



# 17th International Conference on Concurrent Enterprising

*"Innovating products and services for collaborative networks"*

ICE 2011

## Welcome to the ICE Conference 2011

20<sup>th</sup> to 22<sup>nd</sup> of June 2011  
Aachen, Germany

Sophia Antipolis	1994	
Stockholm	1995	
Milan	1996	
Nottingham	1997	
Sinaia	1998	
The Hague	1999	
Toulouse	2000	
Bremen	2001	
Rome	2002	
Helsinki	2003	
Sevilla	2004	
Munich	2005	
Milano	2006	
Sophia Antipolis	2007	
Lisbon	2008	
Leiden	2009	
Lugano	2010	



# ICE 2011: Introducing Aachen

- The city where research looks to the future\*
- The city that offers a unique combination of rich cultural heritage and a great research environment
- The city with more ~ 12.000 employees in research facilities and app. 42.000 students

## Aachen

Center of Europe    **Aix-la-Chapelle**

**RWTH Aachen University**    CHIO

City of Fountains    **Healing waters**

**Where the Kings got crowned**

Hottest springs of Central Europe

**UNESCO World Heritage Site**

Aachener Printen

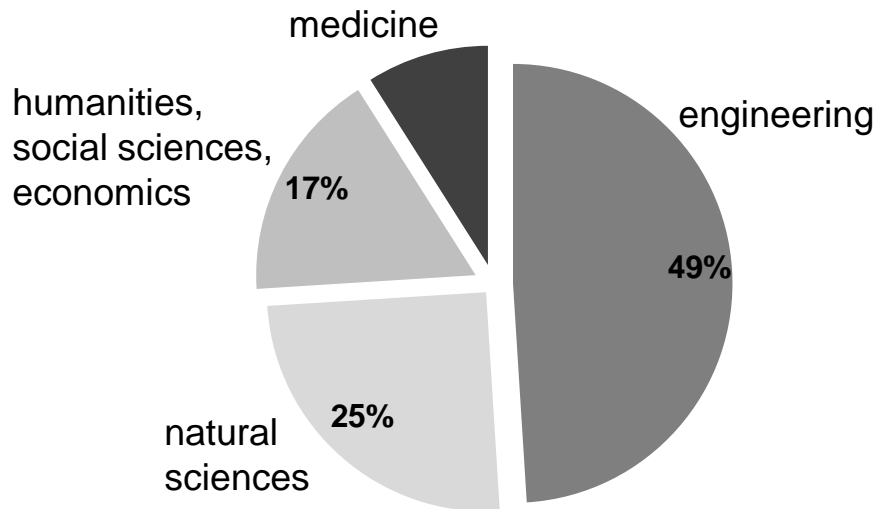


# ICE 2011: RWTH Aachen University



- Budget: 611 Mio. Euro
- Third party funding: 227 Mio. Euro
- Contract Research 70 Mio. Euro
- Affiliated institutes: 35 Mio. Euro

- 450 professorships
- 262 institutes, including 20 major institutes
- 4 Fraunhofer Institutes
- 13 Affiliated institutes
- 9 Research Training Groups
- > 31,000 students



**RWTH**AACHEN Campus

- New initiative at RWTH since 2009
- Initiatives to bring industry and academia together to collaborate and innovate
- Up to 19 research clusters

# Your Host for ICE 2011: FIR at RWTH Aachen



Prof. Günther Schuh  
Scientific Director



Prof. Volker Stich  
Managing Director



## Departments

Information Management	Service Management	Production Management
<ul style="list-style-type: none"><li>▪ Information Logistics</li><li>▪ Information Technologies</li><li>▪ Competence Center Electronic Commerce</li></ul>	<ul style="list-style-type: none"><li>▪ Service Engineering</li><li>▪ Lean Services</li><li>▪ Community Management</li><li>▪ Competence Center Maintenance</li></ul>	<ul style="list-style-type: none"><li>▪ Supply Chain Design</li><li>▪ Order management</li><li>▪ Logistic Management</li><li>▪ Competence Center IT-Management</li></ul>
<ul style="list-style-type: none"><li>▪ <b>Smart Object Innovation Lab</b></li></ul>	<ul style="list-style-type: none"><li>▪ <b>Service Science Innovation Lab</b></li></ul>	<ul style="list-style-type: none"><li>▪ <b>ERP Innovation Lab</b></li></ul>
RWTHAACHEN Campus		



**ICE 2011**

***17th International Conference on Concurrent Enterprising***

***“Innovating products and services for collaborative networks”***

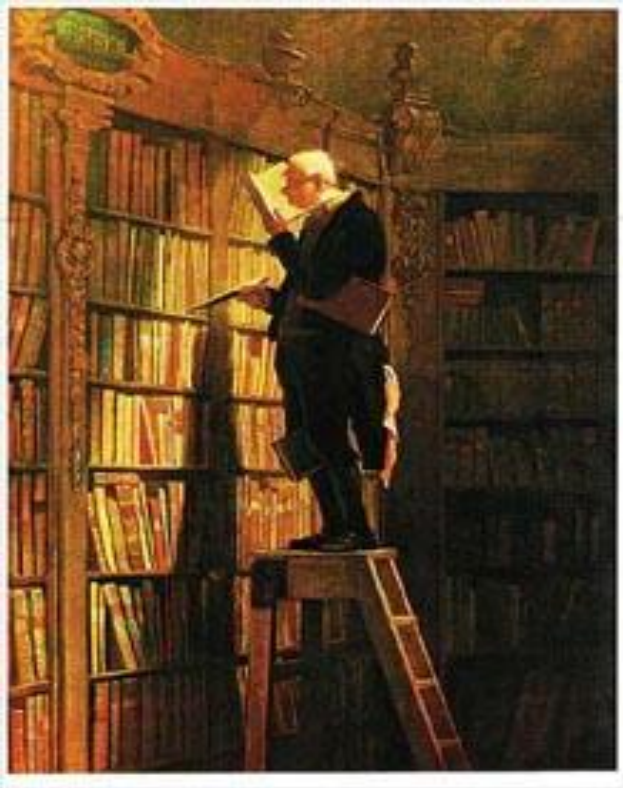
# **Innovations in Research: The RWTH Aachen Campus Project**

**Prof. Dr.-Ing. Volker Stich**

**ICE 2011, 20<sup>th</sup> June 2011**

# Our research approach

## Research for Library



## Research for Industry

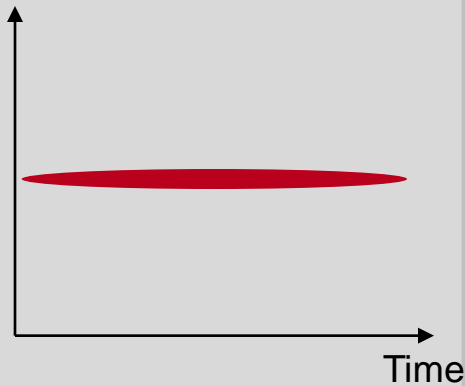


# The Vision: RWTH Aachen Campus as catalyst for research und trigger for innovation

## Research Yesterday

- Long development times
- Narrow scope for solutions

Solution Space



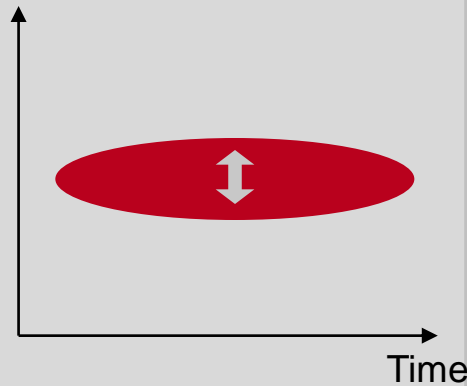
*Knowing, where it is written*



## Research Today

- Long development times
- Narrow scope for solutions

Solution Space



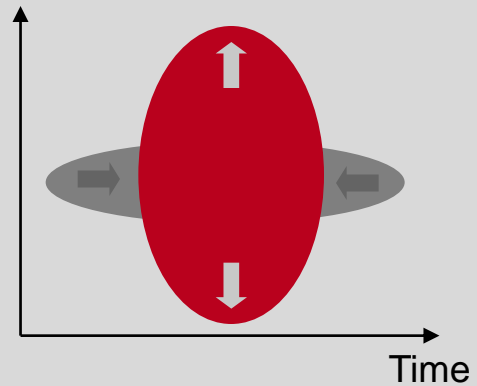
*Knowing, who knows what*



## Research Tomorrow

- Shortened development times
- Ample room for solutions

Solution Space



*Knowing, where knowledge is created*

**RWTHAACHEN**Campus

# RWTH Aachen Campus project in a nutshell

Vision: To emerge as one of the world leading technical Universities, RWTH Aachen has started the RWTH Campus Project to foster cooperation of research and industry.

## ■ RWTH Aachen Campus Facts

- Area: appr. **545,000m<sup>2</sup>**,
- Capital commitments: appr. **2,000,000,000 €**,
- New direct and indirect jobs: appr. **10,000**



- The CAMPUS-Areal Melaten covers a total area of **appr. 200.000m<sup>2</sup>**
- Additional Central Facilities will develop (Center for Continuing Education, Boulevard, „Campus Gate“, Child Care, Gastronomy, Hotels, Shopping, Services)

# The RWTH Aachen Campus: catalyst for research, competitive power and job-turbo

## Benefits for industry

- Increased R&D-speed
- Reduction of research risk
- Access to resources and young staff members
- Use of synergy effects
- Increase of attractiveness of companies
- Development of competitive advantages

## Benefits for university

- High-end research with intensive Interaction between industry and economy
- Attractive teaching and training events
- Improvement of image
- Generating new financial sources
- Guarantee of topical relevance

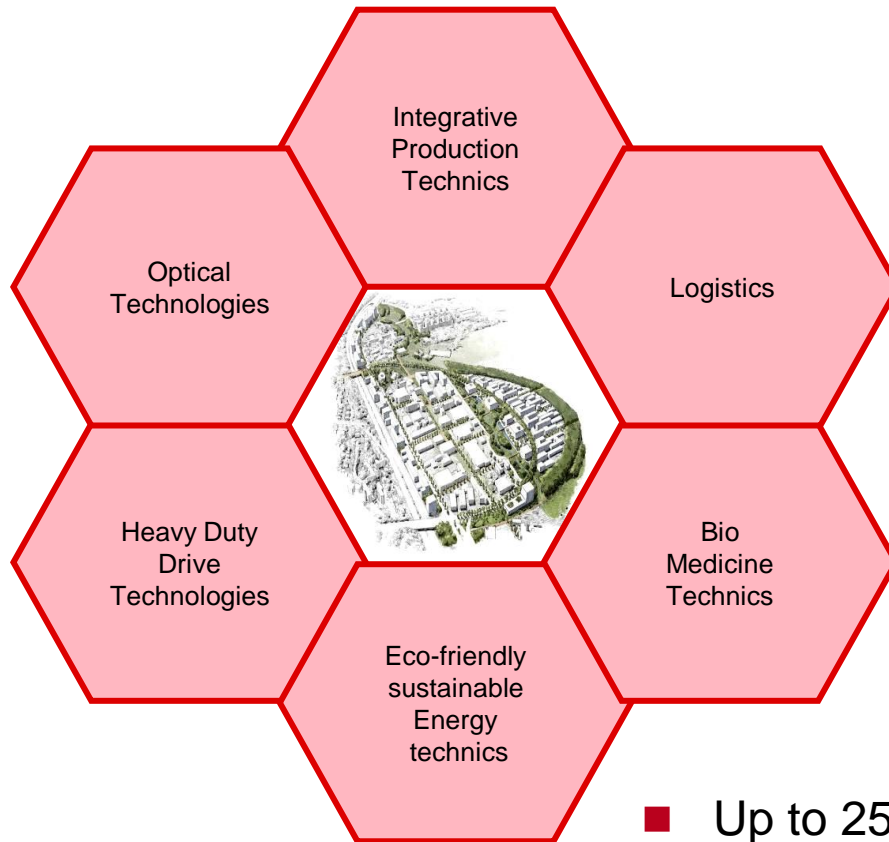
## Benefits for members of staff

- Rapid and job-relevant qualifications
- Cosmopolitan working environment
- Broad offer of further training
- Doctorate close to industry
- Early setup of a personal network

## Benefits for public

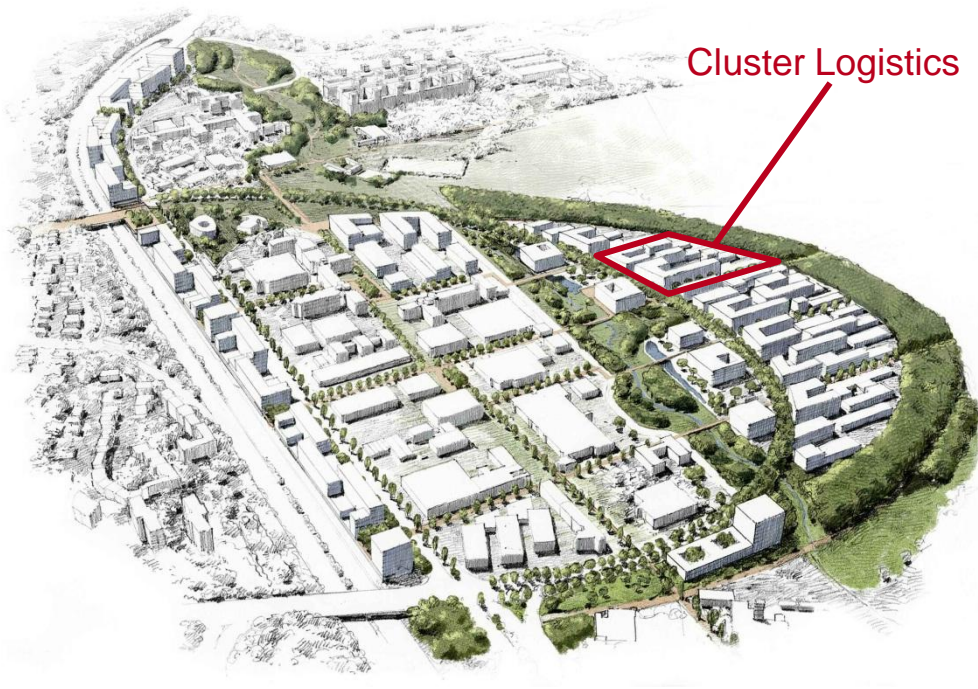
- High-tech-developments
- R&D as competitive power
- Highly qualified jobs
- International attractiveness
- Increase of gross domestic product

# Starting with six Campus Clusters



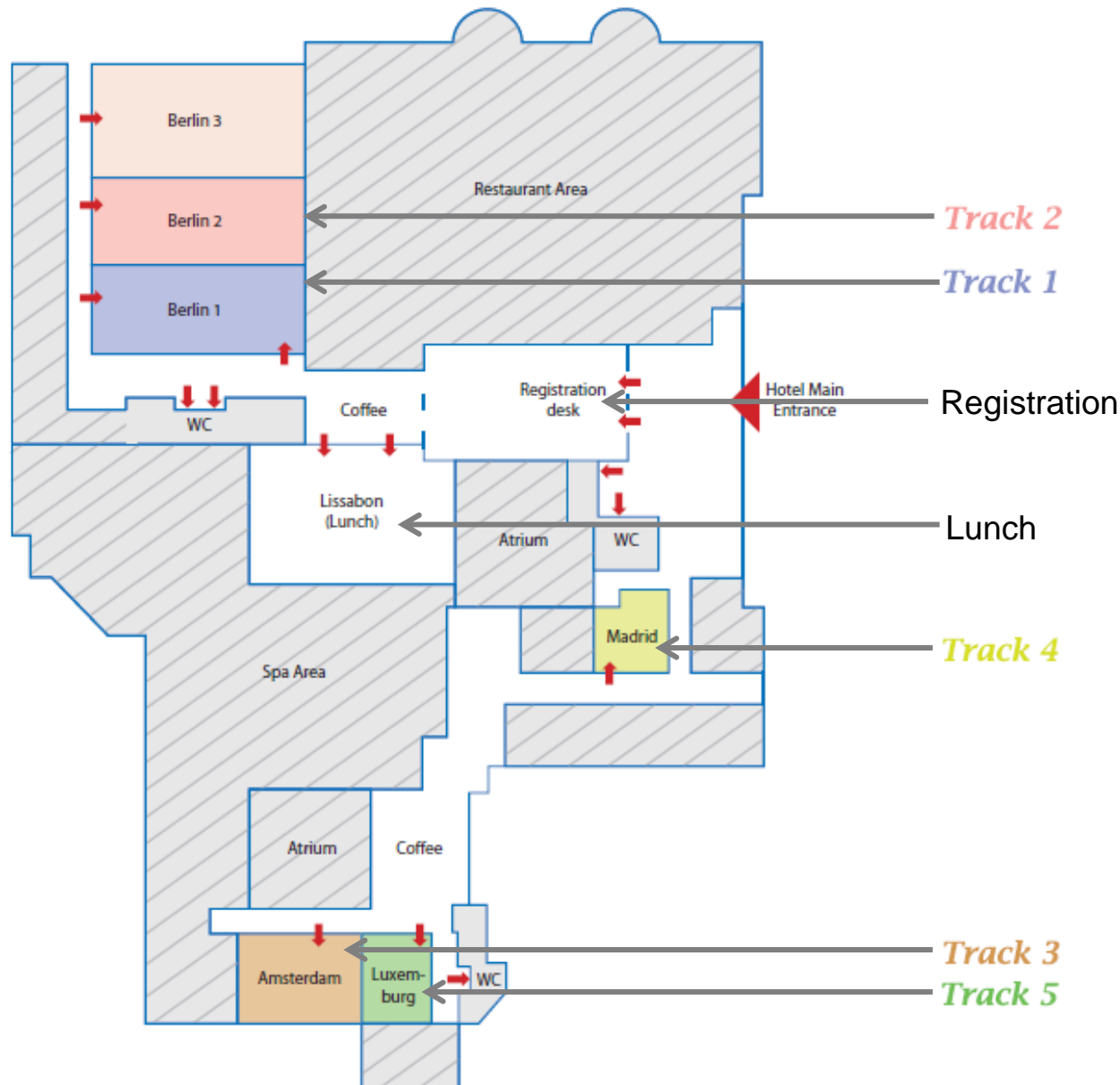
- Up to 250 national and international technology providers (research partner) get the opportunity to ...
  - bring in own research and development capabilities
  - establish research cooperation with other parties
  - develop Lasting integration into research activities of RWTH Aachen

# FIR's Cluster Logistics



# Innovating Products and Services for Collaborative Networks

## Venue and program overview



### Monday, 20. June 2011

- 3 Keynote presentations
- 5 Parallel Tracks:  
15 sessions
- 65 papers
- Networking reception  
hosted by the Mayor of  
Aachen Mr. Marcel Phillip

### Tuesday, 21. June 2011

- Workshop Sessions
- Gala Dinner &  
Award Ceremony
- Innovation Lab Tours  
(lists at registration desk)

### Wednesday, 22. June 2011

- Workshop Sessions

# Monday: Paper Sessions

09:00 – 10:30

## KEYNOTES

Prof. Volker Stich; Drs. Jean Severijns; Prof. Günther Schuh

10:30 – 11:00

11:00 – 12:30

## Track 1

### Advances In Concurrent Engineering

A. Braukhane, Q. Romberg: Lessons Learned from One-Week Concurrent Engineering Study Approach  
E. Red, G. Jensen, D. French, P. Weerakoon: Multi-User Architectures for Computer-Aided Engineering Collaboration  
I.-S. Fan, I. Jennions: Asset Health Management System Design  
J. Y. Song, M. Kracheel, G. Ziegler, H. A. Moser: Critical Interaction Instances in Collaborative Concurrent Engineering

## Track 2

### Product and Service Engineering

C. Grefrath, R. Frombach, H. Schmidt-Bleker, A. Meckelnborg, C. Deutzkens: Construction industry meets services  
P. Furrer, C. Hollmüller, F. Kienzle, Q. Küttel, N. Gamard, S. Gamard: A semantic journey to discover research and innovation opportunities in Europe  
A. Kampker, B. Franzkoch, C. Wesch-Potente, I. Brökelmann: ReBox-Pool - Innovative logistic concept based on a modular loading carrier concept  
M. Flores, A. Cabello, L. Torredemer, M. Agrawal, J. Keast, S. Terzi and A. Sopolana: Do enterprises implement a Process Architecture towards Lean in Product Development? A comparative study among large and small firms

## Track 3

### Concurrent Enterprising Domains

H. Duin, K.-D. Thoben: Serious Gaming for Sustainable Manufacturing: A Requirements Analysis  
C. Kandel, M. Klumpp, T. Keusgen: GPS based Track and Trace for Transparent and Sustainable Global Supply Chains  
M. Suchocki: Supplier-led Enterprise Change Management within the AEC Sector  
Oliver Budde, Julius Golovatchev: PLM Audit in the Telecommunication Industry

## Track 4

### Living Labs-1

P. Panek, W. Hlasek, M. Schrenk, K. Werner, W. L. Zagler: Experiences from User Centric Engineering of Ambient-Assisted Living Technologies in the Living Lab Schwechat  
A.-G. Nyström, S. Leminen: Living Lab - A New Form of Business Network  
I. Véliz: LUPi - innovative uses and practices lab, core of the Design Creative City Living Lab  
J. Salminen, S. Konsti-Laakso, M. Pallot, B. Trousse, B. Senach: Evaluating User Involvement within Living Labs through the use of a Domain Landscape

## Track 5

### Integrated Production Technology for High-Wage Countries

C. Brecher, W. Lohse, M. Vittr: CAM-NC Planning with Real and Virtual Process Data  
A. Roderburg, K. Gerhardt, C. Hinke, H.-S. Park, S. Buchholz, F. Klocke: Design Methodology for Innovative Hybrid Manufacturing Technologies  
U. Reisinger, M. Schleser, S. Scheik, W. Michaeli, O. Grönlund, A. Neuß, J. Wunderle, R. Poprawe, A. Rosner, K. Bobzin, T. Schlafer, S. Theiß, P. Kutschmann, E. Haberstroh, D. Flock, A. Bührig-Polazcek, M. Jakob: Novel Process Chains for the Production of Plastics/Metal-Hybrids  
U. Thombsen, J. Schüttler, T. Auerbach, M. Beckers, G. Buchholz, U. Eppelt, Y.-S. Gloy, P. Fritz, J. Lose, T. Molitor, A. Reßmann, A. Schreiber, D. Veselovac, K. Wilmms, T. Gries, W. Michaeli, D. Petring, R. Poprawe, U. Reisinger, R. Schmitt, W. Schulz, F. Klocke: Model-Based Self-Optimization for Manufacturing Systems

12:30 – 13:30

13:30 – 15:00

### Approaches In Concurrent Engineering

P. Näkki, K. Koskela, M. Pikkarainen: Practical Model for User-driven Innovation in Agile Software Development  
N. Jastroch, V. Kirova, C. S. Ku, T. J. Marlowe, M. Mohtashami: Adapting Business and Technical Processes for Collaborative Software Development  
K. Terna, M. Torok: A New Approach in the Development of Ontology Based Workflow Architectures  
E. Nass, M. Scheibmayer: Defining a Research Framework for the Business Impact of Data Management

### Product and Service Approaches

L. Henze, L. Mulder, P. J. Stappers: Conceptualizing Product Service Networks: Towards an Initial Framework  
C. Durugbo: Collaborative Networks for Product-Service Systems Delivery  
A. Hesmer, J. Trebels, S. Wiesner, B. Brenken, K.-D. Thoben: Introducing a co-creative Innovation Environment for Extended Products  
G. Schuh, P. Thomassen, G. Gudergan: Designing Cooperation Concepts for Service Networks

### Smart Objects Engineering

M. Forcolin, E. Fracasso, F. Tumanischvili, P. Lupieri: EURIDICE - IoT Applied to Logistics Using the Intelligent Cargo Concept  
J. Fluhr, T. Lutz: Use Case Types for Communication with and for Electric Vehicles (EV)  
R. Stevens, K. Kalaboukas, M. Forcolin: Simple Sensor Network Middleware and First Acting Devices  
K. A. Hribemik, Z. Ghairi, C. Hans, K.-D. Thoben: Co-creating the Internet of Things - First Experiences in the Participatory Design of Intelligent Products with Arduino

### Living Labs-2

A. Dippelhofer, U. Daniels, T. Rudolph, M. Conte, R. Santoro: The Living Labs for the Market Development and Value Creation: the GNSS Living Lab Prize  
J. Benavent, J. Colobrans, S. Mari, J. C. Castro, J. M. Colomé: Lessons learned from users: The development of the LivingLab4carers platform case  
H. Schaffers, A. Sallström, M. Pallot, J. M. Hernández-Muñoz, R. Santoro, B. Trousse: Integrating Living Labs with Future Internet Experimental Platforms for Co-creating Services within Smart Cities  
B. R. Katzy, C. J. Stettina, L. P. J. Groenewegen, M. J. de Groot: Managing Weak Ties in Collaborative Work

### Integrated Production Technology for High-Wage Countries

G. Schuh, R. Schmitt, A. Arybsoe, A. Bohl, M. Hienzsch, J. Quick: Integrative Standardisation - Theoretical Model and Empirical Investigation of German Toolmaking Firms  
G. Schuh, C. Thomas, S. Fuchs, T. Potente: Interactive visualization in production control  
T. Brosze, M. Schürmeyer, F. Bauhoff, N. Hering, J. Quick: High Resolution Production Control by Real Time Information  
J. Aguilar, G. J. Schmitz, U. Hecht, A. Schievenbusch, R. Guntlin, G. Schuh, A. Kampker, B. Franzkoch, P. Burgraef, R. Hilchner, J. Noecker, C. Wesch: Integrative Factory Design for a Casting Facility for TIAI Components

15:00 – 15:30

15:30 – 17:30

### Advances In Concurrent Enterprising

M. Rossi, E. T. Kerga, M. Taisch and S. Terzi: Proposal of a method to systematically identify wastes in New Product Development Process  
M. Donovan-Kühlich, M. Sma: GeoSpatial-Temporal Analytics to gain Insight from Linked Open Data  
J. A. dos Santos, P. Harland: Customer Satisfaction as an Objective Criterion for the Product Improvement Process  
V. Franchini, R. Fornasiero, A. Vinelli: From Fashion Based Production to Customer-oriented Networks for Healthy and Fashionable Footwear  
A. Nielsen, D. Kolter, S. Mütze-Niewöhner, J. Karla, C. M. Schlick: Towards a Human Reliability Analysis in Process Modelling: An Empirical Investigation

### Collaborative Innovation

B. Katzy, K. Sailer, T. Holzmann, E. Turgut: Deal-Flow portfolios in Innovation Collaborations - Revisiting the Rationale of Innovation Networks  
F. Larrinaga, I. Santos, O. Lizaralde, A. Perez: A Case Study on the Use of Community Platforms for Inter-Enterprise Innovation  
H. Gous, J. Gard, G. Baltes, C. Schutte, A. Gerber: Business architecture for inter-organisational innovation networks: A case study comparison from South Africa and Germany  
E. Gourov, K. Toteva: Raising creativity and participation in innovation and knowledge management activities  
J. Wu, H.-D. Haasis: Knowledge-based Stakeholder Collaboration for Sustainable Development of Freight Villages

### Advances In Concurrent Enterprising

V. Stich, S. Kompa, C. Meier, C. M. Senger: Changeable Production Systems in the Machinery and Equipment Industry - Success Factors: IT-Integration and Real-Time Capable Production Planning and Control  
Y.-J. Tseng, F.-Y. Huang, J.-C. Wang: A Particle Swarm Optimization and Case-Based Reasoning Model for Sub-Disassembly Formation in the Multi-Plant Disassembly Sequence Planning  
S. Meiser, W. Kuehn: Resource Capacity Search in Collaborative Print Service Networks  
P. Hofbauer, C. Wenninger: Elastic Collaboration for Automotive Supplier Networks  
T. Wuest, P. Sitek, M. Seifert, K.-D. Thoben: Organisational and technical interdependencies in collaborative production

### Open Innovation

S. Schwab, J. Koch, P. Flachskampf, I. Isenhardt: Strategic Implementation of Open Innovation Methods in Small and Medium-sized Enterprises  
M. Leitzelman, B. Trousse: Supporting the Selection of Open Innovation Software Tools  
B. Semolic, P. L. Staaf-Ong: Open innovation system and collaboration platform for the large EU infrastructure projects - NETLIPSE case study  
C. Durugbo, J. Riedel, K. Pawar: Towards a Unified Model of Co-creation  
A. Badji, D. Fusch: ELLIOT: Co-creative open innovation and living lab based evaluation to foster wider adoption of IoT-enabled solutions

### Intelligent Non-Hierarchical Networks

L. Canetta, A. F. Pittu: Open Innovation Accelerators benchmarking: applicability in the Mass Customisation context  
D. Romero, J. Osorio, M. C. Bentacur, G. Estrada, A. Molina: Next Generation Computer-Aided Tools: Supporting Integrated Sustainable Mass-Customized Product Developments  
G. Schuh, T. Potente, J. Nocker, T. Jasinski: Framework for complexity-oriented allocation of production in non-hierarchical networks  
J. Riedel, J. Baalsrud Hauge: State of the Art of Serious Games for Business and Industry

17:30 – 19:00

19:00 – 21:30

## Networking City Hall

(Welcome by Marcel Philipp – Mayor of the City of Aachen)

# Tuesday and Wednesday: Workshop Sessions

	<i>Track 1</i> Enterprise Interoperability	<i>Track 2</i> Living Labs	<i>Track 3</i> Service Science and Innovation	<i>Track 4</i> Organisational Integration & Responsiveness	<i>Track 5</i> Professional Networks
09:00 – 10:30	Collaboration and Interoperability Services In the COIN System: A Scientific Approach – 1	Living Lab – Common Assets – 1	Lean Service Processes	Distributed, Standards-based Master Data Management for Seamless Interoperability – 1	Design and Management (strategic, tactical and operational) of Non-Hierarchical Collaborative Manufacturing Networks – 1
10:30 – 11:00					
11:00 – 12:30	Collaboration and Interoperability Services In the COIN System: A Scientific Approach – 2	Living Lab – Common Assets – 2	Innovating Service Solutions – 1	Distributed, Standards-based Master Data Management for Seamless Interoperability – 2	Design and Management (strategic, tactical and operational) of Non-Hierarchical Collaborative Manufacturing Networks – 2
12:30 – 13:30					
13:30 – 15:00	Enterprise Interoperability and Collaboration In the Enlarged Europe Community – 1	Living Lab – Domain Networks – 1	Innovating Service Solutions – 2	Smart Objects and Complex Event Processing – 1	Production Planning In Serious Gaming – InTime (Game)
15:00 – 15:30					
15:30 – 17:30	Enterprise Interoperability and Collaboration In the Enlarged Europe Community – 2	Living Lab – Domain Networks – 2	Smart Nets	Smart Objects and Complex Event Processing – 2	Supplier performance evaluation via EDI – InTime (UseCase)
19:00 – 22:00	Gala Dinner and Award Ceremony in the Historical Ballroom „Altes Kurhaus“				

	<i>Track 1</i> Enterprise Interoperability	<i>Track 2</i> Living Labs	<i>Track 3</i> Service Science and Innovation	<i>Track 4</i> Organisational Integration & Responsiveness	<i>Track 5</i> Professional Networks
09:00 – 10:30	COIN EI / EC Services. From Lesson Learnt to Future Implementation Ideas: Consolidation to facilitate Uptake and Adoption – 1	Living Lab – Sharing Experiences and Joint Initiatives – 1	Service Engineering – 1	Wireless Sensors Networks	Towards Theoretical Framework of Living Lab Phenomena
10:30 – 11:00					
11:00 – 12:30	COIN EI / EC Services. From Lesson Learnt to Future Implementation Ideas: Consolidation to facilitate Uptake and Adoption – 2	Living Lab – Sharing Experiences and Joint Initiatives – 2	Service Engineering – 2	Strategic Planning for Innovation In High Velocity Markets – 1	Future Internet Enterprise Systems – 1
12:30 – 13:30					
13:30 – 15:00	COIN-Award	Living Lab – Sharing Experiences and Joint Initiatives – 3	Service Systems – 1	Strategic Planning for Innovation In High Velocity Markets – 2	Future Internet Enterprise Systems – 2
15:00 – 15:30					
15:30 – 17:30	International Journal of Product Development	Living Lab – Sharing Experiences and Joint Initiatives – 4	Service Systems – 2	Closed Session	Closed Session

# The Campus Cluster Logistics' Innovation Labs address three main research areas

## Service Science InnovationLab



## ERP InnovationLab



## Smart Objects InnovationLab



REPARATUR CENTER  
HEINEN-ZAVELBERG



**CLAAS**



**PHILIPS**  
sense and simplicity

**SKF**

PSI

itelligence

myOpenFactory

**FAUSER AG**  
organisation @ software

**assecO**  
GERMANY

**TT**  
Technologie Transfer

**GERRY WEBER**



**bümu**  
Bundesverband  
IT-Mittelstand e.V.



dawin checkMaster

**MUL**  
SERVICES

### Invent the future of Services

How can service innovations be successfully realised with the help of modern techniques and procedures?

### Create the Future of Enterprise Resource Planning

Which systems, technologies and standards are necessary to enable optimal information exchange in logistic networks?

### Enable High Resolution Transparency

Which technologies and standards enable to model real-time logistic processes in information systems?

**Guided Tours!**

# ICE 2011: How to get in and around Aachen



Conference Venue

FIR-Innovation Lab Tours, Tuesday

Main Building RWTH Aachen

Gala Dinner, Tuesday, 19:00

Networking, Monday, 19:00

Main Station

# Key Speakers



## **Conference host and chair**

Professor Volker Stich  
FIR at RWTH Aachen  
Managing Director

Innovations in Research:  
The RWTH Aachen Campus Project



## **First Opening Keynote**

Jean Severijns  
Technology Top Region Limburg  
Project Manager Internationalisation

Smart Specialisation Strategy in a Functional Region:  
The TTR-ELA triangle case



## **Second Opening Keynote**

Professor Günther Schuh  
FIR at RWTH Aachen  
Scientific Director

Developing a production engineering based theory of  
production



## **Networking Welcome, Monday**

Marcel Philipp  
City of Aachen  
Mayor

“Welcome in Aachen”



## **Gala Dinner Keynote, Tuesday**

Dr. Fiona Williams  
Ericsson Eurolab  
Project Manager

Talk on concurrent enterprising

Thank You for your Attention  
**Enjoy ICE 2011**

- Speakers have to be in the session rooms 15mn before the session start for uploading presentations. Please prepare a short bio.
- Session chairs to be in the session rooms 20mn before the session start for installing & connecting their laptop.
- Do not forget to wear your name batch all during the Conference – also for the evening events.