
KNOWLEDGE SHARING IN THE INTEGRATED ENTERPRISE

IFIP – The International Federation for Information Processing

IFIP was founded in 1960 under the auspices of UNESCO, following the First World Computer Congress held in Paris the previous year. An umbrella organization for societies working in information processing, IFIP's aim is two-fold: to support information processing within its member countries and to encourage technology transfer to developing nations. As its mission statement clearly states,

IFIP's mission is to be the leading, truly international, apolitical organization which encourages and assists in the development, exploitation and application of information technology for the benefit of all people.

IFIP is a non-profitmaking organization, run almost solely by 2500 volunteers. It operates through a number of technical committees, which organize events and publications. IFIP's events range from an international congress to local seminars, but the most important are:

- The IFIP World Computer Congress, held every second year;
- Open conferences;
- Working conferences.

The flagship event is the IFIP World Computer Congress, at which both invited and contributed papers are presented. Contributed papers are rigorously refereed and the rejection rate is high.

As with the Congress, participation in the open conferences is open to all and papers may be invited or submitted. Again, submitted papers are stringently refereed.

The working conferences are structured differently. They are usually run by a working group and attendance is small and by invitation only. Their purpose is to create an atmosphere conducive to innovation and development. Refereeing is less rigorous and papers are subjected to extensive group discussion.

Publications arising from IFIP events vary. The papers presented at the IFIP World Computer Congress and at open conferences are published as conference proceedings, while the results of the working conferences are often published as collections of selected and edited papers.

Any national society whose primary activity is in information may apply to become a full member of IFIP, although full membership is restricted to one society per country. Full members are entitled to vote at the annual General Assembly. National societies preferring a less committed involvement may apply for associate or corresponding membership. Associate members enjoy the same benefits as full members, but without voting rights. Corresponding members are not represented in IFIP bodies. Affiliated membership is open to non-national societies, and individual and honorary membership schemes are also offered.

KNOWLEDGE SHARING IN THE INTEGRATED ENTERPRISE

*Interoperability Strategies for the
Enterprise Architect*

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Preface to ICEIMT'04

Knowledge Sharing in the Integrated Enterprise – Interoperability Strategies for the Enterprise Architect

The ICEIMT series of conferences 1992, 1997 and 2002 was originally started as a strategic initiative of NIST and the European Union to review the state of the art in Enterprise Integration (EI) and to make recommendations to industry and research, creating roadmaps for EI research and product development. Pre-conference workshops had been organised with internationally recognised experts and reports of these workshops were presented at the conference.

Enterprise Integration has grown in the past ten years at a pace where there is an obvious need for a more frequent forum where these strategic discussions can be continued bringing together leading thinkers of industry, defence and research.

The IFIP (International Federation of Information Processing) Working Group 5.12 on Enterprise Integration (a majority of members being organisers of past ICEIMT conferences and invited experts to past workshops) has taken the responsibility to sponsor this more frequent reincarnation of ICEIMT. In addition, the INTEROP European Network of Excellence has been invited to present the results of their interoperability workshop series at the conference. As EI is an interdisciplinary field, the International Programme Committee includes important figures from industrial engineering and management, supply chain management, software engineering, systems engineering, artificial intelligence and computer science, CALS, and most importantly, representatives of tool developers. Members also include strategic leaders of Virtual Enterprise research and ongoing projects on interoperability.

A particular feature of EI, and interoperability within that area, is the prominent role of international and regional standardisation bodies as well as industry consortia. An important role of ICEIMT04 will be to conduct discussions about the strategic fit between the short and medium term steps that industry needs to take (which should enable the development of interoperable products and software systems), and the long term strategic considerations. Without the deep understanding of this issue industry may end up facing a new 'Y2K problem' in the years to come.

In the past five years it has become apparent that creating the technical conditions of interoperability must be supported by cultural, socio-economic and psychological conditions. The interoperability of our software tools crucially depends on the motivation of people who create them, their ability to learn as well as to communicate in order to create a mutually accepted common understanding. Thus this conference intends to also investigate interoperability from the point of view of communication between humans.

This last point inspired the title of ICEIMT'04: Knowledge Sharing in the Integrated Enterprise – Interoperability Strategies for the Enterprise Architect, because there is interoperability between humans (so they understand one another on the basis of commonly defined concepts) and interoperability between modelling tools (so they can exchange and interpret models in the same way).

Topics of this conference include:

- Enterprise Modelling (modelling languages, scope and detail of modelling, model development methodologies)
- Enterprise Reference Models (modularity, sharability, quality, scalability)
- Enterprise Architecture Frameworks (practice and theory), role of standardisation, relation to systems and engineering and software engineering
- Interoperability – present and future trends & standardisation
- Common ontologies (level of definition – logic, XML, etc –, competency questions, evolvability, standardisation)
- Enterprise Modelling Tools (functionality, interoperability, methodology support)
- Hot spots of interoperability
- New theories and techniques, interdisciplinary approaches
- Human understanding and communication as a condition of interoperability. Suitable social structures that create the motivation and the opportunity to achieve common understanding and consensus.

Papers of this conference have been peer reviewed through a double blind refereeing process and we would like to thank all members of the International Programme Committee who undertook this task.

Peter Bernus
Chair IPC ICEIMT'04

Mark Fox
Chair Organising Committee

Preface to DIISM'04

Manufacturing and Engineering in the Information Society: Responding to Global Challenges

Since the first DIISM working conference, which took place nearly 11 years ago, the world has seen drastic changes, including the renovation of manufacturing softwares. The conditions for engineering and manufacturing science have changed on a large scale, in terms of technology-enabled collaboration among the fields of design, engineering, production, usage, maintenance and recycling/disposal. These changes can be observed in rapidly growing fields such as supply chain management. On factory floors, new visions of co-existing human-machine production systems involve both knowledge management and multi-media technologies.

As a consequence of these changes, the importance of information infrastructures for manufacturing has stunningly increased. Information infrastructures play a key role in integrating diverse fields of manufacturing, engineering and management. This is in addition to its basic role as the information and communication platform for the production systems. Eventually, it should also serve the synthetic function of knowledge management, during the life cycles of both the production systems and their products, and for all stakeholders.

These proceedings is the compilation of those leading authors, who have contributed to the workshop 'Design of Information Infrastructure Systems for Manufacturing' (DIISM 2004) that was held at the University of Toronto from Oktober 10 - 11, 2004. Prominent experts from both academia and industries have presented significant results, examples and proposals. Their themes cover several necessary parts of the information infrastructure.

The workshop was sponsored by the International Federation of Information Processing (IFIP), through Working Groups 5.3 (Computer Aided Manufacturing) and 5.7 (Computer Applications in Production Management).

We sincerely thank all the authors, the program committee members and the participants for their contribution.

In conclusion, we strongly hope that these proceedings will be a useful source of information for the further development and foundation of the information infrastructure for engineering and manufacturing.

On behalf of the Organizing Committee

Jan Goossenaerts

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