenges covering different types of material and indistries, targeting increased competitiveness by means of a semantic data-dirven and agile approach.

Detergent pouch systems
(Proctor & Gamble)

Composite preregs
(Composites Evolution)



Steel Section Mill
(Arcelor Mittal)

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