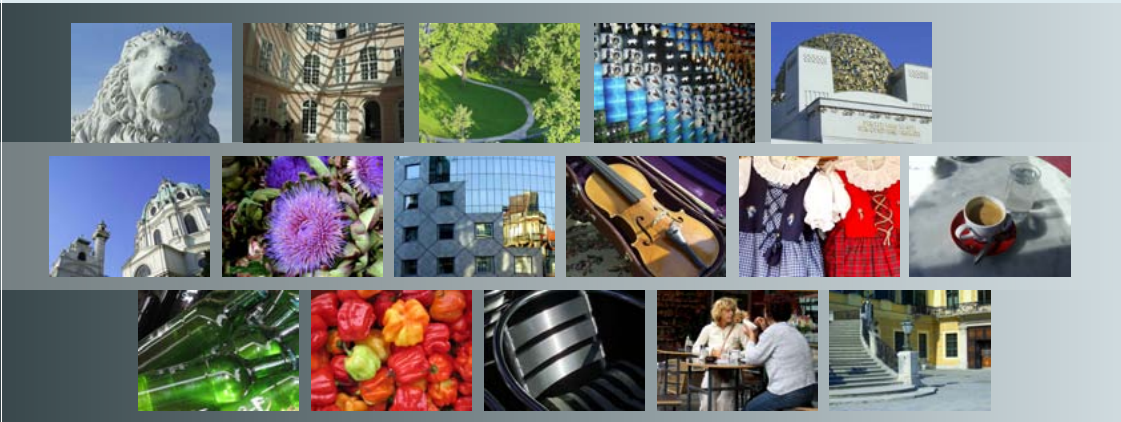


July 23-27 2007, Vienna, Austria  
[www.indin2007.org](http://www.indin2007.org)



# INDIN 2007

## CONFERENCE PROGRAM

5th IEEE International Conference on  
Industrial Informatics

**SIEMENS**



TECHNISCHE  
UNIVERSITÄT  
WIEN  
VIENNA  
UNIVERSITY OF  
TECHNOLOGY

**OVE**



**IEEE**



Mon 23rd	Tue 24th	Wed 25th	Thu 26th	Fri 27th
<p><b>Tutorials</b></p> <p><b>9:30 - 12:30</b> Tutorial 1</p> <p><b>9:30 - 17:30</b> Tutorial 2</p> <p><b>13:30 - 17:30</b> Tutorial 3</p>	<p><b>08:30 - 08:40</b> Welcome</p> <p><b>08:40 - 09:25</b> Keynote</p> <p><b>09:25 - 10:10</b> Keynote</p> <p><b>10:10 - 10:20</b> Break</p> <p><b>10:20 - 12:05</b> Sessions S01-1 (Room 1.2) T03-1 (Room 3.1) T08-1 (Room 3.2) T04-1 (Room 4.1)</p> <p><b>12:05 - 13:05</b> Lunch</p> <p><b>13:05 - 13:35</b> Posters I1 (Room 0.5)</p> <p><b>13:35 - 15:20</b> Sessions S01-2 (Room 1.2) T03-2 (Room 3.1) T08-2 (Room 3.2) T01-1 (Room 4.1) T09-1 (Room 4.2)</p> <p><b>15:20 - 15:30</b> Break</p> <p><b>15:30 - 17:00</b> Sessions S08-1 (Room 1.2) T03-3 (Room 3.1) T08-3 (Room 3.2) T01-2 (Room 4.1) T09-2 (Room 4.2)</p>	<p><b>08:40 - 09:25</b> Keynote</p> <p><b>09:25 - 10:10</b> Keynote</p> <p><b>10:10 - 10:20</b> Break</p> <p><b>10:20 - 12:05</b> Sessions T02-1 (Room 1.2) S05-1 (Room 3.1) S04-1 (Room 3.2) T06-1 (Room 4.1)</p> <p><b>12:05 - 13:05</b> Lunch</p> <p><b>13:05 - 13:35</b> Posters Student Poster Session (Room 0.5)</p> <p><b>13:35 - 15:20</b> Sessions S03-1 (Room 1.2) S05-2 (Room 3.1) T05-1 (Room 3.2) T04-2 (Room 4.1) T10-1 (Room 4.2)</p> <p><b>15:20 - 15:30</b> Break</p> <p><b>15:30 - 17:00</b> Sessions S03-2 (Room 1.2) S07-1 (Room 3.1) T05-2 (Room 3.2) T04-3 (Room 4.1) T09-3 (Room 4.2)</p>	<p><b>08:30 - 09:15</b> Keynote</p> <p><b>09:15 - 09:25</b> Break</p> <p><b>09:25 - 10:55</b> Sessions T02-2 (Room 1.2) T03-4 (Room 3.1) EU (Room 3.2) T04-4 (Room 4.1) T10-2 (Room 4.2)</p> <p><b>10:55 - 11:05</b> Break</p> <p><b>11:05 - 12:35</b> Sessions S02-1 (Room 1.2) S07-2 (Room 3.1) T05-3 (Room 3.2) T04-5 (Room 4.1) T10-3 (Room 4.2)</p> <p><b>12:35 - 13:35</b> Lunch</p> <p><b>13:35 - 14:05</b> Posters I2 (Room 0.5)</p> <p><b>14:05 - 15:50</b> Sessions T07-1 (Room 1.2) S06-1 (Room 3.1) T05-4 (Room 3.2) T06-2 (Room 4.1) T10-4 (Room 4.2)</p> <p><b>15:50 - 16:00</b> Break</p> <p><b>16:00 - 16:20</b> Closing</p>	<p><b>Industrial Day</b> 8:30 Bus Transfer from Tech Gate Vienna</p>
<p><b>Welcome Reception</b> Meeting point 18:30 "Otto Wagner Pavillon" Karlsplatz</p>		<p><b>18:30 Conference Banquet</b> Palais Niederösterreich</p>	<p><b>18:30 Industrial Day Dinner</b> Palm House, Hofburg</p>	<p><b>All plenary sessions take place in Room 0.1</b></p> <p><b>Please find session abbreviations explained in the track list on the last page</b></p>



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# Welcome Message from the conference chairs

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On behalf of the IEEE Industrial Electronics Society (IES) and the INDIN 2007 Organizing Committee, it is our pleasure to welcome you to the 5<sup>th</sup> IEEE Conference on Industrial Informatics in Vienna. INDIN has become one of the major annual events of the IES, attracting a large number of experts in the area of industrial information technologies. INDIN 2007 is organized by the IES and the Vienna University of Technology, in cooperation with OVE, ONEEIDA, and with substantial support from Siemens Austria.

We would like to thank all the volunteers who have made INDIN 2007 possible. Most notably, we thank our Track Chairs, Special Session Chairs and the Technical Program Committee on putting together an excellent technical program. Special thanks go to all authors for their participation in INDIN 2007, as well as the many reviewers worldwide for their contribution in making this a quality conference. Finally, we express our sincere thanks to the members of the Local Organizing Committee for their excellent preparation to make this a memorable event.

Beside the scientific program – tutorials, panel presentations, poster discussions and panel discussions at the Industrial Day – INDIN 2007 offers a charming social program. A welcome reception at a Winery on the hills of Grinzing and a conference banquet in one of Vienna's famous palais are an attempt to introduce the INDIN community to this marvellous venue and its famous cuisine.

This 5<sup>th</sup> IEEE Conference on Industrial Informatics promises to be an excellent opportunity for all delegates to further their technical knowledge, and enjoy the hospitality of Vienna. We look forward to seeing all of you at INDIN 2007, renewing old friendships, making new ones and enjoying an outstanding technical and social program.

Yours sincerely,



Dietmar Dietrich

General Co-Chair



Gerhard Hancke

General Co-Chair



Peter Palensky

Technical Program Chair



# General Information

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## Registration Desk

Please register at our registration desk in the hall as soon as possible during our opening hours (see below). Here you will receive your conference bag, the printed proceedings and your badge, which serves as admission ticket for all INDIN events.

## Opening hours

The registration desk is open on Tuesday, Wednesday and Thursday, starting from 8:00 am.

## On-site registration

If you have not already registered for INDIN online in advance, you can also register at the conference venue

## Additional social program ticket

At the registration desk you can purchase additional tickets for the welcome reception and the Banquet dinner (both in one), in case you have not already registered for these events online in advance, or you would like to take a non-INDIN delegate with you. The price for the social program ticket is EUR 100.

## Accepted payment methods

You can pay by VISA, MasterCard or Diners as well as in cash (Euro only).

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## Badge

Upon registration you receive your **INDIN Badge**. Please wear it at all technical and social program events of the INDIN Conference. Your badge serves as admission ticket for panel sessions, conference banquet and all other INDIN events.

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## Internet Access

There will be free wireless Internet access available for you at the venue. Please connect to the open WLAN with SSID “**TGV x.x**”, where x can vary depending on room and floor. Configure the WLAN using the following settings:

Network Authentication: Open  
Data Encryption: Disabled

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## Panel presentations

Panel presentations are to be done via PPT or PDF presentations with maximum 20 minutes of time (including questions). Laptop computers and digital projectors for presentation are available; bring your files on a USB thumb drive or CD. Please come forward to the session organisers in the break/coffee break before your session for copying your files on the presentation computer.

Please note that we do not guarantee that video clips included in your presentations will actually work.

If you have only hand written transparencies, please mail black-and-white A4 paper copies to the conference secretariat; we will scan it into a PDF file for presentation.

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## Posters

Poster sessions are on Tuesday, Wednesday and Thursday after lunch (see section “Technical Program”). On Wednesday there will be a Student Poster display. The best student poster will be awarded during the conference diner.

If you have been accepted for a poster presentation, please print the poster by yourself and bring it with you. The presentation is interactive and has typically more time, and a larger and very interested audience. Poster format is ISO A0 (1189 x 841 mm, 46.81 x 33.11 inch). There are no restrictions in layout. The poster must include the following parts of your paper:

- the full title and all authors
- the abstract
- all (important) figures
- the problem statement
- the solution

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## Tutorials

INDIN 2007 aims to network researchers, academics, engineers, and industry experts to discuss break-through research, new ideas, recent developments, and new applications related to industrial informatics.

Tutorials are held on **Monday, July 23**. For more details, please refer to Page 8.

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## Industrial Day

The first IEEE INDIN Industrial Day is a forum for technology experts, researchers and industrial managers to discuss today's and tomorrow's challenges in academic/industrial cooperation. The motto of this industrial day is "the future of manufacturing". More information can be found in the technical program section.

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## Bank, Currency, Credit Cards

The national currency in Austria is Euro (€). Money can be drawn from cash machines using Maestro cards and credit cards. Please check with your own bank for applying transfer fees.

In the inner city major credit cards such as MasterCard, Visa etc. are widely accepted.

At the **INDIN Registration Desk** you can pay for your on-site registration by VISA, MasterCard or Diners as well as in cash (Euro only).

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## Liability & Insurance

The organizers cannot be held responsible for accidents to conference participants or accompanying persons, for damage, or loss of their personal property, or for cancellation expenses regardless of cause.

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## Public Transport

### In the city

Vienna has an extensive tram and bus network - the tram network being third largest in the world. In the most populated areas of Vienna, transportation systems are run so frequently (even during off-peak hours), that any familiarity with departure timetables is virtually unnecessary. The convenience and flexibility of the public transport is therefore reflected through its popularity.

## To and from the airport

**By taxi** – This way of transportation costs approximately 30 €. The actual price depends on the taxi company.

**By train** – There are two trains available, the ÖBB S-Bahn and the City Airport Train (CAT). Both trains arrive at the station "Landstraße Wien-Mitte", where you can change to subways U3 and U4. The **S-Bahn** departs each 30 minutes (Airport .09 and .39) and costs 3,40 €. It takes 24 minutes to "Landstraße Wien-Mitte". The **City Airport Train** has also a frequency of 30 minutes, but leaves the airport at .05/.35 and needs only 16 minutes for journey. Tickets cost 8 € for one direction and 15 € for round trip.

**By bus** – Two bus services connect the airport with Westbahnhof and Schwedenplatz. Both have a 30 minutes frequency. Tickets start from 6 € for a single trip.

At the airport exit there is a screen showing the next departures of trains and buses.

For information about the **conference venue** please refer to the next chapter.



Tech Gate Vienna – The conference venue





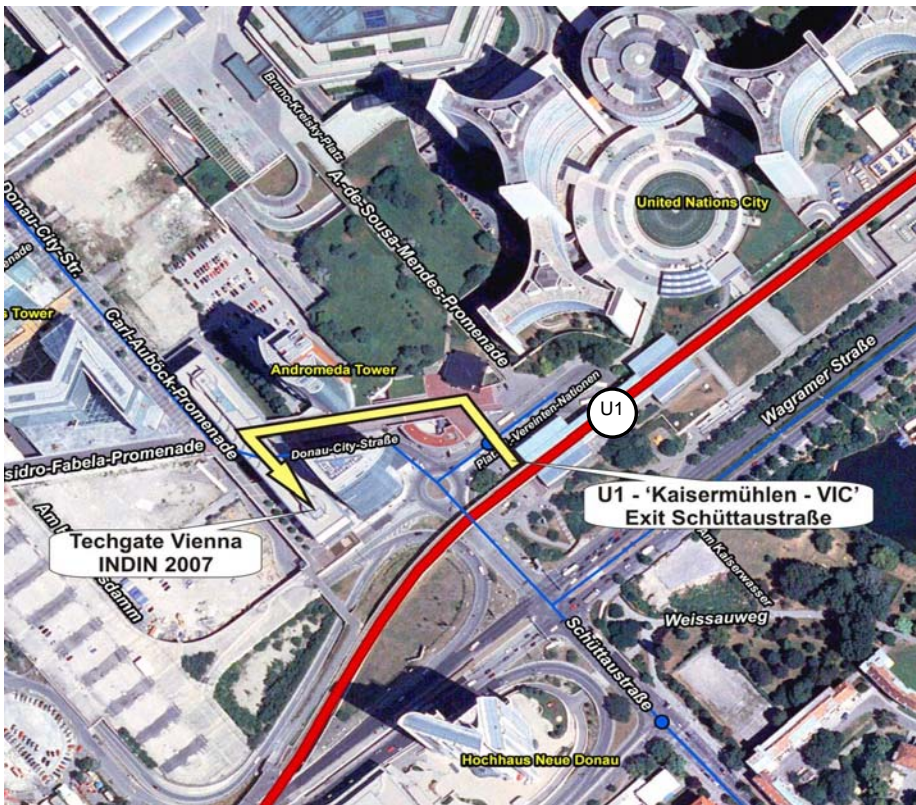
# Conference Venue

## The conference takes place at:

Tech Gate Vienna Wissenschafts- und Technologiepark GmbH  
Donau-City-Straße 1  
1220 Vienna, Austria

## Arrival by underground train:

Use Vienna's underground line **U1** and go to the station  
"Kaisermühlen – VIC" (Exit Schüttaustraße).



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# Technical Program

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## Monday, 23rd of July – Tutorials

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### 9:30 – 12:30 Tutorial 1

#### Joint European Effort in creating a Safe Network based on the EN 14908 networking standard (LON)

Presenters:

Dr. Jürgen Hertel, Consortium Manger of SafetyLon Project (Tutorial Coordinator)  
Dr. Peter Wratil, Managing Director of Innotec GmbH (Hamburg)  
Dr. Dietmar Loy, Engineering Manager, Loytec GmbH, Vienna  
Grzegorz Hayduk, Software Engineer, AGH-UST University, Krakow  
Martin Mentzel, Technical Project Coordinator, Fachhochschule Dortmund  
Chris Brönnimann, Managing Director of Ingenieurbüro Brönnimann, Thun (CH)

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### 9:30 – 17:30 Tutorial 2

#### Modeling Distributed Control Systems within ODECE based on IEC 61499

Presenters:

Dr. Thomas Strasser, Profactor Produktionsforschungs GmbH, Steyr  
Alois Zoitl, ACIN, Vienna University of Technology

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### 13:30 – 17:30 Tutorial 3

#### Agent-Oriented Software Engineering

Presenter

Massimo Cossentino, ICAR-CNR

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## Tuesday, 24th of July – INDIN Sessions

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### 08:30 - 08:40 Welcome

Peter Palensky, Technical Program Chair

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### 08:40 - 09:25 Keynote

#### Trends and Innovations in Process Automation

Norbert Schadler, Siemens

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### 09:25 - 10:10 Keynote

Technologies for Achieving Field-Ubiquitous Computing

Akira Nagashima, Yokogawa Electric Corporation

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### 10:10 - 10:20 Break

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### 10:20 - 12:05 Panel Sessions

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**S01-1 ENERGY MANAGEMENT AND MICRO GRIDS  
IT AND ENERGY**

ROOM 1.2

TUESDAY, 24/07/2007, 10:20 - 12:05

#### **A closer look on load management**

Friederich Kupzog, Charlotte Roesener, WF-005169, Volume 2, Page 899

#### **KNIVES: Network based Demand and Supply Control System - Enhancement for Network and Environmental Affinity -**

Toshihiko Handa, Charlotte Roesener, Junichi Ichimura, Hiroaki Nishi, WF-003859, Volume 2, Page 919

#### **Neural Implementation of MicroGrid Central Controllers**

Fabrizio Pilo, Giuditta Pisano, Gian Giuseppe Soma, WF-006637, Volume 2, Page 925

#### **VPPs information needs for effective operation in competitive electricity markets**

Hugo Morais, Marílio Cardoso, Luís Castanheira, Zita Vale, Isabel Praça, WF-006084, Volume 2, Page 931

**T03-1 MODELS FOR FACTORY AUTOMATION**  
**FACTORY AUTOMATION**  
ROOM 3.1  
TUESDAY, 24/07/2007 10:20 - 12:05

**An Open Source IEC 61131-3 Integrated Development Environment**

Edouard Tisserant, Laurent Bessard, Mário de Sousa, WF-005932, Volume 1, Page 183

**Development of a Methodological Framework for the Self Reconfiguration of Automated Visual Inspection Systems**

Hugo Garcia, Rene Villalobos, WF-003263, Volume 1, Page 207

**New Simulation Models to Evaluate Performance of PROFINET IO Class 1 Systems**

Paolo Ferrari, Alessandra Flammini, Daniele Marioli, Andrea Taroni, Francesco Venturini, WF-004952, Volume 1, Page 237

**Service model for the management of industrial environments. Dynamic reconfiguration of production elements**

Diego Marcos-Jorquera, Francisco Maciá-Pérez, Virgilio Gilart-Iglesias, Juan Antonio Gil-Martínez-Abarca, WF-004871, Volume 1, Page 249

**Simulation of Industrial Applications using the Execution Environment SCXML**

Raimundo Moura, Luiz Guedes, WF-000981, Volume 1, Page 255

**T08-1 COGNITIVE SCIENCE 1**  
**COGNITIVE SCIENCE IN INDUSTRIAL INFORMATICS**  
ROOM 3.2  
TUESDAY, 24/07/2007 10:20 - 12:05

**A Comparative Study of Dynamic Learning Rate BPN and Wavelet Neural Networks**

Y. Z. Zhao, J. B. Zhang, A. J. R. Aendenroomer, WF-000574, Volume 2, Page 611

**Developing Intentional Systems with the PRACTIONIST Framework**

Vito Morreale, Susanna Bonura, Giuseppe Francaviglia, Fabio Centineo, Michele Puccio, Massimo Cossentino, WF-006475, Volume 2, Page 633

## **Learning by Bagging and Adaboost based on Support Vector Machine**

Yu Wang, Cheng-De Lin, WF-002828, Volume 2, Page 663

## **Modeling Product Engineering and Manufacturing Activity in Vehicle Development Process**

João Ferreira, André Carvalho, João Pimentel, Marco Guedes, Francesco Furini, Nuno Silva, WF-03921, Volume 2, Page 675

### **T04-1 POWER SYSTEM APPLICATIONS APPLICATIONS OF INDUSTRIAL INFORMATICS**

ROOM 4.1

TUESDAY, 24/07/2007 10:20 - 12:05

## **Design and Implement of Distribution Transformer Outage Detection System**

Hau-Ren Lu, Leether Yao, WF-005908, Volume 1, Page 323

## **Outlier Identification and Justification Using Multi-Objective PSO based Clustering Algorithm in Power System**

Li Feng, Ziyang Liu, Chao Ma, WF-002364, Volume 1, Page 365

## **Platform based development of embedded systems for traction and power engineering applications - experiences and challenges**

Sinisa Marijan, Ivan Petrovic, WF-005576, Volume 1, Page 371

## **The Efficient Offline Search System for High Risk Events of Power Systems Caused by Transient Stability**

Tetsushi Miki, WF-001945, Volume 1, Page 399

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**12:05 - 13:05 Lunch**

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**13:05 - 13:35 Poster Session**

### **I1 INTERACTIVE SESSION 1 INTERACTIVE SESSION**

ROOM 0.5

TUESDAY, 24/07/2007 POSTER SESSION 13:05 - 13:35

### **Design of a communication system for integration of industrial networks over public IP networks**

Nunzio Torrisi, Dennis Brandão, Rodrigo P. Pantoni, João F. G. Oliveira, WF-005428, Volume 1, Page 201

### **Extending the Mean-Value Analysis Algorithm According to the Thread Pool Investigation**

Ágnes Bogárdi-Mészöly, Tihamér Levendovszky, Hassan Charaf, WF-006122, Volume 2, Page 731

### **Measuring Semantic Gap: An Information Quantity Perspective**

Qinsheng Zhuang, Junkang Feng, Hong Bao, WF-000663, Volume 2, Page 669

### **Radio Map Filter for Sensor Network Indoor Localization Systems**

Yong Wu, Jianbin Hu, Zhong Chen, WF-003573, Volume 1, Page 63

### **Removal of Muscular and Artefacts Noise from the ECG by a Neural Network**

Jorge Mateo Sotos, José Manuel Blas Arnau, Ana María Torres Aranda, César Sánchez Meléndez, WF-006939, Volume 2, Page 687

### **Requirement Analysis and Optimization of combined Networks**

Andriy Luntovskyy, Volodymyr Vasyutynskyy, Cemal Oezluek, Dietbert Guetter, WF-000515, Volume 1, Page 69

### **Simulation Results for the ARS-PA Model**

Tobias Deutsch, Heimo Zeilinger, Roland Lang, WF-007587, Volume 2, Page 1021

### **The Realization of the Performance Estimation System on AIS SOTDMA Algorithm**

Hyosung Lee, Seungmin Lee, Heungho Lee, WF-006815, Volume 1, Page 405

### **Two-stage product definition for mass customization**

Li Yu, Liya Wang, WF-002925, Volume 2, Page 699

### **UPnP Compression Implementation for Building Automation Devices**

Stefan Knauth, Rolf Kistler, Daniel Käslin, Alexander Klapproth, WF-004715, Volume 1, Page 75

**S01-2 POWER MARKETS AND ENERGY BUSINESS  
IT AND ENERGY  
ROOM 1.2**

TUESDAY, 24/07/2007 13:35 - 15:20

**Establishing Large-Scale Renewable Reserve Capacity through Distributed Multi-Agent Support**

Horst F. Wedde, Sebastian Lehnhoff, Edmund Handschin, Olav Krause, WF-004634, Volume 2, Page 905

**Incentive-oriented market platforms to increase total efficiency of electricity systems**

Karl Derler, Ewald Traxler, WF-004022, Volume 2, Page 913

**Integration of Power Plant information system with Business information system in the open electricity market: challenges and solutions**

Tuan Dang, WF-003913, Volume 2, Page 1209

**T03-2 MODELING AND IEC 61499  
FACTORY AUTOMATION**

ROOM 3.1

TUESDAY, 24/07/2007 13:35 - 15:20

**A Methodology for Multidisciplinary Modeling of Industrial Control Systems using UML**

Elisabet Estevez, Marga Marcos, Isabel Sarachaga, Dario Orive, WF-006327, Volume 1, Page 171

**An IEC 61499 Based Approach for Distributed Batch Process Control**

Kleanthis Thramboulidis, Seppo Sierla, Nikolaos Papakonstantinou, Kari Koskinen, WF-003077, Volume 1, Page 177

**Management of Replicated IEC 61499 Applications**

Mario de Sousa, Adriano Santos, WF-006602, Volume 1, Page 231

**Using the CIP Protocol with IEC 61499 Communication Function Blocks**

Frans Weehuizen, Alois Zoitl, WF-003697, Volume 1, Page 261

**T08-2 COGNITIVE SCIENCE 2**  
**COGNITIVE SCIENCE IN INDUSTRIAL INFORMATICS**  
ROOM 3.2  
TUESDAY, 24/07/2007 13:35 - 15:20

**Image Processing and Neuro-Fuzzy Computing for Cork Quality Classification**

Beatriz Paniagua-Paniagua, Miguel Ángel Vega-Rodríguez, Juan Manuel Sánchez-Pérez, Juan Antonio Gómez-Pulido, WF-005894, Volume 2, Page 657

**Perception of Pseudo-Stereoscopic Image Depths of Three-Dimensional Objects Displayed on VDT Screen**

Tetsuya Muraoka, Hiroaki Ikeda, WF-000213, Volume 2, Page 681

**Route Selection for Vehicle Navigation and Control**

Grantham Pang, Ming Hei Chu, WF-001171, Volume 2, Page 693

**Vision for Cognitive Systems: A New Compound Concept Connecting Natural Scenes with Cognitive Models**

Peter Goebel, Markus Vincze, WF-005029, Volume 2, Page 705

**T01-1 MODELING, SIMULATION AND INTEGRATION**  
**BUILDINGS, NETWORKS AND AUTOMATION**  
ROOM 4.1  
TUESDAY, 24/07/2007 13:35 - 15:20

**Automated measurement-based Device Traffic Modeling in Control Networks**

Joern Ploennigs, Mario Gürtler, Mario Neugebauer, Klaus Kabitzsch, WF-004766, Volume 1, Page 27

**Deadband Sampling in PID Control**

Volodymyr Vasylutynskyy, Klaus Kabitzsch, WF-005916, Volume 1, Page 45

**Petri net based Building Automation and Monitoring System**

Luis Gomes, Aniko Costa, Joao Paulo Barros, Rui Pais, Tiago Rodrigues, Richard Ferreira, WF-007676, Volume 1, Page 57

**Vertical Integration in Building Automation Systems**

Stefan Soucek, Dietmar Loy, WF-007374, Volume 1, Page 81



**Web Services in Building Automation: Mapping KNX to oBIX**

Matthias Neugschwandtner, Georg Neugschwandtner, Wolfgang Kastner, WF-006947, Volume 1, Page 87

**T09-1 SOA PLATFORMS  
SERVICE-ORIENTED ARCHITECTURE  
ROOM 4.2  
TUESDAY, 24/07/2007 13:35 - 15:20**

**Automated SOC development for the power distribution industry**

Cristina Marin, Philippe Lalanda, WF-004472, Volume 2, Page 719

**Platform-Based Design for Clinical Information Systems**

Jan Werner, Janos Mathe, Sean Duncavage, Brad Malin, Akos Ledeczi, Jim Jirjis, Janos Sztipanovits, WF-006556, Volume 2, Page 749

**Service Discovery in Industrial Agent Systems**

Omar López, Jose Lastra, WF-006645, Volume 2, Page 761

**The Challenge of Evolving Existing Systems to Service-Oriented Architectures**

John Hutchinson, Gerald Kotonya, James Walkerdine, Peter Sawyer, Glen Dobson, Victor Onditi, WF-006041, Volume 2, Page 773

**XML-based monitoring and operating for Web Services in automation**

Annerose Braune, Stefan Hennig, Torsten Schaft, WF-006459, Volume 2, Page 797

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**15:20 - 15:30 Break**

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**15:30 - 17:00 Panel Sessions**

**S08-1 E2050: CHALLENGES IN IT AND ENERGY  
CHALLENGES IN IT AND ENERGY  
ROOM 1.2  
TUESDAY, 24/07/2007 15:30 - 17:00**

**DG DemoNet-Concept - A new algorithm for active distribution grid operation facilitating high DG penetration**

Friederich Kupzog, Helfried Brunner, Wolfgang Prügler, Tomaž Pfajfar, Andreas Lugmaier, WF-005231, Volume 2, Page 1197

**Economic Load Dispatch of Higher Order Cost Polynomials Using Modified Particle Swarm Optimization**

Ahmed Yousuf Saber, Atsushi Yona, Masatake Higashi, WF-002569, Volume 2, Page 1203

**Intelligent Metering**

Horst Lunzer, WF-007439, Volume 2, Page 1215

**The power of electronic power management**

Andreas Urschitz, Erich Prem, Jörg Malzon-Jessen, Timothy Maloney, WF-004057, Volume 2, Page 1221

**T03-3 VISUALIZATION AND DESCRIPTION OF FACTORY AUTOMATION  
FACTORY AUTOMATION**

ROOM 3.1

TUESDAY, 24/07/2007 15:30 - 17:00

**3D Profile Reconstruction of Solder Paste Based on Phase Shift Profilometry**

Tak-Wai Hui, Grantham Pang, WF-001252, Volume 1, Page 165

**An open and non-proprietary device description for fieldbus devices for public IP networks**

Rodrigo Palucci Pantoni, Nunzio Torrisi, Dennis Brandão, WF-001449, Volume 1, Page 189

**Internet Visualization of PLCs Programs**

Ramón Piedrafita Moreno, Víctor Larraga Egado, José Luis Villarroel Salcedo, WF-006335, Volume 1, Page 225

**XML based Visualization of the IEC 61131-3 Graphical Languages**

Elisabet Estevez, Marga Marcos, Dario Orive, Edurne Irisarri, Fabian Lopez, WF-006343, Volume 1, Page 279

**T08-3 COGNITIVE SCIENCE 3  
COGNITIVE SCIENCE IN INDUSTRIAL INFORMATICS**

ROOM 3.2

TUESDAY, 24/07/2007 15:30 - 17:00

### **A generalised CFD learning and prediction system**

William Becker, Xinghuo Yu, Jiyuan Tu, WF-003271, Volume 2, Page 615

### **An Approach to Cognition in Factory Automation by applying Functional Systems Theory**

Aleksandra Dvoryanchikova, Ivan Delamer, Jose Lastra, WF-005665, Volume 2, Page 621

### **Context-based Knowledge Recommendation: A 3-D Collaborative Filtering Approach**

Kaichun Liang, Shuqin Cai, Qiankun Zhao, WF-002917, Volume 2, Page 627

### **Development strategy and implementation of a generalized model for FPGA-based artificial cell in bio-inspired hardware systems**

Csaba Szasz, Virgil Chindris, WF-001007, Volume 2, Page 639

### **Formal Support for Failure Knowledge Modeling and Diagnostic Reasoning Using Polychromatic sets**

Guo Li, WF-000817, Volume 2, Page 645

## **T01-2 WIRELESS TECHNOLOGIES BUILDINGS, NETWORKS AND AUTOMATION**

ROOM 4.1

TUESDAY, 24/07/2007 15:30 - 17:00

### **BACnet over ZigBee: a new approach to the wireless datalink channel for BACnet**

Tae Jin Park, You Jin Chon, Dong Kyu Park, Seung Ho Hong, WF-005371, Volume 1, Page 33

### **Credibility of Routing Information in Wireless Sensor Networks**

Jonathan Page, Gerhard Hancke, WF-007161, Volume 1, Page 39

### **Monitoring, Controlling and Configuring of Wireless Household-Electric Network through Remote Virtual Interface**

Antonio Heronaldo de Sousa, Ana Teruko Yokomizo Watanabe, José de Oliveira, Luiz Ricardo Lima, Bruno Henrique Kikumoto de Paula, WF-001627, Volume 1, Page 51

### **Wireless Technologies in Home and Building Automation**

Christian Reinisch, Wolfgang Kastner, Georg Neugschwandtner, Wolfgang Granzer, WF-006203, Volume 1, Page 93

**T09-2 APPLYING SEMANTICS IN SOA  
SERVICE-ORIENTED ARCHITECTURE**

ROOM 4.2

TUESDAY, 24/07/2007 15:30 - 17:00

**A Policy Driven Approach for Service-Oriented Business Rule Management**

Shuying Wang, Miriam Capretz, WF-001538, Volume 2, Page 713

**Discovering Web Services Using Semantic Keywords**

Mauricio Espinoza, Eduardo Mena, WF-005584, Volume 2, Page 725

**Semantic Service for Abnormal Situation Management**

Mika Viinikkala, Seppo Kuikka, WF-006629, Volume 2, Page 755

**Towards semantically-assisted design of collaborative business processes in  
EAI scenarios**

Andreas Friesen, Asma Alazeib, Andras Balogh, Markus Bauer, Athanasios Bouras, Panagiotis Gouvas, Gregoris Mentzas, Albina Pace, WF-006149, Volume 2, Page 779

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## Wednesday, 25th of July – INDIN Sessions

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### 08:40 - 09:25 Keynote

#### **Global Megatrends and their Effects on the Production of the Future**

Thomas Schott, Siemens

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### 09:25 - 10:10 Keynote

#### **Technologies for Achieving Field-Ubiquitous Computing**

Pierantonio Ragazzini, Industria Macchine Automatiche

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### 10:10 - 10:20 Break

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### 10:20 - 12:05 Panel Sessions

**T02-1 SYSTEM SECURITY  
SECURITY AND SAFETY**  
ROOM 1.2  
WEDNESDAY, 25/07/2007 10:20 - 12:05

#### **Detecting Network Attacks via Improved Iterative Scaling**

Xin Jin, Ronghuai Huang, Rongfang Bie, WF-007277, Volume 1, Page 113

#### **Low Cost Self-Testing Implementation for MISTY1 Cryptographic Algorithm**

Rodica Tirtea, Mircea Vladutiu, Geert Deconinck, WF-003867, Volume 1, Page 119

#### **Modelling Security Risks in Real-Time Operating Systems**

Jan Kiszka, Bernardo Wagner, WF-005401, Volume 1, Page 125

#### **Optimizing Security Computation Cost for Mobile Agent Platforms**

Najmus Saqib Malik, Albert Treytl, WF-006513, Volume 1, Page 143

#### **Securing communications in automation networks**

Dirk Reinelt, Arndt Lüder, Thomas Fuchs, WF-006394, Volume 1, Page 149

**S05-1 AGENTS THEORY AND PRACTICE FOR INDUSTRY 1**  
**AGENTS THEORY AND PRACTICE FOR INDUSTRY**

ROOM 3.1

WEDNESDAY, 25/07/2007 10:20 - 12:05

**A Self-Organizing and Holonic Model for Optimization in Multi-Level Location Problems**

Sana Moujahed, Nicolas Gaud, David Meignan, WF-003476, Volume 2, Page 1053

**Dynamic conversations between agents with the PRACTIONIST Framework**

Vito Morreale, Michele Puccio, Giuseppe Cammarata, Giuseppe Francaviglia, WF-006688, Volume 2, Page 1065

**Enhancing JADE Interoperability through the Java-based Interoperable Mobile Agent Framework**

Giancarlo Fortino, Alfredo Garro, Wilma Russo, WF-004804, Volume 2, Page 1071

**Multiagent oriented modeling and simulation for manufacturing systems control**

Selma Azaiez, Georges Habchi, Marc-Philippe Huget, Magali Pralus, Jihene Tounsi, WF-007099, Volume 2, Page 1079

**Separation of Concerns and Role Implementation in the PASSI Design Process**

Luca Sabatucci, Salvatore Gaglio, WF-003611, Volume 2, Page 1097

**S04-1 COGNITIVE AUTOMATION**  
**COGNITIVE AUTOMATION**

ROOM 3.2

WEDNESDAY, 25/07/2007 10:20 - 12:05

**Action planning model for autonomous mobile robots**

Charlotte Roesener, Roland Lang, Tobias Deutsch, Andreas Gruber, Brigitte Palensky, WF-007528, Volume 2, Page 1009

**Hidden Markov Models for Traffic Observation**

Dietmar Bruckner, Brian Sallans, Gerhard Russ, WF-007552, Volume 2, Page 1015

**Smart Nodes for Semantic Analysis of Visual and Aural Data**

Gerhard Pratl, Laurentiu Frangu, WF-007412, Volume 2, Page 1027

## **Technical Model for Basic and Complex Emotions**

Wolfgang Burgstaller, Roland Lang, Patricia Pörscht, Rosemarie Velik, WF-007455, Volume 2, Page 1033

## **The Semantic Web in action: semantically enabled Device Descriptions**

Sebastian Hegler, Martin Wollschlaeger, WF-005088, Volume 2, Page 1039

**T06-1 INFRASTRUCTURE MANAGEMENT  
INFRASTRUCTURE AND TECHNOLOGY  
ROOM 4.1  
WEDNESDAY, 25/07/2007 10:20 - 12:05**

## **A Framework for Managing Enterprise Knowledge for Collaborative Decision Support**

Allan N. Zhang, WF-005762, Volume 1, Page 517

## **Co-ordinated Management of Intelligent Pervasive Spaces**

Chee Y. Yong, Bing Qiao, Duncan J. Wilson, Min Wu, Derek Clements-Croome, Kecheng Liu, Richard Egan, Chris G. Guy, WF-003123, Volume 1, Page 529

## **Memory-based algorithms for abrupt change detection in sensor data streams**

Daniel Nikovski, Ankur Jain, WF-005436, Volume 1, Page 547

## **Strategy of virtual measurement for optimization of dynamic dead-time processes in automated control systems**

A. Dementjev, H.-D. Ribbecke, H. Kubin, K. Kabitzsch, WF-001384, Volume 1, Page 565

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**12:05 - 13:05 Lunch**

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**13:05 - 13:35 Poster Session**

**STUDENT POSTER SESSION  
ROOM 0.5  
13:05 - 13:35**

**S03-1 DEPENDABLE EMBEDDED SYSTEMS 1**

**DEPENDABLE EMBEDDED SYSTEMS**

ROOM 1.2

WEDNESDAY, 25/07/2007 13:35 - 15:20

**Detection of Out-of-Norm Behaviors in Event-Triggered Virtual Networks**

Roman Obermaisser, Philipp Peti, WF-007153, Volume 2, Page 971

**Hardware Failure Virtualization Via Software Encoded Processing**

Ute Wappler, Christof Fetzner, WF-007684, Volume 2, Page 977

**Internet Firewalls in the DECOS System-on-a-Chip Architecture**

Armin Wasicek, Wilfried Elmenreich, WF-004898, Volume 2, Page 983

**Safety Considerations for Cooperating Vehicles using Wireless Communication**

Kristoffer Lidström, Tony Larsson, Lars Strandén, WF-007536, Volume 2, Page 995

**S05-2 AGENTS THEORY AND PRACTICE FOR INDUSTRY 2**

**AGENTS THEORY AND PRACTICE FOR INDUSTRY**

ROOM 3.1

WEDNESDAY, 25/07/2007 13:35 - 15:20

**A Flexible Multi-Agent System Architecture for Plant Automation**

Quibin Feng, Aleksey Bratukin, Albert Treytl, Thilo Sauter, WF-007714, Volume 2, Page 1047

**An Agent-Oriented Programming Model for SOA and Web Services**

Alessandro Ricci, Claudio Buda, Nicola Zagnini, WF-006874, Volume 2, Page 1059

**Resource Allocation in Continuous Production using Market-Based Multi-Agent Systems**

Holger Voos, WF-003689, Volume 2, Page 1085

**Resource-oriented scheduling in the distributed production**

Aleksey Bratukhin, Basit Khan, Albert Treytl, WF-007706, Volume 2, Page 1091

**Workflow Modelling with INGENIAS methodology**

Alberto Garcia, Jorge J. Gomez-Sanz, Juan Pavon, WF-004448, Volume 2, Page 1103



**T05-1 IMAGE PROCESSING AND APPLICATIONS  
ROBOTICS AND AUTONOMOUS SYSTEMS**

ROOM 3.2

WEDNESDAY, 25/07/2007 13:35 - 15:20

**A Quadtree Driven Image Fusion Quality Assessment**

Mohammed Mahmoud Hossny, Saeid Nahavandi, Doug Creighton, WF-001716, Volume 1, Page 419

**Analyzing the Impact of Commercial Video Encoders in Remotely Teleoperated Mobile Robots through IEEE 802.11 Wireless Network Technologies**

Pablo Piñol, Miguel Martinez-Rach, Otoniel Lopez, Manuel P. Malumbres, Jose Oliver, WF-005274, Volume 1, Page 425

**Concepts for Day-Night Stereo Obstacle Detection in the Pantograph Gauge**

Bernhard Hulin, WF-006505, Volume 1, Page 449

**Performance Evaluation of Point Feature Detectors for Eye-in-Hand Visual Servoing**

Corneliu Lazar, Adrian Burlacu, WF-005126, Volume 1, Page 497

**T04-2 INTELLIGENT SYSTEM APPLICATIONS II  
APPLICATIONS OF INDUSTRIAL INFORMATICS**

ROOM 4.1

WEDNESDAY, 25/07/2007 13:35 - 15:20

**A collaborative design in the shipbuilding: Two case studies**

Maryna Solesvik, WF-004782, Volume 1, Page 299

**A RFID based knowledge management systems – an intelligent approach for managing logistics processes**

Harry K.H Chow, K.L. Choy, W.B. Lee, T.Q. Wang, WF-002992, Volume 1, Page 287

**Development of an OPC Server for a Fieldbus Diagnosis Tool**

Hassan Kaghazchi, John Hayes, Donal Heffernan, WF-004987, Volume 1, Page 329

**Software Agents Based Home Automation Software Agent Based Home Automation- An Intelligent Electrical Billing and Maintenance System**

Umakant Kulkarni, Shreehari Joshi, Jayateerth Vadavi, Anil Yardi, Ranganath Yadawad, WF-003433, Volume 1, Page 381

## **Using Web Services to exchange power plant process data**

Olivier Pasteur, Tuan Dang, Pierre-Etienne Delon, WF-002372, Volume 1, Page 411

### **T10-1 DEVELOPMENT METHODOLOGIES EMBEDDED AND NETWORKED CONTROL IN COLLABORATIVE MANUFACTURING**

ROOM 4.2

WEDNESDAY, 25/07/2007 13:35 - 15:20

## **An Agile methodology for Manufacturing Control Systems development**

Giovanni Aiello, Marco Alessi, Manfredi Bruccoleri, Carlo D'Onofrio, Giuseppe Vella, WF-006521, Volume 2, Page 817

## **Design and Implementation of Heterogeneous Distributed Controllers - A Case Study**

Martin Hirsch, Christian Gerber, Hans-Michael Hanisch, Valeriy Vyatkin, WF-002984, Volume 2, Page 829

## **Integrating a New Machine into an Existing Manufacturing System by using Holonic Approach**

Wutthiphath Covanich, Duncan McFarlane, James Brusey, Amro Farid, WF-005002, Volume 2, Page 861

## **UML Automation Profile: Enhancing the Efficiency of Software Development in the Automation Industry**

Tuukka Ritala, Seppo Kuikka, WF-003832, Volume 2, Page 885

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**15:20 - 15:30 Break**

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**15:30 - 17:00 Panel Sessions**

### **S03-2 DEPENDABLE EMBEDDED SYSTEMS 2 DEPENDABLE EMBEDDED SYSTEMS**

ROOM 1.2

WEDNESDAY, 25/07/2007 15:30 - 17:00

## **An Open System for Dependable System Validation and Verification Support – The DECOS Generic Test Bench**

Egbert Althammer, Erwin Schoitsch, Henrik Eriksson, Jonny Vinter, András Pataricza, György Csertán, WF-007668, Volume 2, Page 965

## **Model-Based Simulation of Distributed Real-time Applications**

Wolfgang Herzner, Rupert Schlick, Alain Le Guennec, Bruno Martin, WF-007404, Volume 2, Page 989

## **Towards a DECOS Fault Injection Platform for Time-Triggered Systems**

Henrik Eriksson, Jonny Vinter, Bernhard Leiner, Martin Schlager, WF-007498, Volume 2, Page 1001

### **S07-1 EXECUTION SEMANTICS AND MODELS OF IEC 61499 FUNCTION BLOCK APPLICATIONS**

#### **EXECUTION SEMANTICS OF IEC 61499 FUNCTION BLOCK APPLICATIONS**

ROOM 3.1

WEDNESDAY, 25/07/2007 15:30 - 17:00

## **A Device and Resource Execution Model for IEC 61499 Control Devices**

Alois Zoitl, Christoph Sünder, Thomas Strasser, Marco Colla, WF-005991, Volume 2, Page 1143

## **Execution Models for the IEC 61499 elements Composite Function Block and Subapplication**

Christoph Sünder, Alois Zoitl, James H. Christensen, Marco Colla, Thomas Strasser, WF-003093, Volume 2, Page 1169

## **Modeling and Clarifying the Execution of IEC 61499 Function Blocks Using XNet**

Nils Hagge, Bernardo Wagner, WF-005738, Volume 2, Page 1177

## **Sequential Axiomatic Model for Execution of Basic Function Blocks in IEC61499**

Valeriy Vyatkin, Victor Dubinin, WF-003344, Volume 2, Page 1183

### **T05-2 ROBOT CONTROL SYSTEMS ROBOTICS AND AUTONOMOUS SYSTEMS**

ROOM 3.2

WEDNESDAY, 25/07/2007 15:30 - 17:00

## **Autonomous Mechanical Controlled Grippers for Capturing Flying Objects**

Heinz Frank, Dennis Barteit, Norbert Wellerdick-Wojtasik, Thorsten Frank, Gregor Novak, Stefan Mahlknecht, WF-003425, Volume 1, Page 431

## **Autonomous Vehicle Formation Control with Kinematic Constrains**

Jurek Z. Sasiadek, Dan Neculescu, Maciek Kepka, Bumsoo Kim, WF-001767, Volume 1, Page 437

## **Control System for Unmanned Aerial Vehicles**

Ondrej Spinka, Stepan Kroupa, Zdenek Hanzalek, WF-006491, Volume 1, Page 455

## **Off-line Programming and simulation for automatic robot control software generation**

Manfredi Bruccoleri, Carlo D'Onofrio, Umberto La Commare, WF-005223, Volume 1, Page 491

### **T04-3 WIRELESS / SAFE COMMUNICATION APPLICATIONS APPLICATIONS OF INDUSTRIAL INFORMATICS**

ROOM 4.1

WEDNESDAY, 25/07/2007 15:30 - 17:00

## **Adapting the FTT-CAN Master for multiple buses operation**

Valter Silva, José Fonseca, Joaquim Ferreira, WF-007722, Volume 1, Page 305

## **Application of Wireless Sensor Network to Military Information Integration**

Scott Diamond, Marion Ceruti, WF-002135, Volume 1, Page 317

## **Discrete Event Simulation Framework for Power Aware Wireless Sensor Networks**

Daniel Weber, Johann Glaser, Stefan Mahlkecht, WF-005827, Volume 1, Page 335

## **On Architecture of Low Power Wireless Sensor Networks for Container Tracking and Monitoring Applications**

Stefan Mahlkecht, Sajjad Madani, WF-005517, Volume 1, Page 353

### **T09-3 SOA APPLICATIONS IN FACTORY AUTOMATION SERVICE-ORIENTED ARCHITECTURE**

ROOM 4.2

WEDNESDAY, 25/07/2007 15:30 - 17:00

## **Industrial Machines as a Service: Modelling industrial machinery processes**

Virgilio Gilart-Iglesias, Francisco Maciá-Pérez, Diego Marcos-Jorquera, Francisco José Mora-Gimeno, WF-004901, Volume 2, Page 737

## **Loosely-coupled Automation Systems using Device-level SOA**

Ivan M. Delamer, Jose L. Martinez Lastra, WF-002224, Volume 2, Page 743

## **Verification of the Consistency of Timing Constraints of the Orchestration of Factory Automation Web Services**

Corina Popescu, Jose L. Martinez Lastra, WF-006009, Volume 2, Page 785

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## Thursday, 26th of July – INDIN Sessions

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**08:30 - 09:15 Keynote**

**How open standard based tools can support the future of flexible manufacturing**

Julien Chouinard, ICS Triplex

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**09:15 - 09:25 Break**

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**09:25 - 10:55 Panel Sessions**

**T02-2 SAFE AUTOMATION  
SECURITY AND SAFETY  
ROOM 1.2  
THURSDAY, 26/07/2007 09:25 - 10:55**

**Blackbox testing methodology for SafetyLON according to the IEC 61508 Standard**

Pawel Kwasnowski, Grzegorz Wrobel, Grzegorz Hayduk, Zbigniew Mikos, WF-007293, Volume 1, Page 107

**Network Management for a Safe Communication in an Unsafe Environment**

Peter Fischer, Michael Holz, Martin Mentzel, WF-003999, Volume 1, Page 131

**Online Self Tests for Microcontrollers in Safety Related Systems**

Thomas Tamandl, Peter Preininger, WF-006432, Volume 1, Page 137

**Technology of safe Drives**

Peter Wratil, WF-002348, Volume 1, Page 155

**T03-4 REAL TIME SYSTEMS  
FACTORY AUTOMATION  
ROOM 3.1  
THURSDAY, 26/07/2007 09:25 - 10:55**

### **Analysis of Response Times in 802.11 Industrial Networks**

Gianluca Cena, Ivan Cibrario Bertolotti, Adriano Valenzano, Claudio Zunino, WF-004839, Volume 1, Page 195

### **Real-Time-Oriented Identification Strategies for Failure Diagnosis in Complex Automation-Systems**

H. - Dieter Ribbecke, Sylvia Kunath, WF-001503, Volume 1, Page 243

### **Violations of Real Time Communication Constraints caused by Memory Transfers exceeding CPU Cache Limits in RTAI and RTnet**

Kai Zhou, Bernhard Breinbauer, Thomas Rausch, WF-005673, Volume 1, Page 267

### **Wireless Extensions of Wired Industrial Communication Networks**

Gianluca Cena, Adriano Valenzano, Stefano Vitturi, WF-004707, Volume 1, Page 273

## **EU CURRENT RESEARCH AND THE 7TH FRAMEPROGRAM CURRENT RESEARCH AND THE 7TH FRAMEPROGRAM**

ROOM 3.2

THURSDAY, 26/07/2007 09:25 - 10:55

### **Current Research and the 7th Frameprogram**

Gordana Popovic, European Commission, Directorate General for Information

Society and Media: FP7 and Call Objectives in Micro/Nanosystems, Embedded System & Future and Emerging Technologies

## **T04-4 INTELLIGENT SYSTEMS APPLICATIONS I APPLICATIONS OF INDUSTRIAL INFORMATICS**

ROOM 4.1

THURSDAY, 26/07/2007 09:25 - 10:55

### **Neuro-Fuzzy Versus PI Speed Loop for a Vector Control Based Electrical Drive System with Asynchronous Motor.**

D. Mihai, C. Vasile, WF-001996, Volume 1, Page 341

### **Robust Preprocessing: Denoising and Whitening in the context of Blind Source Separation of Instantaneous Mixtures**

Aurobinda Routray, Niva Das, Pradipta Dash, WF-005355, Volume 1, Page 377

## **Texture Cue Based Tracking System Using Wavelet Transform and a Fuzzy Grammar**

Manuel Ferreira, Cristina Santos, João Monteiro, WF-004413, Volume 1, Page 393

## **Web services for Implementing Vendor Managed Inventory**

Vikash Singh, Mamata Jenamani, WF-005444, Volume 2, Page 791

### **T10-2 DISTRIBUTED FUNCTION BLOCK ARCHITECTURE EMBEDDED AND NETWORKED CONTROL IN COLLABORATIVE MANUFACTURING**

ROOM 4.2

THURSDAY, 26/07/2007 09:25 - 10:55

## **A Migration Path to IEC 61499 for the Batch Process Industry**

Jukka P. Peltola, James H. Christensen, Seppo A. Sierla, Kari O. Koskinen, WF-003719, Volume 2, Page 811

## **Challenges to Industry Adoption of the IEC 61499 Standard on Event-based Function Blocks**

Kenwood H. Hall, Raymond J. Staron, Alois Zoitl, WF-006483, Volume 2, Page 823

## **Formal description of an IEC 61499 runtime environment with real-time constraints**

Christoph Sünder, Hermann Rofner, Valeriy Vyatkin, Bernard Favre-Bulle, WF-003107, Volume 2, Page 853

## **Towards Formal Verification of IEC61499: modelling of Data and Algorithms in NCES**

Cheng Pang, Valeriy Vyatkin, WF-005975, Volume 2, Page 879

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**10:55 - 11:05 Break**

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**11:05 - 12:35 Panel Sessions**

### **S02-1 IT IN MANUFACTURING IT AND MANUFACTURING**

ROOM 1.2

THURSDAY, 26/07/2007 11:05 - 12:35

**Advanced IC tools for maximising virtual team creativity and Innovation in Manufacturing environments**

Mikel Sorli, Íñigo Mendikoa, Alberto Armijo, WF-002208, Volume 2, Page 939

**Ambient Intelligence Based System for Life-cycle Management of Complex Manufacturing and Assembly Lines**

Dragan Stokic, Rui Neves-Silva, Maria Marques, Philip Reimer, Jon Agirre Ibarbia, WF-002666, Volume 2, Page 945

**Diagnosis using Service Oriented Architectures (SOA)**

Jose Barata, Luis Ribeiro, Armando Colombo, WF-005045, Volume 2, Page 951

**Risk Assessment to Support Decision on Complex Manufacturing and Assembly Lines**

Maria Marques, Rui Neves-Silva, WF-004286, Volume 2, Page 957

**S07-2 EXECUTION DESCRIPTION LANGUAGES FOR IEC 61499  
EXECUTION SEMANTICS OF IEC 61499 FUNCTION BLOCK APPLICATIONS**

ROOM 3.1

THURSDAY, 26/07/2007 11:05 - 12:35

**Alternatives for Execution Semantics of IEC61499**

Valeriy Vyatkin, Victor Dubinin, Luca Ferrarini, Carlo Veber, WF-007471, Volume 2, Page 1151

**Defining IEC 61499 Compliance Profiles using UML and OCL**

Tanvir Hussain, Georg Frey, WF-006416, Volume 2, Page 1157

**Enhanced IEC 61499 Device Management Execution and Usage for Downtimeless Reconfiguration**

Thomas Strasser, Christoph Sünder, Alois Zoitl, Martijn N. Rooker, Jeroen E.J. Brunnenkreef, WF-005622, Volume 2, Page 1163

**Synchronous Execution of IEC 61499 Function Blocks Using Esterel**

Li Hsien Yoong, Partha Roop, Valeriy Vyatkin, Zoran Salcic, WF-001961, Volume 2, Page 1189

**T05-3 LOCALIZATION AND TRACKING  
ROBOTICS AND AUTONOMOUS SYSTEMS**

ROOM 3.2

THURSDAY, 26/07/2007 11:05 - 12:35



### **Comparison of Self-Localization Methods for Soccer Robots**

Abdul Bais, Tobias Deutsch, Gregor Novak, WF-007625, Volume 1, Page 443

### **General framework for human object detection and pose estimation in video sequences**

Tamás Vajda, Lorinc Márton, WF-006386, Volume 1, Page 467

### **Global Vision Based Tracking of Multiple Mobile Robots in Subpixel Precision**

Misel Brezak, Ivan Petrovic, WF-005398, Volume 1, Page 473

### **Location tracker for a mobile robot**

Abdul Bais, Robert Sablatnig, Jason Gu, Yahya M. Khawaja, WF-002518, Volume 1, Page 479

## **T04-5 MEASUREMENT / SENSING APPLICATIONS APPLICATIONS OF INDUSTRIAL INFORMATICS**

ROOM 4.1

THURSDAY, 26/07/2007 11:05 - 12:35

### **Advanced Texture Analysis in Cork Quality Detection**

Beatriz Paniagua-Paniagua, Miguel Ángel Vega-Rodríguez, Pablo Bustos-García, Juan Antonio Gómez-Pulido, Juan Manuel Sánchez-Pérez, WF-005886, Volume 1, Page 311

### **Object Velocity Estimation Based on Asynchronous Data from a Dual-Line Sensor System**

Ahmed Nabil Belbachir, Michael Hofstätter, Peter Schön, Nikolaus Donath, Karl M. Reisinger, WF-003484, Volume 1, Page 347

### **Optical Yarn Hairiness Measurement System**

Vitor H. Carvalho, Paulo J. Cardoso, Rosa M. Vasconcelos, Filomena O. Soares, Michael S. Belsley, WF-004669, Volume 1, Page 359

### **Statistical assessment of global and local cylinder wear**

Oscar E. Ruiz, Carlos A. Vanegas, WF-004774, Volume 1, Page 387

## **T10-3 NETWORKED EMBEDDED SYSTEMS EMBEDDED AND NETWORKED CONTROL IN COLLABORATIVE MANUFACTURING**

ROOM 4.2

THURSDAY, 26/07/2007 11:05 - 12:35

**Dynamic Flash-memory Allocation for Smartcards: how to cope with limited space (in a short life)**

A.J.R. Aendenrooier, S. Huang, WF-001023, Volume 2, Page 835

**Dynamic rate and control adaptation in networked control systems**

Ana Antunes, Paulo Pedreiras, Luis Almeida, Alexandre Mota, WF-004537, Volume 2, Page 841

**W-method for Hierarchical and Communicating Finite State Machines**

Florentin Ipate, Logica Banica, WF-001791, Volume 2, Page 891

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**12:35 - 13:35 Lunch**

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**13:35 - 14:05 Poster Session**

**I2 INTERACTIVE SESSION 2**

**INTERACTIVE SESSION**

ROOM 0.5

THURSDAY, 26/07/2007 POSTER SESSION 13:35 - 14:05

**A Recursive Description of mixed Time- and Event-driven dynamics in Mechatronic Systems**

Ales Polic, Ales Hace, Karel Jezernik, WF-002526, Volume 1, Page 293

**An Efficient Data Preprocessing Method for Mining Customer Survey Data**

Allan N. Zhang, WF-005754, Volume 1, Page 573

**An Event-Triggered Smart Sensor Network Architecture**

Erico Meneses Leão, Luiz Affonso Guedes, Francisco Vasques, WF-005541, Volume 1, Page 523

**Architecture of a Safe Node for a Fieldbus System**

Thomas Novak, Thomas Tamandl, WF-005533, Volume 1, Page 101

**Fieldbus Interoperability on Ethernet**

Farzad Arjmandi, Behzad Moshiri, WF-006157, Volume 1, Page 213

**Generation and Application of Precedence Information for the Planning of Assembly and Disassembly Procedures**

Iker Aguinaga, Diego Borro, Luis Matey, WF-001201, Volume 1, Page 219

**Identify and Classify Pulse Information Based on Extension**

Xiaoyuan Zhu, Yongquan Yu, Zhilong Li, Hong Wang, WF-002038, Volume 2, Page 651

## **Software rejuvenation and replicated rejuvenated services**

Rodica Tirtea, Geert Deconinck, WF-004227, Volume 2, Page 767

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### **14:05 - 15:50 Panel Sessions**

**T07-1 E-APPLICATIONS  
E-APPLICATIONS  
ROOM 1.2  
THURSDAY, 26/07/2007 14:05 - 15:50**

#### **Case Study: Utilities and Asset Management – Time For a Change**

Taivo Kangilaski, WF-005681, Volume 1, Page 579

#### **Design and Development of a Service-Oriented Supply Chain: An IT Perspective**

Robin Qiu, Zhigeng Fang, Huizhang Shen, Ming Yu, Jin Dong, WF-002399, Volume 1, Page 585

#### **E-Business and Collaborative Networks: A service-oriented ICT platform for the footwear industry**

Claudia-Melania Chituc, Cesar Toscano, Americo Azevedo, WF-005487, Volume 1, Page 591

#### **Ontology based data warehouse modeling and mining of earthquake data: prediction analysis along Eurasian-Australian continental plates**

Shastri L. Nimmagadda, Heinz Dreher, WF-002585, Volume 1, Page 597

#### **Production Data Integration in the Vaccine Industry**

Nejib Moalla, Abdelaziz Bouras, Yacine Ouzrout, WF-006696, Volume 1, Page 603

**S06-1 DOWNTIMELESS RECONFIGURATION  
DOWNTIMELESS RECONFIGURATION  
ROOM 3.1  
THURSDAY, 26/07/2007 14:05 - 15:50**

#### **A Distributed Energy Management Approach for Autonomous Power Supply Systems**

Ingo Hegny, Roland Holzer, Gunnar Grabmair, Alois Zoitl, Franz Auinger, Ewald Wahlmüller, WF-006246, Volume 2, Page 1111

#### **An Execution Environment for Real-Time Constrained Control Software based on IEC 61499**

Alois Zoitl, Gunnar Grabmair, Rene Smodic, Thomas Strasser, WF-005568, Volume 2, Page 1117

### **Downtimeless System Evolution: Current State and Future Trends**

Oliver Hummer, Christoph Sünder, Thomas Strasser, Martijn Niels Rooker, Gerold Kerbleder, WF-005851, Volume 2, Page 1123

### **Future scenarios for application of downtimeless reconfiguration in industrial practice**

Thomas Baier, Josef Fritsche, Georg Keintzel, Dietmar Loy, Robert Schranz, Heinrich Steininger, Thomas Strasser, Christoph Sünder, WF-003115, Volume 2, Page 1129

### **Modelling Real-time Constraints Regarding Reconfiguration Aspects for IEC 61499 Control Applications**

Gunnar Grabmair, Alois Zoitl, Thomas Strasser, Roman Froschauer, WF-006661, Volume 2, Page 1135

## **T05-4 NETWORKED EMBEDDED SYSTEMS ROBOTICS AND AUTONOMOUS SYSTEMS**

ROOM 3.2

THURSDAY, 26/07/2007 14:05 - 15:50

### **Dynamic Filter Based Prediction for Efficient Networked Motion Tracking**

Lorinc Marton, Piroska Haller, Laszlo Budai, WF-002119, Volume 1, Page 461

### **Modeling Controller Area Network Communication**

Marko Bago, Nedjeljko Peri, Siniša Marijan, WF-003905, Volume 1, Page 485

### **Petri net Splitting Operation within Embedded Systems Co-design**

Anikó Costa, Luís Gomes, WF-007137, Volume 1, Page 503

### **The Input-Output Place-Transition Petri Net Class and Associated Tools**

Luis Gomes, Joao Paulo Barros, Aniko Costa, Ricardo Nunes, WF-007129, Volume 1, Page 509

## **T06-2 REAL-TIME NETWORKS INFRASTRUCTURE AND TECHNOLOGY**

ROOM 4.1

THURSDAY, 26/07/2007 14:05 - 15:50

### **Discrete Time Sliding Mode Controller for a Single Connection ATM Network**

Andrzej Bartoszewicz, Justyna Zuk, Ireneusz Kmin, WF-003085, Volume 1, Page 535

## **End-to-End Delays of Event-Triggered Overlay Networks in a Time-Triggered Architecture**

Roman Obermaisser, WF-002194, Volume 1, Page 541

## **Real-Time Communication for Smart Sensor Networks: A CAN Based Solution**

António Julio Pires, Erico Meneses Leão, João Paulo Sousa, Luiz Affonso Guedes, Francisco Vasques, WF-005819, Volume 1, Page 553

## **Stochastic network calculus for end-to-end delays distribution evaluation on an avionics switched Ethernet**

Frédéric Ridouard, Jean-Luc Scharbag, Christian Fraboul, WF-006408, Volume 1, Page 559

### **T10-4 DISTRIBUTED SYSTEMS EMBEDDED AND NETWORKED CONTROL IN COLLABORATIVE MANUFACTURING**

ROOM 4.2

THURSDAY, 26/07/2007 14:05 - 15:50

## **A Generic Approach for the Simulation of Distributed Control Systems using J2EE Technology**

Uwe Schmidtman, Thorsten Garrels, Hendrik Juergens, Gerd von Coelln, WF-004855, Volume 2, Page 805

## **Field Overlay Architecture for Manufacturing Systems**

Takeshi Ohno, Akira Kataoka, Akira Noguchi, WF-003808, Volume 2, Page 847

## **Optimizing Distributed Foundation Fieldbus Process Control with MSP.RTL Tool**

Jianping Song, Al Mok, Deji Chen, Mark Nixon, WF-006823, Volume 2, Page 867

## **Secure Plug and Play Architecture for Field Devices**

Nobuo Okabe, Shoichi Sakane, Atsushi Inoue, Hiroshi Esaki, WF-001562, Volume 2, Page 873

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**15:50 - 16:00 Break**

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**16:00 - 16:20 Closing**

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## Friday, 27th of July – Industrial Day

The first IEEE INDIN Industrial Day is a forum for technology experts, researchers and industrial managers to discuss today's and tomorrow's challenges in academic/industrial cooperation. The motto of this industrial day is "the future of manufacturing".

We ask for your understanding that due to the high number of registrations the Industrial Day is only open to those delegates that have registered to the event in advance via the INDIN website.

### Agenda

- 08.30 am** Transfers from Tech Gate Vienna to Siemensstrasse
- 09.00 am** Welcome address  
Wolfgang Morrenth, Head of Siemens Austria Automation & Drives (A&D)  
Friedrich Pressl, Head of Siemens Industrial Manufacturing, Engineering and Applications (SIMEA)
- 09.05 am** "Megatrends Industry – How Siemens tackles the challenges"  
Wolfgang Morrenth
- 09.20 am** "Trendsetting automation for the entire value chain"  
Steffen Weber, Siemens A&D HQ - Digital Engineering
- 09:40 am** Coffee Break
- 10:15 am** "Automation versus human resources – finding the right balance in operations"  
Johannes Renner, Head of Manufacturing A&D Austria
- 10.45 am** Visit of the Siemens Austria manufacturing site: 2 Slots parallel
  1. Slot: Economic inverter production
  2. Slot: DC-converters: minimizing engineering costs
- 12.15 am** Lunch
- 1.15 pm** "ICT Project Portfolio – Micro/Nano-Systems, Embedded Systems and Future & Emerging Technologies"  
Mrs. Gordana Popovic, European Committee
- 1.45 pm** "Smart Assembly Project"  
Allan Martel, COO O3neida
- 2.15 pm** Coffee break
- 2.30 pm** Interactive Podium Panel Discussion on:  
"Roles of Industrial Informatics in the future manufacturing facilities and in a new world populated by ambient aware and pro-active products"
- 4 pm** Conclusions – Wrap Up of Discussions  
Antonio Valentini, CEO O3neida
- 4.15 pm** Closing  
Wolfgang Morrenth
- 4.30 pm** Shuttle from Siemensstrasse to Tech Gate Vienna



# Social Program

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– The INDIN 2007 social events are sponsored by SIEMENS –

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## Welcome Reception

Ride with a historic tramway to a typical Viennese "Heurigen" (Winery) and get a taste of local cuisine.

### Date, Time & Dress code

The welcome reception will be held on **Monday, 22nd of July**. Dress code: **smart casual**.

- 18:30** Meeting "Otto Wagner Pavillon" Karlsplatz
- 18:45** Historic Tramway Departure
- 19:30** Heuriger (Bach-Hengl, Sandgasse 7–9, A-1196 Wien-Grinzing)
- 22:30** Bus transfer back to Karlsplatz

### Arrival

The meeting point for the Welcome Reception is at the "**Otto Wagner Pavillon**" at **Karlsplatz**. You can reach this by underground:

Arrival by **U1**: Use exit "U2/U4" at the END of the Station. Then follow green signs "U4".  
On the U4 platform, use exit "**Resselpark**"

Arrival by **U2**: Use exit "Akademiestraße", then go in direction "**Resselpark**"

Arrival by **U4**: Use exit "**Resselpark**"

From the "**Resselpark**" exit you will be guided to the historic tramway.



# Conference Banquet at “Palais Niederösterreich”

## Date, Time & Dress code

Wednesday 25<sup>th</sup> of July, 18:30 – 24:00

Dress code: **formal**

**Don't forget  
your badge!**

## Venue

Altes Landhaus  
Herrengasse 13  
1010 Vienna

URL: <http://www.palais-niederoesterreich.at>

## Arrival

Use the underground line **U3** and drive to the station “**Herrengasse**”. For more details please refer to the map:





# Industrial Day Dinner – Dine in “Palmenhaus”

The Industrial Day Dinner is open to those delegates that have registered to the Industrial Day via the INDIN website.

## Date, Time & Dress code

Thursday 26<sup>th</sup> of July, 18:30 – 24:00

Dress code: **casual**

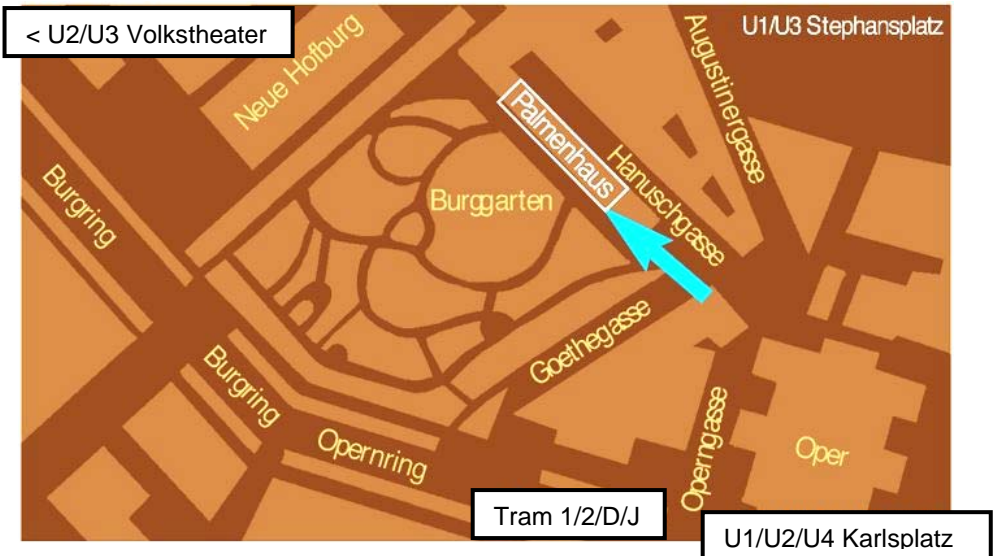
## Venue

Burggarten  
1010 Vienna

URL: <http://www.palmenhaus.at>

## Arrival

Use the underground line **U1, U2** or tram **1,2,D or J** to the stop 'Oper'. For the short walk to the "Palmenhaus" please consider the following map:





## Q&A

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### **General help – where can I get that?**

Please refer to the INDIN Registration Desk in the entrance area for any general requests.

### **Helpline Telephone – can I call anyone?**

In case you got completely lost or missed one of our shuttle services, you can call the INDIN phone +43 681 104 38 403. Please read this program carefully before calling us to ensure that the information you need is not included in this document.

### **Internet – how can I access it?**

There will be free wireless Internet access available for you at the venue. Please connect to the open WLAN with SSID “TGV x.x”, where x can vary depending on room and floor.

### **Organisers – how do I identify them?**

The organisers wear red badges. You can always address your inquiries to them.

### **Presentation – when and in what format shall I provide it?**

Panel presentations are to be done via PPT or PDF presentations with maximum 20 minutes of time (including questions). Laptop computers and digital projectors for presentation are available; bring your files on a USB thumb drive or CD. Please come forward to the session organisers in the break/coffee break before your session for copying your files on the presentation computer.

Please note that we do not guarantee that video clips included in your presentations will actually work.

### **Tickets – how do I get access to the INDIN events?**

Your badge serves as ticket for all INDIN technical and social events. The badge clearly states all events you have admission to. If you have not been registered for an event you would like to take part, please come to the INDIN registration desk.

## **INDIN Help Desk**

The INDIN organising team offers you the **mobile INDIN Help Desk**, which you can call for organisational issues and requests during the conference.

**+43 681 104 38 403**

*Please read this program carefully before calling us in order to avoid unnecessary questions.*

## **Track Overview**

T01 Buildings, Networks and Automation

T02 Security and Safety

T03 Factory Automation

T04 Applications of Industrial Informatics

T05 Robotics and Autonomous Systems

T06 Infrastructure and Technology

T07 E-Applications

T08 Cognitive Science in Industrial Informatics

T09 Service-Oriented Architecture

T10 Embedded and Networked Control in Collaborative Manufacturing

S01 IT and Energy

S02 IT in Manufacturing

S03 Dependable Embedded Systems

S04 Cognitive Automation

S05 Agents Theory and Practice for Industry

S06 Downtimeless Reconfiguration

S07 Execution semantics of IEC 61499 Function Block Applications

S08 Challenges in IT and Energy