

Virtual and digital manufacturing, supply chain management, agent based manufacturing, etc. are significant indicators of a disruptive change in automation and manufacturing in the next decade. E.g., in the near future it should be possible to customize an automobile by a CAD tool and to expect an individually designed vehicle to be delivered within a week. Information and Communication Technologies (ICT) are the driving forces behind this process such that the IES of the IEEE had decided to create a new conference series and magazine named Industrial Informatics (INDIN). At the first conference INDIN'03, Banff/Calgary August 2003, O. Kaynak, president of the IES, described the potential of INDIN by „ . . . Industrial Informatics is rapidly emerging as one of the fastest growing and most promising new technological developments for the next generation and beyond”.

Research network INDIN Niedersachsen

Soon after the first conference INDIN'03 the government of Niedersachsen (engl. Lower Saxony, short NDS, state of the Federal Republic of Germany) had decided to start a research network based on the departments of computer science and electrical engineering at the universities of applied sciences situated in Emden, Hannover, Lueneburg, Osnabrueck and Braunschweig. Since the term INDIN was once introduced and promoted by IEEE we had decided to adopt INDIN for our network too.

The major purpose of INDIN NDS is to maintain and to strengthen the competitiveness of our industry in this important area named INDIN, since transferring well known concepts from ICT to manufacturing is one of the biggest challenges of the next decade. Today, many companies, especially the SMEs, are not prepared for a knowledge-based economy because they lack the resources for research and development (R&D) in this field. In general, a university alone has not the resources to develop the concepts and tools needed by companies. Therefore INDIN NDS bundles the competence of universities of applied sciences in the field of the ICT and manufacturing in order to develop concepts, implementation ready solutions and market ready products as well. Products are usually part of projects going back to participating companies.

The mayor fields of interests of INDIN Niedersachsen are:

1. Creating a complete engineering platform for distributed real time applications
2. Service Oriented Architectures (SOA)
3. IT security in production environment
4. Remote diagnostic and services
5. Agent-based manufacturing