European Lightweight Association

MetaTrace – Traceability for Multi Material Recycling

Fraunhofer-Institute for High-Speed Dynamics, Ernst-Mach-Institut, EMI

DIGITAL ENGINEERING @

Fraunhofer EMI

Project idea: MetaTrace – Traceability for Multi Material Recycling
Call area: No. 3 Industry for a clean and circular economy

European Lightweight Association

Contact

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Project Description

MetaTrace aims to explore and develop **meta data and process modeling** methods using **semantic technologies** and **linked data** concepts to provide for comprehensive **interoperability of data and models** along value chains and product life cycles. This also forms the basis for **traceability** solutions **for digital and real assets**, which help to increase overall **resource efficiency** and **tailored recycling** strategies for multi-material lightweight structures.

Project Objectives

- Define technologies and best practices for meta data, knowledge and process modeling
- Develop traceability solutions and knowledge reasoning on engineering semantic graph data
- Demonstrate value of semantic data management for manufacturing and engineering processes as well as product and materials cycles
- Provide formalized domain knowledge (e.g. ontologies) and models for community reuse (FAIR)

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Our know-how…

- Domain experts in
  - Automotive and aerospace structural engineering
  - Materials modeling and testing
  - Engineering design and recycling of multi-material lightweight structures
- Ontology development and management (e.g. matching, merging, …)
- Graph-based process modeling
- Semantic technologies and knowledge graphs
- LCA and sustainability analyses

We are looking for…

- Attractive Use Cases
- Ontology and semantic technologies experts
- Expertise on business perspectives
- Data management and IT-architectures experts
- Partners experienced with traceability solutions in engineering and manufacturing as well as tangible UX-solutions (e.g. Digital Twins, Data and knowledge visualization)