Welcome to the REV2008 Conference!

Current REV newsletter highlight:

Workshops and Tutorial on Monday, June 23rd

WS-01: Experience in an applied training strategy on an actual factory model on a scale of 1:20

Content:

- Intruducing the segment structure at SIEMENS E&C PS2.
- How do we do our recruiting with our special requirements on our staff for reaching our goals in the Field Servcie Level 2 or IBS for all kinds of automation systems.
- Our first experiences with the successful story of the internal PS2 University V1 / V2 over the last 8 years.
- First Step of using a Totally integrated Automation - Training Facility which was build by the SIEMENS Professional Education.
- Implementing an concept for an own Training Facility according to our issues for practical training with Factory and Process Automation, not based on toys but on real technics and plant parts.
- History of the organization, planning, construction and commisioning of the plant.
- Internal fair in december 2007 (Film).
- Concept of more practical trainings together with didactic university.
- Start of the Trainings Activities.
- Issues and experiences in the first 5 Courses(7-Steps Modell).
- First experiences from the field after our employees passed out training plant and concept called ATHEN

Presenter:

Michael Ermer was born 1967 in Nürnberg, Germany. After the studies of the electrical engineering as an Engineer of Electronic Energy, he worked in the service department for SPS controls in a big data processing house in Germany for 5 years. Later 1996 he has changed to the Fa.Siemens AG and worked there successfully over years in worldwide Field Service Level2, system test and crise management for the products of the ind. communication, like Profibus, Profinet, IE, WLAN, PA, PTP, ASi, EiB aso. Since 2004 he is the executive of a service group of 70 employees.

WS-02: Using NI ELVIS as a Multidisciplinary Engineering Platform

Content:

The goal of the workshop is the understanding of the advantages of using one integrated pc-based laboratory platform for a variety of disciplines in University lab experiments and vocational training. NI ELVIS, an educational design and prototyping platform based on NI LabVIEW graphical system design software, is a leading tool for teaching concepts in areas such as instrumentation, circuits, control, communication, and embedded design in a hands-on, interactive manner. This workshop shows how NI ELVIS can be used from lower-division freshman classes to advanced senior classes to help students learn concepts from circuit design to telecommunications. The workshop deals with following topics:

- Circuit Design and Simulation, SPICE Simulation of analog and digital circuits
- Instrumentation/Measurement, Verification and comparison of real circuit and simulated counter part
- Control, Concept, design and test of PID control loops
- Communication, Introduction to modulation/demodulation concepts

Presenter:

Ingo Knoblich was born on June 9th 1971 in Celle, Germany. After the completion of an apprenticeship he studied electrical engineering at Konstanz University of Applied Sciences.In 1999 he started his professional career at National Instruments. Following Application Engineer and Technical Marketing department, Ingo moved into a sales position. His current role as a Business Development Manger for Academic Relations has a strong focus on the integration of NI products in curriculum, working with academic partners as well as NI's Train-The-Trainer program.

WS-03: Augmented Reality for the Development Process of mechatronic and Self-Optimizing Systems

Content:

Augmented Reality (AR) is gaining popularity as an engineering design tool and is increasingly used in the product development process. In the last years, many applications arise, that promise a benefit for the product development process. The aim of this workshop is to provide an overview about the latest AR applications for the development of mechatronic and self-optimizing systems. Participants will get to know possible applications and benefits of AR inside the product development process. We will present and discuss over 20 application examples from all phases of the product development process like draft, design, feasibility, simulation, etc. Attention is laid to the integration of the application examples into the product development process, as missing integration is one reason for the low acceptance of AR applications by industrial developers.

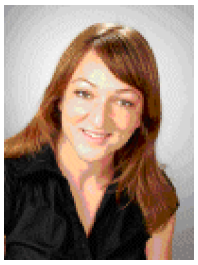
The workshop will last three hours; it will be split into two parts. In part one, a brief introduction into AR is provided as well as a presentation of hardware systems and software tools for AR applications. In the second part, a rough product development process is presented and different AR applications for particular development steps will be discussed. At the end, we will present some suggestions for everyone, planning to use AR in an industrial context.

The workshop is addressed to researches and engineers from industries, who want to

get to know the latest applications potentials for AR in an industrial context.

Presenters:

Rafael Radkowski, born 1976, study from 1998 to 2003 mechanical engineering with focus on product development at the University of Paderborn. He finished his studies as best in year. From 2003 to 2006 he was a scholarship holder at the graduate school „Automatic Reconfiguration in Open Systems" at the Heinz Nixdort Institute. In this context he joins the working group „Computerintegrated Manufacturing" under direction of Prof. Dr.-Ing. J. Gausemeier. His research focus is virtual prototyping, particulary the use of Virtual and Augmented Reality and simulation within the product development process. He finished his Ph.D. in 2006. Since 2006 he works as a post-doc in the workgroup of Prof. Gausemeier. Until now, he has published his research results in above 35 publications



Helene Waßmann, born 1981, studied from 2000 to 2007 Computer Science at the University of Paderborn. Her emphases were Computer Graphics and Image Processing. In 2007 she joined the workgroup Computer Integrated Manufacturing of the Heinz Nixdorf Institute. Her research work focuses on visualisation of technical systems.

TUT-01: Electronic support for the course Constrained PID Control

Content:

PID control represents an engineering discipline with almost one century old tradition. Despite its apparent simplicity and long tradition, it has still not reached a steady state that is evident by a high number of newly appearing papers. So, a potential student or researcher in this topic is confronted by a huge amount of available resources. To get a fast overview of a potential impact of particular approaches it is useful to have simulation, analysis and control design tools enabling an easy verification of the particular method. Such tools are integrated with a unique approach to the analysis and design of the PID control within the e-course Constrained PID control. Tutorial will present broad spectrum of different electronic tools used within the course. It will focus on the electronic support that plays the dominant feature of the course. Based on the "Learning by Doing", or "Learning by Experimenting" strategies in an quasi-authentic context, it adopts the constructivist philosophy of the student-centered e-, or blended learning. The course participants are supported by:

- printed textbooks (with many examples and exercises, summaries and reflection points,
- conference papers and other Internet resources,
- electronic course materials (available via LMS Moodle, containing
- Matlab/Simulink, or Scilab/Scicos programs for simulation and control experiments,
- FLASH and JAVA animations of basic problems,
- e-books,
- tests for self-evaluation,
- low-cost and easy to manipulate physical models of real plants that are either send or given to each student or made accessible via

Internet,

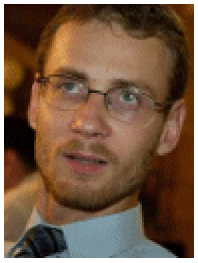
- manuals to all required activities,
- face-to-face workshops (if required by students) and tutors.

The tutorial will focus on the key features of the study support:

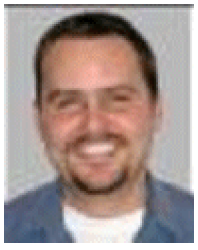
- ways of communication PC – real process under software packages Matlab/Simulink - conventional communication using I/O card, low-cost solutions with using PC ports,
- Scilab/Scicos (open source) – applications transferring data via PC ports,
- live demonstration of educational plants used in constrained PID control course: thermo-optical, electro-mechanical and hydraulic system, advantages of USB based educational plants over the commonly used plants based on data acquisition cards,
- characteristic control tasks solved by tutorial participants,
- scope for future extension of educational process (PLC, industrial buses, embedded control),
- expanding plant's communication abilities with add-on Ethernet interface card,
- design of physical models of real processes with own measurement and communication subsystem and theirs possibilities for TCP/IP protocol.

Presenters:

Mikuláš Huba received the MSc. and PhD. Degrees in technical cybernetics from Slovak University of Technology (STU) in Bratislava in 1974 and 1982, respectively. At the Faculty of Electrical Engineering and Information Technology of STU he habilitated in 1989 and was a Senior Lecture and Head of the Control Theory Group of the Institute of Control and Industrial Informatics (previously Department of Automation and Control). In 2007 he inaugurated in the field of Automation. Since 1996 he is also Head of the university Distance Education Centre.



Martin Kamenský is Ph.D. student at the Slovak University of Technology in Bratislava, Faculty of Electrical Engineering and Information Technology, Institute of Control and Industrial Informatics (ICII), with study and research interests in modern ways of education, control, identification, real plants experiments, communication possibilities of Matlab and Scilab with real plants without measurement cards.



Peter Tapák received the MSc. Degree in automation from Slovak University of Technology in Bratislava in 2005. Nowadays he is a PhD. student at the Slovak University of Technology in Bratislava, Faculty of Electrical Engineering and Information Technology.. He deals with linear systems with input constraints with the focus on the constrained pole assignment control.

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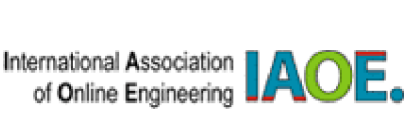

- **Have a look at**
  - **ICL2008 , 24 - 26 September 2008 in Villach, Austria**
  - **IMCL2008 , 16 - 18 April 2008 in Amman, Jordan**
  - **ICBL2008 , 03 - 05 November 2008 in Florianopolis, Brazil**
  - ***iJOE* - International Journal of Online**

Engineering

Important dates

June 09, 2008: Camera-ready due
June 23/25, 2008: Conference REV2008

For your planning

REV2008 will be held in Bridgeport, USA, June 2009