

# ICE2009

## The 15<sup>th</sup> International Conference on Concurrent Enterprising:

*Collaborative Innovation: Emerging Technologies, Environments and Communities*

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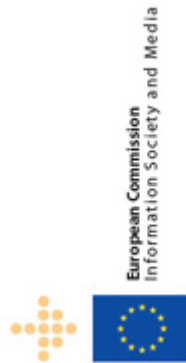
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## Preface

The term Concurrent Enterprising is an amalgam which brings together the paradigms of Concurrent Engineering and Extended/Virtual Enterprising: The Concurrent Enterprise is a distributed, temporary alliance of independent, co-operating manufacturers, customers and suppliers using systematic approaches, methods and advanced technologies for increasing efficiency in the design and manufacture of products and services by - concurrency, parallelism, integration, standardisation, team work and more - for achieving common goals on global markets.

Nowadays, the information society is becoming a reality with low cost broadband networks, extended by mobile or wireless networks, allowing seamless connection and use of applications and services (i2010: Annual Information Society Report 2007).

With the arrival of new services, an emerging challenge of collaborative innovation between new types of individual and organizational users who are using more and more ICT services and products. The rise of user-created content is opening further perspectives for a more creative and innovative Information Society, in the same way that users exploited open source software and standardization to develop new collaborative processes.

This move is supported by emerging technological trends such as the migration towards very high-speed networks, ubiquitous wireless technologies, web 2.0, the Internet of Things, Grids, web-based services, integration of web services in mash-up user interfaces, user-created content and social networking. These trends will affect the business and working environment, providing new industrial opportunities and new solutions for eBusiness and employment, in a single information space.

For a new wave of innovation, grand challenges highlight new user collaborations, new organisational forms, cross-domain dimensions of interoperability, interoperability technologies being accessible to all organizations and users and the need to take into account the concerns of many small developers and users scattered across Europe and the world.

ICE2009 will bring together leading researchers and practitioners from around the world to present their latest findings from research and share practical cases from industry. Authors, workshop and tutorial organizers and participants in general, are invited to contribute to the shaping of the debate, in the scope of a new wave of innovation in collaborative networks and a single information space.

Since the early 1990s the European Society for CE has been actively involved in bringing together leading academics, researchers and practitioners in a common forum so as to stimulate the exchange of ideas, views and latest research and developments in the field of Concurrent Engineering and Extended Enterprising. For many years, ICE has become a proactive knowledge community ([www.ESoCE.net](http://www.ESoCE.net)) and a lively and engaging meeting place for thought leaders in the domain of Concurrent Enterprising.

Since inception this event has evolved and grown in terms of size, nature, number of papers presented quality of papers and presentations, quality of proceedings and countries represented. Compared to other events in the domain, ICE is unique for its good balance between industrial and academic participation and the multi-national character of the event. ICE 2008 in Lisbon (Portugal) attracted a large number of 240 delegates from 30

countries and led to the record breaking publishing of 146 papers. This year sees the transition of the ICE Proceedings to electronic format – the papers will be available on usb stick and only the book of abstracts will be printed. This fifteenth conference follows after the highly successful event in Lisbon. The theme of this year's conference, held in Noordwijk, near Leiden, is “*Collaborative Innovation: Emerging Technologies, Environments and Communities*”.

ICE events over the last decade or so, have consolidated their position in terms of scope, size, nature and number of national and international projects presenting their work. This event has matured considerably over the years and has gained a sustained credibility amongst researchers, academics, practitioners and above all funding bodies. This knowledge-rich community looks forward to participating every year in order to disseminate their results, share ideas and indeed develop and shape their concepts/ideas into collaborative projects. This year's event, has built on the success of the previous conferences by combining the format of a traditional conference with a number of special sessions and targeted workshops, organised in collaboration with several European research projects. The paper presentations, based on submissions received from an open call for papers, have been confined to day one. The presentations will give insight to the latest findings from R&D in CE. They will be introduced with keynote presentations from industry and academia. The second and third days of the conference have been devoted to workshops. These workshops aim to bring together users and experts in interactive sessions for elaborating specific topics. The chair and co-chairs of each workshop will organise selected contributions (presentations and/or demonstrations) in order to stimulate the debate. The workshop outcome will be presented in a roundtable for discussion with the delegates and will be subject to a separate workshop report under the responsibility of the workshop chair and co-chairs.

Accompanying the three days were a number of poster presentations made during the breaks, some papers of which are included in these proceedings along with many papers from the special sessions and workshops.

The topics of ICE2009 were:

- Ambient Environments, Real-time Location & Identification
- Co-creation, Co-Innovation and Open Innovation
- Collaborative Environments and Problem Solving
- Collaborative Mobile Devices and Mobile Engineering
- Collaborative Value Systems and Clusters
- Collaborative Engineering for Sustainability
- Concurrent Engineering Methods and Processes
- Creating Demand for Innovations
- Education, Social Aspects and humanities within CE
- Integrated Engineering of Products, Services & Organisations
- Enterprise Interoperability
- Knowledge Management, Representation, and Visualisation
- Knowledge Workers Productivity and Creativity
- Legal Issues (IPR) in Living Labs
- Living Labs for Innovation and Regional Innovation Systems (RIS)
- People and objects collaboration
- Product Data and Product Life-cycle Management
- Simulations and Games for CE, Collaboration & Learning



- Virtual Enterprises, Organisations and Communities
- Virtual Spaces for Collaboration

ICE2009 has attracted participation from representatives of major research centres and individuals from around the world. Altogether, nearly 80 papers were presented at the conference, representing 30 countries. In addition, a number of funded research projects used this forum to disseminate their results. In total, 76 papers are included in these proceedings. These have been organised and conveniently split into sections according to the topics addressed during the conference:

⇒ Collaborative Innovation

⇒ LivingLabs

⇒ Collaborative Processes and Systems

⇒ Network Communities and Organisations

⇒ Collaborative Decision Making

⇒ Advances in Concurrent Engineering

⇒ Enterprise Interoperability

The Organising Committee would like to take this opportunity to express sincere thanks to all the presenters, session chairmen, delegates, reviewers, committee members and guest speakers for their absorbing and valued contributions. Our special gratitude goes to many people for their support and assistance given throughout the entire planning, preparation and organisation of the conference, especially to the sponsor organisations.

Klaus-Dieter Thoben, Kulwant S Pawar, Robert Bierwolf and Bernhard Katzy

On behalf of the ICE2009 Organising Committee,  
June 2009.

## ICE2009 Workshops

This year ICE hosted a number of workshops organised by projects and/or initiatives. The aim is to bring together users and experts in interactive sessions for elaborating specific topics. The coordinators of each workshop will invite selected presentations and demonstrations in order to stimulate the debate. The following workshops were organised:-

### Track 1: Living Lab

- LL - Discover Leiden Living Lab : Peter van der Wijden & Henk Uittenbogaard
- LL - Dutch Living Lab Event: Martijn Kriens & Veli-Pekka Niitamo
- LL - Living Lab Services - (CO-LLABS): Jens Schumacher and Karin Feurstein
- LL - Living Labs and SME Innovation (Co-LLabs): Hans Schaffers & Roberto Santoro
- LL - Entrepreneurial Open Innovation: From Invention to Innovation - Getting Results from Living Labs: Hermann Löh, Hans Schaffers & Kjetil Kristensen

### Track 2: IEEE TMC - Technology Management Council Europe 2009

- IEEE - Open Innovation - Do or Die, Dare to share: Bart Meier & Jan Voute
- IEEE - Commercial Formalization of Open Innovation: Paul van den Biggelaar
- IEEE - End User Driven Open Innovations: José Loeffen en and Lianne Simonse

### Track 3: INTEROP - Enterprise Interoperability

- Business Cases for Enterprise Interoperability (COIN & V-Lab): Sergio Gusmeroli & Guy Doumengts
- Enterprise Interoperability 4 Living Labs (COIN): Marc Pallot & Carmen Aguilera
- INTEROP ICEIMT 09 - Interoperability and Next Generation Enterprise Architecture: Peter Bernus & Ricardo Goncalves
- Exploring the scientific bases of Enterprise Interoperability: Cristina Martinez & Michele Missikoff & Keith Popplewell

### Track 4: IMS Workshops: Luca Canetta

- IMS-MTP workshop: Claudio Boer & Luca Canetta
- Dorothy parallel session: Luca Canetta & Paolo Pedrazzoli
- Difac parallel session: Luca Canetta & Myrna Flores

### Track 5: SatNav Downstream Service Innovation (ENCADRE)

- ENCADRE - Demand Creation Mechanisms in GNSS Clusters (Inno-FIT): Marco Conte & Jürgen Vogel
- Logistics Industry – Radical Service Innovation through strategic application of RFID and Galileo: Hans Moonen & Ricardo Goncalves

### Track 6: Concurrent Engineering

- CE for Complex System - Collaborative Technologies for Supporting Distributed Organisations -Collaboration Models and Case Studies - CoSpaces Technology for Supporting Collaboration: Terrance Fernando
- CE in Space - Collaborative Innovation in Space - Technology Transfer & Collaborative Enterprising : Massimo Bandecchi & Frank Salzgeber

### Track 7: Collaboration

- COLL - Configurable and mobile working environments for SMEs (COVES): Mehmet Kürümlüoğlu & Abdul Samad (Sami) Kazi
- COLL - Future Work Spaces: Marcel Bijlsma
- COLL - Collaborative Innovation in Practice (AMI@WORK): Håkon Iversen, Kjetil Kristensen, Catherine Janson, Thomas Berman, Nina Enger
- COLL - Collaborative Web Environments: Deirdre Lee & Wolfgang Gräther