

Special Session on
“Knowledge-Based Web for Industrial Systems”

Organized by

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Call for Papers

The development of Internet technologies brought up a number of principles and standards to organize and manage large-scale networks and systems. Thanks to that scale and size powered by a desire of the general public to stay connected, corresponding technologies have rapidly advanced and become affordable to the large amount of people through numerous internet-enabled devices. Different web standards have emerged to help making applications. One of the notable recommendations is, for example, Web Ontology Language (OWL), which is Semantic Web language that can be used to organize (model) knowledge and make it machine-processible, thus supporting automated reasoning during a system run time. A knowledge-based web for industrial systems allows creating distributed systems built using web and Internet protocols to integrate its components that rely on knowledge representation and reasoning allowing the system to continuously perceive and contextualize its current state, define and adjust its goals and implement control actions towards the goals. The session welcomes studies for different industrial application domains with the primary focus on manufacturing industries.

Topics of interest include, but are not limited to:

- Languages, tools and architectures for knowledge representation in industrial applications.
- Automated integration of product engineering knowledge and manufacturing process knowledge.
- Industrial agent-based knowledge systems and services.
- Data processing and fusion methods and tools for the generation of product engineering knowledge or manufacturing knowledge from manufacturing process measurements.



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- Case studies of machine learning and their integration with Internet-based manufacturing or other industrial applications.
- Engineering principles and applications of the Industrial Internet of Things.
- Human knowledge and capabilities empowered via knowledge-based systems – tacit knowledge in the environment of manufacturing industries.
- Intelligent methods for security and trust management in Internet-based systems.
- Notable case studies of knowledge-based and Internet-based systems in different industrial domains.
- Protocol stacks to support knowledge-based engineering.

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IEEE IES TC on Industrial Agents.

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