

Tutorial 7:

Industry Ontology Foundry: A Strategy for Promoting Data Interoperability Across the Enterprise

Tutorial Abstract

The tutorial will provide an overview of different aspects of the Industry Ontology Foundry (IOF). IOF is an initiative involving academic and industrial partners in a collaboration managed by NIST to create a suite of interoperable, public, domain-ontology modules extending across major areas of digital manufacturing. Modules under consideration/development include: Product Life Cycle, Core Product Model, Functional Basis, Materials and Material Attributes. In addition the IOF community is considering Basic Formal Ontology (BFO) as a unifying top-level ontology, and the workshop will include an introduction to the use of BFO in ontology alignment together with a series of presentations outlining the goals and initial test modules of the Foundry. Opportunities for interaction will be provided at every stage in the agenda.

Failures of interoperability are a major obstacle to coherent product life cycle and supply chain management. The Industry Ontology Foundry is an initiative designed to address this problem sponsored by NIST and by a number of industrial and academic partners. The strategy is to create a suite of simple consensus-based public domain-ontology modules extending across the major areas of digital manufacturing.

Modules under consideration include: Product Life Cycle, Core Product Model, Functional Basis, Materials and Material Attributes. The workshop will begin with an introduction to the use of ontology as a strategy to promote interoperability across multiple data and information systems, followed by a number of papers illustrating use cases of the IO Foundry approach.

Participants should have an interest in digital manufacturing and some knowledge of the problems caused by failures of interoperability of data and software systems in the industrial domain.

Schedule

Part 1: Goals and Architecture of the Industry Ontology Foundry

- 1:00pm: Kemper Lewis - Introduction
- 1:10pm: Ram Sriram - The Role of Ontologies in Smart and Networked Manufacturing: Past, Present, and Future
- 1:40pm: Paul Witherell - Levering Ontologies in Next-Generation Data Analytics and Decision Making
- 2:00pm: Barry Smith - Realizing the Industry Ontology Foundry (including an introduction to Basic Formal Ontology)
- 3:00pm: Break

Part 2: Examples of IOF Ontology Test Modules

- 3:15pm: Dimitris Kiritsis - Product Life Cycle Ontology
- 3:45pm: Ian Grosse - A BFO Compliant Ontology to Support Engineering Design and Innovation
- 4:15pm: Farhad Ameri - Manufacturing Supply Chain Ontology: Experiences with BFO
- 4:45pm: Closing Remarks

Further information is available at:

http://ncorwiki.buffalo.edu/index.php/Industry_Ontology_Foundry:_ASME_Workshop_2017